

SAFETY DATA SHEET

According to Regulation (EC) No 1907/2006 (REACH), Annex II (COMMISSION REGULATION (EU) No 2015/830)



Date of issue: 2018-06-20
Revision date: 2023-04-17

SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1. Product identifier

Trade : MGI- D.GREEN

1.2. Relevant identified uses of the substance or mixture and uses advised against

1.2.1. Relevant identified uses

- Water-soluble stationary ink

1.2.2. Uses advised against

- Not available

1.3. Details of the supplier of the safety data sheet

Manufacturer/Supplier : YOU&I COPORATION
Address : 53, EMTIBEUI 26-RO, SIHEUNG-SI, GYEONGGI-DO, KOREA (ZIP CODE) 15118
Telephone : 82-31-494-2030
Email : tech@youicolor.com

1.4. Emergency telephone number

82-31-494-2030 (This number is serviced during office hours only.)
EU-wide emergency number : 112
See section 16.6 for the list of telephone number of poison centers in the European Economic Area.

SECTION 2: HAZARD IDENTIFICATION

2.1. Classification of the substance/mixture

2.1.1. Classification according to Regulation (EC) No 1272/2008 [CLP]
H411-Aquatic Chronic 2

2.2. Label elements

2.2.1. Labelling according to Regulation (EC) No 1272/2008 [CLP]

* Hazard Pictogram(s)



* Signal word : Warning

* Hazard statement(s)

H411: Toxic to aquatic life with long-lasting effects

* Precautionary statement(s)

1) Prevention

P273: Avoid release to the environment.

2) Response

P391: Collect spillage.

3) Storage

- Not applicable

4) Disposal

P501: Disposal contents/ container to in accordance with local national regulation.

2.3. Other hazards

- Not available

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS**3.1. Substances**

- Not applicable

3.2. Mixtures

Name	CAS No.	EINECS NO.	% [weight]	Classification [1272/2008/EC]
WATER	7732-18-5	231-791-2	40~60	Not classified
GLYCERINE	56-81-5	200-289-5	15~20	Not classified
ALUMINIUM POWDER	7429-90-5	231-072-3	3~7	   Flam. Solid 1, H228 Pyr. Liq. 1, H250 Water-react 2, H261 Specific target organ toxicity (repeated) 2, H373 Aquatic Chronic 1: H410 (M factor: 1)
C.I. PIGMENT YELLOW 83	5567-15-7	226-939-8	0~5	Aquatic Chronic 3, H412
C.I. PIGMENT BLUE 15:3	147-14-8	205-685-1	0~5	Not classified
POLY ETHYLENE GLYCOL	25322-68-3	500-038-2	10~15	 Acute toxicity (Oral) 4, H302
2-AMINO-2-METHYL-1-PROPANOL	124-68-5	204-709-8	0~1	 Aquatic Chronic 4, H413 Eye Irrit. 1, H318 Skin Irrit. 2, H315

SECTION 4: FIRST AID MEASURES**4.1. Description of first aid measures****General**

- No general information.

Inhalation

- When exposed to large amounts of steam and mist, move to fresh air.
- Take specific treatment if needed.

Skin contact

- Flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes.
- Laundering enough contaminated clothing before reuse.

Eye contact

- Do not rub your eyes.
- Immediately flush eyes with plenty of water for at least 15 minutes and call a doctor/physician.

Ingestion

- Please be advised by doctor whether induction of vomit is demanded or not.
- Rinse your mouth with water immediately.

4.2. Most important symptoms and effects, both acute and delayed

- Not available

4.3. Indication of any immediate medical attention and special treatment needed

- Notify medical personnel of contaminated situations and have them take appropriate protective measures.

SECTION 5: FIREFIGHTING MEASURES**5.1. Extinguishing media**

Suitable extinguishing media

- Water, form, CO₂, NaHCO₃

Unsuitable extinguishing media

- Avoid use of water jet for extinguishing

5.2. Special hazards arising from the substance or mixture**Hazardous combustion products**

- Not available

5.3. Advice for firefighters

- Cool containers with water until well after fire is out.
- Keep unauthorized personnel out.
- Withdraw immediately in case of rising sound from venting safety devices or discoloration of tank.
- Wear appropriate protective equipment.
- Keep containers cool with water spray.
- Use fire fighting procedures suitable for surrounding area.
- Vapor or gas is burned at distant ignition sources can be spread quickly.

SECTION 6: ACCIDENTAL RELEASE MEASURES**6.1. Personal Precautions, protective equipment and emergency procedures****6.1.1. For non-emergency personnel**

- Protective equipment: Wear proper protective equipment.
- Emergency procedures: Not applicable
- If required, notify relevant authorities according to all applicable regulations.

6.1.2. For emergency responders

- Ventilate closed spaces before entering.
- Must work against the wind, let the upwind people to evacuate.
- Do not touch spilled material. Stop leak if you can do it without risk.
- Handling the damaged containers or spilled material after wearing protective equipment.
- Do not direct water at spill or source of leak.

6.2. Environmental precautions

- Prevent runoff and contact with waterways, drains or sewers.
- If large amounts have been spilled, inform the relevant authorities.
- Avoid dispersal of spilt material and runoff and contact with waterways, drains and sewers. If large spills, advise

6.3. Methods and material for containment and cleaning up**6.3.1. For containment**

- Clear spills immediately
- Clean up all spills immediately.
- Prevent, by any means available, spillage from entering drains or water course.

6.3.2. For cleaning up

- Large spill : Stay upwind and keep out of low areas. Dike for later disposal.
- Notification to central government, local government. When emissions at least of the standard amount
- Dispose of waste in accordance with local regulation.
- Appropriate container for disposal of spilled material collected.
- Small leak: sand or other non-combustible material, please let use absorption.
- Wipe off the solvent.
- Dike for later disposal.

6.3.3. Other information

- Slippery when spilt.

6.4. Reference to other sections

- See Section 7 for information on safe handling.
- See Section 8 for information on personal protection equipment.

- See Section 13 for information on disposal.

SECTION 7: HANDLING AND STORAGE

7.1. Precautions for safe handling

- Avoid direct physical contact.
- Get the manual before use.
- Refer to Engineering controls and personal protective equipment.
- Do not handle until all safety precautions have been read and understood.
- Do not inhale the steam prolonged or repeated.

7.2. Conditions for safe storage, including any incompatibilities

- Save in cool, dry and well ventilated place.
- Check regularly for leaks.
- Please pay attention to incompatibilities materials and conditions to avoid.
- Keep sealed when not in use.
- No open fire.

7.3. Specific end use(s)

- See Section 1 for information on 1.2 Relevant identified uses.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control parameters

8.1.1. Occupational exposure limits

European Union (EU) Commission Directive 2006/15/EC (IOELVs)

- Not available

European Union (EU) Commission Directive 2006/15/EC (IOELVs) - Skin

- Not available

8.1.2. Recommended Monitoring Procedures

- Personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment.

8.1.3. DNEL/PNEC - Values

- Not available

8.2. Exposure controls

8.2.1. Appropriate engineering controls

- A system of local and/or general exhaust is recommended to keep employee exposures above the Exposure Limits. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. The use of local exhaust ventilation is recommended to control emissions near the source.

8.2.2. Individual protection measures, such as personal protective equipment

Hand protection

- Wear appropriate glove.

Eye protection

- Wear primary eye protection such as splash resistant safety goggles with a secondary protection face shield.
- Provide an emergency eye wash station and quick drench shower in the immediate work area.

Respiratory Protection

- Under conditions of frequent use or heavy exposure, Respiratory protection may be needed.
- Respiratory protection is ranked in order from minimum to maximum.
- Consider warning properties before use.
- Any chemical cartridge respirator with organic vapor cartridge(s).
- Any chemical cartridge respirator with a full face piece and organic vapor cartridge(s).
- Any air-purifying respirator with a full face piece and an organic vapor canister.

- For Unknown Concentration or Immediately Dangerous to Life or Health : Any supplied-air respirator with full face piece and operated in a pressure-demand or other positive-pressure mode in combination with a separate escape supply. Any self-contained breathing apparatus with a full face piece.

Skin protection

- Wear appropriate clothing.

8.2.3 Environmental exposure controls

- Do not let product enter drains. For ecological information refer to section 12.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES**9.1. Information on basic physical and chemical properties**

Appearance(State)	Liquid
Appearance(Color)	GREEN
Odor	Odorless
Odor threshold	Not available
pH	8.0 ± 1.0
Melting point/Freezing point	Not available
Initial boiling point and boiling range	> 100 °C
Flash point	300 °C
Evaporation rate	Not available
Flammability(solid, gas)	Not applicable
Upper/Lower Flammability or explosive	Not available
Vapour pressure	Not available
Vapour density	Not available
Relative density	1.1 ± 0.05 g/cm ³
Solubility	Fully miscible
Partition coefficient of n-octanol/water	Not available
Autoignition temperature	No self-igniting
Decomposition temperature	Not available
Viscosity	750 ± 150 Cps
Explosive properties	Not explosive
Oxidizing properties	Not available

9.2. Other information

- Not available

SECTION 10: STABILITY AND REACTIVITY**10.1. Reactivity**

- Not available

10.2. Chemical Stability

- This material is stable under recommended storage and handling conditions.

10.3. Possibility of hazardous reactions

- Hazardous Polymerization will not occur.

10.4. Conditions to avoid

- Avoid contact with incompatible materials and condition.
- Avoid : Accumulation of electrostatic charges, Heating, Flames and hot surfaces

10.5. Incompatible materials

- Not available

10.6. Hazardous decomposition products

- Not available

SECTION 11: TOXICOLOGICAL INFORMATION**11.1. Acute toxicity**

- **Oral**
 - Product (ATEmix) : >5000mg/kg
 - [GLYCERINE] : LD50 = 12600 mg/kg Rat (ChemIDplus)
- [POLY ETHYLENE GLYCOL] : LD50 = 600 mg/kg Rat (KOSHA)
- **Dermal**
 - Product (ATEmix) : >5000mg/kg
 - [GLYCERINE] : LD50 > 10000 mg/kg Rat (ChemIDplus)
- **Inhalation**
 - Product (ATEmix) : Not available
 - [GLYCERINE] : LC50 >2.75 mg/l 4 hr Rat (ECHA)

11.2. Skin corrosion/irritation

- [2-AMINO-2-METHYL-1-PROPANOL] : Classified as Category 2 (KOSHA)

11.3. Serious eye damage/irritation

- [2-AMINO-2-METHYL-1-PROPANOL] : Classified as Category 1 (KOSHA)

11.4. Respiratory sensitization

- Not available

11.5. Skin sensitization

- Not available

11.6. Germ cell mutagenicity

- Not available

11.7. Carcinogenicity

- **IARC**
 - Not available
- **OSHA**
 - Not available
- **ACGIH**
 - [ALUMINIUM POWDER] : A4
- **NTP**
 - Not available
- **EU CLP**
 - Not available

11.8. Reproductive toxicity

- Not available

11.9. Specific target organ toxicity(single exposure):

- Not available

11.10. Specific target organ toxicity(repeated exposure):

- [ALUMINIUM POWDER] : Classified as Category 2 (KOSHA)

11.11. Aspiration hazard

- Not available

SECTION 12: ECOLOGICAL INFORMATION**12.1. Toxicity****12.1.1. Fish**

- [GLYCERINE] : LC50 >11 mg/ℓ 96 hr Cyprinodon variegatus (ECHA)

12.1.2. Invertebrate

- [GLYCERINE] : LC50 1955 mg/ℓ 48 hr Daphnia magna (ECHA)
- [ALUMINIUM POWDER] : NOEC > 100 mg/ℓ 48 hr Daphnia magna (IUCLID)

12.1.3. Algae

- [ALUMINIUM POWDER] : NOEC > 0.052 mg/ℓ 48 hr Selenastrum capricornutum (M = 1) (OECD TG 201, GLP)

12.2. Persistence and degradability**12.2.1. Persistence**

- Not available

12.2.2. Degradability

- [2-AMINO-2-METHYL-1-PROPANOL] : BOD5/COD 0.005 (KOSHA)

12.3. Bioaccumulative potential**12.3.1. Bioaccumulation**

- [2-AMINO-2-METHYL-1-PROPANOL] : 1.3 BSAF (Leuciscus idus(Fish, fresh water), 50ug/) (KOSHA)

12.3.2. Biodegradability

- [2-AMINO-2-METHYL-1-PROPANOL] : 40 (%) 28 days (KOSHA)

12.4. Mobility in soil

- Not available

12.5. Results of PBT and vPvB assessment

- Not available

12.6. Other adverse effects

- Not available

SECTION 13: DISPOSAL CONSIDERATIONS**13.1. Waste treatment methods**

- Since more than two kinds of designated waste is mixed, it is difficult to treat separately, then can be reduction or stabilization by incineration or similar process.
- If water separation is possible, pre-process with Water separation process.
- Dispose by incineration.
- The user of this product must disposal by oneself or entrust to waste disposer or person who other's waste recycle and dispose, person who establish and operate waste disposal facilities.
- Dispose of waste in accordance with all applicable laws and regulations.

SECTION 14: TRANSPORT INFORMATION**14.1. UN No.****14.1.1. UN No. (ADR/RID/ADN)**

3082

14.1.2. UN No. (IMDG CODE/IATA DGR)

3082

14.1.3. UN No. (ICAO)

3082

14.2. UN proper shipping name

- Not applicable

14.3. Transport hazard class(es)

14.3.1. ADR/RID/ADN Class

- Not applicable

14.3.2. ADR/RID/ADN Class

- Not applicable

14.3.3. ADR Label No.

- Not applicable

14.3.4. IMDG Class

- Not applicable

14.3.5. ICAO Class/Division

- Not applicable

14.3.6. Transport Labels

- Not applicable

14.4. Packing group**14.4.1. ADR/RID/ADN Packing group**

- Not applicable

14.4.2. IMDG Packing group

- Not applicable

14.4.3. ICAO Packing group

- Not applicable

14.5. Environmental hazards

- Not applicable

14.6. Special precautions for user

- Local transport follows in accordance with Dangerous goods Safety Management Law.
- Package and transport follow in accordance with Department of Transportation (DOT) and other regulatory agency
- EmS FIRE SCHEDULE : Not applicable
- EmS SPILLAGE SCHEDULE : Not applicable
- Air transport(IATA): Not subject to IATA regulations.

14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

- Not applicable

SECTION 15: REGULATORY INFORMATION**15.1. Safety, health and environmental regulation / legislation specific for the substance or mixture****15.1.1. Europe regulatory****15.1.1.1 REACH Restricted substance under REACH**

- Not applicable

15.1.1.2 REACH Substances subject to authorization under REACH

- Not applicable

15.1.1.3 REACH SVHC

- Not applicable

15.1.1.4 Europe PBT

- Not applicable

15.1.1.5 European Union (EU) Transport of Dangerous Goods by Road - Dangerous Goods List

- Not applicable

15.2. Chemical Safety Assessment

- Not conducted

SECTION 16: OTHER INFORMATION**16.1. Indication of changes**

- The Safety Data Sheet has been reviewed and the data therein were revised and laid out according to the requirements of the Commission Regulation (EC) No. 1907/2006

16.2. Abbreviations and acronyms

- 1272/2008 CLP : Classification, Labelling and Packaging regulation.
- REACH : Registration, Evaluation and authorization of chemical substances.
- DNEL : Derive no effects level
- PNEC : Predicted no effect concentration

16.3. Key literature references and sources for data

- This Safety Data Sheet was compiled with data and information from the following sources: RTECS, ECOSAR, HSDB, SIDS SIAP, ChemWATCH, CESAR, Chemical DB

16.4. Classification procedure

- The mixture classification has been derived based on the classification of the individual components in accordance with the rules set out in Regulation (EC) No 1272/2008 (CLP) as well as the translation tables in Annex VII to the same regulation.

16.5. Training advice

- Not applicable

16.6. Further information

- The (M)SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings. Risks may be determined by reference to Exposures Scenarios. Scale of use, frequency of use and current or available engineering controls must be considered.
- This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only.
- It should not therefore be construed as guaranteeing any specific property of the product.
- Contact a poison control centre, List of Telephone Numbers : AUSTRIA (Vienna Wien) +43 1 406 43 43; BELGIUM (Brussels Bruxelles) +32 70 245 245; BULGARIA (Sofia) +359 2 9154 409; CZECH REPUBLIC (Prague Praha) +420 224 919 293; DENMARK (Copenhagen) 82 12 12 12; ESTONIA (Tallinn) 112; FINLAND (Helsinki) +358 9 471 977; FRANCE (Paris) +33 1 40 0548 48; GERMANY (Berlin) +49 30 19240; GREECE (Athens Athinai) +30 10 779 3777; HUNGARY (Budapest) 06 80 20 11 99; ICELAND (Reykjavik) +354 525 111, +354 543 2222; IRELAND (Dublin) +353 1 8379964; ITALY (Rome) +39 06 305 4343; LATVIA (Riga) +371 704 2468; LITHUANIA (Vilnius) +370 5 236 20 52 or +370 687 53378; MALTA (Valletta) 2425 0000; NETHERLANDS (Bilthoven) +31 30 274 88 88; NORWAY (Oslo) 22 591300; POLAND (Gdansk) +48 58301 65 16 or +48 58 349 2831; PORTUGAL (Lisbon Lisboa) 808 250 143; ROMANIA (Bucharest) +40 21 3183606 SLOVAKIA (Bratislava) +421 2 54 77 4166; SLOVENIA (Ljubljana) + 386 41 650 500; SPAIN (Barcelona) +34 93 227 98 33 or +34 93 227 54 00 bleep 190; SWEDEN (Stockholm) 112 or +46 8 33 12 31 (mon-fri 9.00-17.00); UNITED KINGDOM (London) 112 or 0845 4647 (NHS Direct).

Disclaimer of Liability

This information is based on our present state of knowledge. It should not therefore be construed as guaranteeing specific properties of the products Described or their suitability for a particular application. YOU&I Corporation assumes no responsibility for personal injury or property damage caused by the material. Users assume all risks associated with the use of the material.

***** End of Documents

SAFETY DATA SHEET

According to Regulation (EC) No 1907/2006 (REACH), Annex II (COMMISSION REGULATION (EU) No 2015/830)



Date of issue: 2019-06-14
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1.2.2. Uses advised against

- Not available

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H411-Aquatic Chronic 2

2.2. Label elements

2.2.1. Labelling according to Regulation (EC) No 1272/2008 [CLP]

* Hazard Pictogram(s)



* Signal word : Warning

* Hazard statement(s)

H411: Toxic to aquatic life with long-lasting effects

* Precautionary statement(s)

1) Prevention

P273: Avoid release to the environment.

2) Response

P391: Collect spillage.

3) Storage

- Not applicable

4) Disposal

P501: Disposal contents/ container to in accordance with local national regulation.

2.3. Other hazards

- Not available

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- Flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes.
- Laundering enough contaminated clothing before reuse.

Eye contact

- Do not rub your eyes.
- Immediately flush eyes with plenty of water for at least 15 minutes and call a doctor/physician.

Ingestion

- Please be advised by doctor whether induction of vomit is demanded or not.
- Rinse your mouth with water immediately.

4.2. Most important symptoms and effects, both acute and delayed

- Not available

4.3. Indication of any immediate medical attention and special treatment needed

- Notify medical personnel of contaminated situations and have them take appropriate protective measures.

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Suitable extinguishing media

- Water, form, CO₂, NaHCO₃

Unsuitable extinguishing media

- Avoid use of water jet for extinguishing

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- Slippery when spilt.

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- See Section 1 for information on 1.2 Relevant identified uses.

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Appearance(Color)	GOLD
Odor	Odorless
Odor threshold	Not available
pH	8.0 ± 1.0
Melting point/Freezing point	Not available
Initial boiling point and boiling range	> 100 °C
Flash point	300 °C
Evaporation rate	Not available
Flammability(solid, gas)	Not applicable
Upper/Lower Flammability or explosive	Not available
Vapour pressure	Not available
Vapour density	Not available
Relative density	1.1 ± 0.05 g/cm ³
Solubility	Fully miscible
Partition coefficient of n-octanol/water	Not available
Autoignition temperature	No self-igniting
Decomposition temperature	Not available
Viscosity	750 ± 150 Cps
Explosive properties	Not explosive
Oxidizing properties	Not available

9.2. Other information

- Not available

SECTION 10: STABILITY AND REACTIVITY**10.1. Reactivity**

- Not available

10.2. Chemical Stability

- This material is stable under recommended storage and handling conditions.

10.3. Possibility of hazardous reactions

- Hazardous Polymerization will not occur.

10.4. Conditions to avoid

- Avoid contact with incompatible materials and condition.
- Avoid : Accumulation of electrostatic charges, Heating, Flames and hot surfaces

10.5. Incompatible materials

- Not available

10.6. Hazardous decomposition products

- Not available

SECTION 11: TOXICOLOGICAL INFORMATION**11.1. Acute toxicity**

- **Oral**
 - Product (ATEmix) : >5000mg/kg
 - [GLYCERINE] : LD50 = 12600 mg/kg Rat (ChemIDplus)
- [POLY ETHYLENE GLYCOL] : LD50 = 600 mg/kg Rat (KOSHA)
- **Dermal**
 - Product (ATEmix) : >5000mg/kg
 - [GLYCERINE] : LD50 > 10000 mg/kg Rat (ChemIDplus)
- **Inhalation**
 - Product (ATEmix) : Not available
 - [GLYCERINE] : LC50 >2.75 mg/l 4 hr Rat (ECHA)

11.2. Skin corrosion/irritation

- [2-AMINO-2-METHYL-1-PROPANOL] : Classified as Category 2 (KOSHA)

11.3. Serious eye damage/irritation

- [2-AMINO-2-METHYL-1-PROPANOL] : Classified as Category 1 (KOSHA)

11.4. Respiratory sensitization

- Not available

11.5. Skin sensitization

- Not available

11.6. Germ cell mutagenicity

- Not available

11.7. Carcinogenicity

- **IARC**
 - Not available
- **OSHA**
 - Not available
- **ACGIH**
 - [ALUMINIUM POWDER] : A4
- **NTP**
 - Not available
- **EU CLP**
 - Not available

11.8. Reproductive toxicity

- Not available

11.9. Specific target organ toxicity(single exposure):

- Not available

11.10. Specific target organ toxicity(repeated exposure):

- [ALUMINIUM POWDER] : Classified as Category 2 (KOSHA)

11.11. Aspiration hazard

- Not available

SECTION 12: ECOLOGICAL INFORMATION**12.1. Toxicity****12.1.1. Fish**

- [GLYCERINE] : LC50 >11 mg/l 96 hr Cyprinodon variegatus (ECHA)
- [C.I. PIGMENT YELLOW 83] : LC50 45 mg/l 48 hr Oncorhynchus mykiss (ECOTOX)

12.1.2. Invertebrate

- [GLYCERINE] : LC50 1955 mg/l 48 hr Daphnia magna (ECHA)
- [ALUMINIUM POWDER] : NOEC > 100 mg/l 48 hr Daphnia magna (IUCLID)

12.1.3. Algae

- [ALUMINIUM POWDER] : NOEC > 0.052 mg/l 48 hr Selenastrum capricornutum (M = 1) (OECD TG 201, GLP)

12.2. Persistence and degradability**12.2.1. Persistence**

- [C.I. PIGMENT YELLOW 83] : 7.54 log Kow (IUCLID)

12.2.2. Degradability

- [2-AMINO-2-METHYL-1-PROPANOL] : BOD5/COD 0.005 (KOSHA)

12.3. Bioaccumulative potential**12.3.1. Bioaccumulation**

- [2-AMINO-2-METHYL-1-PROPANOL] : 1.3 BSAF (Leuciscus idus(Fish, fresh water), 50ug/) (KOSHA)
- [C.I. PIGMENT YELLOW 83] : 10 (QSAR)

12.3.2. Biodegradability

- [2-AMINO-2-METHYL-1-PROPANOL] : 40 (%) 28 days (KOSHA)
- [C.I. PIGMENT YELLOW 83] : 6 (%) 28 days (NITE)

12.4. Mobility in soil

- Not available

12.5. Results of PBT and vPvB assessment

- Not available

12.6. Other adverse effects

- Not available

SECTION 13: DISPOSAL CONSIDERATIONS**13.1. Waste treatment methods**

- Since more than two kinds of designated waste is mixed, it is difficult to treat separately, then can be reduction or stabilization by incineration or similar process.
- If water separation is possible, pre-process with Water separation process.
- Dispose by incineration.
- The user of this product must disposal by oneself or entrust to waste disposer or person who other's waste recycle and dispose, person who establish and operate waste disposal facilities.
- Dispose of waste in accordance with all applicable laws and regulations.

SECTION 14: TRANSPORT INFORMATION**14.1. UN No.****14.1.1. UN No. (ADR/RID/ADN)**

3082

14.1.2. UN No. (IMDG CODE/IATA DGR)

3082

14.1.3. UN No. (ICAO)

3082

14.2. UN proper shipping name

- Not applicable

14.3. Transport hazard class(es)

14.3.1. ADR/RID/ADN Class

- Not applicable

14.3.2. ADR/RID/ADN Class

- Not applicable

14.3.3. ADR Label No.

- Not applicable

14.3.4. IMDG Class

- Not applicable

14.3.5. ICAO Class/Division

- Not applicable

14.3.6. Transport Labels

- Not applicable

14.4. Packing group**14.4.1. ADR/RID/ADN Packing group**

- Not applicable

14.4.2. IMDG Packing group

- Not applicable

14.4.3. ICAO Packing group

- Not applicable

14.5. Environmental hazards

- Not applicable

14.6. Special precautions for user

- Local transport follows in accordance with Dangerous goods Safety Management Law.
- Package and transport follow in accordance with Department of Transportation (DOT) and other regulatory agency
- EmS FIRE SCHEDULE : Not applicable
- EmS SPILLAGE SCHEDULE : Not applicable
- Air transport(IATA): Not subject to IATA regulations.

14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

- Not applicable

SECTION 15: REGULATORY INFORMATION**15.1. Safety, health and environmental regulation / legislation specific for the substance or mixture****15.1.1. Europe regulatory****15.1.1.1 REACH Restricted substance under REACH**

- Not applicable

15.1.1.2 REACH Substances subject to authorization under REACH

- Not applicable

15.1.1.3 REACH SVHC

- Not applicable

15.1.1.4 Europe PBT

- Not applicable

15.1.1.5 European Union (EU) Transport of Dangerous Goods by Road - Dangerous Goods List

- Not applicable

15.2. Chemical Safety Assessment

- Not conducted

SECTION 16: OTHER INFORMATION**16.1. Indication of changes**

- The Safety Data Sheet has been reviewed and the data therein were revised and laid out according to the requirements of the Commission Regulation (EC) No. 1907/2006

16.2. Abbreviations and acronyms

- 1272/2008 CLP : Classification, Labelling and Packaging regulation.
- REACH : Registration, Evaluation and authorization of chemical substances.
- DNEL : Derive no effects level
- PNEC : Predicted no effect concentration

16.3. Key literature references and sources for data

- This Safety Data Sheet was compiled with data and information from the following sources: RTECS, ECOSAR, HSDB, SIDS SIAP, ChemWATCH, CESAR, Chemical DB

16.4. Classification procedure

- The mixture classification has been derived based on the classification of the individual components in accordance with the rules set out in Regulation (EC) No 1272/2008 (CLP) as well as the translation tables in Annex VII to the same regulation.

16.5. Training advice

- Not applicable

16.6. Further information

- The (M)SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings. Risks may be determined by reference to Exposures Scenarios. Scale of use, frequency of use and current or available engineering controls must be considered.
- This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only.
- It should not therefore be construed as guaranteeing any specific property of the product.
- Contact a poison control centre, List of Telephone Numbers : AUSTRIA (Vienna Wien) +43 1 406 43 43; BELGIUM (Brussels Bruxelles) +32 70 245 245; BULGARIA (Sofia) +359 2 9154 409; CZECH REPUBLIC (Prague Praha) +420 224 919 293; DENMARK (Copenhagen) 82 12 12 12; ESTONIA (Tallinn) 112; FINLAND (Helsinki) +358 9 471 977; FRANCE (Paris) +33 1 40 0548 48; GERMANY (Berlin) +49 30 19240; GREECE (Athens Athinai) +30 10 779 3777; HUNGARY (Budapest) 06 80 20 11 99; ICELAND (Reykjavik) +354 525 111, +354 543 2222; IRELAND (Dublin) +353 1 8379964; ITALY (Rome) +39 06 305 4343; LATVIA (Riga) +371 704 2468; LITHUANIA (Vilnius) +370 5 236 20 52 or +370 687 53378; MALTA (Valletta) 2425 0000; NETHERLANDS (Bilthoven) +31 30 274 88 88; NORWAY (Oslo) 22 591300; POLAND (Gdansk) +48 58301 65 16 or +48 58 349 2831; PORTUGAL (Lisbon Lisboa) 808 250 143; ROMANIA (Bucharest) +40 21 3183606 SLOVAKIA (Bratislava) +421 2 54 77 4166; SLOVENIA (Ljubljana) + 386 41 650 500; SPAIN (Barcelona) +34 93 227 98 33 or +34 93 227 54 00 bleep 190; SWEDEN (Stockholm) 112 or +46 8 33 12 31 (mon-fri 9.00-17.00); UNITED KINGDOM (London) 112 or 0845 4647 (NHS Direct).

Disclaimer of Liability

This information is based on our present state of knowledge. It should not therefore be construed as guaranteeing specific properties of the products Described or their suitability for a particular application. YOU&I Corporation assumes no responsibility for personal injury or property damage caused by the material. Users assume all risks associated with the use of the material.

***** End of Documents

SAFETY DATA SHEET

According to Regulation (EC) No 1907/2006 (REACH), Annex II (COMMISSION REGULATION (EU) No 2015/830)



Date of issue: 2018-06-20

Revision date: 2022-05-17

SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1. Product identifier

Trade : MGI- B. ROSE

1.2. Relevant identified uses of the substance or mixture and uses advised against

1.2.1. Relevant identified uses

- Water-soluble stationary ink

1.2.2. Uses advised against

- Not available

1.3. Details of the supplier of the safety data sheet

Manufacturer/Supplier : YOU&I CORPORATION

Address : 53, EMTIBEUI 26-RO, SIHEUNG-SI, GYEONGGI-DO, KOREA (ZIP CODE) 15118

Telephone : 82-31-494-2030

Email : tech@youicolor.com

1.4. Emergency telephone number

82-31-494-2030 (This number is serviced during office hours only.)

EU-wide emergency number : 112

See section 16.6 for the list of telephone number of poison centers in the European Economic Area.

SECTION 2: HAZARD IDENTIFICATION

2.1. Classification of the substance/mixture

2.1.1. Classification according to Regulation (EC) No 1272/2008 [CLP]

- Not applicable

2.2. Label elements

2.2.1. Labelling according to Regulation (EC) No 1272/2008 [CLP]

* Hazard Pictogram(s)

- Not applicable

* Signal word : Not applicable

* Hazard statement(s)

- Not applicable

* Precautionary statement(s)

1) Prevention

- Not applicable

2) Response

- Not applicable

3) Storage

- Not applicable

4) Disposal

- Not applicable

2.3. Other hazards

- Not available

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1. Substances

- Not applicable

3.2. Mixtures

Name	CAS No.	EINECS NO.	% [weight]	Classification [1272/2008/EC]
WATER	7732-18-5	231-791-2	40~60	Not classified
GLYCERINE	56-81-5	200-289-5	15~20	Not classified
ALUMINIUM POWDER	7429-90-5	231-072-3	3~7	Water-react 2, H261 Pyr. Liq. 1, H250 Flam. Solid 1, H228
C.I. PIGMENT VIOLET 23	6358-30-1	228-767-9	0~5	Not classified
C.I. PIGMENT RED 170	2786-76-7	220-509-3	0~5	Not classified
POLY ETHYLENE GLYCOL	25322-68-3	500-038-2	10~15	Acute toxicity (Oral) 4, H302
2-AMINO-2-METHYL-1-PROPANOL	124-68-5	204-709-8	0~1	Aquatic Chronic 3, H412 Eye Irrit. 2, H319 Skin Irrit. 2, H315

SECTION 4: FIRST AID MEASURES

4.1. Description of first aid measures

General

- No general information.

Inhalation

- When exposed to large amounts of steam and mist, move to fresh air.
- Take specific treatment if needed.

Skin contact

- Flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes.
- Laundering enough contaminated clothing before reuse.

Eye contact

- Do not rub your eyes.
- Immediately flush eyes with plenty of water for at least 15 minutes and call a doctor/physician.

Ingestion

- Please be advised by doctor whether induction of vomit is demanded or not.
- Rinse your mouth with water immediately.

4.2. Most important symptoms and effects, both acute and delayed

- Not available

4.3. Indication of any immediate medical attention and special treatment needed

- Notify medical personnel of contaminated situations and have them take appropriate protective measures.

SECTION 5: FIREFIGHTING MEASURES

5.1. Extinguishing media

Suitable extinguishing media

- Water, foam, CO₂, NaHCO₃

Unsuitable extinguishing media

- Avoid use of water jet for extinguishing

5.2. Special hazards arising from the substance or mixture

Hazardous combustion products

- Not available

5.3. Advice for firefighters

- Cool containers with water until well after fire is out.
- Keep unauthorized personnel out.
- Withdraw immediately in case of rising sound from venting safety devices or discoloration of tank.
- Wear appropriate protective equipment.

- Keep containers cool with water spray.
- Use fire fighting procedures suitable for surrounding area.
- Vapor or gas is burned at distant ignition sources can be spread quickly.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal Precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

- Protective equipment: Wear proper protective equipment.
- Emergency procedures: Not applicable
- If required, notify relevant authorities according to all applicable regulations.

6.1.2. For emergency responders

- Ventilate closed spaces before entering.
- Must work against the wind, let the upwind people to evacuate.
- Do not touch spilled material. Stop leak if you can do it without risk.
- Handling the damaged containers or spilled material after wearing protective equipment.
- Do not direct water at spill or source of leak.

6.2. Environmental precautions

- Prevent runoff and contact with waterways, drains or sewers.
- If large amounts have been spilled, inform the relevant authorities.
- Avoid dispersal of spilt material and runoff and contact with waterways, drains and sewers. If large spills, advise

6.3. Methods and material for containment and cleaning up

6.3.1. For containment

- Clear spills immediately
- Clean up all spills immediately.
- Prevent, by any means available, spillage from entering drains or water course.

6.3.2. For cleaning up

- Large spill : Stay upwind and keep out of low areas. Dike for later disposal.
- Notification to central government, local government. When emissions at least of the standard amount
- Dispose of waste in accordance with local regulation.
- Appropriate container for disposal of spilled material collected.
- Small leak: sand or other non-combustible material, please let use absorption.
- Wipe off the solvent.
- Dike for later disposal.

6.3.3. Other information

- Slippery when spilt.

6.4. Reference to other sections

- See Section 7 for information on safe handling.
- See Section 8 for information on personal protection equipment.
- See Section 13 for information on disposal.

SECTION 7: HANDLING AND STORAGE

7.1. Precautions for safe handling

- Avoid direct physical contact.
- Get the manual before use.
- Refer to Engineering controls and personal protective equipment.
- Do not handle until all safety precautions have been read and understood.
- Do not inhale the steam prolonged or repeated.

7.2. Conditions for safe storage, including any incompatibilities

- Save in cool, dry and well ventilated place.

- Check regularly for leaks.
- Please pay attention to incompatibilities materials and conditions to avoid.
- Keep sealed when not in use.
- No open fire.

7.3. Specific end use(s)

- See Section 1 for information on 1.2 Relevant identified uses.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control parameters

8.1.1. Occupational exposure limits

European Union (EU) Commission Directive 2006/15/EC (IOELVs)

- Not available

European Union (EU) Commission Directive 2006/15/EC (IOELVs) - Skin

- Not available

8.1.2. Recommended Monitoring Procedures

- Personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment.

8.1.3. DNEL/PNEC - Values

- Not available

8.2. Exposure controls

8.2.1. Appropriate engineering controls

- A system of local and/or general exhaust is recommended to keep employee exposures above the Exposure Limits. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. The use of local exhaust ventilation is recommended to control emissions near the source.

8.2.2. Individual protection measures, such as personal protective equipment

Hand protection

- Wear appropriate glove.

Eye protection

- Wear primary eye protection such as splash resistant safety goggles with a secondary protection face shield.
- Provide an emergency eye wash station and quick drench shower in the immediate work area.

Respiratory Protection

- Under conditions of frequent use or heavy exposure, Respiratory protection may be needed.
- Respiratory protection is ranked in order from minimum to maximum.
- Consider warning properties before use.
- Any chemical cartridge respirator with organic vapor cartridge(s).
- Any chemical cartridge respirator with a full face piece and organic vapor cartridge(s).
- Any air-purifying respirator with a full face piece and an organic vapor canister.
- For Unknown Concentration or Immediately Dangerous to Life or Health : Any supplied-air respirator with full face piece and operated in a pressure-demand or other positive-pressure mode in combination with a separate escape supply. Any self-contained breathing apparatus with a full face piece.

Skin protection

- Wear appropriate clothing.

8.2.3 Environmental exposure controls

- Do not let product enter drains. For ecological information refer to section 12.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Appearance(State)	Liquid
Appearance(Color)	B. ROSE
Odor	Odorless
Odor threshold	Not available
pH	9.0 ± 1.0
Melting point/Freezing point	Not available
Initial boiling point and boiling range	> 100 °C
Flash point	300 °C
Evaporation rate	Not available
Flammability(solid, gas)	Not applicable
Upper/Lower Flammability or explosive	Not available
Vapour pressure	Not available
Vapour density	Not available
Relative density	1.1 ± 0.05 g/cm ³
Solubility	Fully miscible
Partition coefficient of n-octanol/water	Not available
Autoignition temperature	No self-igniting
Decomposition temperature	Not available
Viscosity	750 ± 150 Cps
Explosive properties	Not explosive
Oxidizing properties	Not available

9.2. Other information

- Not available

SECTION 10: STABILITY AND REACTIVITY**10.1. Reactivity**

- Not available

10.2. Chemical Stability

- This material is stable under recommended storage and handling conditions.

10.3. Possibility of hazardous reactions

- Hazardous Polymerization will not occur.

10.4. Conditions to avoid

- Avoid contact with incompatible materials and condition.
- Avoid : Accumulation of electrostatic charges, Heating, Flames and hot surfaces

10.5. Incompatible materials

- Not available

10.6. Hazardous decomposition products

- Not available

SECTION 11: TOXICOLOGICAL INFORMATION**11.1. Acute toxicity**

- **Oral**
 - Product (ATEmix) : >5000mg/kg
 - [GLYCERINE] : LD50 = 12600 mg/kg Rat (ChemIDplus)
- **Dermal**
 - Product (ATEmix) : >5000mg/kg
 - [GLYCERINE] : LD50 > 10000 mg/kg Rat (ChemIDplus)
- **Inhalation**
 - Product (ATEmix) : Not available
 - [GLYCERINE] : LC50 >2.75 mg/l 4 hr Rat (ECHA)

11.2. Skin corrosion/irritation

- Not available

11.3. Serious eye damage/irritation

- Not available

11.4. Respiratory sensitization

- Not available

11.5. Skin sensitization

- Not available

11.6. Germ cell mutagenicity

- Not available

11.7. Carcinogenicity**- IARC**

- Not available

- OSHA

- Not available

- ACGIH

- [ALUMINIUM POWDER] : A4

- NTP

- Not available

- EU CLP

- Not available

11.8. Reproductive toxicity

- Not available

11.9. Specific target organ toxicity(single exposure):

- Not available

11.10. Specific target organ toxicity(repeated exposure):

- Not available

11.11. Aspiration hazard

- Not available

SECTION 12: ECOLOGICAL INFORMATION**12.1. Toxicity****12.1.1. Fish**

- [GLYCERINE] : LC50 >11 mg/l 96 hr Cyprinodon variegatus (ECHA)

12.1.2. Invertebrate

- [GLYCERINE] : LC50 1955 mg/l 48 hr Daphnia magna (ECHA)

12.1.3. Algae

- Not available

12.2. Persistence and degradability**12.2.1. Persistence**

- Not available

12.2.2. Degradability

- Not available

12.3. Bioaccumulative potential**12.3.1. Bioaccumulation**

- Not available

12.3.2. Biodegradability

- [GLYCERINE] : Biodegradability = 63 (%) 14 day (OECD TG 301C, OECD SIDS, OECD TG 301D, IUCLIDE), 94 % 24hr (TOC removal)(ECHA)

12.4. Mobility in soil

- Not available

12.5. Results of PBT and vPvB assessment

- Not available

12.6. Other adverse effects

- Not available

SECTION 13: DISPOSAL CONSIDERATIONS**13.1. Waste treatment methods**

- Since more than two kinds of designated waste is mixed, it is difficult to treat separately, then can be reduction or stabilization by incineration or similar process.
- If water separation is possible, pre-process with Water separation process.
- Dispose by incineration.
- The user of this product must disposal by oneself or entrust to waste disposer or person who other's waste recycle and dispose, person who establish and operate waste disposal facilities.
- Dispose of waste in accordance with all applicable laws and regulations.

SECTION 14: TRANSPORT INFORMATION**14.1. UN No.****14.1.1. UN No. (ADR/RID/ADN)**

- Not applicable

14.1.2. UN No. (IMDG CODE/IATA DGR)

- Not applicable

14.1.3. UN No. (ICAO)

- Not applicable

14.2. UN proper shipping name

- Not applicable

14.3. Transport hazard class(es)**14.3.1. ADR/RID/ADN Class**

- Not applicable

14.3.2. ADR/RID/ADN Class

- Not applicable

14.3.3. ADR Label No.

- Not applicable

14.3.4. IMDG Class

- Not applicable

14.3.5. ICAO Class/Division

- Not applicable

14.3.6. Transport Labels

- Not applicable

14.4. Packing group**14.4.1. ADR/RID/ADN Packing group**

- Not applicable

14.4.2. IMDG Packing group

- Not applicable

14.4.3. ICAO Packing group

- Not applicable

14.5. Environmental hazards

- Not applicable

14.6. Special precautions for user

- Local transport follows in accordance with Dangerous goods Safety Management Law.
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- EmS FIRE SCHEDULE : Not applicable
- EmS SPILLAGE SCHEDULE : Not applicable
- Air transport(IATA): Not subject to IATA regulations.

14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

- Not applicable

SECTION 15: REGULATORY INFORMATION**15.1. Safety, health and environmental regulation / legislation specific for the substance or mixture****15.1.1. Europe regulatory****15.1.1.1 REACH Restricted substance under REACH**

- Not applicable

15.1.1.2 REACH Substances subject to authorization under REACH

- Not applicable

15.1.1.3 REACH SVHC

- Not applicable

15.1.1.4 Europe PBT

- Not applicable

15.1.1.5 European Union (EU) Transport of Dangerous Goods by Road - Dangerous Goods List

- Not applicable

15.2. Chemical Safety Assessment

- Not conducted

SECTION 16: OTHER INFORMATION**16.1. Indication of changes**

- The Safety Data Sheet has been reviewed and the data therein were revised and laid out according the requirements of the Commission Regulation (EC) No. 1907/2006

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- This Safety Data Sheet was compiled with data and information from the following sources: RTECS, ECOSAR, HSDB, SIDS SIAP, ChemWATCH, CESAR, Chemical DB

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16.5. Training advice

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16.6. Further information

- The (M)SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings. Risks may be determined by reference to Exposures Scenarios. Scale of use, frequency of use and current or available engineering controls must be considered.

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- Disclaimer of Liability

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It should not therefore be construed as guaranteeing specific properties of the products

Described or their suitability for a particular application. YOU&I Corporation assumes

no responsibility for personal injury or property damage caused by the material.

Users assume all risks associated with the use of the material.

***** End of Documents

SAFETY DATA SHEET

According to Regulation (EC) No 1907/2006 (REACH), Annex II (COMMISSION REGULATION (EU) No 2015/830)



Date of issue: 2018-06-20
Revision date: 2022-06-21

SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1. Product identifier

Trade : MGI- GRAY

1.2. Relevant identified uses of the substance or mixture and uses advised against

1.2.1. Relevant identified uses

- Water-soluble stationary ink

1.2.2. Uses advised against

- Not available

1.3. Details of the supplier of the safety data sheet

Manufacturer/Supplier : YOU&I COPORATION
Address : 53, EMTIBEUI 26-RO, SIHEUNG-SI, GYEONGGI-DO, KOREA (ZIP CODE) 15118
Telephone : 82-31-494-2030
Email : tech@youicolor.com

1.4. Emergency telephone number

82-31-494-2030 (This number is serviced during office hours only.)
EU-wide emergency number : 112
See section 16.6 for the list of telephone number of poison centers in the European Economic Area.

SECTION 2: HAZARD IDENTIFICATION

2.1. Classification of the substance/mixture

2.1.1. Classification according to Regulation (EC) No 1272/2008 [CLP]

2.2. Label elements

2.2.1. Labelling according to Regulation (EC) No 1272/2008 [CLP]

* Hazard Pictogram(s)



* Signal word : Warning

* Hazard statement(s)

H411: Toxic to aquatic life with long-lasting effects

* Precautionary statement(s)

1) Prevention

P273: Avoid release to the environment.

2) Response

P391: Collect spillage.

3) Storage

- Not applicable

4) Disposal

P501: Disposal contents/ container to in accordance with local national regulation.

2.3. Other hazards

- Not available

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS**3.1. Substances**

- Not applicable

3.2. Mixtures

Name	CAS No.	EINECS NO.	% [weight]	Classification [1272/2008/EC]
WATER	7732-18-5	231-791-2	40~60	Not classified
GLYCERINE	56-81-5	200-289-5	15~20	Not classified
ALUMINIUM POWDER	7429-90-5	231-072-3	3~7	   Flam. Solid 1, H228 Pyr. Liq. 1, H250 Water-react 2, H261 Specific target organ toxicity (repeated) 2, H373 Aquatic Chronic 1: H410 (M-factor: 1)
POLY ETHYLENE GLYCOL	25322-68-3	500-038-2	10~15	 Acute toxicity (Oral) 4, H302 Not classified
C.I. PIGMENT BLACK 7	1333-86-4	215-609-9	0~5	Not classified
2-AMINO-2-METHYL-1-PROPANOL	124-68-5	204-709-8	0~1	 Aquatic Chronic 4, H413 Eye Irrit. 1, H318 Skin Irrit. 2, H315

SECTION 4: FIRST AID MEASURES**4.1. Description of first aid measures****General**

- No general information.

Inhalation

- When exposed to large amounts of steam and mist, move to fresh air.
- Take specific treatment if needed.

Skin contact

- Flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes.
- Laundering enough contaminated clothing before reuse.

Eye contact

- Do not rub your eyes.
- Immediately flush eyes with plenty of water for at least 15 minutes and call a doctor/physician.

Ingestion

- Please be advised by doctor whether induction of vomit is demanded or not.
- Rinse your mouth with water immediately.

4.2. Most important symptoms and effects, both acute and delayed

- Not available

4.3. Indication of any immediate medical attention and special treatment needed

- Notify medical personnel of contaminated situations and have them take appropriate protective measures.

SECTION 5: FIREFIGHTING MEASURES**5.1. Extinguishing media****Suitable extinguishing media**

- Water, foam, CO₂, NaHCO₃

Unsuitable extinguishing media

- Avoid use of water jet for extinguishing

5.2. Special hazards arising from the substance or mixture**Hazardous combustion products**

- Not available

5.3. Advice for firefighters

- Cool containers with water until well after fire is out.
- Keep unauthorized personnel out.
- Withdraw immediately in case of rising sound from venting safety devices or discoloration of tank.
- Wear appropriate protective equipment.
- Keep containers cool with water spray.
- Use fire fighting procedures suitable for surrounding area.
- Vapor or gas is burned at distant ignition sources can be spread quickly.

SECTION 6: ACCIDENTAL RELEASE MEASURES**6.1. Personal Precautions, protective equipment and emergency procedures****6.1.1. For non-emergency personnel**

- Protective equipment: Wear proper protective equipment.
- Emergency procedures: Not applicable
- If required, notify relevant authorities according to all applicable regulations.

6.1.2. For emergency responders

- Ventilate closed spaces before entering.
- Must work against the wind, let the upwind people to evacuate.
- Do not touch spilled material. Stop leak if you can do it without risk.
- Handling the damaged containers or spilled material after wearing protective equipment.
- Do not direct water at spill or source of leak.

6.2. Environmental precautions

- Prevent runoff and contact with waterways, drains or sewers.
- If large amounts have been spilled, inform the relevant authorities.
- Avoid dispersal of spilt material and runoff and contact with waterways, drains and sewers. If large spills, advise

6.3. Methods and material for containment and cleaning up**6.3.1. For containment**

- Clear spills immediately
- Clean up all spills immediately.
- Prevent, by any means available, spillage from entering drains or water course.

6.3.2. For cleaning up

- Large spill : Stay upwind and keep out of low areas. Dike for later disposal.
- Notification to central government, local government. When emissions at least of the standard amount
- Dispose of waste in accordance with local regulation.
- Appropriate container for disposal of spilled material collected.
- Small leak: sand or other non-combustible material, please let use absorption.
- Wipe off the solvent.
- Dike for later disposal.

6.3.3. Other information

- Slippery when spilt.

6.4. Reference to other sections

- See Section 7 for information on safe handling.
- See Section 8 for information on personal protection equipment.
- See Section 13 for information on disposal.

SECTION 7: HANDLING AND STORAGE**7.1. Precautions for safe handling**

- Avoid direct physical contact.
- Get the manual before use.
- Refer to Engineering controls and personal protective equipment.
- Do not handle until all safety precautions have been read and understood.
- Do not inhale the steam prolonged or repeated.

7.2. Conditions for safe storage, including any incompatibilities

- Save in cool, dry and well ventilated place.
- Check regularly for leaks.
- Please pay attention to incompatibilities materials and conditions to avoid.
- Keep sealed when not in use.
- No open fire.

7.3. Specific end use(s)

- See Section 1 for information on 1.2 Relevant identified uses.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION**8.1. Control parameters****8.1.1. Occupational exposure limits****European Union (EU) Commission Directive 2006/15/EC (IOELVs)**

- Not available

European Union (EU) Commission Directive 2006/15/EC (IOELVs) - Skin

- Not available

8.1.2. Recommended Monitoring Procedures

- Personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment.

8.1.3. DNEL/PNEC - Values

- Not available

8.2. Exposure controls**8.2.1. Appropriate engineering controls**

- A system of local and/or general exhaust is recommended to keep employee exposures above the Exposure Limits. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. The use of local exhaust ventilation is recommended to control emissions near the source.

8.2.2. Individual protection measures, such as personal protective equipment**Hand protection**

- Wear appropriate glove.

Eye protection

- Wear primary eye protection such as splash resistant safety goggles with a secondary protection face shield.
- Provide an emergency eye wash station and quick drench shower in the immediate work area.

Respiratory Protection

- Under conditions of frequent use or heavy exposure, Respiratory protection may be needed.
- Respiratory protection is ranked in order from minimum to maximum.
- Consider warning properties before use.
- Any chemical cartridge respirator with organic vapor cartridge(s).
- Any chemical cartridge respirator with a full face piece and organic vapor cartridge(s).
- Any air-purifying respirator with a full face piece and an organic vapor canister.

- For Unknown Concentration or Immediately Dangerous to Life or Health : Any supplied-air respirator with full face piece and operated in a pressure-demand or other positive-pressure mode in combination with a separate escape supply. Any self-contained breathing apparatus with a full face piece.

Skin protection

- Wear appropriate clothing.

8.2.3 Environmental exposure controls

- Do not let product enter drains. For ecological information refer to section 12.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES**9.1. Information on basic physical and chemical properties**

Appearance(State)	Liquid
Appearance(Color)	BLACK
Odor	Odorless
Odor threshold	Not available
pH	8.0 ± 1.0
Melting point/Freezing point	Not available
Initial boiling point and boiling range	> 100 °C
Flash point	300 °C
Evaporation rate	Not available
Flammability(solid, gas)	Not applicable
Upper/Lower Flammability or explosive	Not available
Vapour pressure	Not available
Vapour density	Not available
Relative density	1.1 ± 0.05 g/cm ³
Solubility	Fully miscible
Partition coefficient of n-octanol/water	Not available
Autoignition temperature	No self-igniting
Decomposition temperature	Not available
Viscosity	750 ± 150 Cps
Explosive properties	Not explosive
Oxidizing properties	Not available

9.2. Other information

- Not available

SECTION 10: STABILITY AND REACTIVITY**10.1. Reactivity**

- Not available

10.2. Chemical Stability

- This material is stable under recommended storage and handling conditions.

10.3. Possibility of hazardous reactions

- Hazardous Polymerization will not occur.

10.4. Conditions to avoid

- Avoid contact with incompatible materials and condition.
- Avoid : Accumulation of electrostatic charges, Heating, Flames and hot surfaces

10.5. Incompatible materials

- Not available

10.6. Hazardous decomposition products

- Not available

SECTION 11: TOXICOLOGICAL INFORMATION**11.1. Acute toxicity**

- **Oral**
 - Product (ATEmix) : >5000mg/kg
 - [GLYCERINE] : LD50 = 12600 mg/kg Rat (ChemIDplus)
- [POLY ETHYLENE GLYCOL] : LD50 = 600 mg/kg Rat (KOSHA)
- **Dermal**
 - Product (ATEmix) : >5000mg/kg
 - [GLYCERINE] : LD50 > 10000 mg/kg Rat (ChemIDplus)
- **Inhalation**
 - Product (ATEmix) : Not available
 - [GLYCERINE] : LC50 >2.75 mg/l 4 hr Rat (ECHA)

11.2. Skin corrosion/irritation

- [2-AMINO-2-METHYL-1-PROPANOL] : Classified as Category 2 (KOSHA)

11.3. Serious eye damage/irritation

- [2-AMINO-2-METHYL-1-PROPANOL] : Classified as Category 1 (KOSHA)

11.4. Respiratory sensitization

- Not available

11.5. Skin sensitization

- Not available

11.6. Germ cell mutagenicity

- Not available

11.7. Carcinogenicity

- **IARC**
 - Not available
- **OSHA**
 - Not available
- **ACGIH**
 - [ALUMINIUM POWDER] : A4 (KOSHA)
- **NTP**
 - Not available
- **EU CLP**
 - Not available

11.8. Reproductive toxicity

- Not available

11.9. Specific target organ toxicity(single exposure):

- Not available

11.10. Specific target organ toxicity(repeated exposure):

- [ALUMINIUM POWDER] : Classified as Category 2 (KOSHA)

11.11. Aspiration hazard

- Not available

SECTION 12: ECOLOGICAL INFORMATION**12.1. Toxicity****12.1.1. Fish**

- [GLYCERINE] : LC50 >11 mg/l 96 hr Cyprinodon variegatus (ECHA)

12.1.2. Invertebrate

- [GLYCERINE] : LC50 1955 mg/l 48 hr Daphnia magna (ECHA)
- [ALUMINIUM POWDER] : NOEC > 100 mg/l 48 hr Daphnia magna (IUCLID)

12.1.3. Algae

- [ALUMINIUM POWDER] : NOEC > 0.052 mg/l 48 hr Selenastrum capricornutum (M = 1) (OECD TG 201, GLP)

12.2. Persistence and degradability**12.2.1. Persistence**

- Not available

12.2.2. Degradability

- [2-AMINO-2-METHYL-1-PROPANOL] : BOD5/COD 0.005 (KOSHA)

12.3. Bioaccumulative potential**12.3.1. Bioaccumulation**

- [2-AMINO-2-METHYL-1-PROPANOL] : 1.3 BSAF (Leuciscus idus(Fish, fresh water), 50ug/) (KOSHA)

12.3.2. Biodegradability

- [2-AMINO-2-METHYL-1-PROPANOL] : 40 (%) 28 days (KOSHA)

12.4. Mobility in soil

- Not available

12.5. Results of PBT and vPvB assessment

- Not available

12.6. Other adverse effects

- Not available

SECTION 13: DISPOSAL CONSIDERATIONS**13.1. Waste treatment methods**

- Since more than two kinds of designated waste is mixed, it is difficult to treat separately, then can be reduction or stabilization by incineration or similar process.
- If water separation is possible, pre-process with Water separation process.
- Dispose by incineration.
- The user of this product must disposal by oneself or entrust to waste disposer or person who other's waste recycle and dispose, person who establish and operate waste disposal facilities.
- Dispose of waste in accordance with all applicable laws and regulations.

SECTION 14: TRANSPORT INFORMATION**14.1. UN No.****14.1.1. UN No. (ADR/RID/ADN)**

3082

14.1.2. UN No. (IMDG CODE/IATA DGR)

3082

14.1.3. UN No. (ICAO)

3082

14.2. UN proper shipping name

- Not applicable

14.3. Transport hazard class(es)

14.3.1. ADR/RID/ADN Class

- Not applicable

14.3.2. ADR/RID/ADN Class

- Not applicable

14.3.3. ADR Label No.

- Not applicable

14.3.4. IMDG Class

- Not applicable

14.3.5. ICAO Class/Division

- Not applicable

14.3.6. Transport Labels

- Not applicable

14.4. Packing group**14.4.1. ADR/RID/ADN Packing group**

- Not applicable

14.4.2. IMDG Packing group

- Not applicable

14.4.3. ICAO Packing group

- Not applicable

14.5. Environmental hazards

- Not applicable

14.6. Special precautions for user

- Local transport follows in accordance with Dangerous goods Safety Management Law.
- Package and transport follow in accordance with Department of Transportation (DOT) and other regulatory agency
- EmS FIRE SCHEDULE : Not applicable
- EmS SPILLAGE SCHEDULE : Not applicable
- Air transport(IATA): Not subject to IATA regulations.

14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

- Not applicable

SECTION 15: REGULATORY INFORMATION**15.1. Safety, health and environmental regulation / legislation specific for the substance or mixture****15.1.1. Europe regulatory****15.1.1.1 REACH Restricted substance under REACH**

- Not applicable

15.1.1.2 REACH Substances subject to authorization under REACH

- Not applicable

15.1.1.3 REACH SVHC

- Not applicable

15.1.1.4 Europe PBT

- Not applicable

15.1.1.5 European Union (EU) Transport of Dangerous Goods by Road - Dangerous Goods List

- Not applicable

15.2. Chemical Safety Assessment

- Not conducted

SECTION 16: OTHER INFORMATION**16.1. Indication of changes**

- The Safety Data Sheet has been reviewed and the data therein were revised and laid out according to the requirements of the Commission Regulation (EC) No. 1907/2006

16.2. Abbreviations and acronyms

- 1272/2008 CLP : Classification, Labelling and Packaging regulation.
- REACH : Registration, Evaluation and authorization of chemical substances.
- DNEL : Derive no effects level
- PNEC : Predicted no effect concentration

16.3. Key literature references and sources for data

- This Safety Data Sheet was compiled with data and information from the following sources: RTECS, ECOSAR, HSDB, SIDS SIAP, ChemWATCH, CESAR, Chemical DB

16.4. Classification procedure

- The mixture classification has been derived based on the classification of the individual components in accordance with the rules set out in Regulation (EC) No 1272/2008 (CLP) as well as the translation tables in Annex VII to the same regulation.

16.5. Training advice

- Not applicable

16.6. Further information

- The (M)SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings. Risks may be determined by reference to Exposures Scenarios. Scale of use, frequency of use and current or available engineering controls must be considered.
- This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only.
- It should not therefore be construed as guaranteeing any specific property of the product.
- Contact a poison control centre, List of Telephone Numbers : AUSTRIA (Vienna Wien) +43 1 406 43 43; BELGIUM (Brussels Bruxelles) +32 70 245 245; BULGARIA (Sofia) +359 2 9154 409; CZECH REPUBLIC (Prague Praha) +420 224 919 293; DENMARK (Copenhagen) 82 12 12 12; ESTONIA (Tallinn) 112; FINLAND (Helsinki) +358 9 471 977; FRANCE (Paris) +33 1 40 0548 48; GERMANY (Berlin) +49 30 19240; GREECE (Athens Athinai) +30 10 779 3777; HUNGARY (Budapest) 06 80 20 11 99; ICELAND (Reykjavik) +354 525 111, +354 543 2222; IRELAND (Dublin) +353 1 8379964; ITALY (Rome) +39 06 305 4343; LATVIA (Riga) +371 704 2468; LITHUANIA (Vilnius) +370 5 236 20 52 or +370 687 53378; MALTA (Valletta) 2425 0000; NETHERLANDS (Bilthoven) +31 30 274 88 88; NORWAY (Oslo) 22 591300; POLAND (Gdansk) +48 58301 65 16 or +48 58 349 2831; PORTUGAL (Lisbon Lisboa) 808 250 143; ROMANIA (Bucharest) +40 21 3183606 SLOVAKIA (Bratislava) +421 2 54 77 4166; SLOVENIA (Ljubljana) + 386 41 650 500; SPAIN (Barcelona) +34 93 227 98 33 or +34 93 227 54 00 bleep 190; SWEDEN (Stockholm) 112 or +46 8 33 12 31 (mon-fri 9.00-17.00); UNITED KINGDOM (London) 112 or 0845 4647 (NHS Direct).

Disclaimer of Liability

This information is based on our present state of knowledge. It should not therefore be construed as guaranteeing specific properties of the products Described or their suitability for a particular application. YOU&I Corporation assumes no responsibility for personal injury or property damage caused by the material. Users assume all risks associated with the use of the material.

***** End of Documents

21739-6510

1/9

SAFETY DATA SHEET

According to Regulation (EC) No 1907/2006 (REACH), Annex II (COMMISSION REGULATION (EU) No 2015/830)



Date of issue: 2018-06-20

Revision date: 2022-06-21

SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING**1.1. Product identifier**

Trade name/designation : MGI- VIOLET

1.2. Relevant identified uses of the substance or mixture and uses advised against**1.2.1. Relevant identified uses**

- Water-soluble stationary ink

1.2.2. Uses advised against

- Not available

1.3. Details of the supplier of the safety data sheet

Manufacturer/Supplier : YOU&I COPORATION
Address : 53, EMTIBEUI 26-RO, SIHEUNG-SI, GYEONGGI-DO, KOREA (ZIP CODE) 15118
Telephone : 82-31-494-2030
Email : tech@youicolor.com

1.4. Emergency telephone number

82-31-494-2030 (This number is serviced during office hours only.)
EU-wide emergency number : 112
See section 16.6 for the list of telephone number of poison centers in the European Economic Area.

SECTION 2: HAZARD IDENTIFICATION**2.1. Classification of the substance/mixture****2.1.1. Classification according to Regulation (EC) No 1272/2008 [CLP]**

H411-Aquatic Chronic 2

2.2. Label elements**2.2.1. Labelling according to Regulation (EC) No 1272/2008 [CLP]***** Hazard Pictogram(s)***** Signal word** : Warning*** Hazard statement(s)**

H411: Toxic to aquatic life with long-lasting effects

*** Precautionary statement(s)****1) Prevention**

P273: Avoid release to the environment.

2) Response

P391: Collect spillage.

3) Storage

- Not applicable

4) Disposal

P501: Disposal contents/ container to in accordance with local national regulation.

2.3. Other hazards

- Not available

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS**3.1. Substances**

- Not applicable

3.2. Mixtures

Name	CAS No.	EINECS NO.	% [weight]	Classification [1272/2008/EC]
WATER	7732-18-5	231-791-2	40~60	Not classified
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C.I. PIGMENT VIOLET 23	6358-30-1	228-767-9	0~5	 Specific target organ toxicity (single), H335
POLY ETHYLENE GLYCOL	25322-68-3	500-038-2	10~15	 Acute toxicity (Oral) 4, H302
2-AMINO-2-METHYL-1-PROPANOL	124-68-5	204-709-8	0~1	 Aquatic Chronic 4, H413 Eye Irrit. 1, H318 Skin Irrit. 2, H315

SECTION 4: FIRST AID MEASURES**4.1. Description of first aid measures****General**

- No general information.

Inhalation

- When exposed to large amounts of steam and mist, move to fresh air.
- Take specific treatment if needed.

Skin contact

- Flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes.
- Laundering enough contaminated clothing before reuse.

Eye contact

- Do not rub your eyes.
- Immediately flush eyes with plenty of water for at least 15 minutes and call a doctor/physician.

Ingestion

- Please be advised by doctor whether induction of vomit is demanded or not.
- Rinse your mouth with water immediately.

4.2. Most important symptoms and effects, both acute and delayed

- Not available

4.3. Indication of any immediate medical attention and special treatment needed

- Notify medical personnel of contaminated situations and have them take appropriate protective measures.

SECTION 5: FIREFIGHTING MEASURES**5.1. Extinguishing media****Suitable extinguishing media**

- Water, foam, CO₂, NaHCO₃

Unsuitable extinguishing media

- Avoid use of water jet for extinguishing

5.2. Special hazards arising from the substance or mixture**Hazardous combustion products**

- Not available

5.3. Advice for firefighters

- Cool containers with water until well after fire is out.
- Keep unauthorized personnel out.
- Withdraw immediately in case of rising sound from venting safety devices or discoloration of tank.
- Wear appropriate protective equipment.
- Keep containers cool with water spray.
- Use fire fighting procedures suitable for surrounding area.
- Vapor or gas is burned at distant ignition sources can be spread quickly.

SECTION 6: ACCIDENTAL RELEASE MEASURES**6.1. Personal Precautions, protective equipment and emergency procedures****6.1.1. For non-emergency personnel**

- Protective equipment: Wear proper protective equipment.
- Emergency procedures: Not applicable
- If required, notify relevant authorities according to all applicable regulations.

6.1.2. For emergency responders

- Ventilate closed spaces before entering.
- Must work against the wind, let the upwind people to evacuate.
- Do not touch spilled material. Stop leak if you can do it without risk.
- Handling the damaged containers or spilled material after wearing protective equipment.
- Do not direct water at spill or source of leak.

6.2. Environmental precautions

- Prevent runoff and contact with waterways, drains or sewers.
- If large amounts have been spilled, inform the relevant authorities.
- Avoid dispersal of spilt material and runoff and contact with waterways, drains and sewers. If large spills, advise

6.3. Methods and material for containment and cleaning up**6.3.1. For containment**

- Clear spills immediately
- Clean up all spills immediately.
- Prevent, by any means available, spillage from entering drains or water course.

6.3.2. For cleaning up

- Large spill : Stay upwind and keep out of low areas. Dike for later disposal.
- Notification to central government, local government. When emissions at least of the standard amount
- Dispose of waste in accordance with local regulation.
- Appropriate container for disposal of spilled material collected.
- Small leak: sand or other non-combustible material, please let use absorption.
- Wipe off the solvent.
- Dike for later disposal.

6.3.3. Other information

- Slippery when spilt.

6.4. Reference to other sections

- See Section 7 for information on safe handling.
- See Section 8 for information on personal protection equipment.
- See Section 13 for information on disposal.

SECTION 7: HANDLING AND STORAGE**7.1. Precautions for safe handling**

- Avoid direct physical contact.
- Get the manual before use.
- Refer to Engineering controls and personal protective equipment.
- Do not handle until all safety precautions have been read and understood.
- Do not inhale the steam prolonged or repeated.

7.2. Conditions for safe storage, including any incompatibilities

- Save in cool, dry and well ventilated place.
- Check regularly for leaks.
- Please pay attention to incompatibilities materials and conditions to avoid.
- Keep sealed when not in use.
- No open fire.

7.3. Specific end use(s)

- See Section 1 for information on 1.2 Relevant identified uses.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control parameters

8.1.1. Occupational exposure limits

European Union (EU) Commission Directive 2006/15/EC (IOELVs)

- Not available

European Union (EU) Commission Directive 2006/15/EC (IOELVs) - Skin

- Not available

8.1.2. Recommended Monitoring Procedures

- Personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment.

8.1.3. DNEL/PNEC - Values

- Not available

8.2. Exposure controls

8.2.1. Appropriate engineering controls

- A system of local and/or general exhaust is recommended to keep employee exposures above the Exposure Limits. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. The use of local exhaust ventilation is recommended to control emissions near the source.

8.2.2. Individual protection measures, such as personal protective equipment

Hand protection

- Wear appropriate glove.

Eye protection

- Wear primary eye protection such as splash resistant safety goggles with a secondary protection face shield.
- Provide an emergency eye wash station and quick drench shower in the immediate work area.

Respiratory Protection

- Under conditions of frequent use or heavy exposure, Respiratory protection may be needed.
- Respiratory protection is ranked in order from minimum to maximum.
- Consider warning properties before use.
- Any chemical cartridge respirator with organic vapor cartridge(s).
- Any chemical cartridge respirator with a full face piece and organic vapor cartridge(s).
- Any air-purifying respirator with a full face piece and an organic vapor canister.
- For Unknown Concentration or Immediately Dangerous to Life or Health : Any supplied-air respirator with full face piece and operated in a pressure-demand or other positive-pressure mode in combination with a separate escape supply. Any self-contained breathing apparatus with a full face piece.

Skin protection

- Wear appropriate clothing.

8.2.3 Environmental exposure controls

- Do not let product enter drains. For ecological information refer to section 12.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Appearance(State)	Liquid
Appearance(Color)	VIOLET
Odor	Odorless
Odor threshold	Not available
pH	8.0 ± 1.0
Melting point/Freezing point	Not available
Initial boiling point and boiling range	> 100 °C
Flash point	300 °C
Evaporation rate	Not available
Flammability(solid, gas)	Not applicable
Upper/Lower Flammability or explosive	Not available
Vapour pressure	Not available
Vapour density	Not available
Relative density	1.1 ± 0.05 g/cm ³
Solubility	Fully miscible
Partition coefficient of n-octanol/water	Not available
Autoignition temperature	No self-igniting
Decomposition temperature	Not available
Viscosity	750 ± 150 Cps
Explosive properties	Not explosive
Oxidizing properties	Not available

9.2. Other information

- Not available

SECTION 10: STABILITY AND REACTIVITY

10.1. Reactivity

- Not available

10.2. Chemical Stability

- This material is stable under recommended storage and handling conditions.

10.3. Possibility of hazardous reactions

- Hazardous Polymerization will not occur.

10.4. Conditions to avoid

- Avoid contact with incompatible materials and condition.
- Avoid : Accumulation of electrostatic charges, Heating, Flames and hot surfaces

10.5. Incompatible materials

- Not available

10.6. Hazardous decomposition products

- Not available

SECTION 11: TOXICOLOGICAL INFORMATION

11.1. Acute toxicity

- **Oral**
 - Product (ATEmix) : >5000mg/kg
 - [GLYCERINE] : LD50 = 12600 mg/kg Rat (ChemIDplus)
 - [POLY ETHYLENE GLYCOL] : LD50 = 600 mg/kg Rat (KOSHA)
- **Dermal**

- Product (ATEmix) : >5000mg/kg
- [GLYCERINE] : LD50 > 10000 mg/kg Rat (ChemIDplus)
- **Inhalation**
- Product (ATEmix) : Not available
- [GLYCERINE] : LC50 >2.75 mg/ℓ 4 hr Rat (ECHA)

11.2. Skin corrosion/irritation

- [2-AMINO-2-METHYL-1-PROPANOL] : Classified as Category 2 (KOSHA)

11.3. Serious eye damage/irritation

- [2-AMINO-2-METHYL-1-PROPANOL] : Classified as Category 1 (KOSHA)

11.4. Respiratory sensitization

- Not available

11.5. Skin sensitization

- Not available

11.6. Germ cell mutagenicity

- Not available

11.7. Carcinogenicity

- **IARC**
- Not available
- **OSHA**
- Not available
- **ACGIH**
- [ALUMINIUM POWDER] : A4 (KOSHA)
- **NTP**
- Not available
- **EU CLP**
- Not available

11.8. Reproductive toxicity

- Not available

11.9. Specific target organ toxicity(single exposure):

- [C.I. PIGMENT VIOLET 23] : Classified as Category 3 (Respiratory irritation) (KOSHA)

11.10. Specific target organ toxicity(repeated exposure):

- [ALUMINIUM POWDER] : Classified as Category 2 (KOSHA)

11.11. Aspiration hazard

- Not available

SECTION 12: ECOLOGICAL INFORMATION**12.1. Toxicity****12.1.1. Fish**

- [GLYCERINE] : LC50 >11 mg/ℓ 96 hr Cyprinodon variegatus (ECHA)

12.1.2. Invertebrate

- [GLYCERINE] : LC50 1955 mg/ℓ 48 hr Daphnia magna (ECHA)
- [ALUMINIUM POWDER] : NOEC > 100 mg/ℓ 48 hr Daphnia magna (IUCLID)

12.1.3. Algae

- [ALUMINIUM POWDER] : NOEC > 0.052 mg/ℓ 48 hr Selenastrum capricornutum (M = 1) (OECD TG 201, GLP) (ECHA)

12.2. Persistence and degradability**12.2.1. Persistence**

- Not available

12.2.2. Degradability

- [2-AMINO-2-METHYL-1-PROPANOL] : BOD5/COD 0.005 (KOSHA)

12.3. Bioaccumulative potential**12.3.1. Bioaccumulation**

- [2-AMINO-2-METHYL-1-PROPANOL] : 1.3 BSAF (Leuciscus idus(Fish, fresh water), 50ug/) (KOSHA)

12.3.2. Biodegradability

- [2-AMINO-2-METHYL-1-PROPANOL] : 40 (%) 28 days (KOSHA)

12.4. Mobility in soil

- Not available

12.5. Results of PBT and vPvB assessment

- Not available

12.6. Other adverse effects

- Not available

SECTION 13: DISPOSAL CONSIDERATIONS**13.1. Waste treatment methods**

- Since more than two kinds of designated waste is mixed, it is difficult to treat separately, then can be reduction or stabilization by incineration or similar process.
- If water separation is possible, pre-process with Water separation process.
- Dispose by incineration.
- The user of this product must disposal by oneself or entrust to waste disposer or person who other's waste recycle and dispose, person who establish and operate waste disposal facilities.
- Dispose of waste in accordance with all applicable laws and regulations.

SECTION 14: TRANSPORT INFORMATION**14.1. UN No.****14.1.1. UN No. (ADR/RID/ADN)**

3082

14.1.2. UN No. (IMDG CODE/IATA DGR)

3082

14.1.3. UN No. (ICAO)

3082

14.2. UN proper shipping name

- Not applicable

14.3. Transport hazard class(es)**14.3.1. ADR/RID/ADN Class**

- Not applicable

14.3.2. ADR/RID/ADN Class

- Not applicable

14.3.3. ADR Label No.

- Not applicable

14.3.4. IMDG Class

- Not applicable

14.3.5. ICAO Class/Division

- Not applicable

14.3.6. Transport Labels

- Not applicable

14.4. Packing group**14.4.1. ADR/RID/ADN Packing group**

- Not applicable

14.4.2. IMDG Packing group

- Not applicable

14.4.3. ICAO Packing group

- Not applicable

14.5. Environmental hazards

- Not applicable

14.6. Special precautions for user

- Local transport follows in accordance with Dangerous goods Safety Management Law.
- Package and transport follow in accordance with Department of Transportation (DOT) and other regulatory agency
- EmS FIRE SCHEDULE : Not applicable
- EmS SPILLAGE SCHEDULE : Not applicable
- Air transport(IATA): Not subject to IATA regulations.

14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

- Not applicable

SECTION 15: REGULATORY INFORMATION**15.1. Safety, health and environmental regulation / legislation specific for the substance or mixture****15.1.1. Europe regulatory****15.1.1.1 REACH Restricted substance under REACH**

- Not applicable

15.1.1.2 REACH Substances subject to authorization under REACH

- Not applicable

15.1.1.3 REACH SVHC

- Not applicable

15.1.1.4 Europe PBT

- Not applicable

15.1.1.5 European Union (EU) Transport of Dangerous Goods by Road - Dangerous Goods List

- Not applicable

15.2. Chemical Safety Assessment

- Not conducted

SECTION 16: OTHER INFORMATION**16.1. Indication of changes**

- The Safety Data Sheet has been reviewed and the data therein were revised and laid out according the requirements of the Commission Regulation (EC) No. 1907/2006

16.2. Abbreviations and acronyms

- 1272/2008 CLP : Classification, Labelling and Packaging regulation.
- REACH : Registration, Evaluation and authorization of chemical substances.
- DNEL : Derive no effects level
- PNEC : Predicted no effect concentration

16.3. Key literature references and sources for data

- This Safety Data Sheet was compiled with data and information from the following sources: RTECS, ECOSAR, HSDB, SIDS SIAP, ChemWATCH, CESAR, Chemical DB

16.4. Classification procedure

- The mixture classification has been derived based on the classification of the individual components in accordance with the rules set out in Regulation (EC) No 1272/2008 (CLP) as well as the translation tables in Annex VII to the same regulation.

16.5. Training advice

- Not applicable

16.6. Further information

- The (M)SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings. Risks may be determined by reference to Exposures Scenarios. Scale of use, frequency of use and current or available engineering controls must be considered.

- This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only.

- It should not therefore be construed as guaranteeing any specific property of the product.

- Contact a poison control centre, List of Telephone Numbers : AUSTRIA (Vienna Wien) +43 1 406 43 43; BELGIUM (Brussels Bruxelles) +32 70 245 245; BULGARIA (Sofia) +359 2 9154 409; CZECH REPUBLIC (Prague Praha) +420 224 919 293; DENMARK (Copenhagen) 82 12 12 12; ESTONIA (Tallinn) 112; FINLAND (Helsinki) +358 9 471 977; FRANCE (Paris) +33 1 40 0548 48; GERMANY (Berlin) +49 30 19240; GREECE (Athens Athina) +30 10 779 3777; HUNGARY (Budapest) 06 80 20 11 99; ICELAND (Reykjavik) +354 525 111, +354 543 2222; IRELAND (Dublin) +353 1 8379964; ITALY (Rome) +39 06 305 4343; LATVIA (Riga) +371 704 2468; LITHUANIA (Vilnius) +370 5 236 20 52 or +370 687 53378; MALTA (Valletta) 2425 0000; NETHERLANDS (Bilthoven) +31 30 274 88 88; NORWAY (Oslo) 22 591300; POLAND (Gdansk) +48 58301 65 16 or +48 58 349 2831; PORTUGAL (Lisbon Lisboa) 808 250 143; ROMANIA (Bucharest) +40 21 3183606 SLOVAKIA (Bratislava) +421 2 54 77 4166; SLOVENIA (Ljubljana) + 386 41 650 500; SPAIN (Barcelona) +34 93 227 98 33 or +34 93 227 54 00 bleep 190; SWEDEN (Stockholm) 112 or +46 8 33 12 31 (mon-fri 9.00-17.00); UNITED KINGDOM (London) 112 or 0845 4647 (NHS Direct).

Disclaimer of Liability

This information is based on our present state of knowledge.

It should not therefore be construed as guaranteeing specific properties of the products Described or their suitability for a particular application. YOU&I Corporation assumes no responsibility for personal injury or property damage caused by the material. Users assume all risks associated with the use of the material.

***** End of Documents

21739-9330

1/9

SAFETY DATA SHEET

According to Regulation (EC) No 1907/2006 (REACH), Annex II (COMMISSION REGULATION (EU) No 2015/830)



Date of issue: 2019-06-14
Revision date: 2022-06-21

SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING**1.1. Product identifier**

Trade name/designation : MGI- SILVER

1.2. Relevant identified uses of the substance or mixture and uses advised against**1.2.1. Relevant identified uses**

- Water-soluble stationary ink

1.2.2. Uses advised against

- Not available

1.3. Details of the supplier of the safety data sheet

Manufacturer/Supplier : YOU&I COPORATION
Address : 53, EMTIBEUI 26-RO, SIHEUNG-SI, GYEONGGI-DO, KOREA (ZIP CODE) 15118
Telephone : 82-31-494-2030
Email : tech@youicolor.com

1.4. Emergency telephone number

82-31-494-2030 (This number is serviced during office hours only.)
EU-wide emergency number : 112
See section 16.6 for the list of telephone number of poison centers in the European Economic Area.

SECTION 2: HAZARD IDENTIFICATION**2.1. Classification of the substance/mixture**

2.1.1. Classification according to Regulation (EC) No 1272/2008 [CLP]
H411-Aquatic Chronic 2

2.2. Label elements**2.2.1. Labelling according to Regulation (EC) No 1272/2008 [CLP]***** Hazard Pictogram(s)**

*** Signal word** : Warning

*** Hazard statement(s)**
H411: Toxic to aquatic life with long-lasting effects

*** Precautionary statement(s)****1) Prevention**

P273: Avoid release to the environment.

2) Response

P391: Collect spillage.

3) Storage

- Not applicable

4) Disposal

P501: Disposal contents/ container to in accordance with local national regulation.

2.3. Other hazards

- Not available

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS**3.1. Substances**

- Not applicable

3.2. Mixtures

Name	CAS No.	EINECS NO.	% [weight]	Classification [1272/2008/EC]
WATER	7732-18-5	231-791-2	40~60	Not classified
GLYCERINE	56-81-5	200-289-5	15~20	Not classified
ALUMINIUM POWDER	7429-90-5	231-072-3	3~7	   Flam. Solid 1, H228 Pyr. Liq. 1, H250 Water-react 2, H261 Specific target organ toxicity (repeated) 2, H373 Aquatic Chronic 1: H410 (M-factor: 1)
POLY ETHYLENE GLYCOL	25322-68-3	500-038-2	10~15	 Acute toxicity (Oral) 4, H302
2-AMINO-2-METHYL-1-PROPANOL	124-68-5	204-709-8	0~1	 Aquatic Chronic 4, H413 Eye Irrit. 1, H318 Skin Irrit. 2, H315

SECTION 4: FIRST AID MEASURES**4.1. Description of first aid measures****General**

- No general information.

Inhalation

- When exposed to large amounts of steam and mist, move to fresh air.
- Take specific treatment if needed.

Skin contact

- Flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes.
- Laundering enough contaminated clothing before reuse.

Eye contact

- Do not rub your eyes.
- Immediately flush eyes with plenty of water for at least 15 minutes and call a doctor/physician.

Ingestion

- Please be advised by doctor whether induction of vomit is demanded or not.
- Rinse your mouth with water immediately.

4.2. Most important symptoms and effects, both acute and delayed

- Not available

4.3. Indication of any immediate medical attention and special treatment needed

- Notify medical personnel of contaminated situations and have them take appropriate protective measures.

SECTION 5: FIREFIGHTING MEASURES**5.1. Extinguishing media****Suitable extinguishing media**

- Water, foam, CO₂, NaHCO₃

Unsuitable extinguishing media

- Avoid use of water jet for extinguishing

5.2. Special hazards arising from the substance or mixture**Hazardous combustion products**

- Not available

5.3. Advice for firefighters

- Cool containers with water until well after fire is out.
- Keep unauthorized personnel out.
- Withdraw immediately in case of rising sound from venting safety devices or discoloration of tank.
- Wear appropriate protective equipment.
- Keep containers cool with water spray.
- Use fire fighting procedures suitable for surrounding area.
- Vapor or gas is burned at distant ignition sources can be spread quickly.

SECTION 6: ACCIDENTAL RELEASE MEASURES**6.1. Personal Precautions, protective equipment and emergency procedures****6.1.1. For non-emergency personnel**

- Protective equipment: Wear proper protective equipment.
- Emergency procedures: Not applicable
- If required, notify relevant authorities according to all applicable regulations.

6.1.2. For emergency responders

- Ventilate closed spaces before entering.
- Must work against the wind, let the upwind people to evacuate.
- Do not touch spilled material. Stop leak if you can do it without risk.
- Handling the damaged containers or spilled material after wearing protective equipment.
- Do not direct water at spill or source of leak.

6.2. Environmental precautions

- Prevent runoff and contact with waterways, drains or sewers.
- If large amounts have been spilled, inform the relevant authorities.
- Avoid dispersal of spilt material and runoff and contact with waterways, drains and sewers. If large spills, advise

6.3. Methods and material for containment and cleaning up**6.3.1. For containment**

- Clear spills immediately
- Clean up all spills immediately.
- Prevent, by any means available, spillage from entering drains or water course.

6.3.2. For cleaning up

- Large spill : Stay upwind and keep out of low areas. Dike for later disposal.
- Notification to central government, local government. When emissions at least of the standard amount
- Dispose of waste in accordance with local regulation.
- Appropriate container for disposal of spilled material collected.
- Small leak: sand or other non-combustible material, please let use absorption.
- Wipe off the solvent.
- Dike for later disposal.

6.3.3. Other information

- Slippery when spilt.

6.4. Reference to other sections

- See Section 7 for information on safe handling.
- See Section 8 for information on personal protection equipment.
- See Section 13 for information on disposal.

SECTION 7: HANDLING AND STORAGE**7.1. Precautions for safe handling**

- Avoid direct physical contact.
- Get the manual before use.
- Refer to Engineering controls and personal protective equipment.
- Do not handle until all safety precautions have been read and understood.

- Do not inhale the steam prolonged or repeated.

7.2. Conditions for safe storage, including any incompatibilities

- Save in cool, dry and well ventilated place.
- Check regularly for leaks.
- Please pay attention to incompatibilities materials and conditions to avoid.
- Keep sealed when not in use.
- No open fire.

7.3. Specific end use(s)

- See Section 1 for information on 1.2 Relevant identified uses.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control parameters

8.1.1. Occupational exposure limits

European Union (EU) Commission Directive 2006/15/EC (IOELVs)

- Not available

European Union (EU) Commission Directive 2006/15/EC (IOELVs) - Skin

- Not available

8.1.2. Recommended Monitoring Procedures

- Personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment.

8.1.3. DNEL/PNEC - Values

- Not available

8.2. Exposure controls

8.2.1. Appropriate engineering controls

- A system of local and/or general exhaust is recommended to keep employee exposures above the Exposure Limits. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. The use of local exhaust ventilation is recommended to control emissions near the source.

8.2.2. Individual protection measures, such as personal protective equipment

Hand protection

- Wear appropriate glove.

Eye protection

- Wear primary eye protection such as splash resistant safety goggles with a secondary protection face shield.
- Provide an emergency eye wash station and quick drench shower in the immediate work area.

Respiratory Protection

- Under conditions of frequent use or heavy exposure, Respiratory protection may be needed.
- Respiratory protection is ranked in order from minimum to maximum.
- Consider warning properties before use.
- Any chemical cartridge respirator with organic vapor cartridge(s).
- Any chemical cartridge respirator with a full face piece and organic vapor cartridge(s).
- Any air-purifying respirator with a full face piece and an organic vapor canister.
- For Unknown Concentration or Immediately Dangerous to Life or Health : Any supplied-air respirator with full face piece and operated in a pressure-demand or other positive-pressure mode in combination with a separate escape supply. Any self-contained breathing apparatus with a full face piece.

Skin protection

- Wear appropriate clothing.

8.2.3 Environmental exposure controls

- Do not let product enter drains. For ecological information refer to section 12.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Appearance(State)	Liquid
Appearance(Color)	SILVER
Odor	Odorless
Odor threshold	Not available
pH	8.0 ± 1.0
Melting point/Freezing point	Not available
Initial boiling point and boiling range	> 100 °C
Flash point	300 °C
Evaporation rate	Not available
Flammability(solid, gas)	Not applicable
Upper/Lower Flammability or explosive	Not available
Vapour pressure	Not available
Vapour density	Not available
Relative density	1.1 ± 0.05 g/cm ³
Solubility	Fully miscible
Partition coefficient of n-octanol/water	Not available
Autoignition temperature	No self-igniting
Decomposition temperature	Not available
Viscosity	750 ± 150 Cps
Explosive properties	Not explosive
Oxidizing properties	Not available

9.2. Other information

- Not available

SECTION 10: STABILITY AND REACTIVITY**10.1. Reactivity**

- Not available

10.2. Chemical Stability

- This material is stable under recommended storage and handling conditions.

10.3. Possibility of hazardous reactions

- Hazardous Polymerization will not occur.

10.4. Conditions to avoid

- Avoid contact with incompatible materials and condition.
 - Avoid : Accumulation of electrostatic charges, Heating, Flames and hot surfaces

10.5. Incompatible materials

- Not available

10.6. Hazardous decomposition products

- Not available

SECTION 11: TOXICOLOGICAL INFORMATION**11.1. Acute toxicity****- Oral**

- Product (ATEmix) : >5000mg/kg
 - [GLYCERINE] : LD50 = 12600 mg/kg Rat (ChemIDplus)
 - [POLY ETHYLENE GLYCOL] : LD50 = 600 mg/kg Rat (KOSHA)

- Dermal

- Product (ATEmix) : >5000mg/kg
 - [GLYCERINE] : LD50 > 10000 mg/kg Rat (ChemIDplus)

- Inhalation

- Product (ATEmix) : Not available
 - [GLYCERINE] : LC50 >2.75 mg/ℓ 4 hr Rat (ECHA)

11.2. Skin corrosion/irritation

- [2-AMINO-2-METHYL-1-PROPANOL] : Classified as Category 2 (KOSHA)

11.3. Serious eye damage/irritation

- [2-AMINO-2-METHYL-1-PROPANOL] : Classified as Category 1 (KOSHA)

11.4. Respiratory sensitization

- Not available

11.5. Skin sensitization

- Not available

11.6. Germ cell mutagenicity

- Not available

11.7. Carcinogenicity**- IARC**

- Not available

- OSHA

- Not available

- ACGIH

- [ALUMINIUM POWDER] : A4

- NTP

- Not available

- EU CLP

- Not available

11.8. Reproductive toxicity

- Not available

11.9. Specific target organ toxicity(single exposure):

- Not available

11.10. Specific target organ toxicity(repeated exposure):

- [ALUMINIUM POWDER] : Classified as Category 2 (KOSHA)

11.11. Aspiration hazard

- Not available

SECTION 12: ECOLOGICAL INFORMATION**12.1. Toxicity****12.1.1. Fish**

- [GLYCERINE] : LC50 >11 mg/ℓ 96 hr Cyprinodon variegatus (ECHA)

12.1.2. Invertebrate

- [GLYCERINE] : LC50 1955 mg/ℓ 48 hr Daphnia magna (ECHA)

- [ALUMINIUM POWDER] : NOEC > 100 mg/ℓ 48 hr Daphnia magna (IUCLID)

12.1.3. Algae

- [ALUMINIUM POWDER] : NOEC > 0.052 mg/ℓ 48 hr Selenastrum capricornutum (M = 1) (OECD TG 201, GLP) (ECHA)

12.2. Persistence and degradability**12.2.1. Persistence**

- Not available

12.2.2. Degradability

- [2-AMINO-2-METHYL-1-PROPANOL] : BOD5/COD 0.005 (KOSHA)

12.3. Bioaccumulative potential**12.3.1. Bioaccumulation**

- [2-AMINO-2-METHYL-1-PROPANOL] : 1.3 BSAF (Leuciscus idus(Fish, fresh water), 50ug/) (KOSHA)

12.3.2. Biodegradability

- [2-AMINO-2-METHYL-1-PROPANOL] : 40 (%) 28 days (KOSHA)

12.4. Mobility in soil

- Not available

12.5. Results of PBT and vPvB assessment

- Not available

12.6. Other adverse effects

- Not available

SECTION 13: DISPOSAL CONSIDERATIONS**13.1. Waste treatment methods**

- Since more than two kinds of designated waste is mixed, it is difficult to treat separately, then can be reduction or stabilization by incineration or similar process.
- If water separation is possible, pre-process with Water separation process.
- Dispose by incineration.
- The user of this product must disposal by oneself or entrust to waste disposer or person who other's waste recycle and dispose, person who establish and operate waste disposal facilities.
- Dispose of waste in accordance with all applicable laws and regulations.

SECTION 14: TRANSPORT INFORMATION**14.1. UN No.**

14.1.1. UN No. (ADR/RID/ADN)
3082

14.1.2. UN No. (IMDG CODE/IATA DGR)
3082

14.1.3. UN No. (ICAO)
3082

14.2. UN proper shipping name

- Not applicable

14.3. Transport hazard class(es)

14.3.1. ADR/RID/ADN Class
- Not applicable

14.3.2. ADR/RID/ADN Class
- Not applicable

14.3.3. ADR Label No.
- Not applicable

14.3.4. IMDG Class
- Not applicable

14.3.5. ICAO Class/Division
- Not applicable

14.3.6. Transport Labels
- Not applicable

14.4. Packing group

14.4.1. ADR/RID/ADN Packing group

- Not applicable

14.4.2. IMDG Packing group

- Not applicable

14.4.3. ICAO Packing group

- Not applicable

14.5. Environmental hazards

- Not applicable

14.6. Special precautions for user

- Local transport follows in accordance with Dangerous goods Safety Management Law.
- Package and transport follow in accordance with Department of Transportation (DOT) and other regulatory agency
- EmS FIRE SCHEDULE : Not applicable
- EmS SPILLAGE SCHEDULE : Not applicable
- Air transport(IATA): Not subject to IATA regulations.

14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

- Not applicable

SECTION 15: REGULATORY INFORMATION**15.1. Safety, health and environmental regulation / legislation specific for the substance or mixture****15.1.1. Europe regulatory****15.1.1.1 REACH Restricted substance under REACH**

- Not applicable

15.1.1.2 REACH Substances subject to authorization under REACH

- Not applicable

15.1.1.3 REACH SVHC

- Not applicable

15.1.1.4 Europe PBT

- Not applicable

15.1.1.5 European Union (EU) Transport of Dangerous Goods by Road - Dangerous Goods List

- Not applicable

15.2. Chemical Safety Assessment

- Not conducted

SECTION 16: OTHER INFORMATION**16.1. Indication of changes**

- The Safety Data Sheet has been reviewed and the data therein were revised and laid out according the requirements of the Commission Regulation (EC) No. 1907/2006

16.2. Abbreviations and acronyms

- 1272/2008 CLP : Classification, Labelling and Packaging regulation.
- REACH : Registration, Evaluation and authorization of chemical substances.
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- PNEC : Predicted no effect concentration

16.3. Key literature references and sources for data

- This Safety Data Sheet was compiled with data and information from the following sources: RTECS, ECOSAR, HSDB, SIDS SIAP, ChemWATCH, CESAR, Chemical DB

16.4. Classification procedure

- The mixture classification has been derived based on the classification of the individual components in accordance with the rules set out in Regulation (EC) No 1272/2008 (CLP) as well as the translation tables in Annex VII to the same regulation.

16.5. Training advice

- Not applicable

16.6. Further information

- The (M)SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings. Risks may be determined by reference to Exposures Scenarios. Scale of use, frequency of use and current or available engineering controls must be considered.

- This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only.

- It should not therefore be construed as guaranteeing any specific property of the product.

- Contact a poison control centre, List of Telephone Numbers : AUSTRIA (Vienna Wien) +43 1 406 43 43; BELGIUM (Brussels Bruxelles) +32 70 245 245; BULGARIA (Sofia) +359 2 9154 409; CZECH REPUBLIC (Prague Praha) +420 224 919 293; DENMARK (Copenhagen) 82 12 12 12; ESTONIA (Tallinn) 112; FINLAND (Helsinki) +358 9 471 977; FRANCE (Paris) +33 1 40 0548 48; GERMANY (Berlin) +49 30 19240; GREECE (Athens Athina) +30 10 779 3777; HUNGARY (Budapest) 06 80 20 11 99; ICELAND (Reykjavik) +354 525 111, +354 543 2222; IRELAND (Dublin) +353 1 8379964; ITALY (Rome) +39 06 305 4343; LATVIA (Riga) +371 704 2468; LITHUANIA (Vilnius) +370 5 236 20 52 or +370 687 53378; MALTA (Valletta) 2425 0000; NETHERLANDS (Bilthoven) +31 30 274 88 88; NORWAY (Oslo) 22 591300; POLAND (Gdansk) +48 58301 65 16 or +48 58 349 2831; PORTUGAL (Lisbon Lisboa) 808 250 143; ROMANIA (Bucharest) +40 21 3183606 SLOVAKIA (Bratislava) +421 2 54 77 4166; SLOVENIA (Ljubljana) + 386 41 650 500; SPAIN (Barcelona) +34 93 227 98 33 or +34 93 227 54 00 bleep 190; SWEDEN (Stockholm) 112 or +46 8 33 12 31 (mon-fri 9.00-17.00); UNITED KINGDOM (London) 112 or 0845 4647 (NHS Direct).

Disclaimer of Liability

This information is based on our present state of knowledge.

It should not therefore be construed as guaranteeing specific properties of the products

Described or their suitability for a particular application. YOU&I Corporation assumes

no responsibility for personal injury or property damage caused by the material.

Users assume all risks associated with the use of the material.

***** End of Documents

21739-5030

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SAFETY DATA SHEET

According to Regulation (EC) No 1907/2006 (REACH), Annex II (COMMISSION REGULATION (EU) No 2015/830)



Date of issue: 2018-06-20

Revision date: 2022-06-21

SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING**1.1. Product identifier**

Trade name/designation : MGI- S.BLUE

1.2. Relevant identified uses of the substance or mixture and uses advised against**1.2.1. Relevant identified uses**

- Water-soluble stationary ink

1.2.2. Uses advised against

- Not available

1.3. Details of the supplier of the safety data sheet

Manufacturer/Supplier : YOU&I COPORATION

Address : 53, EMTIBEUI 26-RO, SIHEUNG-SI, GYEONGGI-DO, KOREA (ZIP CODE) 15118

Telephone : 82-31-494-2030

Email : tech@youicolor.com

1.4. Emergency telephone number

82-31-494-2030 (This number is serviced during office hours only.)

EU-wide emergency number : 112

See section 16.6 for the list of telephone number of poison centers in the European Economic Area.

SECTION 2: HAZARD IDENTIFICATION**2.1. Classification of the substance/mixture****2.1.1. Classification according to Regulation (EC) No 1272/2008 [CLP]**

H411-Aquatic Chronic 2

2.2. Label elements**2.2.1. Labelling according to Regulation (EC) No 1272/2008 [CLP]***** Hazard Pictogram(s)***** Signal word** : Warning*** Hazard statement(s)**

H411: Toxic to aquatic life with long-lasting effects

*** Precautionary statement(s)****1) Prevention**

P273: Avoid release to the environment.

2) Response

P391: Collect spillage.

3) Storage

- Not applicable

4) Disposal

P501: Disposal contents/ container to in accordance with local national regulation.

2.3. Other hazards

- Not available

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS**3.1. Substances**

- Not applicable

3.2. Mixtures

Name	CAS No.	EINECS NO.	% [weight]	Classification [1272/2008/EC]
WATER	7732-18-5	231-791-2	40~60	Not classified
GLYCERINE	56-81-5	200-289-5	15~20	Not classified
ALUMINIUM POWDER	7429-90-5	231-072-3	3~7	   'Flam. Solid 1, H228 Pyr. Liq. 1, H250 Water-react 2, H261 Specific target organ toxicity (repeated) 2, H373 Aquatic Chronic 1: H410 (M-factor: 1)
C.I. PIGMENT BLUE 15:3	147-14-8	205-685-1	0~5	Not classified
POLY ETHYLENE GLYCOL	25322-68-3	500-038-2	10~15	 Acute toxicity (Oral) 4, H302
2-AMINO-2-METHYL-1-PROPANOL	124-68-5	204-709-8	0~1	 Aquatic Chronic 4, H413 Eye Irrit. 1, H318 Skin Irrit. 2, H315

SECTION 4: FIRST AID MEASURES**4.1. Description of first aid measures****General**

- No general information.

Inhalation

- When exposed to large amounts of steam and mist, move to fresh air.
- Take specific treatment if needed.

Skin contact

- Flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes.
- Laundering enough contaminated clothing before reuse.

Eye contact

- Do not rub your eyes.
- Immediately flush eyes with plenty of water for at least 15 minutes and call a doctor/physician.

Ingestion

- Please be advised by doctor whether induction of vomit is demanded or not.
- Rinse your mouth with water immediately.

4.2. Most important symptoms and effects, both acute and delayed

- Not available

4.3. Indication of any immediate medical attention and special treatment needed

- Notify medical personnel of contaminated situations and have them take appropriate protective measures.

SECTION 5: FIREFIGHTING MEASURES**5.1. Extinguishing media****Suitable extinguishing media**

- Water, foam, CO₂, NaHCO₃

Unsuitable extinguishing media

- Avoid use of water jet for extinguishing

5.2. Special hazards arising from the substance or mixture**Hazardous combustion products**

- Not available

5.3. Advice for firefighters

- Cool containers with water until well after fire is out.
- Keep unauthorized personnel out.
- Withdraw immediately in case of rising sound from venting safety devices or discoloration of tank.
- Wear appropriate protective equipment.
- Keep containers cool with water spray.
- Use fire fighting procedures suitable for surrounding area.
- Vapor or gas is burned at distant ignition sources can be spread quickly.

SECTION 6: ACCIDENTAL RELEASE MEASURES**6.1. Personal Precautions, protective equipment and emergency procedures****6.1.1. For non-emergency personnel**

- Protective equipment: Wear proper protective equipment.
- Emergency procedures: Not applicable
- If required, notify relevant authorities according to all applicable regulations.

6.1.2. For emergency responders

- Ventilate closed spaces before entering.
- Must work against the wind, let the upwind people to evacuate.
- Do not touch spilled material. Stop leak if you can do it without risk.
- Handling the damaged containers or spilled material after wearing protective equipment.
- Do not direct water at spill or source of leak.

6.2. Environmental precautions

- Prevent runoff and contact with waterways, drains or sewers.
- If large amounts have been spilled, inform the relevant authorities.
- Avoid dispersal of spilt material and runoff and contact with waterways, drains and sewers. If large spills, advise

6.3. Methods and material for containment and cleaning up**6.3.1. For containment**

- Clear spills immediately
- Clean up all spills immediately.
- Prevent, by any means available, spillage from entering drains or water course.

6.3.2. For cleaning up

- Large spill : Stay upwind and keep out of low areas. Dike for later disposal.
- Notification to central government, local government. When emissions at least of the standard amount
- Dispose of waste in accordance with local regulation.
- Appropriate container for disposal of spilled material collected.
- Small leak: sand or other non-combustible material, please let use absorption.
- Wipe off the solvent.
- Dike for later disposal.

6.3.3. Other information

- Slippery when spilt.

6.4. Reference to other sections

- See Section 7 for information on safe handling.
- See Section 8 for information on personal protection equipment.
- See Section 13 for information on disposal.

SECTION 7: HANDLING AND STORAGE**7.1. Precautions for safe handling**

- Avoid direct physical contact.
- Get the manual before use.
- Refer to Engineering controls and personal protective equipment.
- Do not handle until all safety precautions have been read and understood.

- Do not inhale the steam prolonged or repeated.

7.2. Conditions for safe storage, including any incompatibilities

- Save in cool, dry and well ventilated place.
- Check regularly for leaks.
- Please pay attention to incompatibilities materials and conditions to avoid.
- Keep sealed when not in use.
- No open fire.

7.3. Specific end use(s)

- See Section 1 for information on 1.2 Relevant identified uses.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control parameters

8.1.1. Occupational exposure limits

European Union (EU) Commission Directive 2006/15/EC (IOELVs)

- Not available

European Union (EU) Commission Directive 2006/15/EC (IOELVs) - Skin

- Not available

8.1.2. Recommended Monitoring Procedures

- Personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment.

8.1.3. DNEL/PNEC - Values

- Not available

8.2. Exposure controls

8.2.1. Appropriate engineering controls

- A system of local and/or general exhaust is recommended to keep employee exposures above the Exposure Limits. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. The use of local exhaust ventilation is recommended to control emissions near the source.

8.2.2. Individual protection measures, such as personal protective equipment

Hand protection

- Wear appropriate glove.

Eye protection

- Wear primary eye protection such as splash resistant safety goggles with a secondary protection face shield.
- Provide an emergency eye wash station and quick drench shower in the immediate work area.

Respiratory Protection

- Under conditions of frequent use or heavy exposure, Respiratory protection may be needed.
- Respiratory protection is ranked in order from minimum to maximum.
- Consider warning properties before use.
- Any chemical cartridge respirator with organic vapor cartridge(s).
- Any chemical cartridge respirator with a full face piece and organic vapor cartridge(s).
- Any air-purifying respirator with a full face piece and an organic vapor canister.
- For Unknown Concentration or Immediately Dangerous to Life or Health : Any supplied-air respirator with full face piece and operated in a pressure-demand or other positive-pressure mode in combination with a separate escape supply. Any self-contained breathing apparatus with a full face piece.

Skin protection

- Wear appropriate clothing.

8.2.3 Environmental exposure controls

- Do not let product enter drains. For ecological information refer to section 12.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Appearance(State)	Liquid
Appearance(Color)	S.BLUE
Odor	Odorless
Odor threshold	Not available
pH	8.0 ± 1.0
Melting point/Freezing point	Not available
Initial boiling point and boiling range	> 100 °C
Flash point	300 °C
Evaporation rate	Not available
Flammability(solid, gas)	Not applicable
Upper/Lower Flammability or explosive	Not available
Vapour pressure	Not available
Vapour density	Not available
Relative density	1.1 ± 0.05 g/cm ³
Solubility	Fully miscible
Partition coefficient of n-octanol/water	Not available
Autoignition temperature	No self-igniting
Decomposition temperature	Not available
Viscosity	750 ± 150 Cps
Explosive properties	Not explosive
Oxidizing properties	Not available

9.2. Other information

- Not available

SECTION 10: STABILITY AND REACTIVITY**10.1. Reactivity**

- Not available

10.2. Chemical Stability

- This material is stable under recommended storage and handling conditions.

10.3. Possibility of hazardous reactions

- Hazardous Polymerization will not occur.

10.4. Conditions to avoid

- Avoid contact with incompatible materials and condition.
 - Avoid : Accumulation of electrostatic charges, Heating, Flames and hot surfaces

10.5. Incompatible materials

- Not available

10.6. Hazardous decomposition products

- Not available

SECTION 11: TOXICOLOGICAL INFORMATION**11.1. Acute toxicity****- Oral**

- Product (ATEmix) : >5000mg/kg
 - [GLYCERINE] : LD50 = 12600 mg/kg Rat (ChemIDplus)
 - [POLY ETHYLENE GLYCOL] : LD50 = 600 mg/kg Rat (KOSHA)

- Dermal

- Product (ATEmix) : >5000mg/kg
 - [GLYCERINE] : LD50 > 10000 mg/kg Rat (ChemIDplus)

- Inhalation

- Product (ATEmix) : Not available
 - [GLYCERINE] : LC50 >2.75 mg/ℓ 4 hr Rat (ECHA)

11.2. Skin corrosion/irritation

- [2-AMINO-2-METHYL-1-PROPANOL] : Classified as Category 2 (KOSHA)

11.3. Serious eye damage/irritation

- [2-AMINO-2-METHYL-1-PROPANOL] : Classified as Category 1 (KOSHA)

11.4. Respiratory sensitization

- Not available

11.5. Skin sensitization

- Not available

11.6. Germ cell mutagenicity

- Not available

11.7. Carcinogenicity**- IARC**

- Not available

- OSHA

- Not available

- ACGIH

- [ALUMINIUM POWDER] : A4

- NTP

- Not available

- EU CLP

- Not available

11.8. Reproductive toxicity

- Not available

11.9. Specific target organ toxicity(single exposure):

- Not available

11.10. Specific target organ toxicity(repeated exposure):

- [ALUMINIUM POWDER] : Classified as Category 2 (KOSHA)

11.11. Aspiration hazard

- Not available

SECTION 12: ECOLOGICAL INFORMATION**12.1. Toxicity****12.1.1. Fish**

- [GLYCERINE] : LC50 >11 mg/ℓ 96 hr Cyprinodon variegatus (ECHA)

12.1.2. Invertebrate

- [GLYCERINE] : LC50 1955 mg/ℓ 48 hr Daphnia magna (ECHA)

- [ALUMINIUM POWDER] : NOEC > 100 mg/ℓ 48 hr Daphnia magna (IUCLID)

12.1.3. Algae

- [ALUMINIUM POWDER] : NOEC > 0.052 mg/ℓ 48 hr Selenastrum capricornutum (M = 1) (OECD TG 201, GLP) (ECHA)

12.2. Persistence and degradability**12.2.1. Persistence**

- Not available

12.2.2. Degradability

- [2-AMINO-2-METHYL-1-PROPANOL] : BOD5/COD 0.005 (KOSHA)

12.3. Bioaccumulative potential**12.3.1. Bioaccumulation**

- [2-AMINO-2-METHYL-1-PROPANOL] : 1.3 BSAF (Leuciscus idus(Fish, fresh water), 50ug/) (KOSHA)

12.3.2. Biodegradability

- [2-AMINO-2-METHYL-1-PROPANOL] : 40 (%) 28 days (KOSHA)

12.4. Mobility in soil

- Not available

12.5. Results of PBT and vPvB assessment

- Not available

12.6. Other adverse effects

- Not available

SECTION 13: DISPOSAL CONSIDERATIONS**13.1. Waste treatment methods**

- Since more than two kinds of designated waste is mixed, it is difficult to treat separately, then can be reduction or stabilization by incineration or similar process.
- If water separation is possible, pre-process with Water separation process.
- Dispose by incineration.
- The user of this product must disposal by oneself or entrust to waste disposer or person who other's waste recycle and dispose, person who establish and operate waste disposal facilities.
- Dispose of waste in accordance with all applicable laws and regulations.

SECTION 14: TRANSPORT INFORMATION**14.1. UN No.****14.1.1. UN No. (ADR/RID/ADN)**

3082

14.1.2. UN No. (IMDG CODE/IATA DGR)

3082

14.1.3. UN No. (ICAO)

3082

14.2. UN proper shipping name

- Not applicable

14.3. Transport hazard class(es)**14.3.1. ADR/RID/ADN Class**

- Not applicable

14.3.2. ADR/RID/ADN Class

- Not applicable

14.3.3. ADR Label No.

- Not applicable

14.3.4. IMDG Class

- Not applicable

14.3.5. ICAO Class/Division

- Not applicable

14.3.6. Transport Labels

- Not applicable

14.4. Packing group**14.4.1. ADR/RID/ADN Packing group**

- Not applicable

14.4.2. IMDG Packing group

- Not applicable

14.4.3. ICAO Packing group

- Not applicable

14.5. Environmental hazards

- Not applicable

14.6. Special precautions for user

- Local transport follows in accordance with Dangerous goods Safety Management Law.
- Package and transport follow in accordance with Department of Transportation (DOT) and other regulatory agency
- EmS FIRE SCHEDULE : Not applicable
- EmS SPILLAGE SCHEDULE : Not applicable
- Air transport(IATA): Not subject to IATA regulations.

14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

- Not applicable

SECTION 15: REGULATORY INFORMATION**15.1. Safety, health and environmental regulation / legislation specific for the substance or mixture****15.1.1. Europe regulatory****15.1.1.1 REACH Restricted substance under REACH**

- Not applicable

15.1.1.2 REACH Substances subject to authorization under REACH

- Not applicable

15.1.1.3 REACH SVHC

- Not applicable

15.1.1.4 Europe PBT

- Not applicable

15.1.1.5 European Union (EU) Transport of Dangerous Goods by Road - Dangerous Goods List

- Not applicable

15.2. Chemical Safety Assessment

- Not conducted

SECTION 16: OTHER INFORMATION**16.1. Indication of changes**

- The Safety Data Sheet has been reviewed and the data therein were revised and laid out according the requirements of the Commission Regulation (EC) No. 1907/2006

16.2. Abbreviations and acronyms

- 1272/2008 CLP : Classification, Labelling and Packaging regulation.
- REACH : Registration, Evaluation and authorization of chemical substances.
- DNEL : Derive no effects level
- PNEC : Predicted no effect concentration

16.3. Key literature references and sources for data

- This Safety Data Sheet was compiled with data and information from the following sources: RTECS, ECOSAR, HSDB, SIDS SIAP, ChemWATCH, CESAR, Chemical DB

16.4. Classification procedure

- The mixture classification has been derived based on the classification of the individual components in accordance with the rules set out in Regulation (EC) No 1272/2008 (CLP) as well as the translation tables in Annex VII to the same regulation.

16.5. Training advice

- Not applicable

16.6. Further information

- The (M)SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings. Risks may be determined by reference to Exposures Scenarios. Scale of use, frequency of use and current or available engineering controls must be considered.

- This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only.

- It should not therefore be construed as guaranteeing any specific property of the product.

- Contact a poison control centre, List of Telephone Numbers : AUSTRIA (Vienna Wien) +43 1 406 43 43; BELGIUM (Brussels Bruxelles) +32 70 245 245; BULGARIA (Sofia) +359 2 9154 409; CZECH REPUBLIC (Prague Praha) +420 224 919 293; DENMARK (Copenhagen) 82 12 12 12; ESTONIA (Tallinn) 112; FINLAND (Helsinki) +358 9 471 977; FRANCE (Paris) +33 1 40 0548 48; GERMANY (Berlin) +49 30 19240; GREECE (Athens Athina) +30 10 779 3777; HUNGARY (Budapest) 06 80 20 11 99; ICELAND (Reykjavik) +354 525 111, +354 543 2222; IRELAND (Dublin) +353 1 8379964; ITALY (Rome) +39 06 305 4343; LATVIA (Riga) +371 704 2468; LITHUANIA (Vilnius) +370 5 236 20 52 or +370 687 53378; MALTA (Valletta) 2425 0000; NETHERLANDS (Bilthoven) +31 30 274 88 88; NORWAY (Oslo) 22 591300; POLAND (Gdansk) +48 58301 65 16 or +48 58 349 2831; PORTUGAL (Lisbon Lisboa) 808 250 143; ROMANIA (Bucharest) +40 21 3183606 SLOVAKIA (Bratislava) +421 2 54 77 4166; SLOVENIA (Ljubljana) + 386 41 650 500; SPAIN (Barcelona) +34 93 227 98 33 or +34 93 227 54 00 bleep 190; SWEDEN (Stockholm) 112 or +46 8 33 12 31 (mon-fri 9.00-17.00); UNITED KINGDOM (London) 112 or 0845 4647 (NHS Direct).

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no responsibility for personal injury or property damage caused by the material.

Users assume all risks associated with the use of the material.

***** End of Documents

21739-3010

1/9

SAFETY DATA SHEET

According to Regulation (EC) No 1907/2006 (REACH), Annex II (COMMISSION REGULATION (EU) No 2015/830)



Date of issue: 2018-06-20

Revision date: 2022-06-21

SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING**1.1. Product identifier**

Trade name/designation : MGI- RED

1.2. Relevant identified uses of the substance or mixture and uses advised against**1.2.1. Relevant identified uses**

- Water-soluble stationary ink

1.2.2. Uses advised against

- Not available

1.3. Details of the supplier of the safety data sheet

Manufacturer/Supplier : YOU&I COPORATION

Address : 53, EMTIBEUI 26-RO, SIHEUNG-SI, GYEONGGI-DO, KOREA (ZIP CODE) 15118

Telephone : 82-31-494-2030

Email : tech@youicolor.com

1.4. Emergency telephone number

82-31-494-2030 (This number is serviced during office hours only.)

EU-wide emergency number : 112

See section 16.6 for the list of telephone number of poison centers in the European Economic Area.

SECTION 2: HAZARD IDENTIFICATION**2.1. Classification of the substance/mixture****2.1.1. Classification according to Regulation (EC) No 1272/2008 [CLP]**

H411-Aquatic Chronic 2

2.2. Label elements**2.2.1. Labelling according to Regulation (EC) No 1272/2008 [CLP]***** Hazard Pictogram(s)***** Signal word** : Warning*** Hazard statement(s)**

H411: Toxic to aquatic life with long-lasting effects

*** Precautionary statement(s)****1) Prevention**

P273: Avoid release to the environment.

2) Response

P391: Collect spillage.

3) Storage

- Not applicable

4) Disposal

P501: Disposal contents/ container to in accordance with local national regulation.

2.3. Other hazards

- Not available

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS**3.1. Substances**

- Not applicable

3.2. Mixtures

Name	CAS No.	EINECS NO.	% [weight]	Classification [1272/2008/EC]
WATER	7732-18-5	231-791-2	40~60	Not classified
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C.I. PIGMENT RED 170	2786-76-7	220-509-3	0~5	Aquatic Chronic 4, H413
POLY ETHYLENE GLYCOL	25322-68-3	500-038-2	10~15	 Acute toxicity (Oral) 4, H302
2-AMINO-2-METHYL-1-PROPANOL	124-68-5	204-709-8	0~1	 Aquatic Chronic 4, H413 Eye Irrit. 1, H318 Skin Irrit. 2, H315

SECTION 4: FIRST AID MEASURES**4.1. Description of first aid measures****General**

- No general information.

Inhalation

- When exposed to large amounts of steam and mist, move to fresh air.
- Take specific treatment if needed.

Skin contact

- Flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes.
- Laundering enough contaminated clothing before reuse.

Eye contact

- Do not rub your eyes.
- Immediately flush eyes with plenty of water for at least 15 minutes and call a doctor/physician.

Ingestion

- Please be advised by doctor whether induction of vomit is demanded or not.
- Rinse your mouth with water immediately.

4.2. Most important symptoms and effects, both acute and delayed

- Not available

4.3. Indication of any immediate medical attention and special treatment needed

- Notify medical personnel of contaminated situations and have them take appropriate protective measures.

SECTION 5: FIREFIGHTING MEASURES**5.1. Extinguishing media****Suitable extinguishing media**

- Water, foam, CO₂, NaHCO₃

Unsuitable extinguishing media

- Avoid use of water jet for extinguishing

5.2. Special hazards arising from the substance or mixture**Hazardous combustion products**

- Not available

5.3. Advice for firefighters

- Cool containers with water until well after fire is out.
- Keep unauthorized personnel out.
- Withdraw immediately in case of rising sound from venting safety devices or discoloration of tank.
- Wear appropriate protective equipment.
- Keep containers cool with water spray.
- Use fire fighting procedures suitable for surrounding area.
- Vapor or gas is burned at distant ignition sources can be spread quickly.

SECTION 6: ACCIDENTAL RELEASE MEASURES**6.1. Personal Precautions, protective equipment and emergency procedures****6.1.1. For non-emergency personnel**

- Protective equipment: Wear proper protective equipment.
- Emergency procedures: Not applicable
- If required, notify relevant authorities according to all applicable regulations.

6.1.2. For emergency responders

- Ventilate closed spaces before entering.
- Must work against the wind, let the upwind people to evacuate.
- Do not touch spilled material. Stop leak if you can do it without risk.
- Handling the damaged containers or spilled material after wearing protective equipment.
- Do not direct water at spill or source of leak.

6.2. Environmental precautions

- Prevent runoff and contact with waterways, drains or sewers.
- If large amounts have been spilled, inform the relevant authorities.
- Avoid dispersal of spilt material and runoff and contact with waterways, drains and sewers. If large spills, advise

6.3. Methods and material for containment and cleaning up**6.3.1. For containment**

- Clear spills immediately
- Clean up all spills immediately.
- Prevent, by any means available, spillage from entering drains or water course.

6.3.2. For cleaning up

- Large spill : Stay upwind and keep out of low areas. Dike for later disposal.
- Notification to central government, local government. When emissions at least of the standard amount
- Dispose of waste in accordance with local regulation.
- Appropriate container for disposal of spilled material collected.
- Small leak: sand or other non-combustible material, please let use absorption.
- Wipe off the solvent.
- Dike for later disposal.

6.3.3. Other information

- Slippery when spilt.

6.4. Reference to other sections

- See Section 7 for information on safe handling.
- See Section 8 for information on personal protection equipment.
- See Section 13 for information on disposal.

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- Avoid direct physical contact.
- Get the manual before use.
- Refer to Engineering controls and personal protective equipment.
- Do not handle until all safety precautions have been read and understood.

- Do not inhale the steam prolonged or repeated.

7.2. Conditions for safe storage, including any incompatibilities

- Save in cool, dry and well ventilated place.
- Check regularly for leaks.
- Please pay attention to incompatibilities materials and conditions to avoid.
- Keep sealed when not in use.
- No open fire.

7.3. Specific end use(s)

- See Section 1 for information on 1.2 Relevant identified uses.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control parameters

8.1.1. Occupational exposure limits

European Union (EU) Commission Directive 2006/15/EC (IOELVs)

- Not available

European Union (EU) Commission Directive 2006/15/EC (IOELVs) - Skin

- Not available

8.1.2. Recommended Monitoring Procedures

- Personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment.

8.1.3. DNEL/PNEC - Values

- Not available

8.2. Exposure controls

8.2.1. Appropriate engineering controls

- A system of local and/or general exhaust is recommended to keep employee exposures above the Exposure Limits. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. The use of local exhaust ventilation is recommended to control emissions near the source.

8.2.2. Individual protection measures, such as personal protective equipment

Hand protection

- Wear appropriate glove.

Eye protection

- Wear primary eye protection such as splash resistant safety goggles with a secondary protection face shield.
- Provide an emergency eye wash station and quick drench shower in the immediate work area.

Respiratory Protection

- Under conditions of frequent use or heavy exposure, Respiratory protection may be needed.
- Respiratory protection is ranked in order from minimum to maximum.
- Consider warning properties before use.
- Any chemical cartridge respirator with organic vapor cartridge(s).
- Any chemical cartridge respirator with a full face piece and organic vapor cartridge(s).
- Any air-purifying respirator with a full face piece and an organic vapor canister.
- For Unknown Concentration or Immediately Dangerous to Life or Health : Any supplied-air respirator with full face piece and operated in a pressure-demand or other positive-pressure mode in combination with a separate escape supply. Any self-contained breathing apparatus with a full face piece.

Skin protection

- Wear appropriate clothing.

8.2.3 Environmental exposure controls

- Do not let product enter drains. For ecological information refer to section 12.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Appearance(State)	Liquid
Appearance(Color)	RED
Odor	Odorless
Odor threshold	Not available
pH	8.0 ± 1.0
Melting point/Freezing point	Not available
Initial boiling point and boiling range	> 100 °C
Flash point	300 °C
Evaporation rate	Not available
Flammability(solid, gas)	Not applicable
Upper/Lower Flammability or explosive	Not available
Vapour pressure	Not available
Vapour density	Not available
Relative density	1.1 ± 0.05 g/cm ³
Solubility	Fully miscible
Partition coefficient of n-octanol/water	Not available
Autoignition temperature	No self-igniting
Decomposition temperature	Not available
Viscosity	750 ± 150 Cps
Explosive properties	Not explosive
Oxidizing properties	Not available

9.2. Other information

- Not available

SECTION 10: STABILITY AND REACTIVITY**10.1. Reactivity**

- Not available

10.2. Chemical Stability

- This material is stable under recommended storage and handling conditions.

10.3. Possibility of hazardous reactions

- Hazardous Polymerization will not occur.

10.4. Conditions to avoid

- Avoid contact with incompatible materials and condition.
 - Avoid : Accumulation of electrostatic charges, Heating, Flames and hot surfaces

10.5. Incompatible materials

- Not available

10.6. Hazardous decomposition products

- Not available

SECTION 11: TOXICOLOGICAL INFORMATION**11.1. Acute toxicity****- Oral**

- Product (ATEmix) : >5000mg/kg
 - [GLYCERINE] : LD50 = 12600 mg/kg Rat (ChemIDplus)
 - [POLY ETHYLENE GLYCOL] : LD50 = 600 mg/kg Rat (KOSHA)

- Dermal

- Product (ATEmix) : >5000mg/kg
 - [GLYCERINE] : LD50 > 10000 mg/kg Rat (ChemIDplus)

- Inhalation

- Product (ATEmix) : Not available
 - [GLYCERINE] : LC50 >2.75 mg/ℓ 4 hr Rat (ECHA)

11.2. Skin corrosion/irritation

- [2-AMINO-2-METHYL-1-PROPANOL] : Classified as Category 2 (KOSHA)

11.3. Serious eye damage/irritation

- [2-AMINO-2-METHYL-1-PROPANOL] : Classified as Category 1 (KOSHA)

11.4. Respiratory sensitization

- Not available

11.5. Skin sensitization

- Not available

11.6. Germ cell mutagenicity

- Not available

11.7. Carcinogenicity**- IARC**

- Not available

- OSHA

- Not available

- ACGIH

- [ALUMINIUM POWDER] : A4

- NTP

- Not available

- EU CLP

- Not available

11.8. Reproductive toxicity

- Not available

11.9. Specific target organ toxicity(single exposure):

- Not available

11.10. Specific target organ toxicity(repeated exposure):

- [ALUMINIUM POWDER] : Classified as Category 2 (KOSHA)

11.11. Aspiration hazard

- Not available

SECTION 12: ECOLOGICAL INFORMATION**12.1. Toxicity****12.1.1. Fish**

- [GLYCERINE] : LC50 >11 mg/ℓ 96 hr Cyprinodon variegatus (ECHA)

- [C.I. PIGMENT RED 170] : LC50 >0.217 mg/ℓ 96 hr (ECOSAR)

12.1.2. Invertebrate

- [GLYCERINE] : LC50 1955 mg/ℓ 48 hr Daphnia magna (ECHA)

- [ALUMINIUM POWDER] : NOEC > 100 mg/ℓ 48 hr Daphnia magna (IUCLID)

- [C.I. PIGMENT RED 170] : LC50 0.545 mg/ℓ 48 hr (ECOSHA)

12.1.3. Algae

- [ALUMINIUM POWDER] : NOEC > 0.052 mg/ℓ 48 hr Selenastrum capricornutum (M = 1) (OECD TG 201, GLP) (ECHA)

- [C.I. PIGMENT RED 170] : EC50 0.06 mg/ℓ 96 hr (ECOSHA)

12.2. Persistence and degradability**12.2.1. Persistence**

- [C.I. PIGMENT RED 170] : 6.04 log Kow (ECOSAR)

12.2.2. Degradability

- [2-AMINO-2-METHYL-1-PROPANOL] : BOD5/COD 0.005 (KOSHA)

12.3. Bioaccumulative potential

12.3.1. Bioaccumulation

- [2-AMINO-2-METHYL-1-PROPANOL] : 1.3 BSAF (Leuciscus idus(Fish, fresh water), 50ug/) (KOSHA)
- [C.I. PIGMENT RED 170] : 10 (QSAR)

12.3.2. Biodegradability

- [2-AMINO-2-METHYL-1-PROPANOL] : 40 (%) 28 days (KOSHA)

12.4. Mobility in soil

- Not available

12.5. Results of PBT and vPvB assessment

- Not available

12.6. Other adverse effects

- Not available

SECTION 13: DISPOSAL CONSIDERATIONS**13.1. Waste treatment methods**

- Since more than two kinds of designated waste is mixed, it is difficult to treat separately, then can be reduction or stabilization by incineration or similar process.
- If water separation is possible, pre-process with Water separation process.
- Dispose by incineration.
- The user of this product must disposal by oneself or entrust to waste disposer or person who other's waste recycle and dispose, person who establish and operate waste disposal facilities.
- Dispose of waste in accordance with all applicable laws and regulations.

SECTION 14: TRANSPORT INFORMATION**14.1. UN No.****14.1.1. UN No. (ADR/RID/ADN)**

3082

14.1.2. UN No. (IMDG CODE/IATA DGR)

3082

14.1.3. UN No. (ICAO)

3082

14.2. UN proper shipping name

- Not applicable

14.3. Transport hazard class(es)**14.3.1. ADR/RID/ADN Class**

- Not applicable

14.3.2. ADR/RID/ADN Class

- Not applicable

14.3.3. ADR Label No.

- Not applicable

14.3.4. IMDG Class

- Not applicable

14.3.5. ICAO Class/Division

- Not applicable

14.3.6. Transport Labels

- Not applicable

14.4. Packing group

14.4.1. ADR/RID/ADN Packing group

- Not applicable

14.4.2. IMDG Packing group

- Not applicable

14.4.3. ICAO Packing group

- Not applicable

14.5. Environmental hazards

- Not applicable

14.6. Special precautions for user

- Local transport follows in accordance with Dangerous goods Safety Management Law.
- Package and transport follow in accordance with Department of Transportation (DOT) and other regulatory agency
- EmS FIRE SCHEDULE : Not applicable
- EmS SPILLAGE SCHEDULE : Not applicable
- Air transport(IATA): Not subject to IATA regulations.

14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

- Not applicable

SECTION 15: REGULATORY INFORMATION**15.1. Safety, health and environmental regulation / legislation specific for the substance or mixture****15.1.1. Europe regulatory****15.1.1.1 REACH Restricted substance under REACH**

- Not applicable

15.1.1.2 REACH Substances subject to authorization under REACH

- Not applicable

15.1.1.3 REACH SVHC

- Not applicable

15.1.1.4 Europe PBT

- Not applicable

15.1.1.5 European Union (EU) Transport of Dangerous Goods by Road - Dangerous Goods List

- Not applicable

15.2. Chemical Safety Assessment

- Not conducted

SECTION 16: OTHER INFORMATION**16.1. Indication of changes**

- The Safety Data Sheet has been reviewed and the data therein were revised and laid out according the requirements of the Commission Regulation (EC) No. 1907/2006

16.2. Abbreviations and acronyms

- 1272/2008 CLP : Classification, Labelling and Packaging regulation.
- REACH : Registration, Evaluation and authorization of chemical substances.
- DNEL : Derive no effects level
- PNEC : Predicted no effect concentration

16.3. Key literature references and sources for data

- This Safety Data Sheet was compiled with data and information from the following sources: RTECS, ECOSAR, HSDB, SIDS SIAP, ChemWATCH, CESAR, Chemical DB

16.4. Classification procedure

- The mixture classification has been derived based on the classification of the individual components in accordance with the rules set out in Regulation (EC) No 1272/2008 (CLP) as well as the translation tables in Annex VII to the same regulation.

16.5. Training advice

- Not applicable

16.6. Further information

- The (M)SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings. Risks may be determined by reference to Exposures Scenarios. Scale of use, frequency of use and current or available engineering controls must be considered.

- This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only.

- It should not therefore be construed as guaranteeing any specific property of the product.

- Contact a poison control centre, List of Telephone Numbers : AUSTRIA (Vienna Wien) +43 1 406 43 43; BELGIUM (Brussels Bruxelles) +32 70 245 245; BULGARIA (Sofia) +359 2 9154 409; CZECH REPUBLIC (Prague Praha) +420 224 919 293; DENMARK (Copenhagen) 82 12 12 12; ESTONIA (Tallinn) 112; FINLAND (Helsinki) +358 9 471 977; FRANCE (Paris) +33 1 40 0548 48; GERMANY (Berlin) +49 30 19240; GREECE (Athens Athinai) +30 10 779 3777; HUNGARY (Budapest) 06 80 20 11 99; ICELAND (Reykjavik) +354 525 111, +354 543 2222; IRELAND (Dublin) +353 1 8379964; ITALY (Rome) +39 06 305 4343; LATVIA (Riga) +371 704 2468; LITHUANIA (Vilnius) +370 5 236 20 52 or +370 687 53378; MALTA (Valletta) 2425 0000; NETHERLANDS (Bilthoven) +31 30 274 88 88; NORWAY (Oslo) 22 591300; POLAND (Gdansk) +48 58301 65 16 or +48 58 349 2831; PORTUGAL (Lisbon Lisboa) 808 250 143; ROMANIA (Bucharest) +40 21 3183606 SLOVAKIA (Bratislava) +421 2 54 77 4166; SLOVENIA (Ljubljana) + 386 41 650 500; SPAIN (Barcelona) +34 93 227 98 33 or +34 93 227 54 00 bleep 190; SWEDEN (Stockholm) 112 or +46 8 33 12 31 (mon-fri 9.00-17.00); UNITED KINGDOM (London) 112 or 0845 4647 (NHS Direct).

• Disclaimer of Liability

This information is based on our present state of knowledge.

It should not therefore be construed as guaranteeing specific properties of the products Described or their suitability for a particular application. YOU&I Corporation assumes no responsibility for personal injury or property damage caused by the material. Users assume all risks associated with the use of the material.

***** End of Documents

21739-3060

1/9

SAFETY DATA SHEET

According to Regulation (EC) No 1907/2006 (REACH), Annex II (COMMISSION REGULATION (EU) No 2015/830)



Date of issue: 2018-06-20

Revision date: 2022-06-21

SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING**1.1. Product identifier**

Trade name/designation : MGI- PINK

1.2. Relevant identified uses of the substance or mixture and uses advised against**1.2.1. Relevant identified uses**

- Water-soluble stationary ink

1.2.2. Uses advised against

- Not available

1.3. Details of the supplier of the safety data sheet

Manufacturer/Supplier : YOU&I COPORATION
Address : 53, EMTIBEUI 26-RO, SIHEUNG-SI, GYEONGGI-DO, KOREA (ZIP CODE) 15118
Telephone : 82-31-494-2030
Email : tech@youicolor.com

1.4. Emergency telephone number

82-31-494-2030 (This number is serviced during office hours only.)
EU-wide emergency number : 112
See section 16.6 for the list of telephone number of poison centers in the European Economic Area.

SECTION 2: HAZARD IDENTIFICATION**2.1. Classification of the substance/mixture****2.1.1. Classification according to Regulation (EC) No 1272/2008 [CLP]**

H411-Aquatic Chronic 2

2.2. Label elements**2.2.1. Labelling according to Regulation (EC) No 1272/2008 [CLP]***** Hazard Pictogram(s)***** Signal word** : Warning*** Hazard statement(s)**

H411: Toxic to aquatic life with long-lasting effects

*** Precautionary statement(s)****1) Prevention**

P273: Avoid release to the environment.

2) Response

P391: Collect spillage.

3) Storage

- Not applicable

4) Disposal

P501: Disposal contents/ container to in accordance with local national regulation.

2.3. Other hazards

- Not available

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS**3.1. Substances**

- Not applicable

3.2. Mixtures

Name	CAS No.	EINECS NO.	% [weight]	Classification [1272/2008/EC]
WATER	7732-18-5	231-791-2	40~60	Not classified
GLYCERINE	56-81-5	200-289-5	15~20	Not classified
ALUMINIUM POWDER	7429-90-5	231-072-3	3~7	   Flam. Solid 1, H228 Pyr. Liq. 1, H250 Water-react 2, H261 Specific target organ toxicity (repeated) 2, H373 Aquatic Chronic 1: H410 (M-factor: 1)
C.I. PIGMENT RED 122	980-26-7	213-561-3	0~5	 Acute toxicity (Inhalation) 4, H332
POLY ETHYLENE GLYCOL	25322-68-3	500-038-2	10~15	 Acute toxicity (Oral) 4, H302
2-AMINO-2-METHYL-1-PROPANOL	124-68-5	204-709-8	0~1	 Aquatic Chronic 4, H413 Eye Irrit. 1, H318 Skin Irrit. 2, H315

SECTION 4: FIRST AID MEASURES**4.1. Description of first aid measures****General**

- No general information.

Inhalation

- When exposed to large amounts of steam and mist, move to fresh air.
- Take specific treatment if needed.

Skin contact

- Flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes.
- Laundering enough contaminated clothing before reuse.

Eye contact

- Do not rub your eyes.
- Immediately flush eyes with plenty of water for at least 15 minutes and call a doctor/physician.

Ingestion

- Please be advised by doctor whether induction of vomit is demanded or not.
- Rinse your mouth with water immediately.

4.2. Most important symptoms and effects, both acute and delayed

- Not available

4.3. Indication of any immediate medical attention and special treatment needed

- Notify medical personnel of contaminated situations and have them take appropriate protective measures.

SECTION 5: FIREFIGHTING MEASURES**5.1. Extinguishing media****Suitable extinguishing media**

- Water, foam, CO₂, NaHCO₃

Unsuitable extinguishing media

- Avoid use of water jet for extinguishing

5.2. Special hazards arising from the substance or mixture**Hazardous combustion products**

- Not available

5.3. Advice for firefighters

- Cool containers with water until well after fire is out.
- Keep unauthorized personnel out.
- Withdraw immediately in case of rising sound from venting safety devices or discoloration of tank.
- Wear appropriate protective equipment.
- Keep containers cool with water spray.
- Use fire fighting procedures suitable for surrounding area.
- Vapor or gas is burned at distant ignition sources can be spread quickly.

SECTION 6: ACCIDENTAL RELEASE MEASURES**6.1. Personal Precautions, protective equipment and emergency procedures****6.1.1. For non-emergency personnel**

- Protective equipment: Wear proper protective equipment.
- Emergency procedures: Not applicable
- If required, notify relevant authorities according to all applicable regulations.

6.1.2. For emergency responders

- Ventilate closed spaces before entering.
- Must work against the wind, let the upwind people to evacuate.
- Do not touch spilled material. Stop leak if you can do it without risk.
- Handling the damaged containers or spilled material after wearing protective equipment.
- Do not direct water at spill or source of leak.

6.2. Environmental precautions

- Prevent runoff and contact with waterways, drains or sewers.
- If large amounts have been spilled, inform the relevant authorities.
- Avoid dispersal of spilt material and runoff and contact with waterways, drains and sewers. If large spills, advise

6.3. Methods and material for containment and cleaning up**6.3.1. For containment**

- Clear spills immediately
- Clean up all spills immediately.
- Prevent, by any means available, spillage from entering drains or water course.

6.3.2. For cleaning up

- Large spill : Stay upwind and keep out of low areas. Dike for later disposal.
- Notification to central government, local government. When emissions at least of the standard amount
- Dispose of waste in accordance with local regulation.
- Appropriate container for disposal of spilled material collected.
- Small leak: sand or other non-combustible material, please let use absorption.
- Wipe off the solvent.
- Dike for later disposal.

6.3.3. Other information

- Slippery when spilt.

6.4. Reference to other sections

- See Section 7 for information on safe handling.
- See Section 8 for information on personal protection equipment.
- See Section 13 for information on disposal.

SECTION 7: HANDLING AND STORAGE**7.1. Precautions for safe handling**

- Avoid direct physical contact.

- Get the manual before use.
- Refer to Engineering controls and personal protective equipment.
- Do not handle until all safety precautions have been read and understood.
- Do not inhale the steam prolonged or repeated.

7.2. Conditions for safe storage, including any incompatibilities

- Save in cool, dry and well ventilated place.
- Check regularly for leaks.
- Please pay attention to incompatibilities materials and conditions to avoid.
- Keep sealed when not in use.
- No open fire.

7.3. Specific end use(s)

- See Section 1 for information on 1.2 Relevant identified uses.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION**8.1. Control parameters****8.1.1. Occupational exposure limits****European Union (EU) Commission Directive 2006/15/EC (IOELVs)**

- Not available

European Union (EU) Commission Directive 2006/15/EC (IOELVs) - Skin

- Not available

8.1.2. Recommended Monitoring Procedures

- Personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment.

8.1.3. DNEL/PNEC - Values

- Not available

8.2. Exposure controls**8.2.1. Appropriate engineering controls**

- A system of local and/or general exhaust is recommended to keep employee exposures above the Exposure Limits. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. The use of local exhaust ventilation is recommended to control emissions near the source.

8.2.2. Individual protection measures, such as personal protective equipment**Hand protection**

- Wear appropriate glove.

Eye protection

- Wear primary eye protection such as splash resistant safety goggles with a secondary protection face shield.
- Provide an emergency eye wash station and quick drench shower in the immediate work area.

Respiratory Protection

- Under conditions of frequent use or heavy exposure, Respiratory protection may be needed.
- Respiratory protection is ranked in order from minimum to maximum.
- Consider warning properties before use.
- Any chemical cartridge respirator with organic vapor cartridge(s).
- Any chemical cartridge respirator with a full face piece and organic vapor cartridge(s).
- Any air-purifying respirator with a full face piece and an organic vapor canister.
- For Unknown Concentration or Immediately Dangerous to Life or Health : Any supplied-air respirator with full face piece and operated in a pressure-demand or other positive-pressure mode in combination with a separate escape supply. Any self-contained breathing apparatus with a full face piece.

Skin protection

- Wear appropriate clothing.

8.2.3 Environmental exposure controls

- Do not let product enter drains. For ecological information refer to section 12.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES**9.1. Information on basic physical and chemical properties**

Appearance(State)	Liquid
Appearance(Color)	PINK
Odor	Odorless
Odor threshold	Not available
pH	8.0 ± 1.0
Melting point/Freezing point	Not available
Initial boiling point and boiling range	> 100 °C
Flash point	300 °C
Evaporation rate	Not available
Flammability(solid, gas)	Not applicable
Upper/Lower Flammability or explosive	Not available
Vapour pressure	Not available
Vapour density	Not available
Relative density	1.1 ± 0.05 g/cm3
Solubility	Fully miscible
Partition coefficient of n-octanol/water	Not available
Autoignition temperature	No self-igniting
Decomposition temperature	Not available
Viscosity	750 ± 150 Cps
Explosive properties	Not explosive
Oxidizing properties	Not available

9.2. Other information

- Not available

SECTION 10: STABILITY AND REACTIVITY**10.1. Reactivity**

- Not available

10.2. Chemical Stability

- This material is stable under recommended storage and handling conditions.

10.3. Possibility of hazardous reactions

- Hazardous Polymerization will not occur.

10.4. Conditions to avoid

- Avoid contact with incompatible materials and condition.
- Avoid : Accumulation of electrostatic charges, Heating, Flames and hot surfaces

10.5. Incompatible materials

- Not available

10.6. Hazardous decomposition products

- Not available

SECTION 11: TOXICOLOGICAL INFORMATION**11.1. Acute toxicity****- Oral**

- Product (ATEmix) : >5000mg/kg
- [GLYCERINE] : LD50 = 12600 mg/kg Rat (ChemIDplus)
- [POLY ETHYLENE GLYCOL] : LD50 = 600 mg/kg Rat (KOSHA)

- Dermal

- Product (ATEmix) : >5000mg/kg

- [GLYCERINE] : LD50 > 10000 mg/kg Rat (ChemIDplus)

- Inhalation

- Product (ATEmix) : Not available

- [GLYCERINE] : LC50 >2.75 mg/ℓ 4 hr Rat (ECHA)

- [C.I. PIGMENT RED 122] : LC0 = 3.055 mg/ℓ 4hr Rat (OECD TG 403, GLP) (ECHA)

11.2. Skin corrosion/irritation

- [2-AMINO-2-METHYL-1-PROPANOL] : Classified as Category 2 (KOSHA)

11.3. Serious eye damage/irritation

- [2-AMINO-2-METHYL-1-PROPANOL] : Classified as Category 1 (KOSHA)

11.4. Respiratory sensitization

- Not available

11.5. Skin sensitization

- Not available

11.6. Germ cell mutagenicity

- Not available

11.7. Carcinogenicity

- IARC

- Not available

- OSHA

- Not available

- ACGIH

- [ALUMINIUM POWDER] : A4

- NTP

- Not available

- EU CLP

- Not available

11.8. Reproductive toxicity

- Not available

11.9. Specific target organ toxicity(single exposure):

- Not available

11.10. Specific target organ toxicity(repeated exposure):

- [ALUMINIUM POWDER] : Classified as Category 2 (KOSHA)

11.11. Aspiration hazard

- Not available

SECTION 12: ECOLOGICAL INFORMATION

12.1. Toxicity

12.1.1. Fish

- [GLYCERINE] : LC50 >11 mg/ℓ 96 hr Cyprinodon variegatus (ECHA)

12.1.2. Invertebrate

- [GLYCERINE] : LC50 1955 mg/ℓ 48 hr Daphnia magna (ECHA)

- [ALUMINIUM POWDER] : NOEC > 100 mg/ℓ 48 hr Daphnia magna (IUCLID)

12.1.3. Algae

- [ALUMINIUM POWDER] : NOEC > 0.052 mg/ℓ 48 hr Selenastrum capricornutum (M = 1) (OECD TG 201, GLP) (ECHA)

12.2. Persistence and degradability

12.2.1. Persistence

- Not available

12.2.2. Degradability

- [2-AMINO-2-METHYL-1-PROPANOL] : BOD5/COD 0.005 (KOSHA)

12.3. Bioaccumulative potential

12.3.1. Bioaccumulation

- [2-AMINO-2-METHYL-1-PROPANOL] : 1.3 BSAF (Leuciscus idus(Fish, fresh water), 50ug/) (KOSHA)

12.3.2. Biodegradability

- [2-AMINO-2-METHYL-1-PROPANOL] : 40 (%) 28 days (KOSHA)

12.4. Mobility in soil

- Not available

12.5. Results of PBT and vPvB assessment

- Not available

12.6. Other adverse effects

- Not available

SECTION 13: DISPOSAL CONSIDERATIONS

13.1. Waste treatment methods

- Since more than two kinds of designated waste is mixed, it is difficult to treat separately, then can be reduction or stabilization by incineration or similar process.
- If water separation is possible, pre-process with Water separation process.
- Dispose by incineration.
- The user of this product must disposal by oneself or entrust to waste disposer or person who other's waste recycle and dispose, person who establish and operate waste disposal facilities.
- Dispose of waste in accordance with all applicable laws and regulations.

SECTION 14: TRANSPORT INFORMATION

14.1. UN No.

14.1.1. UN No. (ADR/RID/ADN)

3082

14.1.2. UN No. (IMDG CODE/IATA DGR)

3082

14.1.3. UN No. (ICAO)

3082

14.2. UN proper shipping name

- Not applicable

14.3. Transport hazard class(es)

14.3.1. ADR/RID/ADN Class

- Not applicable

14.3.2. ADR/RID/ADN Class

- Not applicable

14.3.3. ADR Label No.

- Not applicable

14.3.4. IMDG Class

- Not applicable

14.3.5. ICAO Class/Division

- Not applicable

14.3.6. Transport Labels

- Not applicable

14.4. Packing group

14.4.1. ADR/RID/ADN Packing group

- Not applicable

14.4.2. IMDG Packing group

- Not applicable

14.4.3. ICAO Packing group

- Not applicable

14.5. Environmental hazards

- Not applicable

14.6. Special precautions for user

- Local transport follows in accordance with Dangerous goods Safety Management Law.
- Package and transport follow in accordance with Department of Transportation (DOT) and other regulatory agency
- EmS FIRE SCHEDULE : Not applicable
- EmS SPILLAGE SCHEDULE : Not applicable
- Air transport(IATA): Not subject to IATA regulations.

14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

- Not applicable

SECTION 15: REGULATORY INFORMATION

15.1. Safety, health and environmental regulation / legislation specific for the substance or mixture

15.1.1. Europe regulatory

15.1.1.1 REACH Restricted substance under REACH

- Not applicable

15.1.1.2 REACH Substances subject to authorization under REACH

- Not applicable

15.1.1.3 REACH SVHC

- Not applicable

15.1.1.4 Europe PBT

- Not applicable

15.1.1.5 European Union (EU) Transport of Dangerous Goods by Road - Dangerous Goods List

- Not applicable

15.2. Chemical Safety Assessment

- Not conducted

SECTION 16: OTHER INFORMATION

16.1. Indication of changes

- The Safety Data Sheet has been reviewed and the data therein were revised and laid out according to the requirements of the Commission Regulation (EC) No. 1907/2006

16.2. Abbreviations and acronyms

- 1272/2008 CLP : Classification, Labelling and Packaging regulation.
- REACH : Registration, Evaluation and authorization of chemical substances.
- DNEL : Derive no effects level
- PNEC : Predicted no effect concentration

16.3. Key literature references and sources for data

- This Safety Data Sheet was compiled with data and information from the following sources: RTECS, ECOSAR, HSDB, SIDS SIAP, ChemWATCH, CESAR, Chemical DB

16.4. Classification procedure

- The mixture classification has been derived based on the classification of the individual components in accordance with the rules set out in Regulation (EC) No 1272/2008 (CLP) as well as the translation tables in Annex VII to the same regulation.

16.5. Training advice

- Not applicable

16.6. Further information

- The (M)SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings. Risks may be determined by reference to Exposures Scenarios. Scale of use, frequency of use and current or available engineering controls must be considered.

- This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only.

- It should not therefore be construed as guaranteeing any specific property of the product.

- Contact a poison control centre, List of Telephone Numbers : AUSTRIA (Vienna Wien) +43 1 406 43 43; BELGIUM (Brussels Bruxelles) +32 70 245 245; BULGARIA (Sofia) +359 2 9154 409; CZECH REPUBLIC (Prague Praha) +420 224 919 293; DENMARK (Copenhagen) 82 12 12 12; ESTONIA (Tallinn) 112; FINLAND (Helsinki) +358 9 471 977; FRANCE (Paris) +33 1 40 0548 48; GERMANY (Berlin) +49 30 19240; GREECE (Athens Athina) +30 10 779 3777; HUNGARY (Budapest) 06 80 20 11 99; ICELAND (Reykjavik) +354 525 111, +354 543 2222; IRELAND (Dublin) +353 1 8379964; ITALY (Rome) +39 06 305 4343; LATVIA (Riga) +371 704 2468; LITHUANIA (Vilnius) +370 5 236 20 52 or +370 687 53378; MALTA (Valletta) 2425 0000; NETHERLANDS (Bilthoven) +31 30 274 88 88; NORWAY (Oslo) 22 591300; POLAND (Gdansk) +48 58301 65 16 or +48 58 349 2831; PORTUGAL (Lisbon Lisboa) 808 250 143; ROMANIA (Bucharest) +40 21 3183606 SLOVAKIA (Bratislava) +421 2 54 77 4166; SLOVENIA (Ljubljana) + 386 41 650 500; SPAIN (Barcelona) +34 93 227 98 33 or +34 93 227 54 00 bleep 190; SWEDEN (Stockholm) 112 or +46 8 33 12 31 (mon-fri 9.00-17.00); UNITED KINGDOM (London) 112 or 0845 4647 (NHS Direct).

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This information is based on our present state of knowledge.

It should not therefore be construed as guaranteeing specific properties of the products Described or their suitability for a particular application. YOU&I Corporation assumes no responsibility for personal injury or property damage caused by the material. Users assume all risks associated with the use of the material.

***** End of Documents

21739-4510

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SAFETY DATA SHEET

According to Regulation (EC) No 1907/2006 (REACH), Annex II (COMMISSION REGULATION (EU) No 2015/830)



Date of issue: 2018-06-20
Revision date: 2022-06-21

SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING**1.1. Product identifier**

Trade name/designation : MGI- ORANGE

1.2. Relevant identified uses of the substance or mixture and uses advised against**1.2.1. Relevant identified uses**

- Water-soluble stationary ink

1.2.2. Uses advised against

- Not available

1.3. Details of the supplier of the safety data sheet

Manufacturer/Supplier : YOU&I COPORATION
Address : 53, EMTIBEUI 26-RO, SIHEUNG-SI, GYEONGGI-DO, KOREA (ZIP CODE) 15118
Telephone : 82-31-494-2030
Email : tech@youicolor.com

1.4. Emergency telephone number

82-31-494-2030 (This number is serviced during office hours only.)
EU-wide emergency number : 112
See section 16.6 for the list of telephone number of poison centers in the European Economic Area.

SECTION 2: HAZARD IDENTIFICATION**2.1. Classification of the substance/mixture****2.1.1. Classification according to Regulation (EC) No 1272/2008 [CLP]**

H411-Aquatic Chronic 2

2.2. Label elements**2.2.1. Labelling according to Regulation (EC) No 1272/2008 [CLP]***** Hazard Pictogram(s)**

* **Signal word** : Warning

*** Hazard statement(s)**

H411: Toxic to aquatic life with long-lasting effects

*** Precautionary statement(s)****1) Prevention**

P273: Avoid release to the environment.

2) Response

P391: Collect spillage.

3) Storage

- Not applicable

4) Disposal

P501: Disposal contents/ container to in accordance with local national regulation.

2.3. Other hazards

- Not available

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS**3.1. Substances**

- Not applicable

3.2. Mixtures

Name	CAS No.	EINECS NO.	% [weight]	Classification [1272/2008/EC]
WATER	7732-18-5	231-791-2	40~60	Not classified
GLYCERINE	56-81-5	200-289-5	15~20	Not classified
ALUMINIUM POWDER	7429-90-5	231-072-3	3~7	   Flam. Solid 1, H228 Pyr. Liq. 1, H250 Water-react 2, H261 Specific target organ toxicity (repeated) 2, H373 Aquatic Chronic 1: H410 (M-factor: 1)
C.I. PIGMENT RED 170	2786-76-7	220-509-3	0~5	Aquatic Chronic 4, H413
C.I. PIGMENT YELLOW 83	5567-15-7	226-939-8	0~5	Aquatic Chronic 3, H412
POLY ETHYLENE GLYCOL	25322-68-3	500-038-2	10~15	 Acute toxicity (Oral) 4, H302
2-AMINO-2-METHYL-1-PROPANOL	124-68-5	204-709-8	0~1	 Aquatic Chronic 4, H413 Eye Irrit. 1, H318 Skin Irrit. 2, H315

SECTION 4: FIRST AID MEASURES**4.1. Description of first aid measures****General**

- No general information.

Inhalation

- When exposed to large amounts of steam and mist, move to fresh air.
- Take specific treatment if needed.

Skin contact

- Flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes.
- Laundering enough contaminated clothing before reuse.

Eye contact

- Do not rub your eyes.
- Immediately flush eyes with plenty of water for at least 15 minutes and call a doctor/physician.

Ingestion

- Please be advised by doctor whether induction of vomit is demanded or not.
- Rinse your mouth with water immediately.

4.2. Most important symptoms and effects, both acute and delayed

- Not available

4.3. Indication of any immediate medical attention and special treatment needed

- Notify medical personnel of contaminated situations and have them take appropriate protective measures.

SECTION 5: FIREFIGHTING MEASURES**5.1. Extinguishing media****Suitable extinguishing media**

- Water, foam, CO₂, NaHCO₃

Unsuitable extinguishing media

- Avoid use of water jet for extinguishing

5.2. Special hazards arising from the substance or mixture**Hazardous combustion products**

- Not available

5.3. Advice for firefighters

- Cool containers with water until well after fire is out.
- Keep unauthorized personnel out.
- Withdraw immediately in case of rising sound from venting safety devices or discoloration of tank.
- Wear appropriate protective equipment.
- Keep containers cool with water spray.
- Use fire fighting procedures suitable for surrounding area.
- Vapor or gas is burned at distant ignition sources can be spread quickly.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal Precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

- Protective equipment: Wear proper protective equipment.
- Emergency procedures: Not applicable
- If required, notify relevant authorities according to all applicable regulations.

6.1.2. For emergency responders

- Ventilate closed spaces before entering.
- Must work against the wind, let the upwind people to evacuate.
- Do not touch spilled material. Stop leak if you can do it without risk.
- Handling the damaged containers or spilled material after wearing protective equipment.
- Do not direct water at spill or source of leak.

6.2. Environmental precautions

- Prevent runoff and contact with waterways, drains or sewers.
- If large amounts have been spilled, inform the relevant authorities.
- Avoid dispersal of spilt material and runoff and contact with waterways, drains and sewers. If large spills, advise

6.3. Methods and material for containment and cleaning up

6.3.1. For containment

- Clear spills immediately
- Clean up all spills immediately.
- Prevent, by any means available, spillage from entering drains or water course.

6.3.2. For cleaning up

- Large spill : Stay upwind and keep out of low areas. Dike for later disposal.
- Notification to central government, local government. When emissions at least of the standard amount
- Dispose of waste in accordance with local regulation.
- Appropriate container for disposal of spilled material collected.
- Small leak: sand or other non-combustible material, please let use absorption.
- Wipe off the solvent.
- Dike for later disposal.

6.3.3. Other information

- Slippery when spilt.

6.4. Reference to other sections

- See Section 7 for information on safe handling.
- See Section 8 for information on personal protection equipment.
- See Section 13 for information on disposal.

SECTION 7: HANDLING AND STORAGE

7.1. Precautions for safe handling

- Avoid direct physical contact.
- Get the manual before use.
- Refer to Engineering controls and personal protective equipment.

- Do not handle until all safety precautions have been read and understood.
- Do not inhale the steam prolonged or repeated.

7.2. Conditions for safe storage, including any incompatibilities

- Save in cool, dry and well ventilated place.
- Check regularly for leaks.
- Please pay attention to incompatibilities materials and conditions to avoid.
- Keep sealed when not in use.
- No open fire.

7.3. Specific end use(s)

- See Section 1 for information on 1.2 Relevant identified uses.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION**8.1. Control parameters****8.1.1. Occupational exposure limits****European Union (EU) Commission Directive 2006/15/EC (IOELVs)**

- Not available

European Union (EU) Commission Directive 2006/15/EC (IOELVs) - Skin

- Not available

8.1.2. Recommended Monitoring Procedures

- Personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment.

8.1.3. DNEL/PNEC - Values

- Not available

8.2. Exposure controls**8.2.1. Appropriate engineering controls**

- A system of local and/or general exhaust is recommended to keep employee exposures above the Exposure Limits. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. The use of local exhaust ventilation is recommended to control emissions near the source.

8.2.2. Individual protection measures, such as personal protective equipment**Hand protection**

- Wear appropriate glove.

Eye protection

- Wear primary eye protection such as splash resistant safety goggles with a secondary protection face shield.
- Provide an emergency eye wash station and quick drench shower in the immediate work area.

Respiratory Protection

- Under conditions of frequent use or heavy exposure, Respiratory protection may be needed.
- Respiratory protection is ranked in order from minimum to maximum.
- Consider warning properties before use.
- Any chemical cartridge respirator with organic vapor cartridge(s).
- Any chemical cartridge respirator with a full face piece and organic vapor cartridge(s).
- Any air-purifying respirator with a full face piece and an organic vapor canister.
- For Unknown Concentration or Immediately Dangerous to Life or Health : Any supplied-air respirator with full face piece and operated in a pressure-demand or other positive-pressure mode in combination with a separate escape supply. Any self-contained breathing apparatus with a full face piece.

Skin protection

- Wear appropriate clothing.

8.2.3 Environmental exposure controls

- Do not let product enter drains. For ecological information refer to section 12.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES**9.1. Information on basic physical and chemical properties**

Appearance(State)	Liquid
Appearance(Color)	ORANGE
Odor	Odorless
Odor threshold	Not available
pH	8.0 ± 1.0
Melting point/Freezing point	Not available
Initial boiling point and boiling range	> 100 °C
Flash point	300 °C
Evaporation rate	Not available
Flammability(solid, gas)	Not applicable
Upper/Lower Flammability or explosive	Not available
Vapour pressure	Not available
Vapour density	Not available
Relative density	1.1 ± 0.05 g/cm ³
Solubility	Fully miscible
Partition coefficient of n-octanol/water	Not available
Autoignition temperature	No self-igniting
Decomposition temperature	Not available
Viscosity	750 ± 150 Cps
Explosive properties	Not explosive
Oxidizing properties	Not available

9.2. Other information

- Not available

SECTION 10: STABILITY AND REACTIVITY**10.1. Reactivity**

- Not available

10.2. Chemical Stability

- This material is stable under recommended storage and handling conditions.

10.3. Possibility of hazardous reactions

- Hazardous Polymerization will not occur.

10.4. Conditions to avoid

- Avoid contact with incompatible materials and condition.
 - Avoid : Accumulation of electrostatic charges, Heating, Flames and hot surfaces

10.5. Incompatible materials

- Not available

10.6. Hazardous decomposition products

- Not available

SECTION 11: TOXICOLOGICAL INFORMATION**11.1. Acute toxicity****- Oral**

- Product (ATEmix) : >5000mg/kg
- [GLYCERINE] : LD50 = 12600 mg/kg Rat (ChemIDplus)
- [POLY ETHYLENE GLYCOL] : LD50 = 600 mg/kg Rat (KOSHA)

- Dermal

- Product (ATEmix) : >5000mg/kg
- [GLYCERINE] : LD50 > 10000 mg/kg Rat (ChemIDplus)

- Inhalation

- Product (ATEmix) : Not available
- [GLYCERINE] : LC50 >2.75 mg/ℓ 4 hr Rat (ECHA)

11.2. Skin corrosion/irritation

- [2-AMINO-2-METHYL-1-PROPANOL] : Classified as Category 2 (KOSHA)

11.3. Serious eye damage/irritation

- [2-AMINO-2-METHYL-1-PROPANOL] : Classified as Category 1 (KOSHA)

11.4. Respiratory sensitization

- Not available

11.5. Skin sensitization

- Not available

11.6. Germ cell mutagenicity

- Not available

11.7. Carcinogenicity

- **IARC**
 - Not available
- **OSHA**
 - Not available
- **ACGIH**
 - [ALUMINIUM POWDER] : A4
- **NTP**
 - Not available
- **EU CLP**
 - Not available

11.8. Reproductive toxicity

- Not available

11.9. Specific target organ toxicity(single exposure):

- Not available

11.10. Specific target organ toxicity(repeated exposure):

- [ALUMINIUM POWDER] : Classified as Category 2 (KOSHA)

11.11. Aspiration hazard

- Not available

SECTION 12: ECOLOGICAL INFORMATION**12.1. Toxicity****12.1.1. Fish**

- [GLYCERINE] : LC50 >11 mg/ℓ 96 hr Cyprinodon variegatus (ECHA)
- [C.I. PIGMENT RED 170] : LC50 >0.217 mg/ℓ 96 hr (ECOSAR)
- [C.I. PIGMENT YELLOW 83] : LC50 45 mg/ℓ 48 hr Oncorhynchus mykiss (ECOTOX)

12.1.2. Invertebrate

- [GLYCERINE] : LC50 1955 mg/ℓ 48 hr Daphnia magna (ECHA)
- [ALUMINIUM POWDER] : NOEC > 100 mg/ℓ 48 hr Daphnia magna (IUCLID)
- [C.I. PIGMENT RED 170] : LC50 0.545 mg/ℓ 48 hr (ECOSHA)

12.1.3. Algae

- [ALUMINIUM POWDER] : NOEC > 0.052 mg/ℓ 48 hr Selenastrum capricornutum (M = 1) (OECD TG 201, GLP) (ECHA)
- [C.I. PIGMENT RED 170] : EC50 0.06 mg/ℓ 96 hr (ECOSHA)

12.2. Persistence and degradability**12.2.1. Persistence**

- [C.I. PIGMENT RED 170] : 6.04 log Kow (ECOSAR)
- [C.I. PIGMENT YELLOW 83] : 7.54 log Kow (IUCLID)

12.2.2. Degradability

- [2-AMINO-2-METHYL-1-PROPANOL] : BOD5/COD 0.005 (KOSHA)

12.3. Bioaccumulative potential

12.3.1. Bioaccumulation

- [2-AMINO-2-METHYL-1-PROPANOL] : 1.3 BSAF (Leuciscus idus(Fish, fresh water), 50ug/) (KOSHA)
- [C.I. PIGMENT RED 170] : 10 (QSAR)
- [C.I. PIGMENT YELLOW 83] : 10 (QSAR)

12.3.2. Biodegradability

- [2-AMINO-2-METHYL-1-PROPANOL] : 40 (%) 28 days (KOSHA)
- [C.I. PIGMENT YELLOW 83] : 6 (%) 28 days (NITE)

12.4. Mobility in soil

- Not available

12.5. Results of PBT and vPvB assessment

- Not available

12.6. Other adverse effects

- Not available

SECTION 13: DISPOSAL CONSIDERATIONS

13.1. Waste treatment methods

- Since more than two kinds of designated waste is mixed, it is difficult to treat separately, then can be reduction or stabilization by incineration or similar process.
- If water separation is possible, pre-process with Water separation process.
- Dispose by incineration.
- The user of this product must disposal by oneself or entrust to waste disposer or person who other's waste recycle and dispose, person who establish and operate waste disposal facilities.
- Dispose of waste in accordance with all applicable laws and regulations.

SECTION 14: TRANSPORT INFORMATION

14.1. UN No.

14.1.1. UN No. (ADR/RID/ADN)
3082

14.1.2. UN No. (IMDG CODE/IATA DGR)
3082

14.1.3. UN No. (ICAO)
3082

14.2. UN proper shipping name

- Not applicable

14.3. Transport hazard class(es)

14.3.1. ADR/RID/ADN Class
- Not applicable

14.3.2. ADR/RID/ADN Class
- Not applicable

14.3.3. ADR Label No.
- Not applicable

14.3.4. IMDG Class
- Not applicable

14.3.5. ICAO Class/Division
- Not applicable

14.3.6. Transport Labels

- Not applicable

14.4. Packing group**14.4.1. ADR/RID/ADN Packing group**

- Not applicable

14.4.2. IMDG Packing group

- Not applicable

14.4.3. ICAO Packing group

- Not applicable

14.5. Environmental hazards

- Not applicable

14.6. Special precautions for user

- Local transport follows in accordance with Dangerous goods Safety Management Law.
- Package and transport follow in accordance with Department of Transportation (DOT) and other regulatory agency
- EmS FIRE SCHEDULE : Not applicable
- EmS SPILLAGE SCHEDULE : Not applicable
- Air transport(IATA): Not subject to IATA regulations.

14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

- Not applicable

SECTION 15: REGULATORY INFORMATION**15.1. Safety, health and environmental regulation / legislation specific for the substance or mixture****15.1.1. Europe regulatory****15.1.1.1 REACH Restricted substance under REACH**

- Not applicable

15.1.1.2 REACH Substances subject to authorization under REACH

- Not applicable

15.1.1.3 REACH SVHC

- Not applicable

15.1.1.4 Europe PBT

- Not applicable

15.1.1.5 European Union (EU) Transport of Dangerous Goods by Road - Dangerous Goods List

- Not applicable

15.2. Chemical Safety Assessment

- Not conducted

SECTION 16: OTHER INFORMATION**16.1. Indication of changes**

- The Safety Data Sheet has been reviewed and the data therein were revised and laid out according the requirements of the Commission Regulation (EC) No. 1907/2006

16.2. Abbreviations and acronyms

- 1272/2008 CLP : Classification, Labelling and Packaging regulation.
- REACH : Registration, Evaluation and authorization of chemical substances.
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16.3. Key literature references and sources for data

- This Safety Data Sheet was compiled with data and information from the following sources: RTECS, ECOSAR, HSDB, SIDS SIAP, ChemWATCH, CESAR, Chemical DB

16.4. Classification procedure

- The mixture classification has been derived based on the classification of the individual components in accordance with the rules set out in Regulation (EC) No 1272/2008 (CLP) as well as the translation tables in Annex VII to the same regulation.

16.5. Training advice

- Not applicable

16.6. Further information

- The (M)SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings. Risks may be determined by reference to Exposures Scenarios. Scale of use, frequency of use and current or available engineering controls must be considered.

- This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only.

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Disclaimer of Liability

This information is based on our present state of knowledge.

It should not therefore be construed as guaranteeing specific properties of the products Described or their suitability for a particular application. YOU&I Corporation assumes no responsibility for personal injury or property damage caused by the material. Users assume all risks associated with the use of the material.

***** End of Documents

21739-7010

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SAFETY DATA SHEET

According to Regulation (EC) No 1907/2006 (REACH), Annex II (COMMISSION REGULATION (EU) No 2015/830)



Date of issue: 2018-06-20
Revision date: 2022-06-21

SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING**1.1. Product identifier**

Trade name/designation : MGI- GREEN

1.2. Relevant identified uses of the substance or mixture and uses advised against**1.2.1. Relevant identified uses**

- Water-soluble stationary ink

1.2.2. Uses advised against

- Not available

1.3. Details of the supplier of the safety data sheet

Manufacturer/Supplier : YOU&I COPORATION
Address : 53, EMTIBEUI 26-RO, SIHEUNG-SI, GYEONGGI-DO, KOREA (ZIP CODE) 15118
Telephone : 82-31-494-2030
Email : tech@youicolor.com

1.4. Emergency telephone number

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EU-wide emergency number : 112
See section 16.6 for the list of telephone number of poison centers in the European Economic Area.

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H411-Aquatic Chronic 2

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*** Signal word** : Warning

*** Hazard statement(s)**

H411: Toxic to aquatic life with long-lasting effects

*** Precautionary statement(s)****1) Prevention**

P273: Avoid release to the environment.

2) Response

P391: Collect spillage.

3) Storage

- Not applicable

4) Disposal

P501: Disposal contents/ container to in accordance with local national regulation.

2.3. Other hazards

- Not available

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C.I. PIGMENT GREEN 7	1328-53-6	215-524-7	0~5	Not classified
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- No general information.

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- When exposed to large amounts of steam and mist, move to fresh air.
- Take specific treatment if needed.

Skin contact

- Flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes.
- Laundering enough contaminated clothing before reuse.

Eye contact

- Do not rub your eyes.
- Immediately flush eyes with plenty of water for at least 15 minutes and call a doctor/physician.

Ingestion

- Please be advised by doctor whether induction of vomit is demanded or not.
- Rinse your mouth with water immediately.

4.2. Most important symptoms and effects, both acute and delayed

- Not available

4.3. Indication of any immediate medical attention and special treatment needed

- Notify medical personnel of contaminated situations and have them take appropriate protective measures.

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- Water, foam, CO₂, NaHCO₃

Unsuitable extinguishing media

- Avoid use of water jet for extinguishing

5.2. Special hazards arising from the substance or mixture**Hazardous combustion products**

- Not available

5.3. Advice for firefighters

- Cool containers with water until well after fire is out.
- Keep unauthorized personnel out.
- Withdraw immediately in case of rising sound from venting safety devices or discoloration of tank.
- Wear appropriate protective equipment.
- Keep containers cool with water spray.
- Use fire fighting procedures suitable for surrounding area.
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- Protective equipment: Wear proper protective equipment.
- Emergency procedures: Not applicable
- If required, notify relevant authorities according to all applicable regulations.

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- Must work against the wind, let the upwind people to evacuate.
- Do not touch spilled material. Stop leak if you can do it without risk.
- Handling the damaged containers or spilled material after wearing protective equipment.
- Do not direct water at spill or source of leak.

6.2. Environmental precautions

- Prevent runoff and contact with waterways, drains or sewers.
- If large amounts have been spilled, inform the relevant authorities.
- Avoid dispersal of spilt material and runoff and contact with waterways, drains and sewers. If large spills, advise

6.3. Methods and material for containment and cleaning up**6.3.1. For containment**

- Clear spills immediately
- Clean up all spills immediately.
- Prevent, by any means available, spillage from entering drains or water course.

6.3.2. For cleaning up

- Large spill : Stay upwind and keep out of low areas. Dike for later disposal.
- Notification to central government, local government. When emissions at least of the standard amount
- Dispose of waste in accordance with local regulation.
- Appropriate container for disposal of spilled material collected.
- Small leak: sand or other non-combustible material, please let use absorption.
- Wipe off the solvent.
- Dike for later disposal.

6.3.3. Other information

- Slippery when spilt.

6.4. Reference to other sections

- See Section 7 for information on safe handling.
- See Section 8 for information on personal protection equipment.
- See Section 13 for information on disposal.

SECTION 7: HANDLING AND STORAGE**7.1. Precautions for safe handling**

- Avoid direct physical contact.
- Get the manual before use.
- Refer to Engineering controls and personal protective equipment.
- Do not handle until all safety precautions have been read and understood.

- Do not inhale the steam prolonged or repeated.

7.2. Conditions for safe storage, including any incompatibilities

- Save in cool, dry and well ventilated place.
- Check regularly for leaks.
- Please pay attention to incompatibilities materials and conditions to avoid.
- Keep sealed when not in use.
- No open fire.

7.3. Specific end use(s)

- See Section 1 for information on 1.2 Relevant identified uses.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control parameters

8.1.1. Occupational exposure limits

European Union (EU) Commission Directive 2006/15/EC (IOELVs)

- Not available

European Union (EU) Commission Directive 2006/15/EC (IOELVs) - Skin

- Not available

8.1.2. Recommended Monitoring Procedures

- Personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment.

8.1.3. DNEL/PNEC - Values

- Not available

8.2. Exposure controls

8.2.1. Appropriate engineering controls

- A system of local and/or general exhaust is recommended to keep employee exposures above the Exposure Limits. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. The use of local exhaust ventilation is recommended to control emissions near the source.

8.2.2. Individual protection measures, such as personal protective equipment

Hand protection

- Wear appropriate glove.

Eye protection

- Wear primary eye protection such as splash resistant safety goggles with a secondary protection face shield.
- Provide an emergency eye wash station and quick drench shower in the immediate work area.

Respiratory Protection

- Under conditions of frequent use or heavy exposure, Respiratory protection may be needed.
- Respiratory protection is ranked in order from minimum to maximum.
- Consider warning properties before use.
- Any chemical cartridge respirator with organic vapor cartridge(s).
- Any chemical cartridge respirator with a full face piece and organic vapor cartridge(s).
- Any air-purifying respirator with a full face piece and an organic vapor canister.
- For Unknown Concentration or Immediately Dangerous to Life or Health : Any supplied-air respirator with full face piece and operated in a pressure-demand or other positive-pressure mode in combination with a separate escape supply. Any self-contained breathing apparatus with a full face piece.

Skin protection

- Wear appropriate clothing.

8.2.3 Environmental exposure controls

- Do not let product enter drains. For ecological information refer to section 12.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Appearance(State)	Liquid
Appearance(Color)	GREEN
Odor	Odorless
Odor threshold	Not available
pH	8.0 ± 1.0
Melting point/Freezing point	Not available
Initial boiling point and boiling range	> 100 °C
Flash point	300 °C
Evaporation rate	Not available
Flammability(solid, gas)	Not applicable
Upper/Lower Flammability or explosive	Not available
Vapour pressure	Not available
Vapour density	Not available
Relative density	1.1 ± 0.05 g/cm ³
Solubility	Fully miscible
Partition coefficient of n-octanol/water	Not available
Autoignition temperature	No self-igniting
Decomposition temperature	Not available
Viscosity	750 ± 150 Cps
Explosive properties	Not explosive
Oxidizing properties	Not available

9.2. Other information

- Not available

SECTION 10: STABILITY AND REACTIVITY**10.1. Reactivity**

- Not available

10.2. Chemical Stability

- This material is stable under recommended storage and handling conditions.

10.3. Possibility of hazardous reactions

- Hazardous Polymerization will not occur.

10.4. Conditions to avoid

- Avoid contact with incompatible materials and condition.
 - Avoid : Accumulation of electrostatic charges, Heating, Flames and hot surfaces

10.5. Incompatible materials

- Not available

10.6. Hazardous decomposition products

- Not available

SECTION 11: TOXICOLOGICAL INFORMATION**11.1. Acute toxicity****- Oral**

- Product (ATEmix) : >5000mg/kg
 - [GLYCERINE] : LD50 = 12600 mg/kg Rat (ChemIDplus)
 - [POLY ETHYLENE GLYCOL] : LD50 = 600 mg/kg Rat (KOSHA)

- Dermal

- Product (ATEmix) : >5000mg/kg
 - [GLYCERINE] : LD50 > 10000 mg/kg Rat (ChemIDplus)

- Inhalation

- Product (ATEmix) : Not available
 - [GLYCERINE] : LC50 >2.75 mg/ℓ 4 hr Rat (ECHA)

11.2. Skin corrosion/irritation

- [2-AMINO-2-METHYL-1-PROPANOL] : Classified as Category 2 (KOSHA)

11.3. Serious eye damage/irritation

- [2-AMINO-2-METHYL-1-PROPANOL] : Classified as Category 1 (KOSHA)

11.4. Respiratory sensitization

- Not available

11.5. Skin sensitization

- Not available

11.6. Germ cell mutagenicity

- Not available

11.7. Carcinogenicity**- IARC**

- Not available

- OSHA

- Not available

- ACGIH

- [ALUMINIUM POWDER] : A4

- NTP

- Not available

- EU CLP

- Not available

11.8. Reproductive toxicity

- Not available

11.9. Specific target organ toxicity(single exposure):

- Not available

11.10. Specific target organ toxicity(repeated exposure):

- [ALUMINIUM POWDER] : Classified as Category 2 (KOSHA)

11.11. Aspiration hazard

- Not available

SECTION 12: ECOLOGICAL INFORMATION**12.1. Toxicity****12.1.1. Fish**

- [GLYCERINE] : LC50 >11 mg/ℓ 96 hr Cyprinodon variegatus (ECHA)

12.1.2. Invertebrate

- [GLYCERINE] : LC50 1955 mg/ℓ 48 hr Daphnia magna (ECHA)

- [ALUMINIUM POWDER] : NOEC > 100 mg/ℓ 48 hr Daphnia magna (IUCLID)

12.1.3. Algae

- [ALUMINIUM POWDER] : NOEC > 0.052 mg/ℓ 48 hr Selenastrum capricornutum (M = 1) (OECD TG 201, GLP) (ECHA)

12.2. Persistence and degradability**12.2.1. Persistence**

- Not available

12.2.2. Degradability

- [2-AMINO-2-METHYL-1-PROPANOL] : BOD5/COD 0.005 (KOSHA)

12.3. Bioaccumulative potential**12.3.1. Bioaccumulation**

- [2-AMINO-2-METHYL-1-PROPANOL] : 1.3 BSAF (Leuciscus idus(Fish, fresh water), 50ug/) (KOSHA)

12.3.2. Biodegradability

- [2-AMINO-2-METHYL-1-PROPANOL] : 40 (%) 28 days (KOSHA)

12.4. Mobility in soil

- Not available

12.5. Results of PBT and vPvB assessment

- Not available

12.6. Other adverse effects

- Not available

SECTION 13: DISPOSAL CONSIDERATIONS

13.1. Waste treatment methods

- Since more than two kinds of designated waste is mixed, it is difficult to treat separately, then can be reduction or stabilization by incineration or similar process.
- If water separation is possible, pre-process with Water separation process.
- Dispose by incineration.
- The user of this product must disposal by oneself or entrust to waste disposer or person who other's waste recycle and dispose, person who establish and operate waste disposal facilities.
- Dispose of waste in accordance with all applicable laws and regulations.

SECTION 14: TRANSPORT INFORMATION

14.1. UN No.

14.1.1. UN No. (ADR/RID/ADN)
3082

14.1.2. UN No. (IMDG CODE/IATA DGR)
3082

14.1.3. UN No. (ICAO)
3082

14.2. UN proper shipping name

- Not applicable

14.3. Transport hazard class(es)

14.3.1. ADR/RID/ADN Class

- Not applicable

14.3.2. ADR/RID/ADN Class

- Not applicable

14.3.3. ADR Label No.

- Not applicable

14.3.4. IMDG Class

- Not applicable

14.3.5. ICAO Class/Division

- Not applicable

14.3.6. Transport Labels

- Not applicable

14.4. Packing group

14.4.1. ADR/RID/ADN Packing group

- Not applicable

14.4.2. IMDG Packing group

- Not applicable

14.4.3. ICAO Packing group

- Not applicable

14.5. Environmental hazards

- Not applicable

14.6. Special precautions for user

- Local transport follows in accordance with Dangerous goods Safety Management Law.
- Package and transport follow in accordance with Department of Transportation (DOT) and other regulatory agency
- EmS FIRE SCHEDULE : Not applicable
- EmS SPILLAGE SCHEDULE : Not applicable
- Air transport(IATA): Not subject to IATA regulations.

14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

- Not applicable

SECTION 15: REGULATORY INFORMATION**15.1. Safety, health and environmental regulation / legislation specific for the substance or mixture****15.1.1. Europe regulatory****15.1.1.1 REACH Restricted substance under REACH**

- Not applicable

15.1.1.2 REACH Substances subject to authorization under REACH

- Not applicable

15.1.1.3 REACH SVHC

- Not applicable

15.1.1.4 Europe PBT

- Not applicable

15.1.1.5 European Union (EU) Transport of Dangerous Goods by Road - Dangerous Goods List

- Not applicable

15.2. Chemical Safety Assessment

- Not conducted

SECTION 16: OTHER INFORMATION**16.1. Indication of changes**

- The Safety Data Sheet has been reviewed and the data therein were revised and laid out according the requirements of the Commission Regulation (EC) No. 1907/2006

16.2. Abbreviations and acronyms

- 1272/2008 CLP : Classification, Labelling and Packaging regulation.
- REACH : Registration, Evaluation and authorization of chemical substances.
- DNEL : Derive no effects level
- PNEC : Predicted no effect concentration

16.3. Key literature references and sources for data

- This Safety Data Sheet was compiled with data and information from the following sources: RTECS, ECOSAR, HSDB, SIDS SIAP, ChemWATCH, CESAR, Chemical DB

16.4. Classification procedure

- The mixture classification has been derived based on the classification of the individual components in accordance with the rules set out in Regulation (EC) No 1272/2008 (CLP) as well as the translation tables in Annex VII to the same regulation.

16.5. Training advice

- Not applicable

16.6. Further information

- The (M)SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings. Risks may be determined by reference to Exposures Scenarios. Scale of use, frequency of use and current or available engineering controls must be considered.

- This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only.

- It should not therefore be construed as guaranteeing any specific property of the product.

- Contact a poison control centre, List of Telephone Numbers : AUSTRIA (Vienna Wien) +43 1 406 43 43; BELGIUM (Brussels Bruxelles) +32 70 245 245; BULGARIA (Sofia) +359 2 9154 409; CZECH REPUBLIC (Prague Praha) +420 224 919 293; DENMARK (Copenhagen) 82 12 12 12; ESTONIA (Tallinn) 112; FINLAND (Helsinki) +358 9 471 977; FRANCE (Paris) +33 1 40 0548 48; GERMANY (Berlin) +49 30 19240; GREECE (Athens Athina) +30 10 779 3777; HUNGARY (Budapest) 06 80 20 11 99; ICELAND (Reykjavik) +354 525 111, +354 543 2222; IRELAND (Dublin) +353 1 8379964; ITALY (Rome) +39 06 305 4343; LATVIA (Riga) +371 704 2468; LITHUANIA (Vilnius) +370 5 236 20 52 or +370 687 53378; MALTA (Valletta) 2425 0000; NETHERLANDS (Bilthoven) +31 30 274 88 88; NORWAY (Oslo) 22 591300; POLAND (Gdansk) +48 58301 65 16 or +48 58 349 2831; PORTUGAL (Lisbon Lisboa) 808 250 143; ROMANIA (Bucharest) +40 21 3183606 SLOVAKIA (Bratislava) +421 2 54 77 4166; SLOVENIA (Ljubljana) + 386 41 650 500; SPAIN (Barcelona) +34 93 227 98 33 or +34 93 227 54 00 bleep 190; SWEDEN (Stockholm) 112 or +46 8 33 12 31 (mon-fri 9.00-17.00); UNITED KINGDOM (London) 112 or 0845 4647 (NHS Direct).

Disclaimer of Liability

This information is based on our present state of knowledge.

It should not therefore be construed as guaranteeing specific properties of the products

Described or their suitability for a particular application. YOU&I Corporation assumes

no responsibility for personal injury or property damage caused by the material.

Users assume all risks associated with the use of the material.

***** End of Documents

21739-9010

1/9

SAFETY DATA SHEET

According to Regulation (EC) No 1907/2006 (REACH), Annex II (COMMISSION REGULATION (EU) No 2015/830)



Date of issue: 2019-06-14
Revision date: 2022-06-21

SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING**1.1. Product identifier**

Trade name/designation : MGI- GOLD

1.2. Relevant identified uses of the substance or mixture and uses advised against**1.2.1. Relevant identified uses**

- Water-soluble stationary ink

1.2.2. Uses advised against

- Not available

1.3. Details of the supplier of the safety data sheet

Manufacturer/Supplier : YOU&I COPORATION
Address : 53, EMTIBEUI 26-RO, SIHEUNG-SI, GYEONGGI-DO, KOREA (ZIP CODE) 15118
Telephone : 82-31-494-2030
Email : tech@youicolor.com

1.4. Emergency telephone number

82-31-494-2030 (This number is serviced during office hours only.)
EU-wide emergency number : 112
See section 16.6 for the list of telephone number of poison centers in the European Economic Area.

SECTION 2: HAZARD IDENTIFICATION**2.1. Classification of the substance/mixture****2.1.1. Classification according to Regulation (EC) No 1272/2008 [CLP]**

H411-Aquatic Chronic 2

2.2. Label elements**2.2.1. Labelling according to Regulation (EC) No 1272/2008 [CLP]***** Hazard Pictogram(s)**

* Signal word : Warning

*** Hazard statement(s)**

H411: Toxic to aquatic life with long-lasting effects

*** Precautionary statement(s)****1) Prevention**

P273: Avoid release to the environment.

2) Response

P391: Collect spillage.

3) Storage

- Not applicable

4) Disposal

P501: Disposal contents/ container to in accordance with local national regulation.

2.3. Other hazards

- Not available

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS**3.1. Substances**

- Not applicable

3.2. Mixtures

Name	CAS No.	EINECS NO.	% [weight]	Classification [1272/2008/EC]
WATER	7732-18-5	231-791-2	40~60	Not classified
GLYCERINE	56-81-5	200-289-5	15~20	Not classified
ALUMINIUM POWDER	7429-90-5	231-072-3	3~7	   Flam. Solid 1, H228 Pyr. Liq. 1, H250 Water-react 2, H261 Specific target organ toxicity (repeated) 2, H373 Aquatic Chronic 1: H410 (M-factor: 1)
C.I. PIGMENT YELLOW 83	5567-15-7	226-939-8	0~5	Aquatic Chronic 3, H412
POLY ETHYLENE GLYCOL	25322-68-3	500-038-2	10~15	 Acute toxicity (Oral) 4, H302
2-AMINO-2-METHYL-1-PROPANOL	124-68-5	204-709-8	0~1	 Aquatic Chronic 4, H413 Eye Irrit. 1, H318 Skin Irrit. 2, H315

SECTION 4: FIRST AID MEASURES**4.1. Description of first aid measures****General**

- No general information.

Inhalation

- When exposed to large amounts of steam and mist, move to fresh air.
- Take specific treatment if needed.

Skin contact

- Flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes.
- Laundering enough contaminated clothing before reuse.

Eye contact

- Do not rub your eyes.
- Immediately flush eyes with plenty of water for at least 15 minutes and call a doctor/physician.

Ingestion

- Please be advised by doctor whether induction of vomit is demanded or not.
- Rinse your mouth with water immediately.

4.2. Most important symptoms and effects, both acute and delayed

- Not available

4.3. Indication of any immediate medical attention and special treatment needed

- Notify medical personnel of contaminated situations and have them take appropriate protective measures.

SECTION 5: FIREFIGHTING MEASURES**5.1. Extinguishing media****Suitable extinguishing media**

- Water, foam, CO₂, NaHCO₃

Unsuitable extinguishing media

- Avoid use of water jet for extinguishing

5.2. Special hazards arising from the substance or mixture**Hazardous combustion products**

- Not available

5.3. Advice for firefighters

- Cool containers with water until well after fire is out.
- Keep unauthorized personnel out.
- Withdraw immediately in case of rising sound from venting safety devices or discoloration of tank.
- Wear appropriate protective equipment.
- Keep containers cool with water spray.
- Use fire fighting procedures suitable for surrounding area.
- Vapor or gas is burned at distant ignition sources can be spread quickly.

SECTION 6: ACCIDENTAL RELEASE MEASURES**6.1. Personal Precautions, protective equipment and emergency procedures****6.1.1. For non-emergency personnel**

- Protective equipment: Wear proper protective equipment.
- Emergency procedures: Not applicable
- If required, notify relevant authorities according to all applicable regulations.

6.1.2. For emergency responders

- Ventilate closed spaces before entering.
- Must work against the wind, let the upwind people to evacuate.
- Do not touch spilled material. Stop leak if you can do it without risk.
- Handling the damaged containers or spilled material after wearing protective equipment.
- Do not direct water at spill or source of leak.

6.2. Environmental precautions

- Prevent runoff and contact with waterways, drains or sewers.
- If large amounts have been spilled, inform the relevant authorities.
- Avoid dispersal of spilt material and runoff and contact with waterways, drains and sewers. If large spills, advise

6.3. Methods and material for containment and cleaning up**6.3.1. For containment**

- Clear spills immediately
- Clean up all spills immediately.
- Prevent, by any means available, spillage from entering drains or water course.

6.3.2. For cleaning up

- Large spill : Stay upwind and keep out of low areas. Dike for later disposal.
- Notification to central government, local government. When emissions at least of the standard amount
- Dispose of waste in accordance with local regulation.
- Appropriate container for disposal of spilled material collected.
- Small leak: sand or other non-combustible material, please let use absorption.
- Wipe off the solvent.
- Dike for later disposal.

6.3.3. Other information

- Slippery when spilt.

6.4. Reference to other sections

- See Section 7 for information on safe handling.
- See Section 8 for information on personal protection equipment.
- See Section 13 for information on disposal.

SECTION 7: HANDLING AND STORAGE**7.1. Precautions for safe handling**

- Avoid direct physical contact.
- Get the manual before use.
- Refer to Engineering controls and personal protective equipment.
- Do not handle until all safety precautions have been read and understood.

- Do not inhale the steam prolonged or repeated.

7.2. Conditions for safe storage, including any incompatibilities

- Save in cool, dry and well ventilated place.
- Check regularly for leaks.
- Please pay attention to incompatibilities materials and conditions to avoid.
- Keep sealed when not in use.
- No open fire.

7.3. Specific end use(s)

- See Section 1 for information on 1.2 Relevant identified uses.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION**8.1. Control parameters****8.1.1. Occupational exposure limits****European Union (EU) Commission Directive 2006/15/EC (IOELVs)**

- Not available

European Union (EU) Commission Directive 2006/15/EC (IOELVs) - Skin

- Not available

8.1.2. Recommended Monitoring Procedures

- Personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment.

8.1.3. DNEL/PNEC - Values

- Not available

8.2. Exposure controls**8.2.1. Appropriate engineering controls**

- A system of local and/or general exhaust is recommended to keep employee exposures above the Exposure Limits. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. The use of local exhaust ventilation is recommended to control emissions near the source.

8.2.2. Individual protection measures, such as personal protective equipment**Hand protection**

- Wear appropriate glove.

Eye protection

- Wear primary eye protection such as splash resistant safety goggles with a secondary protection face shield.
- Provide an emergency eye wash station and quick drench shower in the immediate work area.

Respiratory Protection

- Under conditions of frequent use or heavy exposure, Respiratory protection may be needed.
- Respiratory protection is ranked in order from minimum to maximum.
- Consider warning properties before use.
- Any chemical cartridge respirator with organic vapor cartridge(s).
- Any chemical cartridge respirator with a full face piece and organic vapor cartridge(s).
- Any air-purifying respirator with a full face piece and an organic vapor canister.
- For Unknown Concentration or Immediately Dangerous to Life or Health : Any supplied-air respirator with full face piece and operated in a pressure-demand or other positive-pressure mode in combination with a separate escape supply. Any self-contained breathing apparatus with a full face piece.

Skin protection

- Wear appropriate clothing.

8.2.3 Environmental exposure controls

- Do not let product enter drains. For ecological information refer to section 12.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Appearance(State)	Liquid
Appearance(Color)	GOLD
Odor	Odorless
Odor threshold	Not available
pH	8.0 ± 1.0
Melting point/Freezing point	Not available
Initial boiling point and boiling range	> 100 °C
Flash point	300 °C
Evaporation rate	Not available
Flammability(solid, gas)	Not applicable
Upper/Lower Flammability or explosive	Not available
Vapour pressure	Not available
Vapour density	Not available
Relative density	1.1 ± 0.05 g/cm ³
Solubility	Fully miscible
Partition coefficient of n-octanol/water	Not available
Autoignition temperature	No self-igniting
Decomposition temperature	Not available
Viscosity	750 ± 150 Cps
Explosive properties	Not explosive
Oxidizing properties	Not available

9.2. Other information

- Not available

SECTION 10: STABILITY AND REACTIVITY**10.1. Reactivity**

- Not available

10.2. Chemical Stability

- This material is stable under recommended storage and handling conditions.

10.3. Possibility of hazardous reactions

- Hazardous Polymerization will not occur.

10.4. Conditions to avoid

- Avoid contact with incompatible materials and condition.
 - Avoid : Accumulation of electrostatic charges, Heating, Flames and hot surfaces

10.5. Incompatible materials

- Not available

10.6. Hazardous decomposition products

- Not available

SECTION 11: TOXICOLOGICAL INFORMATION**11.1. Acute toxicity****- Oral**

- Product (ATEmix) : >5000mg/kg
 - [GLYCERINE] : LD50 = 12600 mg/kg Rat (ChemIDplus)
 - [POLY ETHYLENE GLYCOL] : LD50 = 600 mg/kg Rat (KOSHA)

- Dermal

- Product (ATEmix) : >5000mg/kg
 - [GLYCERINE] : LD50 > 10000 mg/kg Rat (ChemIDplus)

- Inhalation

- Product (ATEmix) : Not available
 - [GLYCERINE] : LC50 >2.75 mg/ℓ 4 hr Rat (ECHA)

11.2. Skin corrosion/irritation

- [2-AMINO-2-METHYL-1-PROPANOL] : Classified as Category 2 (KOSHA)

11.3. Serious eye damage/irritation

- [2-AMINO-2-METHYL-1-PROPANOL] : Classified as Category 1 (KOSHA)

11.4. Respiratory sensitization

- Not available

11.5. Skin sensitization

- Not available

11.6. Germ cell mutagenicity

- Not available

11.7. Carcinogenicity**- IARC**

- Not available

- OSHA

- Not available

- ACGIH

- [ALUMINIUM POWDER] : A4

- NTP

- Not available

- EU CLP

- Not available

11.8. Reproductive toxicity

- Not available

11.9. Specific target organ toxicity(single exposure):

- Not available

11.10. Specific target organ toxicity(repeated exposure):

- [ALUMINIUM POWDER] : Classified as Category 2 (KOSHA)

11.11. Aspiration hazard

- Not available

SECTION 12: ECOLOGICAL INFORMATION**12.1. Toxicity****12.1.1. Fish**

- [GLYCERINE] : LC50 >11 mg/ℓ 96 hr Cyprinodon variegatus (ECHA)

- [C.I. PIGMENT YELLOW 83] : LC50 45 mg/ℓ 48 hr Oncorhynchus mykiss (ECOTOX)

12.1.2. Invertebrate

- [GLYCERINE] : LC50 1955 mg/ℓ 48 hr Daphnia magna (ECHA)

- [ALUMINIUM POWDER] : NOEC > 100 mg/ℓ 48 hr Daphnia magna (IUCLID)

12.1.3. Algae

- [ALUMINIUM POWDER] : NOEC > 0.052 mg/ℓ 48 hr Selenastrum capricornutum (M = 1) (OECD TG 201, GLP) (ECHA)

12.2. Persistence and degradability**12.2.1. Persistence**

- [C.I. PIGMENT YELLOW 83] : 7.54 log Kow (IUCLID)

12.2.2. Degradability

- [2-AMINO-2-METHYL-1-PROPANOL] : BOD5/COD 0.005 (KOSHA)

12.3. Bioaccumulative potential**12.3.1. Bioaccumulation**

- [2-AMINO-2-METHYL-1-PROPANOL] : 1.3 BSAF (Leuciscus idus(Fish, fresh water), 50ug/) (KOSHA)
- [C.I. PIGMENT YELLOW 83] : 10 (QSAR)

12.3.2. Biodegradability

- [2-AMINO-2-METHYL-1-PROPANOL] : 40 (%) 28 days (KOSHA)
- [C.I. PIGMENT YELLOW 83] : 6 (%) 28 days (NITE)

12.4. Mobility in soil

- Not available

12.5. Results of PBT and vPvB assessment

- Not available

12.6. Other adverse effects

- Not available

SECTION 13: DISPOSAL CONSIDERATIONS**13.1. Waste treatment methods**

- Since more than two kinds of designated waste is mixed, it is difficult to treat separately, then can be reduction or stabilization by incineration or similar process.
- If water separation is possible, pre-process with Water separation process.
- Dispose by incineration.
- The user of this product must disposal by oneself or entrust to waste disposer or person who other's waste recycle and dispose, person who establish and operate waste disposal facilities.
- Dispose of waste in accordance with all applicable laws and regulations.

SECTION 14: TRANSPORT INFORMATION**14.1. UN No.**

14.1.1. UN No. (ADR/RID/ADN)
3082

14.1.2. UN No. (IMDG CODE/IATA DGR)
3082

14.1.3. UN No. (ICAO)
3082

14.2. UN proper shipping name

- Not applicable

14.3. Transport hazard class(es)**14.3.1. ADR/RID/ADN Class**

- Not applicable

14.3.2. ADR/RID/ADN Class

- Not applicable

14.3.3. ADR Label No.

- Not applicable

14.3.4. IMDG Class

- Not applicable

14.3.5. ICAO Class/Division

- Not applicable

14.3.6. Transport Labels

- Not applicable

14.4. Packing group**14.4.1. ADR/RID/ADN Packing group**

- Not applicable

14.4.2. IMDG Packing group

- Not applicable

14.4.3. ICAO Packing group

- Not applicable

14.5. Environmental hazards

- Not applicable

14.6. Special precautions for user

- Local transport follows in accordance with Dangerous goods Safety Management Law.
- Package and transport follow in accordance with Department of Transportation (DOT) and other regulatory agency
- EmS FIRE SCHEDULE : Not applicable
- EmS SPILLAGE SCHEDULE : Not applicable
- Air transport(IATA): Not subject to IATA regulations.

14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

- Not applicable

SECTION 15: REGULATORY INFORMATION**15.1. Safety, health and environmental regulation / legislation specific for the substance or mixture****15.1.1. Europe regulatory****15.1.1.1 REACH Restricted substance under REACH**

- Not applicable

15.1.1.2 REACH Substances subject to authorization under REACH

- Not applicable

15.1.1.3 REACH SVHC

- Not applicable

15.1.1.4 Europe PBT

- Not applicable

15.1.1.5 European Union (EU) Transport of Dangerous Goods by Road - Dangerous Goods List

- Not applicable

15.2. Chemical Safety Assessment

- Not conducted

SECTION 16: OTHER INFORMATION**16.1. Indication of changes**

- The Safety Data Sheet has been reviewed and the data therein were revised and laid out according the requirements of the Commission Regulation (EC) No. 1907/2006

16.2. Abbreviations and acronyms

- 1272/2008 CLP : Classification, Labelling and Packaging regulation.
- REACH : Registration, Evaluation and authorization of chemical substances.
- DNEL : Derive no effects level
- PNEC : Predicted no effect concentration

16.3. Key literature references and sources for data

- This Safety Data Sheet was compiled with data and information from the following sources: RTECS, ECOSAR, HSDB, SIDS SIAP, ChemWATCH, CESAR, Chemical DB

16.4. Classification procedure

- The mixture classification has been derived based on the classification of the individual components in accordance with the rules set out in Regulation (EC) No 1272/2008 (CLP) as well as the translation tables in Annex VII to the same regulation.

16.5. Training advice

- Not applicable

16.6. Further information

- The (M)SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings. Risks may be determined by reference to Exposures Scenarios. Scale of use, frequency of use and current or available engineering controls must be considered.

- This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only.

- It should not therefore be construed as guaranteeing any specific property of the product.

- Contact a poison control centre, List of Telephone Numbers : AUSTRIA (Vienna Wien) +43 1 406 43 43; BELGIUM (Brussels Bruxelles) +32 70 245 245; BULGARIA (Sofia) +359 2 9154 409; CZECH REPUBLIC (Prague Praha) +420 224 919 293; DENMARK (Copenhagen) 82 12 12 12; ESTONIA (Tallinn) 112; FINLAND (Helsinki) +358 9 471 977; FRANCE (Paris) +33 1 40 0548 48; GERMANY (Berlin) +49 30 19240; GREECE (Athens Athina) +30 10 779 3777; HUNGARY (Budapest) 06 80 20 11 99; ICELAND (Reykjavik) +354 525 111, +354 543 2222; IRELAND (Dublin) +353 1 8379964; ITALY (Rome) +39 06 305 4343; LATVIA (Riga) +371 704 2468; LITHUANIA (Vilnius) +370 5 236 20 52 or +370 687 53378; MALTA (Valletta) 2425 0000; NETHERLANDS (Bilthoven) +31 30 274 88 88; NORWAY (Oslo) 22 591300; POLAND (Gdansk) +48 58301 65 16 or +48 58 349 2831; PORTUGAL (Lisbon Lisboa) 808 250 143; ROMANIA (Bucharest) +40 21 3183606 SLOVAKIA (Bratislava) +421 2 54 77 4166; SLOVENIA (Ljubljana) + 386 41 650 500; SPAIN (Barcelona) +34 93 227 98 33 or +34 93 227 54 00 bleep 190; SWEDEN (Stockholm) 112 or +46 8 33 12 31 (mon-fri 9.00-17.00); UNITED KINGDOM (London) 112 or 0845 4647 (NHS Direct).

Disclaimer of Liability

This information is based on our present state of knowledge.

It should not therefore be construed as guaranteeing specific properties of the products

Described or their suitability for a particular application. YOU&I Corporation assumes

no responsibility for personal injury or property damage caused by the material.

Users assume all risks associated with the use of the material.

***** End of Documents

21739-8000

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SAFETY DATA SHEET

According to Regulation (EC) No 1907/2006 (REACH), Annex II (COMMISSION REGULATION (EU) No 2015/830)



Date of issue: 2018-06-20

Revision date: 2022-06-21

SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING**1.1. Product identifier**

Trade name/designation : MGI- BROWN

1.2. Relevant identified uses of the substance or mixture and uses advised against**1.2.1. Relevant identified uses**

- Water-soluble stationary ink

1.2.2. Uses advised against

- Not available

1.3. Details of the supplier of the safety data sheet

Manufacturer/Supplier : YOU&I COPORATION
 Address : 53, EMTIBEUI 26-RO, SIHEUNG-SI, GYEONGGI-DO, KOREA (ZIP CODE) 15118
 Telephone : 82-31-494-2030
 Email : tech@youicolor.com

1.4. Emergency telephone number

82-31-494-2030 (This number is serviced during office hours only.)
 EU-wide emergency number : 112
 See section 16.6 for the list of telephone number of poison centers in the European Economic Area.

SECTION 2: HAZARD IDENTIFICATION**2.1. Classification of the substance/mixture****2.1.1. Classification according to Regulation (EC) No 1272/2008 [CLP]**

H411-Aquatic Chronic 2

2.2. Label elements**2.2.1. Labelling according to Regulation (EC) No 1272/2008 [CLP]***** Hazard Pictogram(s)**

* **Signal word** : Warning

* **Hazard statement(s)**
 H411: Toxic to aquatic life with long-lasting effects

*** Precautionary statement(s)****1) Prevention**

P273: Avoid release to the environment.

2) Response

P391: Collect spillage.

3) Storage

- Not applicable

4) Disposal

P501: Disposal contents/ container to in accordance with local national regulation.

2.3. Other hazards

- Not available

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS**3.1. Substances**

- Not applicable

3.2. Mixtures				
Name	CAS No.	EINECS NO.	% [weight]	Classification [1272/2008/EC]
WATER	7732-18-5	231-791-2	40~60	Not classified
GLYCERINE	56-81-5	200-289-5	15~20	Not classified
ALUMINIUM POWDER	7429-90-5	231-072-3	3~7	   Flam. Solid 1, H228 Pyr. Liq. 1, H250 Water-react 2, H261 Specific target organ toxicity (repeated) 2, H373 Aquatic Chronic 1: H410 (M-factor: 1)
C.I. PIGMENT RED 170	2786-76-7	220-509-3	0~5	Aquatic Chronic 4, H413
C.I. PIGMENT YELLOW 83	5567-15-7	226-939-8	0~5	Aquatic Chronic 3, H412
C.I. PIGMENT BLACK 7	1333-86-4	215-609-9	0~5	Not classified
POLY ETHYLENE GLYCOL	25322-68-3	500-038-2	10~15	 Acute toxicity (Oral) 4, H302
2-AMINO-2-METHYL-1-PROPANOL	124-68-5	204-709-8	0~1	 Aquatic Chronic 4, H413 Eye Irrit. 1, H318 Skin Irrit. 2, H315

SECTION 4: FIRST AID MEASURES

4.1. Description of first aid measures

General

- No general information.

Inhalation

- When exposed to large amounts of steam and mist, move to fresh air.
- Take specific treatment if needed.

Skin contact

- Flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes.
- Laundering enough contaminated clothing before reuse.

Eye contact

- Do not rub your eyes.
- Immediately flush eyes with plenty of water for at least 15 minutes and call a doctor/physician.

Ingestion

- Please be advised by doctor whether induction of vomit is demanded or not.
- Rinse your mouth with water immediately.

4.2. Most important symptoms and effects, both acute and delayed

- Not available

4.3. Indication of any immediate medical attention and special treatment needed

- Notify medical personnel of contaminated situations and have them take appropriate protective measures.

SECTION 5: FIREFIGHTING MEASURES

5.1. Extinguishing media

Suitable extinguishing media

- Water, foam, CO₂, NaHCO₃

Unsuitable extinguishing media

- Avoid use of water jet for extinguishing

5.2. Special hazards arising from the substance or mixture

Hazardous combustion products

- Not available

5.3. Advice for firefighters

- Cool containers with water until well after fire is out.
- Keep unauthorized personnel out.
- Withdraw immediately in case of rising sound from venting safety devices or discoloration of tank.
- Wear appropriate protective equipment.
- Keep containers cool with water spray.
- Use fire fighting procedures suitable for surrounding area.
- Vapor or gas is burned at distant ignition sources can be spread quickly.

SECTION 6: ACCIDENTAL RELEASE MEASURES**6.1. Personal Precautions, protective equipment and emergency procedures****6.1.1. For non-emergency personnel**

- Protective equipment: Wear proper protective equipment.
- Emergency procedures: Not applicable
- If required, notify relevant authorities according to all applicable regulations.

6.1.2. For emergency responders

- Ventilate closed spaces before entering.
- Must work against the wind, let the upwind people to evacuate.
- Do not touch spilled material. Stop leak if you can do it without risk.
- Handling the damaged containers or spilled material after wearing protective equipment.
- Do not direct water at spill or source of leak.

6.2. Environmental precautions

- Prevent runoff and contact with waterways, drains or sewers.
- If large amounts have been spilled, inform the relevant authorities.
- Avoid dispersal of spilt material and runoff and contact with waterways, drains and sewers. If large spills, advise

6.3. Methods and material for containment and cleaning up**6.3.1. For containment**

- Clear spills immediately
- Clean up all spills immediately.
- Prevent, by any means available, spillage from entering drains or water course.

6.3.2. For cleaning up

- Large spill : Stay upwind and keep out of low areas. Dike for later disposal.
- Notification to central government, local government. When emissions at least of the standard amount
- Dispose of waste in accordance with local regulation.
- Appropriate container for disposal of spilled material collected.
- Small leak: sand or other non-combustible material, please let use absorption.
- Wipe off the solvent.
- Dike for later disposal.

6.3.3. Other information

- Slippery when spilt.

6.4. Reference to other sections

- See Section 7 for information on safe handling.
- See Section 8 for information on personal protection equipment.
- See Section 13 for information on disposal.

SECTION 7: HANDLING AND STORAGE**7.1. Precautions for safe handling**

- Avoid direct physical contact.
- Get the manual before use.

- Refer to Engineering controls and personal protective equipment.
- Do not handle until all safety precautions have been read and understood.
- Do not inhale the steam prolonged or repeated.

7.2. Conditions for safe storage, including any incompatibilities

- Save in cool, dry and well ventilated place.
- Check regularly for leaks.
- Please pay attention to incompatibilities materials and conditions to avoid.
- Keep sealed when not in use.
- No open fire.

7.3. Specific end use(s)

- See Section 1 for information on 1.2 Relevant identified uses.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION**8.1. Control parameters****8.1.1. Occupational exposure limits****European Union (EU) Commission Directive 2006/15/EC (IOELVs)**

- Not available

European Union (EU) Commission Directive 2006/15/EC (IOELVs) - Skin

- Not available

8.1.2. Recommended Monitoring Procedures

- Personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment.

8.1.3. DNEL/PNEC - Values

- Not available

8.2. Exposure controls**8.2.1. Appropriate engineering controls**

- A system of local and/or general exhaust is recommended to keep employee exposures above the Exposure Limits. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. The use of local exhaust ventilation is recommended to control emissions near the source.

8.2.2. Individual protection measures, such as personal protective equipment**Hand protection**

- Wear appropriate glove.

Eye protection

- Wear primary eye protection such as splash resistant safety goggles with a secondary protection face shield.
- Provide an emergency eye wash station and quick drench shower in the immediate work area.

Respiratory Protection

- Under conditions of frequent use or heavy exposure, Respiratory protection may be needed.
- Respiratory protection is ranked in order from minimum to maximum.
- Consider warning properties before use.
- Any chemical cartridge respirator with organic vapor cartridge(s).
- Any chemical cartridge respirator with a full face piece and organic vapor cartridge(s).
- Any air-purifying respirator with a full face piece and an organic vapor canister.
- For Unknown Concentration or Immediately Dangerous to Life or Health : Any supplied-air respirator with full face piece and operated in a pressure-demand or other positive-pressure mode in combination with a separate escape supply. Any self-contained breathing apparatus with a full face piece.

Skin protection

- Wear appropriate clothing.

8.2.3 Environmental exposure controls

- Do not let product enter drains. For ecological information refer to section 12.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES**9.1. Information on basic physical and chemical properties**

Appearance(State)	Liquid
Appearance(Color)	BROWN
Odor	Odorless
Odor threshold	Not available
pH	8.0 ± 1.0
Melting point/Freezing point	Not available
Initial boiling point and boiling range	> 100 °C
Flash point	300 °C
Evaporation rate	Not available
Flammability(solid, gas)	Not applicable
Upper/Lower Flammability or explosive	Not available
Vapour pressure	Not available
Vapour density	Not available
Relative density	1.1 ± 0.05 g/cm ³
Solubility	Fully miscible
Partition coefficient of n-octanol/water	Not available
Autoignition temperature	No self-igniting
Decomposition temperature	Not available
Viscosity	750 ± 150 Cps
Explosive properties	Not explosive
Oxidizing properties	Not available

9.2. Other information

- Not available

SECTION 10: STABILITY AND REACTIVITY**10.1. Reactivity**

- Not available

10.2. Chemical Stability

- This material is stable under recommended storage and handling conditions.

10.3. Possibility of hazardous reactions

- Hazardous Polymerization will not occur.

10.4. Conditions to avoid

- Avoid contact with incompatible materials and condition.
- Avoid : Accumulation of electrostatic charges, Heating, Flames and hot surfaces

10.5. Incompatible materials

- Not available

10.6. Hazardous decomposition products

- Not available

SECTION 11: TOXICOLOGICAL INFORMATION**11.1. Acute toxicity****- Oral**

- Product (ATEmix) : >5000mg/kg
- [GLYCERINE] : LD50 = 12600 mg/kg Rat (ChemIDplus)
- [POLY ETHYLENE GLYCOL] : LD50 = 600 mg/kg Rat (KOSHA)

- Dermal

- Product (ATEmix) : >5000mg/kg
- [GLYCERINE] : LD50 > 10000 mg/kg Rat (ChemIDplus)

- **Inhalation**
 - Product (ATEmix) : Not available
 - [GLYCERINE] : LC50 >2.75 mg/ℓ 4 hr Rat (ECHA)

11.2. Skin corrosion/irritation

- [2-AMINO-2-METHYL-1-PROPANOL] : Classified as Category 2 (KOSHA)

11.3. Serious eye damage/irritation

- [2-AMINO-2-METHYL-1-PROPANOL] : Classified as Category 1 (KOSHA)

11.4. Respiratory sensitization

- Not available

11.5. Skin sensitization

- Not available

11.6. Germ cell mutagenicity

- Not available

11.7. Carcinogenicity

- **IARC**
 - Not available
- **OSHA**
 - Not available
- **ACGIH**
 - [ALUMINIUM POWDER] : A4 (KOSHA)
- **NTP**
 - Not available
- **EU CLP**
 - Not available

11.8. Reproductive toxicity

- Not available

11.9. Specific target organ toxicity(single exposure):

- Not available

11.10. Specific target organ toxicity(repeated exposure):

- [ALUMINIUM POWDER] : Classified as Category 2 (KOSHA)

11.11. Aspiration hazard

- Not available

SECTION 12: ECOLOGICAL INFORMATION**12.1. Toxicity****12.1.1. Fish**

- [GLYCERINE] : LC50 >11 mg/ℓ 96 hr Cyprinodon variegatus (ECHA)
- [C.I. PIGMENT RED 170] : LC50 >0.217 mg/ℓ 96 hr (ECOSAR)
- [C.I. PIGMENT YELLOW 83] : LC50 45 mg/ℓ 48 hr Oncorhynchus mykiss (ECOTOX)

12.1.2. Invertebrate

- [GLYCERINE] : LC50 1955 mg/ℓ 48 hr Daphnia magna (ECHA)
- [ALUMINIUM POWDER] : NOEC > 100 mg/ℓ 48 hr Daphnia magna (IUCLID)
- [C.I. PIGMENT RED 170] : LC50 0.545 mg/ℓ 48 hr (ECOSHA)

12.1.3. Algae

- [ALUMINIUM POWDER] : NOEC > 0.052 mg/ℓ 48 hr Selenastrum capricornutum (M = 1) (OECD TG 201, GLP) (ECHA)
- [C.I. PIGMENT RED 170] : EC50 0.06 mg/ℓ 96 hr (ECOSHA)

12.2. Persistence and degradability**12.2.1. Persistence**

- [C.I. PIGMENT RED 170] : 6.04 log Kow (ECOSAR)
- [C.I. PIGMENT YELLOW 83] : 7.54 log Kow (IUCLID)

12.2.2. Degradability

- [2-AMINO-2-METHYL-1-PROPANOL] : BOD5/COD 0.005 (KOSHA)

12.3. Bioaccumulative potential**12.3.1. Bioaccumulation**

- [2-AMINO-2-METHYL-1-PROPANOL] : 1.3 BSAF (Leuciscus idus(Fish, fresh water), 50ug/) (KOSHA)
- [C.I. PIGMENT RED 170] : 10 (QSAR)
- [C.I. PIGMENT YELLOW 83] : 10 (QSAR)

12.3.2. Biodegradability

- [2-AMINO-2-METHYL-1-PROPANOL] : 40 (%) 28 days (KOSHA)
- [C.I. PIGMENT YELLOW 83] : 6 (%) 28 days (NITE)

12.4. Mobility in soil

- Not available

12.5. Results of PBT and vPvB assessment

- Not available

12.6. Other adverse effects

- Not available

SECTION 13: DISPOSAL CONSIDERATIONS**13.1. Waste treatment methods**

- Since more than two kinds of designated waste is mixed, it is difficult to treat separately, then can be reduction or stabilization by incineration or similar process.
- If water separation is possible, pre-process with Water separation process.
- Dispose by incineration.
- The user of this product must disposal by oneself or entrust to waste disposer or person who other's waste recycle and dispose, person who establish and operate waste disposal facilities.
- Dispose of waste in accordance with all applicable laws and regulations.

SECTION 14: TRANSPORT INFORMATION**14.1. UN No.****14.1.1. UN No. (ADR/RID/ADN)**

3082

14.1.2. UN No. (IMDG CODE/IATA DGR)

3082

14.1.3. UN No. (ICAO)

3082

14.2. UN proper shipping name

- Not applicable

14.3. Transport hazard class(es)**14.3.1. ADR/RID/ADN Class**

- Not applicable

14.3.2. ADR/RID/ADN Class

- Not applicable

14.3.3. ADR Label No.

- Not applicable

14.3.4. IMDG Class

- Not applicable

14.3.5. ICAO Class/Division

- Not applicable

14.3.6. Transport Labels

- Not applicable

14.4. Packing group**14.4.1. ADR/RID/ADN Packing group**

- Not applicable

14.4.2. IMDG Packing group

- Not applicable

14.4.3. ICAO Packing group

- Not applicable

14.5. Environmental hazards

- Not applicable

14.6. Special precautions for user

- Local transport follows in accordance with Dangerous goods Safety Management Law.
- Package and transport follow in accordance with Department of Transportation (DOT) and other regulatory agency
- EmS FIRE SCHEDULE : Not applicable
- EmS SPILLAGE SCHEDULE : Not applicable
- Air transport(IATA): Not subject to IATA regulations.

14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

- Not applicable

SECTION 15: REGULATORY INFORMATION**15.1. Safety, health and environmental regulation / legislation specific for the substance or mixture****15.1.1. Europe regulatory****15.1.1.1 REACH Restricted substance under REACH**

- Not applicable

15.1.1.2 REACH Substances subject to authorization under REACH

- Not applicable

15.1.1.3 REACH SVHC

- Not applicable

15.1.1.4 Europe PBT

- Not applicable

15.1.1.5 European Union (EU) Transport of Dangerous Goods by Road - Dangerous Goods List

- Not applicable

15.2. Chemical Safety Assessment

- Not conducted

SECTION 16: OTHER INFORMATION**16.1. Indication of changes**

- The Safety Data Sheet has been reviewed and the data therein were revised and laid out according the requirements of the Commission Regulation (EC) No. 1907/2006

16.2. Abbreviations and acronyms

- 1272/2008 CLP : Classification, Labelling and Packaging regulation.
- REACH : Registration, Evaluation and authorization of chemical substances.
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- PNEC : Predicted no effect concentration

16.3. Key literature references and sources for data

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16.4. Classification procedure

- The mixture classification has been derived based on the classification of the individual components in accordance with the rules set out in Regulation (EC) No 1272/2008 (CLP) as well as the translation tables in Annex VII to the same regulation.

16.5. Training advice

- Not applicable

16.6. Further information

- The (M)SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings. Risks may be determined by reference to Exposures Scenarios. Scale of use, frequency of use and current or available engineering controls must be considered.

- This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only.

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Disclaimer of Liability

This information is based on our present state of knowledge.

It should not therefore be construed as guaranteeing specific properties of the products Described or their suitability for a particular application. YOU&I Corporation assumes no responsibility for personal injury or property damage caused by the material. Users assume all risks associated with the use of the material.

***** End of Documents

21739-5010

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SAFETY DATA SHEET

According to Regulation (EC) No 1907/2006 (REACH), Annex II (COMMISSION REGULATION (EU) No 2015/830)



Date of issue: 2018-06-20

Revision date: 2022-06-21

SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING**1.1. Product identifier**

Trade name/designation : MGI- BLUE

1.2. Relevant identified uses of the substance or mixture and uses advised against**1.2.1. Relevant identified uses**

- Water-soluble stationary ink

1.2.2. Uses advised against

- Not available

1.3. Details of the supplier of the safety data sheet

Manufacturer/Supplier : YOU&I COPORATION

Address : 53, EMTIBEUI 26-RO, SIHEUNG-SI, GYEONGGI-DO, KOREA (ZIP CODE) 15118

Telephone : 82-31-494-2030

Email : tech@youicolor.com

1.4. Emergency telephone number

82-31-494-2030 (This number is serviced during office hours only.)

EU-wide emergency number : 112

See section 16.6 for the list of telephone number of poison centers in the European Economic Area.

SECTION 2: HAZARD IDENTIFICATION**2.1. Classification of the substance/mixture****2.1.1. Classification according to Regulation (EC) No 1272/2008 [CLP]**

H411-Aquatic Chronic 2

2.2. Label elements**2.2.1. Labelling according to Regulation (EC) No 1272/2008 [CLP]***** Hazard Pictogram(s)***** Signal word** : Warning*** Hazard statement(s)**

H411: Toxic to aquatic life with long-lasting effects

*** Precautionary statement(s)****1) Prevention**

P273: Avoid release to the environment.

2) Response

P391: Collect spillage.

3) Storage

- Not applicable

4) Disposal

P501: Disposal contents/ container to in accordance with local national regulation.

2.3. Other hazards

- Not available

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS**3.1. Substances**

- Not applicable

3.2. Mixtures				
Name	CAS No.	EINECS NO.	% [weight]	Classification [1272/2008/EC]
WATER	7732-18-5	231-791-2	40~60	Not classified
GLYCERINE	56-81-5	200-289-5	15~20	Not classified
ALUMINIUM POWDER	7429-90-5	231-072-3	3~7	   Flam. Solid 1, H228 Pyr. Liq. 1, H250 Water-react 2, H261 Specific target organ toxicity (repeated) 2, H373 Aquatic Chronic 1: H410 (M-factor: 1)
C.I. PIGMENT BLUE 15:3	147-14-8	205-685-1	0~5	Not classified
C.I. PIGMENT VIOLET 23	6358-30-1	228-767-9	0~5	 Specific target organ toxicity (single), H335
POLY ETHYLENE GLYCOL	25322-68-3	500-038-2	10~15	 Acute toxicity (Oral) 4, H302
2-AMINO-2-METHYL-1-PROPANOL	124-68-5	204-709-8	0~1	 Aquatic Chronic 4, H413 Eye Irrit. 1, H318 Skin Irrit. 2, H315

SECTION 4: FIRST AID MEASURES

4.1. Description of first aid measures

General

- No general information.

Inhalation

- When exposed to large amounts of steam and mist, move to fresh air.
- Take specific treatment if needed.

Skin contact

- Flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes.
- Laundering enough contaminated clothing before reuse.

Eye contact

- Do not rub your eyes.
- Immediately flush eyes with plenty of water for at least 15 minutes and call a doctor/physician.

Ingestion

- Please be advised by doctor whether induction of vomit is demanded or not.
- Rinse your mouth with water immediately.

4.2. Most important symptoms and effects, both acute and delayed

- Not available

4.3. Indication of any immediate medical attention and special treatment needed

- Notify medical personnel of contaminated situations and have them take appropriate protective measures.

SECTION 5: FIREFIGHTING MEASURES

5.1. Extinguishing media

Suitable extinguishing media

- Water, foam, CO₂, NaHCO₃

Unsuitable extinguishing media

- Avoid use of water jet for extinguishing

5.2. Special hazards arising from the substance or mixture**Hazardous combustion products**

- Not available

5.3. Advice for firefighters

- Cool containers with water until well after fire is out.
- Keep unauthorized personnel out.
- Withdraw immediately in case of rising sound from venting safety devices or discoloration of tank.
- Wear appropriate protective equipment.
- Keep containers cool with water spray.
- Use fire fighting procedures suitable for surrounding area.
- Vapor or gas is burned at distant ignition sources can be spread quickly.

SECTION 6: ACCIDENTAL RELEASE MEASURES**6.1. Personal Precautions, protective equipment and emergency procedures****6.1.1. For non-emergency personnel**

- Protective equipment: Wear proper protective equipment.
- Emergency procedures: Not applicable
- If required, notify relevant authorities according to all applicable regulations.

6.1.2. For emergency responders

- Ventilate closed spaces before entering.
- Must work against the wind, let the upwind people to evacuate.
- Do not touch spilled material. Stop leak if you can do it without risk.
- Handling the damaged containers or spilled material after wearing protective equipment.
- Do not direct water at spill or source of leak.

6.2. Environmental precautions

- Prevent runoff and contact with waterways, drains or sewers.
- If large amounts have been spilled, inform the relevant authorities.
- Avoid dispersal of spilt material and runoff and contact with waterways, drains and sewers. If large spills, advise

6.3. Methods and material for containment and cleaning up**6.3.1. For containment**

- Clear spills immediately
- Clean up all spills immediately.
- Prevent, by any means available, spillage from entering drains or water course.

6.3.2. For cleaning up

- Large spill : Stay upwind and keep out of low areas. Dike for later disposal.
- Notification to central government, local government. When emissions at least of the standard amount
- Dispose of waste in accordance with local regulation.
- Appropriate container for disposal of spilled material collected.
- Small leak: sand or other non-combustible material, please let use absorption.
- Wipe off the solvent.
- Dike for later disposal.

6.3.3. Other information

- Slippery when spilt.

6.4. Reference to other sections

- See Section 7 for information on safe handling.
- See Section 8 for information on personal protection equipment.
- See Section 13 for information on disposal.

SECTION 7: HANDLING AND STORAGE**7.1. Precautions for safe handling**

- Avoid direct physical contact.
- Get the manual before use.
- Refer to Engineering controls and personal protective equipment.
- Do not handle until all safety precautions have been read and understood.
- Do not inhale the steam prolonged or repeated.

7.2. Conditions for safe storage, including any incompatibilities

- Save in cool, dry and well ventilated place.
- Check regularly for leaks.
- Please pay attention to incompatibilities materials and conditions to avoid.
- Keep sealed when not in use.
- No open fire.

7.3. Specific end use(s)

- See Section 1 for information on 1.2 Relevant identified uses.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control parameters

8.1.1. Occupational exposure limits

European Union (EU) Commission Directive 2006/15/EC (IOELVs)

- Not available

European Union (EU) Commission Directive 2006/15/EC (IOELVs) - Skin

- Not available

8.1.2. Recommended Monitoring Procedures

- Personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment.

8.1.3. DNEL/PNEC - Values

- Not available

8.2. Exposure controls

8.2.1. Appropriate engineering controls

- A system of local and/or general exhaust is recommended to keep employee exposures above the Exposure Limits. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. The use of local exhaust ventilation is recommended to control emissions near the source.

8.2.2. Individual protection measures, such as personal protective equipment

Hand protection

- Wear appropriate glove.

Eye protection

- Wear primary eye protection such as splash resistant safety goggles with a secondary protection face shield.
- Provide an emergency eye wash station and quick drench shower in the immediate work area.

Respiratory Protection

- Under conditions of frequent use or heavy exposure, Respiratory protection may be needed.
- Respiratory protection is ranked in order from minimum to maximum.
- Consider warning properties before use.
- Any chemical cartridge respirator with organic vapor cartridge(s).
- Any chemical cartridge respirator with a full face piece and organic vapor cartridge(s).
- Any air-purifying respirator with a full face piece and an organic vapor canister.
- For Unknown Concentration or Immediately Dangerous to Life or Health : Any supplied-air respirator with full face piece and operated in a pressure-demand or other positive-pressure mode in combination with a separate escape supply. Any self-contained breathing apparatus with a full face piece.

Skin protection

- Wear appropriate clothing.

8.2.3 Environmental exposure controls

- Do not let product enter drains. For ecological information refer to section 12.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Appearance(State)	Liquid
Appearance(Color)	BLUE
Odor	Odorless
Odor threshold	Not available
pH	8.0 ± 1.0
Melting point/Freezing point	Not available
Initial boiling point and boiling range	> 100 °C
Flash point	300 °C
Evaporation rate	Not available
Flammability(solid, gas)	Not applicable
Upper/Lower Flammability or explosive	Not available
Vapour pressure	Not available
Vapour density	Not available
Relative density	1.1 ± 0.05 g/cm ³
Solubility	Fully miscible
Partition coefficient of n-octanol/water	Not available
Autoignition temperature	No self-igniting
Decomposition temperature	Not available
Viscosity	750 ± 150 Cps
Explosive properties	Not explosive
Oxidizing properties	Not available

9.2. Other information

- Not available

SECTION 10: STABILITY AND REACTIVITY

10.1. Reactivity

- Not available

10.2. Chemical Stability

- This material is stable under recommended storage and handling conditions.

10.3. Possibility of hazardous reactions

- Hazardous Polymerization will not occur.

10.4. Conditions to avoid

- Avoid contact with incompatible materials and condition.
- Avoid : Accumulation of electrostatic charges, Heating, Flames and hot surfaces

10.5. Incompatible materials

- Not available

10.6. Hazardous decomposition products

- Not available

SECTION 11: TOXICOLOGICAL INFORMATION

11.1. Acute toxicity

- **Oral**
 - Product (ATEmix) : >5000mg/kg
 - [GLYCERINE] : LD50 = 12600 mg/kg Rat (ChemIDplus)
 - [POLY ETHYLENE GLYCOL] : LD50 = 600 mg/kg Rat (KOSHA)
- **Dermal**

- Product (ATEmix) : >5000mg/kg
- [GLYCERINE] : LD50 > 10000 mg/kg Rat (ChemIDplus)
- **Inhalation**
- Product (ATEmix) : Not available
- [GLYCERINE] : LC50 >2.75 mg/ℓ 4 hr Rat (ECHA)
- [C.I. PIGMENT RED 122] : LC0 = 3.055 mg/ℓ 4hr Rat (OECD TG 403, GLP) (ECHA)

11.2. Skin corrosion/irritation

- [2-AMINO-2-METHYL-1-PROPANOL] : Classified as Category 2 (KOSHA)

11.3. Serious eye damage/irritation

- [2-AMINO-2-METHYL-1-PROPANOL] : Classified as Category 1 (KOSHA)

11.4. Respiratory sensitization

- Not available

11.5. Skin sensitization

- Not available

11.6. Germ cell mutagenicity

- Not available

11.7. Carcinogenicity

- **IARC**
- Not available
- **OSHA**
- Not available
- **ACGIH**
- [ALUMINIUM POWDER] : A4 (KOSHA)
- **NTP**
- Not available
- **EU CLP**
- Not available

11.8. Reproductive toxicity

- Not available

11.9. Specific target organ toxicity(single exposure):

- [C.I. PIGMENT VIOLET 23] : Classified as Category 3 (Respiratory irritation) (KOSHA)

11.10. Specific target organ toxicity(repeated exposure):

- [ALUMINIUM POWDER] : Classified as Category 2 (KOSHA)

11.11. Aspiration hazard

- Not available

SECTION 12: ECOLOGICAL INFORMATION**12.1. Toxicity****12.1.1. Fish**

- [GLYCERINE] : LC50 >11 mg/ℓ 96 hr Cyprinodon variegatus (ECHA)

12.1.2. Invertebrate

- [GLYCERINE] : LC50 1955 mg/ℓ 48 hr Daphnia magna (ECHA)
- [ALUMINIUM POWDER] : NOEC > 100 mg/ℓ 48 hr Daphnia magna (IUCLID)

12.1.3. Algae

- [ALUMINIUM POWDER] : NOEC > 0.052 mg/ℓ 48 hr Selenastrum capricornutum (M = 1) (OECD TG 201, GLP) (ECHA)

12.2. Persistence and degradability**12.2.1. Persistence**

- Not available

12.2.2. Degradability

- [2-AMINO-2-METHYL-1-PROPANOL] : BOD5/COD 0.005 (KOSHA)

12.3. Bioaccumulative potential**12.3.1. Bioaccumulation**

- [2-AMINO-2-METHYL-1-PROPANOL] : 1.3 BSAF (Leuciscus idus(Fish, fresh water), 50ug/) (KOSHA)

12.3.2. Biodegradability

- [2-AMINO-2-METHYL-1-PROPANOL] : 40 (%) 28 days (KOSHA)

12.4. Mobility in soil

- Not available

12.5. Results of PBT and vPvB assessment

- Not available

12.6. Other adverse effects

- Not available

SECTION 13: DISPOSAL CONSIDERATIONS**13.1. Waste treatment methods**

- Since more than two kinds of designated waste is mixed, it is difficult to treat separately, then can be reduction or stabilization by incineration or similar process.
- If water separation is possible, pre-process with Water separation process.
- Dispose by incineration.
- The user of this product must disposal by oneself or entrust to waste disposer or person who other's waste recycle and dispose, person who establish and operate waste disposal facilities.
- Dispose of waste in accordance with all applicable laws and regulations.

SECTION 14: TRANSPORT INFORMATION**14.1. UN No.****14.1.1. UN No. (ADR/RID/ADN)**

3082

14.1.2. UN No. (IMDG CODE/IATA DGR)

3082

14.1.3. UN No. (ICAO)

3082

14.2. UN proper shipping name

- Not applicable

14.3. Transport hazard class(es)**14.3.1. ADR/RID/ADN Class**

- Not applicable

14.3.2. ADR/RID/ADN Class

- Not applicable

14.3.3. ADR Label No.

- Not applicable

14.3.4. IMDG Class

- Not applicable

14.3.5. ICAO Class/Division

- Not applicable

14.3.6. Transport Labels

- Not applicable

14.4. Packing group**14.4.1. ADR/RID/ADN Packing group**

- Not applicable

14.4.2. IMDG Packing group

- Not applicable

14.4.3. ICAO Packing group

- Not applicable

14.5. Environmental hazards

- Not applicable

14.6. Special precautions for user

- Local transport follows in accordance with Dangerous goods Safety Management Law.
- Package and transport follow in accordance with Department of Transportation (DOT) and other regulatory agency
- EmS FIRE SCHEDULE : Not applicable
- EmS SPILLAGE SCHEDULE : Not applicable
- Air transport(IATA): Not subject to IATA regulations.

14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

- Not applicable

SECTION 15: REGULATORY INFORMATION**15.1. Safety, health and environmental regulation / legislation specific for the substance or mixture****15.1.1. Europe regulatory****15.1.1.1 REACH Restricted substance under REACH**

- Not applicable

15.1.1.2 REACH Substances subject to authorization under REACH

- Not applicable

15.1.1.3 REACH SVHC

- Not applicable

15.1.1.4 Europe PBT

- Not applicable

15.1.1.5 European Union (EU) Transport of Dangerous Goods by Road - Dangerous Goods List

- Not applicable

15.2. Chemical Safety Assessment

- Not conducted

SECTION 16: OTHER INFORMATION**16.1. Indication of changes**

- The Safety Data Sheet has been reviewed and the data therein were revised and laid out according the requirements of the Commission Regulation (EC) No. 1907/2006

16.2. Abbreviations and acronyms

- 1272/2008 CLP : Classification, Labelling and Packaging regulation.
- REACH : Registration, Evaluation and authorization of chemical substances.
- DNEL : Derive no effects level
- PNEC : Predicted no effect concentration

16.3. Key literature references and sources for data

- This Safety Data Sheet was compiled with data and information from the following sources: RTECS, ECOSAR, HSDB, SIDS SIAP, ChemWATCH, CESAR, Chemical DB

16.4. Classification procedure

- The mixture classification has been derived based on the classification of the individual components in accordance with the rules set out in Regulation (EC) No 1272/2008 (CLP) as well as the translation tables in Annex VII to the same regulation.

16.5. Training advice

- Not applicable

16.6. Further information

- The (M)SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings. Risks may be determined by reference to Exposures Scenarios. Scale of use, frequency of use and current or available engineering controls must be considered.

- This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only.

- It should not therefore be construed as guaranteeing any specific property of the product.

- Contact a poison control centre, List of Telephone Numbers : AUSTRIA (Vienna Wien) +43 1 406 43 43; BELGIUM (Brussels Bruxelles) +32 70 245 245; BULGARIA (Sofia) +359 2 9154 409; CZECH REPUBLIC (Prague Praha) +420 224 919 293; DENMARK (Copenhagen) 82 12 12 12; ESTONIA (Tallinn) 112; FINLAND (Helsinki) +358 9 471 977; FRANCE (Paris) +33 1 40 0548 48; GERMANY (Berlin) +49 30 19240; GREECE (Athens Athina) +30 10 779 3777; HUNGARY (Budapest) 06 80 20 11 99; ICELAND (Reykjavik) +354 525 111, +354 543 2222; IRELAND (Dublin) +353 1 8379964; ITALY (Rome) +39 06 305 4343; LATVIA (Riga) +371 704 2468; LITHUANIA (Vilnius) +370 5 236 20 52 or +370 687 53378; MALTA (Valletta) 2425 0000; NETHERLANDS (Bilthoven) +31 30 274 88 88; NORWAY (Oslo) 22 591300; POLAND (Gdansk) +48 58301 65 16 or +48 58 349 2831; PORTUGAL (Lisbon Lisboa) 808 250 143; ROMANIA (Bucharest) +40 21 3183606 SLOVAKIA (Bratislava) +421 2 54 77 4166; SLOVENIA (Ljubljana) + 386 41 650 500; SPAIN (Barcelona) +34 93 227 98 33 or +34 93 227 54 00 bleep 190; SWEDEN (Stockholm) 112 or +46 8 33 12 31 (mon-fri 9.00-17.00); UNITED KINGDOM (London) 112 or 0845 4647 (NHS Direct).

Disclaimer of Liability

This information is based on our present state of knowledge.

It should not therefore be construed as guaranteeing specific properties of the products Described or their suitability for a particular application. YOU&I Corporation assumes no responsibility for personal injury or property damage caused by the material. Users assume all risks associated with the use of the material.

***** End of Documents

SAFETY DATA SHEET

According to Regulation (EC) No 1907/2006 (REACH), Annex II (COMMISSION REGULATION (EU) No 2015/830)



Date of issue: 2018-06-20
Revision date: 2023-04-17

SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1. Product identifier

Trade : MGI- Y.ORANGE

1.2. Relevant identified uses of the substance or mixture and uses advised against

1.2.1. Relevant identified uses

- Water-soluble stationary ink

1.2.2. Uses advised against

- Not available

1.3. Details of the supplier of the safety data sheet

Manufacturer/Supplier : YOU&I COPORATION
Address : 53, EMTIBEUI 26-RO, SIHEUNG-SI, GYEONGGI-DO, KOREA (ZIP CODE) 15118
Telephone : 82-31-494-2030
Email : tech@youicolor.com

1.4. Emergency telephone number

82-31-494-2030 (This number is serviced during office hours only.)
EU-wide emergency number : 112
See section 16.6 for the list of telephone number of poison centers in the European Economic Area.

SECTION 2: HAZARD IDENTIFICATION

2.1. Classification of the substance/mixture

2.1.1. Classification according to Regulation (EC) No 1272/2008 [CLP]
H411-Aquatic Chronic 2

2.2. Label elements

2.2.1. Labelling according to Regulation (EC) No 1272/2008 [CLP]

* Hazard Pictogram(s)



* Signal word : Warning

* Hazard statement(s)

H411: Toxic to aquatic life with long-lasting effects

* Precautionary statement(s)

1) Prevention

P273: Avoid release to the environment.

2) Response

P391: Collect spillage.

3) Storage

- Not applicable

4) Disposal

P501: Disposal contents/ container to in accordance with local national regulation.

2.3. Other hazards

- Not available

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS**3.1. Substances**

- Not applicable

3.2. Mixtures

Name	CAS No.	EINECS NO.	% [weight]	Classification [1272/2008/EC]
WATER	7732-18-5	231-791-2	40~60	Not classified
GLYCERINE	56-81-5	200-289-5	15~20	Not classified
ALUMINIUM POWDER	7429-90-5	231-072-3	3~7	   Flam. Solid 1, H228 Pyr. Liq. 1, H250 Water-react 2, H261 Specific target organ toxicity (repeated) 2, H373 Aquatic Chronic 1: H410 (M factor: 1)
C.I. PIGMENT RED 170	2786-76-7	220-509-3	0~5	Aquatic Chronic 4, H413
C.I. PIGMENT YELLOW 83	5567-15-7	226-939-8	0~5	Aquatic Chronic 3, H412
POLY ETHYLENE GLYCOL	25322-68-3	500-038-2	10~15	 Acute toxicity (Oral) 4, H302
2-AMINO-2-METHYL-1-PROPANOL	124-68-5	204-709-8	0~1	 Aquatic Chronic 4, H413 Eye Irrit. 1, H318 Skin Irrit. 2, H315

SECTION 4: FIRST AID MEASURES**4.1. Description of first aid measures****General**

- No general information.

Inhalation

- When exposed to large amounts of steam and mist, move to fresh air.
- Take specific treatment if needed.

Skin contact

- Flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes.
- Laundering enough contaminated clothing before reuse.

Eye contact

- Do not rub your eyes.
- Immediately flush eyes with plenty of water for at least 15 minutes and call a doctor/physician.

Ingestion

- Please be advised by doctor whether induction of vomit is demanded or not.
- Rinse your mouth with water immediately.

4.2. Most important symptoms and effects, both acute and delayed

- Not available

4.3. Indication of any immediate medical attention and special treatment needed

- Notify medical personnel of contaminated situations and have them take appropriate protective measures.

SECTION 5: FIREFIGHTING MEASURES**5.1. Extinguishing media**

Suitable extinguishing media

- Water, form, CO₂, NaHCO₃

Unsuitable extinguishing media

- Avoid use of water jet for extinguishing

5.2. Special hazards arising from the substance or mixture**Hazardous combustion products**

- Not available

5.3. Advice for firefighters

- Cool containers with water until well after fire is out.
- Keep unauthorized personnel out.
- Withdraw immediately in case of rising sound from venting safety devices or discoloration of tank.
- Wear appropriate protective equipment.
- Keep containers cool with water spray.
- Use fire fighting procedures suitable for surrounding area.
- Vapor or gas is burned at distant ignition sources can be spread quickly.

SECTION 6: ACCIDENTAL RELEASE MEASURES**6.1. Personal Precautions, protective equipment and emergency procedures****6.1.1. For non-emergency personnel**

- Protective equipment: Wear proper protective equipment.
- Emergency procedures: Not applicable
- If required, notify relevant authorities according to all applicable regulations.

6.1.2. For emergency responders

- Ventilate closed spaces before entering.
- Must work against the wind, let the upwind people to evacuate.
- Do not touch spilled material. Stop leak if you can do it without risk.
- Handling the damaged containers or spilled material after wearing protective equipment.
- Do not direct water at spill or source of leak.

6.2. Environmental precautions

- Prevent runoff and contact with waterways, drains or sewers.
- If large amounts have been spilled, inform the relevant authorities.
- Avoid dispersal of spilt material and runoff and contact with waterways, drains and sewers. If large spills, advise

6.3. Methods and material for containment and cleaning up**6.3.1. For containment**

- Clear spills immediately
- Clean up all spills immediately.
- Prevent, by any means available, spillage from entering drains or water course.

6.3.2. For cleaning up

- Large spill : Stay upwind and keep out of low areas. Dike for later disposal.
- Notification to central government, local government. When emissions at least of the standard amount
- Dispose of waste in accordance with local regulation.
- Appropriate container for disposal of spilled material collected.
- Small leak: sand or other non-combustible material, please let use absorption.
- Wipe off the solvent.
- Dike for later disposal.

6.3.3. Other information

- Slippery when spilt.

6.4. Reference to other sections

- See Section 7 for information on safe handling.
- See Section 8 for information on personal protection equipment.

- See Section 13 for information on disposal.

SECTION 7: HANDLING AND STORAGE

7.1. Precautions for safe handling

- Avoid direct physical contact.
- Get the manual before use.
- Refer to Engineering controls and personal protective equipment.
- Do not handle until all safety precautions have been read and understood.
- Do not inhale the steam prolonged or repeated.

7.2. Conditions for safe storage, including any incompatibilities

- Save in cool, dry and well ventilated place.
- Check regularly for leaks.
- Please pay attention to incompatibilities materials and conditions to avoid.
- Keep sealed when not in use.
- No open fire.

7.3. Specific end use(s)

- See Section 1 for information on 1.2 Relevant identified uses.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control parameters

8.1.1. Occupational exposure limits

European Union (EU) Commission Directive 2006/15/EC (IOELVs)

- Not available

European Union (EU) Commission Directive 2006/15/EC (IOELVs) - Skin

- Not available

8.1.2. Recommended Monitoring Procedures

- Personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment.

8.1.3. DNEL/PNEC - Values

- Not available

8.2. Exposure controls

8.2.1. Appropriate engineering controls

- A system of local and/or general exhaust is recommended to keep employee exposures above the Exposure Limits. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. The use of local exhaust ventilation is recommended to control emissions near the source.

8.2.2. Individual protection measures, such as personal protective equipment

Hand protection

- Wear appropriate glove.

Eye protection

- Wear primary eye protection such as splash resistant safety goggles with a secondary protection face shield.
- Provide an emergency eye wash station and quick drench shower in the immediate work area.

Respiratory Protection

- Under conditions of frequent use or heavy exposure, Respiratory protection may be needed.
- Respiratory protection is ranked in order from minimum to maximum.
- Consider warning properties before use.
- Any chemical cartridge respirator with organic vapor cartridge(s).
- Any chemical cartridge respirator with a full face piece and organic vapor cartridge(s).
- Any air-purifying respirator with a full face piece and an organic vapor canister.

- For Unknown Concentration or Immediately Dangerous to Life or Health : Any supplied-air respirator with full face piece and operated in a pressure-demand or other positive-pressure mode in combination with a separate escape supply. Any self-contained breathing apparatus with a full face piece.

Skin protection

- Wear appropriate clothing.

8.2.3 Environmental exposure controls

- Do not let product enter drains. For ecological information refer to section 12.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES**9.1. Information on basic physical and chemical properties**

Appearance(State)	Liquid
Appearance(Color)	ORANGE
Odor	Odorless
Odor threshold	Not available
pH	8.0 ± 1.0
Melting point/Freezing point	Not available
Initial boiling point and boiling range	> 100 °C
Flash point	300 °C
Evaporation rate	Not available
Flammability(solid, gas)	Not applicable
Upper/Lower Flammability or explosive	Not available
Vapour pressure	Not available
Vapour density	Not available
Relative density	1.1 ± 0.05 g/cm ³
Solubility	Fully miscible
Partition coefficient of n-octanol/water	Not available
Autoignition temperature	No self-igniting
Decomposition temperature	Not available
Viscosity	750 ± 150 Cps
Explosive properties	Not explosive
Oxidizing properties	Not available

9.2. Other information

- Not available

SECTION 10: STABILITY AND REACTIVITY**10.1. Reactivity**

- Not available

10.2. Chemical Stability

- This material is stable under recommended storage and handling conditions.

10.3. Possibility of hazardous reactions

- Hazardous Polymerization will not occur.

10.4. Conditions to avoid

- Avoid contact with incompatible materials and condition.
- Avoid : Accumulation of electrostatic charges, Heating, Flames and hot surfaces

10.5. Incompatible materials

- Not available

10.6. Hazardous decomposition products

- Not available

SECTION 11: TOXICOLOGICAL INFORMATION**11.1. Acute toxicity**

- **Oral**
 - Product (ATEmix) : >5000mg/kg
 - [GLYCERINE] : LD50 = 12600 mg/kg Rat (ChemIDplus)
- [POLY ETHYLENE GLYCOL] : LD50 = 600 mg/kg Rat (KOSHA)
- **Dermal**
 - Product (ATEmix) : >5000mg/kg
 - [GLYCERINE] : LD50 > 10000 mg/kg Rat (ChemIDplus)
- **Inhalation**
 - Product (ATEmix) : Not available
 - [GLYCERINE] : LC50 >2.75 mg/l 4 hr Rat (ECHA)

11.2. Skin corrosion/irritation

- [2-AMINO-2-METHYL-1-PROPANOL] : Classified as Category 2 (KOSHA)

11.3. Serious eye damage/irritation

- [2-AMINO-2-METHYL-1-PROPANOL] : Classified as Category 1 (KOSHA)

11.4. Respiratory sensitization

- Not available

11.5. Skin sensitization

- Not available

11.6. Germ cell mutagenicity

- Not available

11.7. Carcinogenicity

- **IARC**
 - Not available
- **OSHA**
 - Not available
- **ACGIH**
 - [ALUMINIUM POWDER] : A4
- **NTP**
 - Not available
- **EU CLP**
 - Not available

11.8. Reproductive toxicity

- Not available

11.9. Specific target organ toxicity(single exposure):

- Not available

11.10. Specific target organ toxicity(repeated exposure):

- [ALUMINIUM POWDER] : Classified as Category 2 (KOSHA)

11.11. Aspiration hazard

- Not available

SECTION 12: ECOLOGICAL INFORMATION**12.1. Toxicity****12.1.1. Fish**

- [GLYCERINE] : LC50 >11 mg/ℓ 96 hr *Cyprinodon variegatus* (ECHA)
- [C.I. PIGMENT RED 170] : LC50 >0.217 mg/ℓ 96 hr (ECOSAR)
- [C.I. PIGMENT YELLOW 83] : LC50 45 mg/ℓ 48 hr *Oncorhynchus mykiss* (ECOTOX)

12.1.2. Invertebrate

- [GLYCERINE] : LC50 1955 mg/ℓ 48 hr *Daphnia magna* (ECHA)
- [ALUMINIUM POWDER] : NOEC > 100 mg/ℓ 48 hr *Daphnia magna* (IUCLID)
- [C.I. PIGMENT RED 170] : LC50 0.545 mg/ℓ 48 hr (ECOSHA)

12.1.3. Algae

- [ALUMINIUM POWDER] : NOEC > 0.052 mg/ℓ 48 hr *Selenastrum capricornutum* (M = 1) (OECD TG 201, GLP)
- [C.I. PIGMENT RED 170] : EC50 0.06 mg/ℓ 96 hr (ECOSHA)

12.2. Persistence and degradability**12.2.1. Persistence**

- [C.I. PIGMENT RED 170] : 6.04 log Kow (ECOSAR)
- [C.I. PIGMENT YELLOW 83] : 7.54 log Kow (IUCLID)

12.2.2. Degradability

- [2-AMINO-2-METHYL-1-PROPANOL] : BOD5/COD 0.005 (KOSHA)

12.3. Bioaccumulative potential**12.3.1. Bioaccumulation**

- [2-AMINO-2-METHYL-1-PROPANOL] : 1.3 BSAF (*Leuciscus idus*(Fish, fresh water), 50ug/) (KOSHA)
- [C.I. PIGMENT RED 170] : 10 (QSAR)
- [C.I. PIGMENT YELLOW 83] : 10 (QSAR)

12.3.2. Biodegradability

- [2-AMINO-2-METHYL-1-PROPANOL] : 40 (%) 28 days (KOSHA)
- [C.I. PIGMENT YELLOW 83] : 6 (%) 28 days (NITE)

12.4. Mobility in soil

- Not available

12.5. Results of PBT and vPvB assessment

- Not available

12.6. Other adverse effects

- Not available

SECTION 13: DISPOSAL CONSIDERATIONS**13.1. Waste treatment methods**

- Since more than two kinds of designated waste is mixed, it is difficult to treat separately, then can be reduction or stabilization by incineration or similar process.
- If water separation is possible, pre-process with Water separation process.
- Dispose by incineration.
- The user of this product must disposal by oneself or entrust to waste disposer or person who other's waste recycle and dispose, person who establish and operate waste disposal facilities.
- Dispose of waste in accordance with all applicable laws and regulations.

SECTION 14: TRANSPORT INFORMATION**14.1. UN No.****14.1.1. UN No. (ADR/RID/ADN)**

3082

14.1.2. UN No. (IMDG CODE/IATA DGR)

3082

14.1.3. UN No. (ICAO)

3082

14.2. UN proper shipping name

- Not applicable

14.3. Transport hazard class(es)**14.3.1. ADR/RID/ADN Class**

- Not applicable

14.3.2. ADR/RID/ADN Class

- Not applicable

14.3.3. ADR Label No.

- Not applicable

14.3.4. IMDG Class

- Not applicable

14.3.5. ICAO Class/Division

- Not applicable

14.3.6. Transport Labels

- Not applicable

14.4. Packing group**14.4.1. ADR/RID/ADN Packing group**

- Not applicable

14.4.2. IMDG Packing group

- Not applicable

14.4.3. ICAO Packing group

- Not applicable

14.5. Environmental hazards

- Not applicable

14.6. Special precautions for user

- Local transport follows in accordance with Dangerous goods Safety Management Law.
- Package and transport follow in accordance with Department of Transportation (DOT) and other regulatory agency
- EmS FIRE SCHEDULE : Not applicable
- EmS SPILLAGE SCHEDULE : Not applicable
- Air transport(IATA): Not subject to IATA regulations.

14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

- Not applicable

SECTION 15: REGULATORY INFORMATION**15.1. Safety, health and environmental regulation / legislation specific for the substance or mixture****15.1.1. Europe regulatory****15.1.1.1 REACH Restricted substance under REACH**

- Not applicable

15.1.1.2 REACH Substances subject to authorization under REACH

- Not applicable

15.1.1.3 REACH SVHC

- Not applicable

15.1.1.4 Europe PBT

- Not applicable

15.1.1.5 European Union (EU) Transport of Dangerous Goods by Road - Dangerous Goods List

- Not applicable

15.2. Chemical Safety Assessment

- Not conducted

SECTION 16: OTHER INFORMATION**16.1. Indication of changes**

- The Safety Data Sheet has been reviewed and the data therein were revised and laid out according to the requirements of the Commission Regulation (EC) No. 1907/2006

16.2. Abbreviations and acronyms

- 1272/2008 CLP : Classification, Labelling and Packaging regulation.
- REACH : Registration, Evaluation and authorization of chemical substances.
- DNEL : Derive no effects level
- PNEC : Predicted no effect concentration

16.3. Key literature references and sources for data

- This Safety Data Sheet was compiled with data and information from the following sources: RTECS, ECOSAR, HSDB, SIDS SIAP, ChemWATCH, CESAR, Chemical DB

16.4. Classification procedure

- The mixture classification has been derived based on the classification of the individual components in accordance with the rules set out in Regulation (EC) No 1272/2008 (CLP) as well as the translation tables in Annex VII to the same regulation.

16.5. Training advice

- Not applicable

16.6. Further information

- The (M)SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings. Risks may be determined by reference to Exposures Scenarios. Scale of use, frequency of use and current or available engineering controls must be considered.
- This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only.
- It should not therefore be construed as guaranteeing any specific property of the product.
- Contact a poison control centre, List of Telephone Numbers : AUSTRIA (Vienna Wien) +43 1 406 43 43; BELGIUM (Brussels Bruxelles) +32 70 245 245; BULGARIA (Sofia) +359 2 9154 409; CZECH REPUBLIC (Prague Praha) +420 224 919 293; DENMARK (Copenhagen) 82 12 12 12; ESTONIA (Tallinn) 112; FINLAND (Helsinki) +358 9 471 977; FRANCE (Paris) +33 1 40 0548 48; GERMANY (Berlin) +49 30 19240; GREECE (Athens Athinai) +30 10 779 3777; HUNGARY (Budapest) 06 80 20 11 99; ICELAND (Reykjavik) +354 525 111, +354 543 2222; IRELAND (Dublin) +353 1 8379964; ITALY (Rome) +39 06 305 4343; LATVIA (Riga) +371 704 2468; LITHUANIA (Vilnius) +370 5 236 20 52 or +370 687 53378; MALTA (Valletta) 2425 0000; NETHERLANDS (Bilthoven) +31 30 274 88 88; NORWAY (Oslo) 22 591300; POLAND (Gdansk) +48 58301 65 16 or +48 58 349 2831; PORTUGAL (Lisbon Lisboa) 808 250 143; ROMANIA (Bucharest) +40 21 3183606 SLOVAKIA (Bratislava) +421 2 54 77 4166; SLOVENIA (Ljubljana) + 386 41 650 500; SPAIN (Barcelona) +34 93 227 98 33 or +34 93 227 54 00 bleep 190; SWEDEN (Stockholm) 112 or +46 8 33 12 31 (mon-fri 9.00-17.00); UNITED KINGDOM (London) 112 or 0845 4647 (NHS Direct).

Disclaimer of Liability

This information is based on our present state of knowledge. It should not therefore be construed as guaranteeing specific properties of the products Described or their suitability for a particular application. YOU&I Corporation assumes no responsibility for personal injury or property damage caused by the material.

Users assume all risks associated with the use of the material.

***** End of Documents

SAFETY DATA SHEET

According to Regulation (EC) No 1907/2006 (REACH), Annex II (COMMISSION REGULATION (EU) No 2015/830)



Date of issue: 2018-06-20

Revision date: 2023-04-17

SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1. Product identifier

Trade : MGI- T.BLUE

1.2. Relevant identified uses of the substance or mixture and uses advised against

1.2.1. Relevant identified uses

- Water-soluble stationary ink

1.2.2. Uses advised against

- Not available

1.3. Details of the supplier of the safety data sheet

Manufacturer/Supplier : YOU&I CORPORATION

Address : 53, EMTIBEUI 26-RO, SIHEUNG-SI, GYEONGGI-DO, KOREA (ZIP CODE) 15118

Telephone : 82-31-494-2030

Email : tech@youicolor.com

1.4. Emergency telephone number

82-31-494-2030 (This number is serviced during office hours only.)

EU-wide emergency number : 112

See section 16.6 for the list of telephone number of poison centers in the European Economic Area.

SECTION 2: HAZARD IDENTIFICATION

2.1. Classification of the substance/mixture

2.1.1. Classification according to Regulation (EC) No 1272/2008 [CLP]

H411-Aquatic Chronic 2

2.2. Label elements

2.2.1. Labelling according to Regulation (EC) No 1272/2008 [CLP]

* Hazard Pictogram(s)



* Signal word : Warning

* Hazard statement(s)

H411: Toxic to aquatic life with long-lasting effects

* Precautionary statement(s)

1) Prevention

P273: Avoid release to the environment.

2) Response

P391: Collect spillage.

3) Storage

- Not applicable

4) Disposal

P501: Disposal contents/ container to in accordance with local national regulation.

2.3. Other hazards

- Not available

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1. Substances

- Not applicable

3.2. Mixtures

Name	CAS No.	EINECS NO.	% [weight]	Classification [1272/2008/EC]
WATER	7732-18-5	231-791-2	40~60	Not classified
GLYCERINE	56-81-5	200-289-5	15~20	Not classified
ALUMINIUM POWDER	7429-90-5	231-072-3	3~7	   'Flam. Solid 1, H228 Pyr. Liq. 1, H250 Water-react 2, H261 Specific target organ toxicity (repeated) 2, H373
C.I. PIGMENT BLUE 15:3	147-14-8	205-685-1	0~5	Not classified
C.I. PIGMENT GREEN 7	1328-53-6	215-524-7	0~5	Not classified
POLY ETHYLENE GLYCOL	25322-68-3	500-038-2	10~15	 Acute toxicity (Oral) 4, H302
2-AMINO-2-METHYL-1-PROPANOL	124-68-5	204-709-8	0~1	 Aquatic Chronic 4, H413 Eye Irrit. 1, H318 Skin Irrit. 2, H315

SECTION 4: FIRST AID MEASURES**4.1. Description of first aid measures****General**

- No general information.

Inhalation

- When exposed to large amounts of steam and mist, move to fresh air.
- Take specific treatment if needed.

Skin contact

- Flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes.
- Laundering enough contaminated clothing before reuse.

Eye contact

- Do not rub your eyes.
- Immediately flush eyes with plenty of water for at least 15 minutes and call a doctor/physician.

Ingestion

- Please be advised by doctor whether induction of vomit is demanded or not.
- Rinse your mouth with water immediately.

4.2. Most important symptoms and effects, both acute and delayed

- Not available

4.3. Indication of any immediate medical attention and special treatment needed

- Notify medical personnel of contaminated situations and have them take appropriate protective measures.

SECTION 5: FIREFIGHTING MEASURES**5.1. Extinguishing media****Suitable extinguishing media**

- Water, foam, CO₂, NaHCO₃

Unsuitable extinguishing media

- Avoid use of water jet for extinguishing

5.2. Special hazards arising from the substance or mixture**Hazardous combustion products**

- Not available

5.3. Advice for firefighters

- Cool containers with water until well after fire is out.
- Keep unauthorized personnel out.
- Withdraw immediately in case of rising sound from venting safety devices or discoloration of tank.
- Wear appropriate protective equipment.
- Keep containers cool with water spray.
- Use fire fighting procedures suitable for surrounding area.
- Vapor or gas is burned at distant ignition sources can be spread quickly.

SECTION 6: ACCIDENTAL RELEASE MEASURES**6.1. Personal Precautions, protective equipment and emergency procedures****6.1.1. For non-emergency personnel**

- Protective equipment: Wear proper protective equipment.
- Emergency procedures: Not applicable
- If required, notify relevant authorities according to all applicable regulations.

6.1.2. For emergency responders

- Ventilate closed spaces before entering.
- Must work against the wind, let the upwind people to evacuate.
- Do not touch spilled material. Stop leak if you can do it without risk.
- Handling the damaged containers or spilled material after wearing protective equipment.
- Do not direct water at spill or source of leak.

6.2. Environmental precautions

- Prevent runoff and contact with waterways, drains or sewers.
- If large amounts have been spilled, inform the relevant authorities.
- Avoid dispersal of spilt material and runoff and contact with waterways, drains and sewers. If large spills, advise

6.3. Methods and material for containment and cleaning up**6.3.1. For containment**

- Clear spills immediately
- Clean up all spills immediately.
- Prevent, by any means available, spillage from entering drains or water course.

6.3.2. For cleaning up

- Large spill : Stay upwind and keep out of low areas. Dike for later disposal.
- Notification to central government, local government. When emissions at least of the standard amount
- Dispose of waste in accordance with local regulation.
- Appropriate container for disposal of spilled material collected.
- Small leak: sand or other non-combustible material, please let use absorption.
- Wipe off the solvent.
- Dike for later disposal.

6.3.3. Other information

- Slippery when spilt.

6.4. Reference to other sections

- See Section 7 for information on safe handling.
- See Section 8 for information on personal protection equipment.
- See Section 13 for information on disposal.

SECTION 7: HANDLING AND STORAGE**7.1. Precautions for safe handling**

- Avoid direct physical contact.
- Get the manual before use.
- Refer to Engineering controls and personal protective equipment.
- Do not handle until all safety precautions have been read and understood.
- Do not inhale the steam prolonged or repeated.

7.2. Conditions for safe storage, including any incompatibilities

- Save in cool, dry and well ventilated place.
- Check regularly for leaks.
- Please pay attention to incompatibilities materials and conditions to avoid.
- Keep sealed when not in use.
- No open fire.

7.3. Specific end use(s)

- See Section 1 for information on 1.2 Relevant identified uses.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION**8.1. Control parameters****8.1.1. Occupational exposure limits****European Union (EU) Commission Directive 2006/15/EC (IOELVs)**

- Not available

European Union (EU) Commission Directive 2006/15/EC (IOELVs) - Skin

- Not available

8.1.2. Recommended Monitoring Procedures

- Personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment.

8.1.3. DNEL/PNEC - Values

- Not available

8.2. Exposure controls**8.2.1. Appropriate engineering controls**

- A system of local and/or general exhaust is recommended to keep employee exposures above the Exposure Limits. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. The use of local exhaust ventilation is recommended to control emissions near the source.

8.2.2. Individual protection measures, such as personal protective equipment**Hand protection**

- Wear appropriate glove.

Eye protection

- Wear primary eye protection such as splash resistant safety goggles with a secondary protection face shield.
- Provide an emergency eye wash station and quick drench shower in the immediate work area.

Respiratory Protection

- Under conditions of frequent use or heavy exposure, Respiratory protection may be needed.
- Respiratory protection is ranked in order from minimum to maximum.
- Consider warning properties before use.
- Any chemical cartridge respirator with organic vapor cartridge(s).
- Any chemical cartridge respirator with a full face piece and organic vapor cartridge(s).
- Any air-purifying respirator with a full face piece and an organic vapor canister.

- For Unknown Concentration or Immediately Dangerous to Life or Health : Any supplied-air respirator with full face piece and operated in a pressure-demand or other positive-pressure mode in combination with a separate escape supply. Any self-contained breathing apparatus with a full face piece.

Skin protection

- Wear appropriate clothing.

8.2.3 Environmental exposure controls

- Do not let product enter drains. For ecological information refer to section 12.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES**9.1. Information on basic physical and chemical properties**

Appearance(State)	Liquid
Appearance(Color)	T.BLUE
Odor	Odorless
Odor threshold	Not available
pH	8.0 ± 1.0
Melting point/Freezing point	Not available
Initial boiling point and boiling range	> 100 °C
Flash point	300 °C
Evaporation rate	Not available
Flammability(solid, gas)	Not applicable
Upper/Lower Flammability or explosive	Not available
Vapour pressure	Not available
Vapour density	Not available
Relative density	1.1 ± 0.05 g/cm ³
Solubility	Fully miscible
Partition coefficient of n-octanol/water	Not available
Autoignition temperature	No self-igniting
Decomposition temperature	Not available
Viscosity	750 ± 150 Cps
Explosive properties	Not explosive
Oxidizing properties	Not available

9.2. Other information

- Not available

SECTION 10: STABILITY AND REACTIVITY**10.1. Reactivity**

- Not available

10.2. Chemical Stability

- This material is stable under recommended storage and handling conditions.

10.3. Possibility of hazardous reactions

- Hazardous Polymerization will not occur.

10.4. Conditions to avoid

- Avoid contact with incompatible materials and condition.
- Avoid : Accumulation of electrostatic charges, Heating, Flames and hot surfaces

10.5. Incompatible materials

- Not available

10.6. Hazardous decomposition products

- Not available

SECTION 11: TOXICOLOGICAL INFORMATION**11.1. Acute toxicity**

- **Oral**
 - Product (ATEmix) : >5000mg/kg
 - [GLYCERINE] : LD50 = 12600 mg/kg Rat (ChemIDplus)
- [POLY ETHYLENE GLYCOL] : LD50 = 600 mg/kg Rat (KOSHA)
- **Dermal**
 - Product (ATEmix) : >5000mg/kg
 - [GLYCERINE] : LD50 > 10000 mg/kg Rat (ChemIDplus)
- **Inhalation**
 - Product (ATEmix) : Not available
 - [GLYCERINE] : LC50 >2.75 mg/l 4 hr Rat (ECHA)

11.2. Skin corrosion/irritation

- [2-AMINO-2-METHYL-1-PROPANOL] : Classified as Category 2 (KOSHA)

11.3. Serious eye damage/irritation

- [2-AMINO-2-METHYL-1-PROPANOL] : Classified as Category 1 (KOSHA)

11.4. Respiratory sensitization

- Not available

11.5. Skin sensitization

- Not available

11.6. Germ cell mutagenicity

- Not available

11.7. Carcinogenicity

- **IARC**
 - Not available
- **OSHA**
 - Not available
- **ACGIH**
 - [ALUMINIUM POWDER] : A4
- **NTP**
 - Not available
- **EU CLP**
 - Not available

11.8. Reproductive toxicity

- Not available

11.9. Specific target organ toxicity(single exposure):

- Not available

11.10. Specific target organ toxicity(repeated exposure):

- [ALUMINIUM POWDER] : Classified as Category 2 (KOSHA)

11.11. Aspiration hazard

- Not available

SECTION 12: ECOLOGICAL INFORMATION**12.1. Toxicity****12.1.1. Fish**

- [GLYCERINE] : LC50 >11 mg/l 96 hr Cyprinodon variegatus (ECHA)

12.1.2. Invertebrate

- [GLYCERINE] : LC50 1955 mg/l 48 hr Daphnia magna (ECHA)
- [ALUMINIUM POWDER] : NOEC > 100 mg/l 48 hr Daphnia magna (IUCLID)

12.1.3. Algae

- [ALUMINIUM POWDER] : NOEC > 0.052 mg/l 48 hr Selenastrum capricornutum (M = 1) (OECD TG 201, GLP)

12.2. Persistence and degradability**12.2.1. Persistence**

- Not available

12.2.2. Degradability

- [2-AMINO-2-METHYL-1-PROPANOL] : BOD5/COD 0.005 (KOSHA)

12.3. Bioaccumulative potential**12.3.1. Bioaccumulation**

- [2-AMINO-2-METHYL-1-PROPANOL] : 1.3 BSAF (Leuciscus idus(Fish, fresh water), 50ug/) (KOSHA)

12.3.2. Biodegradability

- [2-AMINO-2-METHYL-1-PROPANOL] : 40 (%) 28 days (KOSHA)

12.4. Mobility in soil

- Not available

12.5. Results of PBT and vPvB assessment

- Not available

12.6. Other adverse effects

- Not available

SECTION 13: DISPOSAL CONSIDERATIONS**13.1. Waste treatment methods**

- Since more than two kinds of designated waste is mixed, it is difficult to treat separately, then can be reduction or stabilization by incineration or similar process.
- If water separation is possible, pre-process with Water separation process.
- Dispose by incineration.
- The user of this product must disposal by oneself or entrust to waste disposer or person who other's waste recycle and dispose, person who establish and operate waste disposal facilities.
- Dispose of waste in accordance with all applicable laws and regulations.

SECTION 14: TRANSPORT INFORMATION**14.1. UN No.****14.1.1. UN No. (ADR/RID/ADN)**

3082

14.1.2. UN No. (IMDG CODE/IATA DGR)

3082

14.1.3. UN No. (ICAO)

3082

14.2. UN proper shipping name

- Not applicable

14.3. Transport hazard class(es)

14.3.1. ADR/RID/ADN Class

- Not applicable

14.3.2. ADR/RID/ADN Class

- Not applicable

14.3.3. ADR Label No.

- Not applicable

14.3.4. IMDG Class

- Not applicable

14.3.5. ICAO Class/Division

- Not applicable

14.3.6. Transport Labels

- Not applicable

14.4. Packing group**14.4.1. ADR/RID/ADN Packing group**

- Not applicable

14.4.2. IMDG Packing group

- Not applicable

14.4.3. ICAO Packing group

- Not applicable

14.5. Environmental hazards

- Not applicable

14.6. Special precautions for user

- Local transport follows in accordance with Dangerous goods Safety Management Law.
- Package and transport follow in accordance with Department of Transportation (DOT) and other regulatory agency
- EmS FIRE SCHEDULE : Not applicable
- EmS SPILLAGE SCHEDULE : Not applicable
- Air transport(IATA): Not subject to IATA regulations.

14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

- Not applicable

SECTION 15: REGULATORY INFORMATION**15.1. Safety, health and environmental regulation / legislation specific for the substance or mixture****15.1.1. Europe regulatory****15.1.1.1 REACH Restricted substance under REACH**

- Not applicable

15.1.1.2 REACH Substances subject to authorization under REACH

- Not applicable

15.1.1.3 REACH SVHC

- Not applicable

15.1.1.4 Europe PBT

- Not applicable

15.1.1.5 European Union (EU) Transport of Dangerous Goods by Road - Dangerous Goods List

- Not applicable

15.2. Chemical Safety Assessment

- Not conducted

SECTION 16: OTHER INFORMATION**16.1. Indication of changes**

- The Safety Data Sheet has been reviewed and the data therein were revised and laid out according to the requirements of the Commission Regulation (EC) No. 1907/2006

16.2. Abbreviations and acronyms

- 1272/2008 CLP : Classification, Labelling and Packaging regulation.
- REACH : Registration, Evaluation and authorization of chemical substances.
- DNEL : Derive no effects level
- PNEC : Predicted no effect concentration

16.3. Key literature references and sources for data

- This Safety Data Sheet was compiled with data and information from the following sources: RTECS, ECOSAR, HSDB, SIDS SIAP, ChemWATCH, CESAR, Chemical DB

16.4. Classification procedure

- The mixture classification has been derived based on the classification of the individual components in accordance with the rules set out in Regulation (EC) No 1272/2008 (CLP) as well as the translation tables in Annex VII to the same regulation.

16.5. Training advice

- Not applicable

16.6. Further information

- The (M)SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings. Risks may be determined by reference to Exposures Scenarios. Scale of use, frequency of use and current or available engineering controls must be considered.
- This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only.
- It should not therefore be construed as guaranteeing any specific property of the product.
- Contact a poison control centre, List of Telephone Numbers : AUSTRIA (Vienna Wien) +43 1 406 43 43; BELGIUM (Brussels Bruxelles) +32 70 245 245; BULGARIA (Sofia) +359 2 9154 409; CZECH REPUBLIC (Prague Praha) +420 224 919 293; DENMARK (Copenhagen) 82 12 12 12; ESTONIA (Tallinn) 112; FINLAND (Helsinki) +358 9 471 977; FRANCE (Paris) +33 1 40 0548 48; GERMANY (Berlin) +49 30 19240; GREECE (Athens Athinai) +30 10 779 3777; HUNGARY (Budapest) 06 80 20 11 99; ICELAND (Reykjavik) +354 525 111, +354 543 2222; IRELAND (Dublin) +353 1 8379964; ITALY (Rome) +39 06 305 4343; LATVIA (Riga) +371 704 2468; LITHUANIA (Vilnius) +370 5 236 20 52 or +370 687 53378; MALTA (Valletta) 2425 0000; NETHERLANDS (Bilthoven) +31 30 274 88 88; NORWAY (Oslo) 22 591300; POLAND (Gdansk) +48 58301 65 16 or +48 58 349 2831; PORTUGAL (Lisbon Lisboa) 808 250 143; ROMANIA (Bucharest) +40 21 3183606 SLOVAKIA (Bratislava) +421 2 54 77 4166; SLOVENIA (Ljubljana) + 386 41 650 500; SPAIN (Barcelona) +34 93 227 98 33 or +34 93 227 54 00 bleep 190; SWEDEN (Stockholm) 112 or +46 8 33 12 31 (mon-fri 9.00-17.00); UNITED KINGDOM (London) 112 or 0845 4647 (NHS Direct).

Disclaimer of Liability

This information is based on our present state of knowledge. It should not therefore be construed as guaranteeing specific properties of the products Described or their suitability for a particular application. YOU&I Corporation assumes no responsibility for personal injury or property damage caused by the material. Users assume all risks associated with the use of the material.

***** End of Documents

SAFETY DATA SHEET

According to Regulation (EC) No 1907/2006 (REACH), Annex II (COMMISSION REGULATION (EU) No 2015/830)



Date of issue: 2018-06-20
Revision date: 2023-04-17

SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1. Product identifier

Trade : MGI- SCARLET

1.2. Relevant identified uses of the substance or mixture and uses advised against

1.2.1. Relevant identified uses

- Water-soluble stationary ink

1.2.2. Uses advised against

- Not available

1.3. Details of the supplier of the safety data sheet

Manufacturer/Supplier : YOU&I COPORATION
Address : 53, EMTIBEUI 26-RO, SIHEUNG-SI, GYEONGGI-DO, KOREA (ZIP CODE) 15118
Telephone : 82-31-494-2030
Email : tech@youicolor.com

1.4. Emergency telephone number

82-31-494-2030 (This number is serviced during office hours only.)
EU-wide emergency number : 112
See section 16.6 for the list of telephone number of poison centers in the European Economic Area.

SECTION 2: HAZARD IDENTIFICATION

2.1. Classification of the substance/mixture

2.1.1. Classification according to Regulation (EC) No 1272/2008 [CLP]
H411-Aquatic Chronic 2

2.2. Label elements

2.2.1. Labelling according to Regulation (EC) No 1272/2008 [CLP]

* Hazard Pictogram(s)



* Signal word : Warning

* Hazard statement(s)

H411: Toxic to aquatic life with long-lasting effects

* Precautionary statement(s)

1) Prevention

P273: Avoid release to the environment.

2) Response

P391: Collect spillage.

3) Storage

- Not applicable

4) Disposal

P501: Disposal contents/ container to in accordance with local national regulation.

2.3. Other hazards

- Not available

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS**3.1. Substances**

- Not applicable

3.2. Mixtures

Name	CAS No.	EINECS NO.	% [weight]	Classification [1272/2008/EC]
WATER	7732-18-5	231-791-2	40~60	Not classified
GLYCERINE	56-81-5	200-289-5	15~20	Not classified
ALUMINIUM POWDER	7429-90-5	231-072-3	3~7	   Flam. Solid 1, H228 Pyr. Liq. 1, H250 Water-react 2, H261 Specific target organ toxicity (repeated) 2, H373 Aquatic Chronic 1: H410 (M factor: 1)
C.I. PIGMENT RED 170	2786-76-7	220-509-3	0~5	Aquatic Chronic 4, H413
C.I. PIGMENT YELLOW 83	5567-15-7	226-939-8	0~5	Aquatic Chronic 3, H412
POLY ETHYLENE GLYCOL	25322-68-3	500-038-2	10~15	 Acute toxicity (Oral) 4, H302
2-AMINO-2-METHYL-1-PROPANOL	124-68-5	204-709-8	0~1	 Aquatic Chronic 4, H413 Eye Irrit. 1, H318 Skin Irrit. 2, H315

SECTION 4: FIRST AID MEASURES**4.1. Description of first aid measures****General**

- No general information.

Inhalation

- When exposed to large amounts of steam and mist, move to fresh air.
- Take specific treatment if needed.

Skin contact

- Flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes.
- Laundering enough contaminated clothing before reuse.

Eye contact

- Do not rub your eyes.
- Immediately flush eyes with plenty of water for at least 15 minutes and call a doctor/physician.

Ingestion

- Please be advised by doctor whether induction of vomit is demanded or not.
- Rinse your mouth with water immediately.

4.2. Most important symptoms and effects, both acute and delayed

- Not available

4.3. Indication of any immediate medical attention and special treatment needed

- Notify medical personnel of contaminated situations and have them take appropriate protective measures.

SECTION 5: FIREFIGHTING MEASURES**5.1. Extinguishing media**

Suitable extinguishing media

- Water, form, CO₂, NaHCO₃

Unsuitable extinguishing media

- Avoid use of water jet for extinguishing

5.2. Special hazards arising from the substance or mixture**Hazardous combustion products**

- Not available

5.3. Advice for firefighters

- Cool containers with water until well after fire is out.
- Keep unauthorized personnel out.
- Withdraw immediately in case of rising sound from venting safety devices or discoloration of tank.
- Wear appropriate protective equipment.
- Keep containers cool with water spray.
- Use fire fighting procedures suitable for surrounding area.
- Vapor or gas is burned at distant ignition sources can be spread quickly.

SECTION 6: ACCIDENTAL RELEASE MEASURES**6.1. Personal Precautions, protective equipment and emergency procedures****6.1.1. For non-emergency personnel**

- Protective equipment: Wear proper protective equipment.
- Emergency procedures: Not applicable
- If required, notify relevant authorities according to all applicable regulations.

6.1.2. For emergency responders

- Ventilate closed spaces before entering.
- Must work against the wind, let the upwind people to evacuate.
- Do not touch spilled material. Stop leak if you can do it without risk.
- Handling the damaged containers or spilled material after wearing protective equipment.
- Do not direct water at spill or source of leak.

6.2. Environmental precautions

- Prevent runoff and contact with waterways, drains or sewers.
- If large amounts have been spilled, inform the relevant authorities.
- Avoid dispersal of spilt material and runoff and contact with waterways, drains and sewers. If large spills, advise

6.3. Methods and material for containment and cleaning up**6.3.1. For containment**

- Clear spills immediately
- Clean up all spills immediately.
- Prevent, by any means available, spillage from entering drains or water course.

6.3.2. For cleaning up

- Large spill : Stay upwind and keep out of low areas. Dike for later disposal.
- Notification to central government, local government. When emissions at least of the standard amount
- Dispose of waste in accordance with local regulation.
- Appropriate container for disposal of spilled material collected.
- Small leak: sand or other non-combustible material, please let use absorption.
- Wipe off the solvent.
- Dike for later disposal.

6.3.3. Other information

- Slippery when spilt.

6.4. Reference to other sections

- See Section 7 for information on safe handling.
- See Section 8 for information on personal protection equipment.

- See Section 13 for information on disposal.

SECTION 7: HANDLING AND STORAGE

7.1. Precautions for safe handling

- Avoid direct physical contact.
- Get the manual before use.
- Refer to Engineering controls and personal protective equipment.
- Do not handle until all safety precautions have been read and understood.
- Do not inhale the steam prolonged or repeated.

7.2. Conditions for safe storage, including any incompatibilities

- Save in cool, dry and well ventilated place.
- Check regularly for leaks.
- Please pay attention to incompatibilities materials and conditions to avoid.
- Keep sealed when not in use.
- No open fire.

7.3. Specific end use(s)

- See Section 1 for information on 1.2 Relevant identified uses.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control parameters

8.1.1. Occupational exposure limits

European Union (EU) Commission Directive 2006/15/EC (IOELVs)

- Not available

European Union (EU) Commission Directive 2006/15/EC (IOELVs) - Skin

- Not available

8.1.2. Recommended Monitoring Procedures

- Personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment.

8.1.3. DNEL/PNEC - Values

- Not available

8.2. Exposure controls

8.2.1. Appropriate engineering controls

- A system of local and/or general exhaust is recommended to keep employee exposures above the Exposure Limits. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. The use of local exhaust ventilation is recommended to control emissions near the source.

8.2.2. Individual protection measures, such as personal protective equipment

Hand protection

- Wear appropriate glove.

Eye protection

- Wear primary eye protection such as splash resistant safety goggles with a secondary protection face shield.
- Provide an emergency eye wash station and quick drench shower in the immediate work area.

Respiratory Protection

- Under conditions of frequent use or heavy exposure, Respiratory protection may be needed.
- Respiratory protection is ranked in order from minimum to maximum.
- Consider warning properties before use.
- Any chemical cartridge respirator with organic vapor cartridge(s).
- Any chemical cartridge respirator with a full face piece and organic vapor cartridge(s).
- Any air-purifying respirator with a full face piece and an organic vapor canister.

- For Unknown Concentration or Immediately Dangerous to Life or Health : Any supplied-air respirator with full face piece and operated in a pressure-demand or other positive-pressure mode in combination with a separate escape supply. Any self-contained breathing apparatus with a full face piece.

Skin protection

- Wear appropriate clothing.

8.2.3 Environmental exposure controls

- Do not let product enter drains. For ecological information refer to section 12.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES**9.1. Information on basic physical and chemical properties**

Appearance(State)	Liquid
Appearance(Color)	RED
Odor	Odorless
Odor threshold	Not available
pH	8.0 ± 1.0
Melting point/Freezing point	Not available
Initial boiling point and boiling range	> 100 °C
Flash point	300 °C
Evaporation rate	Not available
Flammability(solid, gas)	Not applicable
Upper/Lower Flammability or explosive	Not available
Vapour pressure	Not available
Vapour density	Not available
Relative density	1.1 ± 0.05 g/cm ³
Solubility	Fully miscible
Partition coefficient of n-octanol/water	Not available
Autoignition temperature	No self-igniting
Decomposition temperature	Not available
Viscosity	750 ± 150 Cps
Explosive properties	Not explosive
Oxidizing properties	Not available

9.2. Other information

- Not available

SECTION 10: STABILITY AND REACTIVITY**10.1. Reactivity**

- Not available

10.2. Chemical Stability

- This material is stable under recommended storage and handling conditions.

10.3. Possibility of hazardous reactions

- Hazardous Polymerization will not occur.

10.4. Conditions to avoid

- Avoid contact with incompatible materials and condition.
- Avoid : Accumulation of electrostatic charges, Heating, Flames and hot surfaces

10.5. Incompatible materials

- Not available

10.6. Hazardous decomposition products

- Not available

SECTION 11: TOXICOLOGICAL INFORMATION**11.1. Acute toxicity**

- **Oral**
 - Product (ATEmix) : >5000mg/kg
 - [GLYCERINE] : LD50 = 12600 mg/kg Rat (ChemIDplus)
- [POLY ETHYLENE GLYCOL] : LD50 = 600 mg/kg Rat (KOSHA)
- **Dermal**
 - Product (ATEmix) : >5000mg/kg
 - [GLYCERINE] : LD50 > 10000 mg/kg Rat (ChemIDplus)
- **Inhalation**
 - Product (ATEmix) : Not available
 - [GLYCERINE] : LC50 >2.75 mg/l 4 hr Rat (ECHA)

11.2. Skin corrosion/irritation

- [2-AMINO-2-METHYL-1-PROPANOL] : Classified as Category 2 (KOSHA)

11.3. Serious eye damage/irritation

- [2-AMINO-2-METHYL-1-PROPANOL] : Classified as Category 1 (KOSHA)

11.4. Respiratory sensitization

- Not available

11.5. Skin sensitization

- Not available

11.6. Germ cell mutagenicity

- Not available

11.7. Carcinogenicity

- **IARC**
 - Not available
- **OSHA**
 - Not available
- **ACGIH**
 - [ALUMINIUM POWDER] : A4
- **NTP**
 - Not available
- **EU CLP**
 - Not available

11.8. Reproductive toxicity

- Not available

11.9. Specific target organ toxicity(single exposure):

- Not available

11.10. Specific target organ toxicity(repeated exposure):

- [ALUMINIUM POWDER] : Classified as Category 2 (KOSHA)

11.11. Aspiration hazard

- Not available

SECTION 12: ECOLOGICAL INFORMATION**12.1. Toxicity****12.1.1. Fish**

- [GLYCERINE] : LC50 >11 mg/ℓ 96 hr *Cyprinodon variegatus* (ECHA)
- [C.I. PIGMENT RED 170] : LC50 >0.217 mg/ℓ 96 hr (ECOSAR)
- [C.I. PIGMENT YELLOW 83] : LC50 45 mg/ℓ 48 hr *Oncorhynchus mykiss* (ECOTOX)

12.1.2. Invertebrate

- [GLYCERINE] : LC50 1955 mg/ℓ 48 hr *Daphnia magna* (ECHA)
- [ALUMINIUM POWDER] : NOEC > 100 mg/ℓ 48 hr *Daphnia magna* (IUCLID)
- [C.I. PIGMENT RED 170] : LC50 0.545 mg/ℓ 48 hr (ECOSHA)

12.1.3. Algae

- [ALUMINIUM POWDER] : NOEC > 0.052 mg/ℓ 48 hr *Selenastrum capricornutum* (M = 1) (OECD TG 201, GLP)
- [C.I. PIGMENT RED 170] : EC50 0.06 mg/ℓ 96 hr (ECOSHA)

12.2. Persistence and degradability**12.2.1. Persistence**

- [C.I. PIGMENT RED 170] : 6.04 log Kow (ECOSAR)
- [C.I. PIGMENT YELLOW 83] : 7.54 log Kow (IUCLID)

12.2.2. Degradability

- [2-AMINO-2-METHYL-1-PROPANOL] : BOD5/COD 0.005 (KOSHA)

12.3. Bioaccumulative potential**12.3.1. Bioaccumulation**

- [2-AMINO-2-METHYL-1-PROPANOL] : 1.3 BSAF (*Leuciscus idus*(Fish, fresh water), 50ug/) (KOSHA)
- [C.I. PIGMENT RED 170] : 10 (QSAR)
- [C.I. PIGMENT YELLOW 83] : 10 (QSAR)

12.3.2. Biodegradability

- [2-AMINO-2-METHYL-1-PROPANOL] : 40 (%) 28 days (KOSHA)
- [C.I. PIGMENT YELLOW 83] : 6 (%) 28 days (NITE)

12.4. Mobility in soil

- Not available

12.5. Results of PBT and vPvB assessment

- Not available

12.6. Other adverse effects

- Not available

SECTION 13: DISPOSAL CONSIDERATIONS**13.1. Waste treatment methods**

- Since more than two kinds of designated waste is mixed, it is difficult to treat separately, then can be reduction or stabilization by incineration or similar process.
- If water separation is possible, pre-process with Water separation process.
- Dispose by incineration.
- The user of this product must disposal by oneself or entrust to waste disposer or person who other's waste recycle and dispose, person who establish and operate waste disposal facilities.
- Dispose of waste in accordance with all applicable laws and regulations.

SECTION 14: TRANSPORT INFORMATION**14.1. UN No.****14.1.1. UN No. (ADR/RID/ADN)**

3082

14.1.2. UN No. (IMDG CODE/IATA DGR)

3082

14.1.3. UN No. (ICAO)

3082

14.2. UN proper shipping name

- Not applicable

14.3. Transport hazard class(es)

14.3.1. ADR/RID/ADN Class

- Not applicable

14.3.2. ADR/RID/ADN Class

- Not applicable

14.3.3. ADR Label No.

- Not applicable

14.3.4. IMDG Class

- Not applicable

14.3.5. ICAO Class/Division

- Not applicable

14.3.6. Transport Labels

- Not applicable

14.4. Packing group

14.4.1. ADR/RID/ADN Packing group

- Not applicable

14.4.2. IMDG Packing group

- Not applicable

14.4.3. ICAO Packing group

- Not applicable

14.5. Environmental hazards

- Not applicable

14.6. Special precautions for user

- Local transport follows in accordance with Dangerous goods Safety Management Law.
- Package and transport follow in accordance with Department of Transportation (DOT) and other regulatory agency
- EmS FIRE SCHEDULE : Not applicable
- EmS SPILLAGE SCHEDULE : Not applicable
- Air transport(IATA): Not subject to IATA regulations.

14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

- Not applicable

SECTION 15: REGULATORY INFORMATION

15.1. Safety, health and environmental regulation / legislation specific for the substance or mixture

15.1.1. Europe regulatory

15.1.1.1 REACH Restricted substance under REACH

- Not applicable

15.1.1.2 REACH Substances subject to authorization under REACH

- Not applicable

15.1.1.3 REACH SVHC

- Not applicable

15.1.1.4 Europe PBT

- Not applicable

15.1.1.5 European Union (EU) Transport of Dangerous Goods by Road - Dangerous Goods List

- Not applicable

15.2. Chemical Safety Assessment

- Not conducted

SECTION 16: OTHER INFORMATION**16.1. Indication of changes**

- The Safety Data Sheet has been reviewed and the data therein were revised and laid out according to the requirements of the Commission Regulation (EC) No. 1907/2006

16.2. Abbreviations and acronyms

- 1272/2008 CLP : Classification, Labelling and Packaging regulation.
- REACH : Registration, Evaluation and authorization of chemical substances.
- DNEL : Derive no effects level
- PNEC : Predicted no effect concentration

16.3. Key literature references and sources for data

- This Safety Data Sheet was compiled with data and information from the following sources: RTECS, ECOSAR, HSDB, SIDS SIAP, ChemWATCH, CESAR, Chemical DB

16.4. Classification procedure

- The mixture classification has been derived based on the classification of the individual components in accordance with the rules set out in Regulation (EC) No 1272/2008 (CLP) as well as the translation tables in Annex VII to the same regulation.

16.5. Training advice

- Not applicable

16.6. Further information

- The (M)SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings. Risks may be determined by reference to Exposures Scenarios. Scale of use, frequency of use and current or available engineering controls must be considered.
- This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only.
- It should not therefore be construed as guaranteeing any specific property of the product.
- Contact a poison control centre, List of Telephone Numbers : AUSTRIA (Vienna Wien) +43 1 406 43 43; BELGIUM (Brussels Bruxelles) +32 70 245 245; BULGARIA (Sofia) +359 2 9154 409; CZECH REPUBLIC (Prague Praha) +420 224 919 293; DENMARK (Copenhagen) 82 12 12 12; ESTONIA (Tallinn) 112; FINLAND (Helsinki) +358 9 471 977; FRANCE (Paris) +33 1 40 0548 48; GERMANY (Berlin) +49 30 19240; GREECE (Athens Athinai) +30 10 779 3777; HUNGARY (Budapest) 06 80 20 11 99; ICELAND (Reykjavik) +354 525 111, +354 543 2222; IRELAND (Dublin) +353 1 8379964; ITALY (Rome) +39 06 305 4343; LATVIA (Riga) +371 704 2468; LITHUANIA (Vilnius) +370 5 236 20 52 or +370 687 53378; MALTA (Valletta) 2425 0000; NETHERLANDS (Bilthoven) +31 30 274 88 88; NORWAY (Oslo) 22 591300; POLAND (Gdansk) +48 58301 65 16 or +48 58 349 2831; PORTUGAL (Lisbon Lisboa) 808 250 143; ROMANIA (Bucharest) +40 21 3183606 SLOVAKIA (Bratislava) +421 2 54 77 4166; SLOVENIA (Ljubljana) + 386 41 650 500; SPAIN (Barcelona) +34 93 227 98 33 or +34 93 227 54 00 bleep 190; SWEDEN (Stockholm) 112 or +46 8 33 12 31 (mon-fri 9.00-17.00); UNITED KINGDOM (London) 112 or 0845 4647 (NHS Direct).

Disclaimer of Liability

This information is based on our present state of knowledge. It should not therefore be construed as guaranteeing specific properties of the products Described or their suitability for a particular application. YOU&I Corporation assumes no responsibility for personal injury or property damage caused by the material.

Users assume all risks associated with the use of the material.

***** End of Documents

SAFETY DATA SHEET

According to Regulation (EC) No 1907/2006 (REACH), Annex II (COMMISSION REGULATION (EU) No 2015/830)



Date of issue: 2018-06-20
Revision date: 2023-04-17

SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1. Product identifier

Trade : MGI- ROSE

1.2. Relevant identified uses of the substance or mixture and uses advised against

1.2.1. Relevant identified uses

- Water-soluble stationary ink

1.2.2. Uses advised against

- Not available

1.3. Details of the supplier of the safety data sheet

Manufacturer/Supplier : YOU&I COPORATION
Address : 53, EMTIBEUI 26-RO, SIHEUNG-SI, GYEONGGI-DO, KOREA (ZIP CODE) 15118
Telephone : 82-31-494-2030
Email : tech@youicolor.com

1.4. Emergency telephone number

82-31-494-2030 (This number is serviced during office hours only.)
EU-wide emergency number : 112
See section 16.6 for the list of telephone number of poison centers in the European Economic Area.

SECTION 2: HAZARD IDENTIFICATION

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2.1.1. Classification according to Regulation (EC) No 1272/2008 [CLP]
H411-Aquatic Chronic 2

2.2. Label elements

2.2.1. Labelling according to Regulation (EC) No 1272/2008 [CLP]

* Hazard Pictogram(s)



* Signal word : Warning

* Hazard statement(s)

H411: Toxic to aquatic life with long-lasting effects

* Precautionary statement(s)

1) Prevention

P273: Avoid release to the environment.

2) Response

P391: Collect spillage.

3) Storage

- Not applicable

4) Disposal

P501: Disposal contents/ container to in accordance with local national regulation.

2.3. Other hazards

- Not available

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS**3.1. Substances**

- Not applicable

3.2. Mixtures

Name	CAS No.	EINECS NO.	% [weight]	Classification [1272/2008/EC]
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GLYCERINE	56-81-5	200-289-5	15~20	Not classified
ALUMINIUM POWDER	7429-90-5	231-072-3	3~7	   Flam. Solid 1, H228 Pyr. Liq. 1, H250 Water-react 2, H261 Specific target organ toxicity (repeated) 2, H373
C.I. PIGMENT RED 170	2786-76-7	220-509-3	0~5	Aquatic Chronic 4, H413
C.I. PIGMENT RED 122	980-26-7	213-561-3	0~5	 Acute toxicity (Inhalation) 4, H332
POLY ETHYLENE GLYCOL	25322-68-3	500-038-2	10~15	 Acute toxicity (Oral) 4, H302
2-AMINO-2-METHYL-1-PROPANOL	124-68-5	204-709-8	0~1	 Aquatic Chronic 4, H413 Eye Irrit. 1, H318 Skin Irrit. 2, H315

SECTION 4: FIRST AID MEASURES**4.1. Description of first aid measures****General**

- No general information.

Inhalation

- When exposed to large amounts of steam and mist, move to fresh air.
- Take specific treatment if needed.

Skin contact

- Flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes.
- Laundering enough contaminated clothing before reuse.

Eye contact

- Do not rub your eyes.
- Immediately flush eyes with plenty of water for at least 15 minutes and call a doctor/physician.

Ingestion

- Please be advised by doctor whether induction of vomit is demanded or not.
- Rinse your mouth with water immediately.

4.2. Most important symptoms and effects, both acute and delayed

- Not available

4.3. Indication of any immediate medical attention and special treatment needed

- Notify medical personnel of contaminated situations and have them take appropriate protective measures.

SECTION 5: FIREFIGHTING MEASURES**5.1. Extinguishing media****Suitable extinguishing media**

- Water, foam, CO₂, NaHCO₃

Unsuitable extinguishing media

- Avoid use of water jet for extinguishing

5.2. Special hazards arising from the substance or mixture**Hazardous combustion products**

- Not available

5.3. Advice for firefighters

- Cool containers with water until well after fire is out.
- Keep unauthorized personnel out.
- Withdraw immediately in case of rising sound from venting safety devices or discoloration of tank.
- Wear appropriate protective equipment.
- Keep containers cool with water spray.
- Use fire fighting procedures suitable for surrounding area.
- Vapor or gas is burned at distant ignition sources can be spread quickly.

SECTION 6: ACCIDENTAL RELEASE MEASURES**6.1. Personal Precautions, protective equipment and emergency procedures****6.1.1. For non-emergency personnel**

- Protective equipment: Wear proper protective equipment.
- Emergency procedures: Not applicable
- If required, notify relevant authorities according to all applicable regulations.

6.1.2. For emergency responders

- Ventilate closed spaces before entering.
- Must work against the wind, let the upwind people to evacuate.
- Do not touch spilled material. Stop leak if you can do it without risk.
- Handling the damaged containers or spilled material after wearing protective equipment.
- Do not direct water at spill or source of leak.

6.2. Environmental precautions

- Prevent runoff and contact with waterways, drains or sewers.
- If large amounts have been spilled, inform the relevant authorities.
- Avoid dispersal of spilt material and runoff and contact with waterways, drains and sewers. If large spills, advise

6.3. Methods and material for containment and cleaning up**6.3.1. For containment**

- Clear spills immediately
- Clean up all spills immediately.
- Prevent, by any means available, spillage from entering drains or water course.

6.3.2. For cleaning up

- Large spill : Stay upwind and keep out of low areas. Dike for later disposal.
- Notification to central government, local government. When emissions at least of the standard amount
- Dispose of waste in accordance with local regulation.
- Appropriate container for disposal of spilled material collected.
- Small leak: sand or other non-combustible material, please let use absorption.
- Wipe off the solvent.
- Dike for later disposal.

6.3.3. Other information

- Slippery when spilt.

6.4. Reference to other sections

- See Section 7 for information on safe handling.
- See Section 8 for information on personal protection equipment.
- See Section 13 for information on disposal.

SECTION 7: HANDLING AND STORAGE**7.1. Precautions for safe handling**

- Avoid direct physical contact.
- Get the manual before use.
- Refer to Engineering controls and personal protective equipment.
- Do not handle until all safety precautions have been read and understood.
- Do not inhale the steam prolonged or repeated.

7.2. Conditions for safe storage, including any incompatibilities

- Save in cool, dry and well ventilated place.
- Check regularly for leaks.
- Please pay attention to incompatibilities materials and conditions to avoid.
- Keep sealed when not in use.
- No open fire.

7.3. Specific end use(s)

- See Section 1 for information on 1.2 Relevant identified uses.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION**8.1. Control parameters****8.1.1. Occupational exposure limits****European Union (EU) Commission Directive 2006/15/EC (IOELVs)**

- Not available

European Union (EU) Commission Directive 2006/15/EC (IOELVs) - Skin

- Not available

8.1.2. Recommended Monitoring Procedures

- Personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment.

8.1.3. DNEL/PNEC - Values

- Not available

8.2. Exposure controls**8.2.1. Appropriate engineering controls**

- A system of local and/or general exhaust is recommended to keep employee exposures above the Exposure Limits. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. The use of local exhaust ventilation is recommended to control emissions near the source.

8.2.2. Individual protection measures, such as personal protective equipment**Hand protection**

- Wear appropriate glove.

Eye protection

- Wear primary eye protection such as splash resistant safety goggles with a secondary protection face shield.
- Provide an emergency eye wash station and quick drench shower in the immediate work area.

Respiratory Protection

- Under conditions of frequent use or heavy exposure, Respiratory protection may be needed.
- Respiratory protection is ranked in order from minimum to maximum.
- Consider warning properties before use.

- Any chemical cartridge respirator with organic vapor cartridge(s).
- Any chemical cartridge respirator with a full face piece and organic vapor cartridge(s).
- Any air-purifying respirator with a full face piece and an organic vapor canister.
- For Unknown Concentration or Immediately Dangerous to Life or Health : Any supplied-air respirator with full face piece and operated in a pressure-demand or other positive-pressure mode in combination with a separate escape supply. Any self-contained breathing apparatus with a full face piece.

Skin protection

- Wear appropriate clothing.

8.2.3 Environmental exposure controls

- Do not let product enter drains. For ecological information refer to section 12.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES**9.1. Information on basic physical and chemical properties**

Appearance(State)	Liquid
Appearance(Color)	RED
Odor	Odorless
Odor threshold	Not available
pH	8.0 ± 1.0
Melting point/Freezing point	Not available
Initial boiling point and boiling range	> 100 °C
Flash point	300 °C
Evaporation rate	Not available
Flammability(solid, gas)	Not applicable
Upper/Lower Flammability or explosive	Not available
Vapour pressure	Not available
Vapour density	Not available
Relative density	1.1 ± 0.05 g/cm ³
Solubility	Fully miscible
Partition coefficient of n-octanol/water	Not available
Autoignition temperature	No self-igniting
Decomposition temperature	Not available
Viscosity	750 ± 150 Cps
Explosive properties	Not explosive
Oxidizing properties	Not available

9.2. Other information

- Not available

SECTION 10: STABILITY AND REACTIVITY**10.1. Reactivity**

- Not available

10.2. Chemical Stability

- This material is stable under recommended storage and handling conditions.

10.3. Possibility of hazardous reactions

- Hazardous Polymerization will not occur.

10.4. Conditions to avoid

- Avoid contact with incompatible materials and condition.
- Avoid : Accumulation of electrostatic charges, Heating, Flames and hot surfaces

10.5. Incompatible materials

- Not available

10.6. Hazardous decomposition products

- Not available

SECTION 11: TOXICOLOGICAL INFORMATION**11.1. Acute toxicity**

- **Oral**
 - Product (ATEmix) : >5000mg/kg
 - [GLYCERINE] : LD50 = 12600 mg/kg Rat (ChemIDplus)
- [POLY ETHYLENE GLYCOL] : LD50 = 600 mg/kg Rat (KOSHA)
- **Dermal**
 - Product (ATEmix) : >5000mg/kg
 - [GLYCERINE] : LD50 > 10000 mg/kg Rat (ChemIDplus)
- **Inhalation**
 - Product (ATEmix) : Not available
 - [GLYCERINE] : LC50 >2.75 mg/l 4 hr Rat (ECHA)

11.2. Skin corrosion/irritation

- [2-AMINO-2-METHYL-1-PROPANOL] : Classified as Category 2 (KOSHA)

11.3. Serious eye damage/irritation

- [2-AMINO-2-METHYL-1-PROPANOL] : Classified as Category 1 (KOSHA)

11.4. Respiratory sensitization

- Not available

11.5. Skin sensitization

- Not available

11.6. Germ cell mutagenicity

- Not available

11.7. Carcinogenicity

- **IARC**
 - Not available
- **OSHA**
 - Not available
- **ACGIH**
 - [ALUMINIUM POWDER] : A4
- **NTP**
 - Not available
- **EU CLP**
 - Not available

11.8. Reproductive toxicity

- Not available

11.9. Specific target organ toxicity(single exposure):

- Not available

11.10. Specific target organ toxicity(repeated exposure):

- [ALUMINIUM POWDER] : Classified as Category 2 (KOSHA)

11.11. Aspiration hazard

- Not available

SECTION 12: ECOLOGICAL INFORMATION**12.1. Toxicity****12.1.1. Fish**

- [GLYCERINE] : LC50 >11 mg/l 96 hr Cyprinodon variegatus (ECHA)
- [C.I. PIGMENT RED 170] : LC50 >0.217 mg/l 96 hr (ECOSAR)

12.1.2. Invertebrate

- [GLYCERINE] : LC50 1955 mg/l 48 hr Daphnia magna (ECHA)
- [ALUMINIUM POWDER] : NOEC > 100 mg/l 48 hr Daphnia magna (IUCLID)
- [C.I. PIGMENT RED 170] : LC50 0.545 mg/l 48 hr (ECOSHA)

12.1.3. Algae

- [ALUMINIUM POWDER] : NOEC > 0.052 mg/l 48 hr Selenastrum capricornutum (M = 1) (OECD TG 201, GLP)
- [C.I. PIGMENT RED 170] : EC50 0.06 mg/l 96 hr (ECOSHA)

12.2. Persistence and degradability**12.2.1. Persistence**

- [C.I. PIGMENT RED 170] : 6.04 log Kow (ECOSAR)

12.2.2. Degradability

- [2-AMINO-2-METHYL-1-PROPANOL] : BOD5/COD 0.005 (KOSHA)

12.3. Bioaccumulative potential**12.3.1. Bioaccumulation**

- [2-AMINO-2-METHYL-1-PROPANOL] : 1.3 BSAF (Leuciscus idus(Fish, fresh water), 50ug/) (KOSHA)
- [C.I. PIGMENT RED 170] : 10 (QSAR)

12.3.2. Biodegradability

- [2-AMINO-2-METHYL-1-PROPANOL] : 40 (%) 28 days (KOSHA)

12.4. Mobility in soil

- Not available

12.5. Results of PBT and vPvB assessment

- Not available

12.6. Other adverse effects

- Not available

SECTION 13: DISPOSAL CONSIDERATIONS**13.1. Waste treatment methods**

- Since more than two kinds of designated waste is mixed, it is difficult to treat separately, then can be reduction or stabilization by incineration or similar process.
- If water separation is possible, pre-process with Water separation process.
- Dispose by incineration.
- The user of this product must disposal by oneself or entrust to waste disposer or person who other's waste recycle and dispose, person who establish and operate waste disposal facilities.
- Dispose of waste in accordance with all applicable laws and regulations.

SECTION 14: TRANSPORT INFORMATION**14.1. UN No.****14.1.1. UN No. (ADR/RID/ADN)**

3082

14.1.2. UN No. (IMDG CODE/IATA DGR)

3082

14.1.3. UN No. (ICAO)

3082

14.2. UN proper shipping name

- Not applicable

14.3. Transport hazard class(es)**14.3.1. ADR/RID/ADN Class**

- Not applicable

14.3.2. ADR/RID/ADN Class

- Not applicable

14.3.3. ADR Label No.

- Not applicable

14.3.4. IMDG Class

- Not applicable

14.3.5. ICAO Class/Division

- Not applicable

14.3.6. Transport Labels

- Not applicable

14.4. Packing group**14.4.1. ADR/RID/ADN Packing group**

- Not applicable

14.4.2. IMDG Packing group

- Not applicable

14.4.3. ICAO Packing group

- Not applicable

14.5. Environmental hazards

- Not applicable

14.6. Special precautions for user

- Local transport follows in accordance with Dangerous goods Safety Management Law.
- Package and transport follow in accordance with Department of Transportation (DOT) and other regulatory agency
- EmS FIRE SCHEDULE : Not applicable
- EmS SPILLAGE SCHEDULE : Not applicable
- Air transport(IATA): Not subject to IATA regulations.

14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

- Not applicable

SECTION 15: REGULATORY INFORMATION**15.1. Safety, health and environmental regulation / legislation specific for the substance or mixture****15.1.1. Europe regulatory****15.1.1.1 REACH Restricted substance under REACH**

- Not applicable

15.1.1.2 REACH Substances subject to authorization under REACH

- Not applicable

15.1.1.3 REACH SVHC

- Not applicable

15.1.1.4 Europe PBT

- Not applicable

15.1.1.5 European Union (EU) Transport of Dangerous Goods by Road - Dangerous Goods List

- Not applicable

15.2. Chemical Safety Assessment

- Not conducted

SECTION 16: OTHER INFORMATION**16.1. Indication of changes**

- The Safety Data Sheet has been reviewed and the data therein were revised and laid out according to the requirements of the Commission Regulation (EC) No. 1907/2006

16.2. Abbreviations and acronyms

- 1272/2008 CLP : Classification, Labelling and Packaging regulation.
- REACH : Registration, Evaluation and authorization of chemical substances.
- DNEL : Derive no effects level
- PNEC : Predicted no effect concentration

16.3. Key literature references and sources for data

- This Safety Data Sheet was compiled with data and information from the following sources: RTECS, ECOSAR, HSDB, SIDS SIAP, ChemWATCH, CESAR, Chemical DB

16.4. Classification procedure

- The mixture classification has been derived based on the classification of the individual components in accordance with the rules set out in Regulation (EC) No 1272/2008 (CLP) as well as the translation tables in Annex VII to the same regulation.

16.5. Training advice

- Not applicable

16.6. Further information

- The (M)SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings. Risks may be determined by reference to Exposures Scenarios. Scale of use, frequency of use and current or available engineering controls must be considered.
- This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only.
- It should not therefore be construed as guaranteeing any specific property of the product.
- Contact a poison control centre, List of Telephone Numbers : AUSTRIA (Vienna Wien) +43 1 406 43 43; BELGIUM (Brussels Bruxelles) +32 70 245 245; BULGARIA (Sofia) +359 2 9154 409; CZECH REPUBLIC (Prague Praha) +420 224 919 293; DENMARK (Copenhagen) 82 12 12 12; ESTONIA (Tallinn) 112; FINLAND (Helsinki) +358 9 471 977; FRANCE (Paris) +33 1 40 0548 48; GERMANY (Berlin) +49 30 19240; GREECE (Athens Athinaï) +30 10 779 3777; HUNGARY (Budapest) 06 80 20 11 99; ICELAND (Reykjavik) +354 525 111, +354 543 2222; IRELAND (Dublin) +353 1 8379964; ITALY (Rome) +39 06 305 4343; LATVIA (Riga) +371 704 2468; LITHUANIA (Vilnius) +370 5 236 20 52 or +370 687 53378; MALTA (Valletta) 2425 0000; NETHERLANDS (Bilthoven) +31 30 274 88 88; NORWAY (Oslo) 22 591300; POLAND (Gdansk) +48 58301 65 16 or +48 58 349 2831; PORTUGAL (Lisbon Lisboa) 808 250 143; ROMANIA (Bucharest) +40 21 3183606 SLOVAKIA (Bratislava) +421 2 54 77 4166; SLOVENIA (Ljubljana) + 386 41 650 500; SPAIN (Barcelona) +34 93 227 98 33 or +34 93 227 54 00 bleep 190; SWEDEN (Stockholm) 112 or +46 8 33 12 31 (mon-fri 9.00-17.00); UNITED KINGDOM (London) 112 or 0845 4647 (NHS Direct).

Disclaimer of Liability

This information is based on our present state of knowledge.
It should not therefore be construed as guaranteeing specific properties of the products
Described or their suitability for a particular application. YOU&I Corporation assumes

no responsibility for personal injury or property damage caused by the material.
Users assume all risks associated with the use of the material.

***** End of Documents

SAFETY DATA SHEET

According to Regulation (EC) No 1907/2006 (REACH), Annex II (COMMISSION REGULATION (EU) No 2015/830)



Date of issue: 2018-06-20
Revision date: 2022-04-17

SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1. Product identifier

Trade : MGI- LVIOLET

1.2. Relevant identified uses of the substance or mixture and uses advised against

1.2.1. Relevant identified uses

- Water-soluble stationary ink

1.2.2. Uses advised against

- Not available

1.3. Details of the supplier of the safety data sheet

Manufacturer/Supplier : YOU&I COPORATION
Address : 53, EMTIBEUI 26-RO, SIHEUNG-SI, GYEONGGI-DO, KOREA (ZIP CODE) 15118
Telephone : 82-31-494-2030
Email : tech@youicolor.com

1.4. Emergency telephone number

82-31-494-2030 (This number is serviced during office hours only.)
EU-wide emergency number : 112
See section 16.6 for the list of telephone number of poison centers in the European Economic Area.

SECTION 2: HAZARD IDENTIFICATION

2.1. Classification of the substance/mixture

2.1.1. Classification according to Regulation (EC) No 1272/2008 [CLP]
H411-Aquatic Chronic 2

2.2. Label elements

2.2.1. Labelling according to Regulation (EC) No 1272/2008 [CLP]

* Hazard Pictogram(s)



* Signal word : Warning

* Hazard statement(s)

H411: Toxic to aquatic life with long-lasting effects

* Precautionary statement(s)

1) Prevention

P273: Avoid release to the environment.

2) Response

P391: Collect spillage.

3) Storage

- Not applicable

4) Disposal

P501: Disposal contents/ container to in accordance with local national regulation.

2.3. Other hazards

- Not available

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS**3.1. Substances**

- Not applicable

3.2. Mixtures

Name	CAS No.	EINECS NO.	% [weight]	Classification [1272/2008/EC]
WATER	7732-18-5	231-791-2	40~60	Not classified
GLYCERINE	56-81-5	200-289-5	15~20	Not classified
ALUMINIUM POWDER	7429-90-5	231-072-3	3~7	   Flam. Solid 1, H228 Pyr. Liq. 1, H250 Water-react 2, H261 Specific target organ toxicity (repeated) 2, H373 Aquatic Chronic 1: H410 (M-factor: 1)
C.I. PIGMENT RED 122	980-26-7	213-561-3	0~5	 Acute toxicity (Inhalation) 4, H332
C.I. PIGMENT VIOLET 23	6358-30-1	228-767-9	0~5	 Specific target organ toxicity (single), H335
POLY ETHYLENE GLYCOL	25322-68-3	500-038-2	10~15	 Acute toxicity (Oral) 4, H302
2-AMINO-2-METHYL-1-PROPANOL	124-68-5	204-709-8	0~1	 Aquatic Chronic 4, H413 Eye Irrit. 1, H318 Skin Irrit. 2, H315

SECTION 4: FIRST AID MEASURES**4.1. Description of first aid measures****General**

- No general information.

Inhalation

- When exposed to large amounts of steam and mist, move to fresh air.
- Take specific treatment if needed.

Skin contact

- Flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes.
- Laundering enough contaminated clothing before reuse.

Eye contact

- Do not rub your eyes.
- Immediately flush eyes with plenty of water for at least 15 minutes and call a doctor/physician.

Ingestion

- Please be advised by doctor whether induction of vomit is demanded or not.
- Rinse your mouth with water immediately.

4.2. Most important symptoms and effects, both acute and delayed

- Not available

4.3. Indication of any immediate medical attention and special treatment needed

- Notify medical personnel of contaminated situations and have them take appropriate protective measures.

SECTION 5: FIREFIGHTING MEASURES**5.1. Extinguishing media****Suitable extinguishing media**

- Water, foam, CO₂, NaHCO₃

Unsuitable extinguishing media

- Avoid use of water jet for extinguishing

5.2. Special hazards arising from the substance or mixture**Hazardous combustion products**

- Not available

5.3. Advice for firefighters

- Cool containers with water until well after fire is out.
- Keep unauthorized personnel out.
- Withdraw immediately in case of rising sound from venting safety devices or discoloration of tank.
- Wear appropriate protective equipment.
- Keep containers cool with water spray.
- Use fire fighting procedures suitable for surrounding area.
- Vapor or gas is burned at distant ignition sources can be spread quickly.

SECTION 6: ACCIDENTAL RELEASE MEASURES**6.1. Personal Precautions, protective equipment and emergency procedures****6.1.1. For non-emergency personnel**

- Protective equipment: Wear proper protective equipment.
- Emergency procedures: Not applicable
- If required, notify relevant authorities according to all applicable regulations.

6.1.2. For emergency responders

- Ventilate closed spaces before entering.
- Must work against the wind, let the upwind people to evacuate.
- Do not touch spilled material. Stop leak if you can do it without risk.
- Handling the damaged containers or spilled material after wearing protective equipment.
- Do not direct water at spill or source of leak.

6.2. Environmental precautions

- Prevent runoff and contact with waterways, drains or sewers.
- If large amounts have been spilled, inform the relevant authorities.
- Avoid dispersal of spilt material and runoff and contact with waterways, drains and sewers. If large spills, advise

6.3. Methods and material for containment and cleaning up**6.3.1. For containment**

- Clear spills immediately
- Clean up all spills immediately.
- Prevent, by any means available, spillage from entering drains or water course.

6.3.2. For cleaning up

- Large spill : Stay upwind and keep out of low areas. Dike for later disposal.
- Notification to central government, local government. When emissions at least of the standard amount
- Dispose of waste in accordance with local regulation.
- Appropriate container for disposal of spilled material collected.
- Small leak: sand or other non-combustible material, please let use absorption.
- Wipe off the solvent.
- Dike for later disposal.

6.3.3. Other information

- Slippery when spilt.

6.4. Reference to other sections

- See Section 7 for information on safe handling.
- See Section 8 for information on personal protection equipment.
- See Section 13 for information on disposal.

SECTION 7: HANDLING AND STORAGE**7.1. Precautions for safe handling**

- Avoid direct physical contact.
- Get the manual before use.
- Refer to Engineering controls and personal protective equipment.
- Do not handle until all safety precautions have been read and understood.
- Do not inhale the steam prolonged or repeated.

7.2. Conditions for safe storage, including any incompatibilities

- Save in cool, dry and well ventilated place.
- Check regularly for leaks.
- Please pay attention to incompatibilities materials and conditions to avoid.
- Keep sealed when not in use.
- No open fire.

7.3. Specific end use(s)

- See Section 1 for information on 1.2 Relevant identified uses.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION**8.1. Control parameters****8.1.1. Occupational exposure limits****European Union (EU) Commission Directive 2006/15/EC (IOELVs)**

- Not available

European Union (EU) Commission Directive 2006/15/EC (IOELVs) - Skin

- Not available

8.1.2. Recommended Monitoring Procedures

- Personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment.

8.1.3. DNEL/PNEC - Values

- Not available

8.2. Exposure controls**8.2.1. Appropriate engineering controls**

- A system of local and/or general exhaust is recommended to keep employee exposures above the Exposure Limits. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. The use of local exhaust ventilation is recommended to control emissions near the source.

8.2.2. Individual protection measures, such as personal protective equipment**Hand protection**

- Wear appropriate glove.

Eye protection

- Wear primary eye protection such as splash resistant safety goggles with a secondary protection face shield.
- Provide an emergency eye wash station and quick drench shower in the immediate work area.

Respiratory Protection

- Under conditions of frequent use or heavy exposure, Respiratory protection may be needed.
- Respiratory protection is ranked in order from minimum to maximum.
- Consider warning properties before use.
- Any chemical cartridge respirator with organic vapor cartridge(s).
- Any chemical cartridge respirator with a full face piece and organic vapor cartridge(s).
- Any air-purifying respirator with a full face piece and an organic vapor canister.
- For Unknown Concentration or Immediately Dangerous to Life or Health : Any supplied-air respirator with full face piece and operated in a pressure-demand or other positive-pressure mode in combination with a separate escape supply. Any self-contained breathing apparatus with a full face piece.

Skin protection

- Wear appropriate clothing.

8.2.3 Environmental exposure controls

- Do not let product enter drains. For ecological information refer to section 12.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES**9.1. Information on basic physical and chemical properties**

Appearance(State)	Liquid
Appearance(Color)	VIOLET
Odor	Odorless
Odor threshold	Not available
pH	8.0 ± 1.0
Melting point/Freezing point	Not available
Initial boiling point and boiling range	> 100 °C
Flash point	300 °C
Evaporation rate	Not available
Flammability(solid, gas)	Not applicable
Upper/Lower Flammability or explosive	Not available
Vapour pressure	Not available
Vapour density	Not available
Relative density	1.1 ± 0.05 g/cm ³
Solubility	Fully miscible
Partition coefficient of n-octanol/water	Not available
Autoignition temperature	No self-igniting
Decomposition temperature	Not available
Viscosity	750 ± 150 Cps
Explosive properties	Not explosive
Oxidizing properties	Not available

9.2. Other information

- Not available

SECTION 10: STABILITY AND REACTIVITY**10.1. Reactivity**

- Not available

10.2. Chemical Stability

- This material is stable under recommended storage and handling conditions.

10.3. Possibility of hazardous reactions

- Hazardous Polymerization will not occur.

10.4. Conditions to avoid

- Avoid contact with incompatible materials and condition.
- Avoid : Accumulation of electrostatic charges, Heating, Flames and hot surfaces

10.5. Incompatible materials

- Not available

10.6. Hazardous decomposition products

- Not available

SECTION 11: TOXICOLOGICAL INFORMATION**11.1. Acute toxicity**

- **Oral**
 - Product (ATEmix) : >5000mg/kg
 - [GLYCERINE] : LD50 = 12600 mg/kg Rat (ChemIDplus)
 - [POLY ETHYLENE GLYCOL] : LD50 = 600 mg/kg Rat (KOSHA)
- **Dermal**
 - Product (ATEmix) : >5000mg/kg
 - [GLYCERINE] : LD50 > 10000 mg/kg Rat (ChemIDplus)
- **Inhalation**
 - Product (ATEmix) : Not available
 - [GLYCERINE] : LC50 >2.75 mg/l 4 hr Rat (ECHA)

11.2. Skin corrosion/irritation

- [2-AMINO-2-METHYL-1-PROPANOL] : Classified as Category 2 (KOSHA)

11.3. Serious eye damage/irritation

- [2-AMINO-2-METHYL-1-PROPANOL] : Classified as Category 1 (KOSHA)

11.4. Respiratory sensitization

- Not available

11.5. Skin sensitization

- Not available

11.6. Germ cell mutagenicity

- Not available

11.7. Carcinogenicity

- **IARC**
 - Not available
- **OSHA**
 - Not available
- **ACGIH**
 - [ALUMINIUM POWDER] : A4 (KOSHA)
- **NTP**
 - Not available
- **EU CLP**
 - Not available

11.8. Reproductive toxicity

- Not available

11.9. Specific target organ toxicity(single exposure):

- [C.I. PIGMENT VIOLET 23] : Classified as Category 3 (Respiratory irritation) (KOSHA)

11.10. Specific target organ toxicity(repeated exposure):

- [ALUMINIUM POWDER] : Classified as Category 2 (KOSHA)

11.11. Aspiration hazard

- Not available

SECTION 12: ECOLOGICAL INFORMATION**12.1. Toxicity****12.1.1. Fish**

- [GLYCERINE] : LC50 >11 mg/l 96 hr Cyprinodon variegatus (ECHA)

12.1.2. Invertebrate

- [GLYCERINE] : LC50 1955 mg/l 48 hr Daphnia magna (ECHA)
- [ALUMINIUM POWDER] : NOEC > 100 mg/l 48 hr Daphnia magna (IUCLID)

12.1.3. Algae

- [ALUMINIUM POWDER] : NOEC > 0.052 mg/l 48 hr Selenastrum capricornutum (M = 1) (OECD TG 201, GLP)

12.2. Persistence and degradability**12.2.1. Persistence**

- Not available

12.2.2. Degradability

- [2-AMINO-2-METHYL-1-PROPANOL] : BOD5/COD 0.005 (KOSHA)

12.3. Bioaccumulative potential**12.3.1. Bioaccumulation**

- [2-AMINO-2-METHYL-1-PROPANOL] : 1.3 BSAF (Leuciscus idus(Fish, fresh water), 50ug/) (KOSHA)

12.3.2. Biodegradability

- [2-AMINO-2-METHYL-1-PROPANOL] : 40 (%) 28 days (KOSHA)

12.4. Mobility in soil

- Not available

12.5. Results of PBT and vPvB assessment

- Not available

12.6. Other adverse effects

- Not available

SECTION 13: DISPOSAL CONSIDERATIONS**13.1. Waste treatment methods**

- Since more than two kinds of designated waste is mixed, it is difficult to treat separately, then can be reduction or stabilization by incineration or similar process.
- If water separation is possible, pre-process with Water separation process.
- Dispose by incineration.
- The user of this product must disposal by oneself or entrust to waste disposer or person who other's waste recycle and dispose, person who establish and operate waste disposal facilities.
- Dispose of waste in accordance with all applicable laws and regulations.

SECTION 14: TRANSPORT INFORMATION**14.1. UN No.****14.1.1. UN No. (ADR/RID/ADN)**

3082

14.1.2. UN No. (IMDG CODE/IATA DGR)

3082

14.1.3. UN No. (ICAO)

3082

14.2. UN proper shipping name

- Not applicable

14.3. Transport hazard class(es)**14.3.1. ADR/RID/ADN Class**

- Not applicable

14.3.2. ADR/RID/ADN Class

- Not applicable

14.3.3. ADR Label No.

- Not applicable

14.3.4. IMDG Class

- Not applicable

14.3.5. ICAO Class/Division

- Not applicable

14.3.6. Transport Labels

- Not applicable

14.4. Packing group**14.4.1. ADR/RID/ADN Packing group**

- Not applicable

14.4.2. IMDG Packing group

- Not applicable

14.4.3. ICAO Packing group

- Not applicable

14.5. Environmental hazards

- Not applicable

14.6. Special precautions for user

- Local transport follows in accordance with Dangerous goods Safety Management Law.
- Package and transport follow in accordance with Department of Transportation (DOT) and other regulatory agency
- EmS FIRE SCHEDULE : Not applicable
- EmS SPILLAGE SCHEDULE : Not applicable
- Air transport(IATA): Not subject to IATA regulations.

14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

- Not applicable

SECTION 15: REGULATORY INFORMATION**15.1. Safety, health and environmental regulation / legislation specific for the substance or mixture****15.1.1. Europe regulatory****15.1.1.1 REACH Restricted substance under REACH**

- Not applicable

15.1.1.2 REACH Substances subject to authorization under REACH

- Not applicable

15.1.1.3 REACH SVHC

- Not applicable

15.1.1.4 Europe PBT

- Not applicable

15.1.1.5 European Union (EU) Transport of Dangerous Goods by Road - Dangerous Goods List

- Not applicable

15.2. Chemical Safety Assessment

- Not conducted

SECTION 16: OTHER INFORMATION**16.1. Indication of changes**

- The Safety Data Sheet has been reviewed and the data therein were revised and laid out according to the requirements of the Commission Regulation (EC) No. 1907/2006

16.2. Abbreviations and acronyms

- 1272/2008 CLP : Classification, Labelling and Packaging regulation.
- REACH : Registration, Evaluation and authorization of chemical substances.
- DNEL : Derive no effects level
- PNEC : Predicted no effect concentration

16.3. Key literature references and sources for data

- This Safety Data Sheet was compiled with data and information from the following sources: RTECS, ECOSAR, HSDB, SIDS SIAP, ChemWATCH, CESAR, Chemical DB

16.4. Classification procedure

- The mixture classification has been derived based on the classification of the individual components in accordance with the rules set out in Regulation (EC) No 1272/2008 (CLP) as well as the translation tables in Annex VII to the same regulation.

16.5. Training advice

- Not applicable

16.6. Further information

- The (M)SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings. Risks may be determined by reference to Exposures Scenarios. Scale of use, frequency of use and current or available engineering controls must be considered.
- This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only.
- It should not therefore be construed as guaranteeing any specific property of the product.
- Contact a poison control centre, List of Telephone Numbers : AUSTRIA (Vienna Wien) +43 1 406 43 43; BELGIUM (Brussels Bruxelles) +32 70 245 245; BULGARIA (Sofia) +359 2 9154 409; CZECH REPUBLIC (Prague Praha) +420 224 919 293; DENMARK (Copenhagen) 82 12 12 12; ESTONIA (Tallinn) 112; FINLAND (Helsinki) +358 9 471 977; FRANCE (Paris) +33 1 40 0548 48; GERMANY (Berlin) +49 30 19240; GREECE (Athens Athinai) +30 10 779 3777; HUNGARY (Budapest) 06 80 20 11 99; ICELAND (Reykjavik) +354 525 111, +354 543 2222; IRELAND (Dublin) +353 1 8379964; ITALY (Rome) +39 06 305 4343; LATVIA (Riga) +371 704 2468; LITHUANIA (Vilnius) +370 5 236 20 52 or +370 687 53378; MALTA (Valletta) 2425 0000; NETHERLANDS (Bilthoven) +31 30 274 88 88; NORWAY (Oslo) 22 591300; POLAND (Gdansk) +48 58301 65 16 or +48 58 349 2831; PORTUGAL (Lisbon Lisboa) 808 250 143; ROMANIA (Bucharest) +40 21 3183606 SLOVAKIA (Bratislava) +421 2 54 77 4166; SLOVENIA (Ljubljana) + 386 41 650 500; SPAIN (Barcelona) +34 93 227 98 33 or +34 93 227 54 00 bleep 190; SWEDEN (Stockholm) 112 or +46 8 33 12 31 (mon-fri 9.00-17.00); UNITED KINGDOM (London) 112 or 0845 4647 (NHS Direct).

- Disclaimer of Liability

This information is based on our present state of knowledge.
It should not therefore be construed as guaranteeing specific properties of the products Described or their suitability for a particular application. YOU&I Corporation assumes no responsibility for personal injury or property damage caused by the material. Users assume all risks associated with the use of the material.

***** End of Documents

SAFETY DATA SHEET

According to Regulation (EC) No 1907/2006 (REACH), Annex II (COMMISSION REGULATION (EU) No 2015/830)



Date of issue: 2018-06-20
Revision date: 2022-04-17

SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1. Product identifier

Trade : MGI- D.VIOLET

1.2. Relevant identified uses of the substance or mixture and uses advised against

1.2.1. Relevant identified uses

- Water-soluble stationary ink

1.2.2. Uses advised against

- Not available

1.3. Details of the supplier of the safety data sheet

Manufacturer/Supplier : YOU&I COPORATION
Address : 53, EMTIBEUI 26-RO, SIHEUNG-SI, GYEONGGI-DO, KOREA (ZIP CODE) 15118
Telephone : 82-31-494-2030
Email : tech@youicolor.com

1.4. Emergency telephone number

82-31-494-2030 (This number is serviced during office hours only.)
EU-wide emergency number : 112
See section 16.6 for the list of telephone number of poison centers in the European Economic Area.

SECTION 2: HAZARD IDENTIFICATION

2.1. Classification of the substance/mixture

2.1.1. Classification according to Regulation (EC) No 1272/2008 [CLP]
H411-Aquatic Chronic 2

2.2. Label elements

2.2.1. Labelling according to Regulation (EC) No 1272/2008 [CLP]

* Hazard Pictogram(s)



* Signal word : Warning

* Hazard statement(s)

H411: Toxic to aquatic life with long-lasting effects

* Precautionary statement(s)

1) Prevention

P273: Avoid release to the environment.

2) Response

P391: Collect spillage.

3) Storage

- Not applicable

4) Disposal

P501: Disposal contents/ container to in accordance with local national regulation.

2.3. Other hazards

- Not available

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS**3.1. Substances**

- Not applicable

3.2. Mixtures

Name	CAS No.	EINECS NO.	% [weight]	Classification [1272/2008/EC]
WATER	7732-18-5	231-791-2	40~60	Not classified
GLYCERINE	56-81-5	200-289-5	15~20	Not classified
ALUMINIUM POWDER	7429-90-5	231-072-3	3~7	   Flam. Solid 1, H228 Pyr. Liq. 1, H250 Water-react 2, H261 Specific target organ toxicity (repeated) 2, H373 Aquatic Chronic 1: H410 (M-factor: 1)
C.I. PIGMENT BLUE 15:3	147-14-8	205-685-1	0~5	Not classified
C.I. PIGMENT VIOLET 23	6358-30-1	228-767-9	0~5	 Specific target organ toxicity (single), H335
POLY ETHYLENE GLYCOL	25322-68-3	500-038-2	10~15	 Acute toxicity (Oral) 4, H302
2-AMINO-2-METHYL-1-PROPANOL	124-68-5	204-709-8	0~1	 Aquatic Chronic 4, H413 Eye Irrit. 1, H318 Skin Irrit. 2, H315

SECTION 4: FIRST AID MEASURES**4.1. Description of first aid measures****General**

- No general information.

Inhalation

- When exposed to large amounts of steam and mist, move to fresh air.
- Take specific treatment if needed.

Skin contact

- Flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes.
- Laundering enough contaminated clothing before reuse.

Eye contact

- Do not rub your eyes.
- Immediately flush eyes with plenty of water for at least 15 minutes and call a doctor/physician.

Ingestion

- Please be advised by doctor whether induction of vomit is demanded or not.
- Rinse your mouth with water immediately.

4.2. Most important symptoms and effects, both acute and delayed

- Not available

4.3. Indication of any immediate medical attention and special treatment needed

- Notify medical personnel of contaminated situations and have them take appropriate protective measures.

SECTION 5: FIREFIGHTING MEASURES**5.1. Extinguishing media****Suitable extinguishing media**

- Water, foam, CO₂, NaHCO₃

Unsuitable extinguishing media

- Avoid use of water jet for extinguishing

5.2. Special hazards arising from the substance or mixture**Hazardous combustion products**

- Not available

5.3. Advice for firefighters

- Cool containers with water until well after fire is out.
- Keep unauthorized personnel out.
- Withdraw immediately in case of rising sound from venting safety devices or discoloration of tank.
- Wear appropriate protective equipment.
- Keep containers cool with water spray.
- Use fire fighting procedures suitable for surrounding area.
- Vapor or gas is burned at distant ignition sources can be spread quickly.

SECTION 6: ACCIDENTAL RELEASE MEASURES**6.1. Personal Precautions, protective equipment and emergency procedures****6.1.1. For non-emergency personnel**

- Protective equipment: Wear proper protective equipment.
- Emergency procedures: Not applicable
- If required, notify relevant authorities according to all applicable regulations.

6.1.2. For emergency responders

- Ventilate closed spaces before entering.
- Must work against the wind, let the upwind people to evacuate.
- Do not touch spilled material. Stop leak if you can do it without risk.
- Handling the damaged containers or spilled material after wearing protective equipment.
- Do not direct water at spill or source of leak.

6.2. Environmental precautions

- Prevent runoff and contact with waterways, drains or sewers.
- If large amounts have been spilled, inform the relevant authorities.
- Avoid dispersal of spilt material and runoff and contact with waterways, drains and sewers. If large spills, advise

6.3. Methods and material for containment and cleaning up**6.3.1. For containment**

- Clear spills immediately
- Clean up all spills immediately.
- Prevent, by any means available, spillage from entering drains or water course.

6.3.2. For cleaning up

- Large spill : Stay upwind and keep out of low areas. Dike for later disposal.
- Notification to central government, local government. When emissions at least of the standard amount
- Dispose of waste in accordance with local regulation.
- Appropriate container for disposal of spilled material collected.
- Small leak: sand or other non-combustible material, please let use absorption.
- Wipe off the solvent.
- Dike for later disposal.

6.3.3. Other information

- Slippery when spilt.

6.4. Reference to other sections

- See Section 7 for information on safe handling.
- See Section 8 for information on personal protection equipment.
- See Section 13 for information on disposal.

SECTION 7: HANDLING AND STORAGE**7.1. Precautions for safe handling**

- Avoid direct physical contact.
- Get the manual before use.
- Refer to Engineering controls and personal protective equipment.
- Do not handle until all safety precautions have been read and understood.
- Do not inhale the steam prolonged or repeated.

7.2. Conditions for safe storage, including any incompatibilities

- Save in cool, dry and well ventilated place.
- Check regularly for leaks.
- Please pay attention to incompatibilities materials and conditions to avoid.
- Keep sealed when not in use.
- No open fire.

7.3. Specific end use(s)

- See Section 1 for information on 1.2 Relevant identified uses.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION**8.1. Control parameters****8.1.1. Occupational exposure limits****European Union (EU) Commission Directive 2006/15/EC (IOELVs)**

- Not available

European Union (EU) Commission Directive 2006/15/EC (IOELVs) - Skin

- Not available

8.1.2. Recommended Monitoring Procedures

- Personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment.

8.1.3. DNEL/PNEC - Values

- Not available

8.2. Exposure controls**8.2.1. Appropriate engineering controls**

- A system of local and/or general exhaust is recommended to keep employee exposures above the Exposure Limits. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. The use of local exhaust ventilation is recommended to control emissions near the source.

8.2.2. Individual protection measures, such as personal protective equipment**Hand protection**

- Wear appropriate glove.

Eye protection

- Wear primary eye protection such as splash resistant safety goggles with a secondary protection face shield.
- Provide an emergency eye wash station and quick drench shower in the immediate work area.

Respiratory Protection

- Under conditions of frequent use or heavy exposure, Respiratory protection may be needed.
- Respiratory protection is ranked in order from minimum to maximum.
- Consider warning properties before use.

- Any chemical cartridge respirator with organic vapor cartridge(s).
- Any chemical cartridge respirator with a full face piece and organic vapor cartridge(s).
- Any air-purifying respirator with a full face piece and an organic vapor canister.
- For Unknown Concentration or Immediately Dangerous to Life or Health : Any supplied-air respirator with full face piece and operated in a pressure-demand or other positive-pressure mode in combination with a separate escape supply. Any self-contained breathing apparatus with a full face piece.

Skin protection

- Wear appropriate clothing.

8.2.3 Environmental exposure controls

- Do not let product enter drains. For ecological information refer to section 12.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES**9.1. Information on basic physical and chemical properties**

Appearance(State)	Liquid
Appearance(Color)	VIOLET
Odor	Odorless
Odor threshold	Not available
pH	8.0 ± 1.0
Melting point/Freezing point	Not available
Initial boiling point and boiling range	> 100 °C
Flash point	300 °C
Evaporation rate	Not available
Flammability(solid, gas)	Not applicable
Upper/Lower Flammability or explosive	Not available
Vapour pressure	Not available
Vapour density	Not available
Relative density	1.1 ± 0.05 g/cm ³
Solubility	Fully miscible
Partition coefficient of n-octanol/water	Not available
Autoignition temperature	No self-igniting
Decomposition temperature	Not available
Viscosity	750 ± 150 Cps
Explosive properties	Not explosive
Oxidizing properties	Not available

9.2. Other information

- Not available

SECTION 10: STABILITY AND REACTIVITY**10.1. Reactivity**

- Not available

10.2. Chemical Stability

- This material is stable under recommended storage and handling conditions.

10.3. Possibility of hazardous reactions

- Hazardous Polymerization will not occur.

10.4. Conditions to avoid

- Avoid contact with incompatible materials and condition.
- Avoid : Accumulation of electrostatic charges, Heating, Flames and hot surfaces

10.5. Incompatible materials

- Not available

10.6. Hazardous decomposition products

- Not available

SECTION 11: TOXICOLOGICAL INFORMATION

11.1. Acute toxicity

- **Oral**
 - Product (ATEmix) : >5000mg/kg
 - [GLYCERINE] : LD50 = 12600 mg/kg Rat (ChemIDplus)
- [POLY ETHYLENE GLYCOL] : LD50 = 600 mg/kg Rat (KOSHA)
- **Dermal**
 - Product (ATEmix) : >5000mg/kg
 - [GLYCERINE] : LD50 > 10000 mg/kg Rat (ChemIDplus)
- **Inhalation**
 - Product (ATEmix) : Not available
 - [GLYCERINE] : LC50 >2.75 mg/l 4 hr Rat (ECHA)

11.2. Skin corrosion/irritation

- [2-AMINO-2-METHYL-1-PROPANOL] : Classified as Category 2 (KOSHA)

11.3. Serious eye damage/irritation

- [2-AMINO-2-METHYL-1-PROPANOL] : Classified as Category 1 (KOSHA)

11.4. Respiratory sensitization

- Not available

11.5. Skin sensitization

- Not available

11.6. Germ cell mutagenicity

- Not available

11.7. Carcinogenicity

- **IARC**
 - Not available
- **OSHA**
 - Not available
- **ACGIH**
 - [ALUMINIUM POWDER] : A4 (KOSHA)
- **NTP**
 - Not available
- **EU CLP**
 - Not available

11.8. Reproductive toxicity

- Not available

11.9. Specific target organ toxicity(single exposure):

- [C.I. PIGMENT VIOLET 23] : Classified as Category 3 (Respiratory irritation) (KOSHA)

11.10. Specific target organ toxicity(repeated exposure):

- [ALUMINIUM POWDER] : Classified as Category 2 (KOSHA)

11.11. Aspiration hazard

- Not available

SECTION 12: ECOLOGICAL INFORMATION**12.1. Toxicity****12.1.1. Fish**

- [GLYCERINE] : LC50 >11 mg/l 96 hr Cyprinodon variegatus (ECHA)

12.1.2. Invertebrate

- [GLYCERINE] : LC50 1955 mg/l 48 hr Daphnia magna (ECHA)
- [ALUMINIUM POWDER] : NOEC > 100 mg/l 48 hr Daphnia magna (IUCLID)

12.1.3. Algae

- [ALUMINIUM POWDER] : NOEC > 0.052 mg/l 48 hr Selenastrum capricornutum (M = 1) (OECD TG 201, GLP)

12.2. Persistence and degradability**12.2.1. Persistence**

- Not available

12.2.2. Degradability

- [2-AMINO-2-METHYL-1-PROPANOL] : BOD5/COD 0.005 (KOSHA)

12.3. Bioaccumulative potential**12.3.1. Bioaccumulation**

- [2-AMINO-2-METHYL-1-PROPANOL] : 1.3 BSAF (Leuciscus idus(Fish, fresh water), 50ug/) (KOSHA)

12.3.2. Biodegradability

- [2-AMINO-2-METHYL-1-PROPANOL] : 40 (%) 28 days (KOSHA)

12.4. Mobility in soil

- Not available

12.5. Results of PBT and vPvB assessment

- Not available

12.6. Other adverse effects

- Not available

SECTION 13: DISPOSAL CONSIDERATIONS**13.1. Waste treatment methods**

- Since more than two kinds of designated waste is mixed, it is difficult to treat separately, then can be reduction or stabilization by incineration or similar process.
- If water separation is possible, pre-process with Water separation process.
- Dispose by incineration.
- The user of this product must disposal by oneself or entrust to waste disposer or person who other's waste recycle and dispose, person who establish and operate waste disposal facilities.
- Dispose of waste in accordance with all applicable laws and regulations.

SECTION 14: TRANSPORT INFORMATION**14.1. UN No.****14.1.1. UN No. (ADR/RID/ADN)**

3082

14.1.2. UN No. (IMDG CODE/IATA DGR)

3082

14.1.3. UN No. (ICAO)

3082

14.2. UN proper shipping name

- Not applicable

14.3. Transport hazard class(es)**14.3.1. ADR/RID/ADN Class**

- Not applicable

14.3.2. ADR/RID/ADN Class

- Not applicable

14.3.3. ADR Label No.

- Not applicable

14.3.4. IMDG Class

- Not applicable

14.3.5. ICAO Class/Division

- Not applicable

14.3.6. Transport Labels

- Not applicable

14.4. Packing group**14.4.1. ADR/RID/ADN Packing group**

- Not applicable

14.4.2. IMDG Packing group

- Not applicable

14.4.3. ICAO Packing group

- Not applicable

14.5. Environmental hazards

- Not applicable

14.6. Special precautions for user

- Local transport follows in accordance with Dangerous goods Safety Management Law.
- Package and transport follow in accordance with Department of Transportation (DOT) and other regulatory agency
- EmS FIRE SCHEDULE : Not applicable
- EmS SPILLAGE SCHEDULE : Not applicable
- Air transport(IATA): Not subject to IATA regulations.

14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

- Not applicable

SECTION 15: REGULATORY INFORMATION**15.1. Safety, health and environmental regulation / legislation specific for the substance or mixture****15.1.1. Europe regulatory****15.1.1.1 REACH Restricted substance under REACH**

- Not applicable

15.1.1.2 REACH Substances subject to authorization under REACH

- Not applicable

15.1.1.3 REACH SVHC

- Not applicable

15.1.1.4 Europe PBT

- Not applicable

15.1.1.5 European Union (EU) Transport of Dangerous Goods by Road - Dangerous Goods List

- Not applicable

15.2. Chemical Safety Assessment

- Not conducted

SECTION 16: OTHER INFORMATION**16.1. Indication of changes**

- The Safety Data Sheet has been reviewed and the data therein were revised and laid out according to the requirements of the Commission Regulation (EC) No. 1907/2006

16.2. Abbreviations and acronyms

- 1272/2008 CLP : Classification, Labelling and Packaging regulation.
- REACH : Registration, Evaluation and authorization of chemical substances.
- DNEL : Derive no effects level
- PNEC : Predicted no effect concentration

16.3. Key literature references and sources for data

- This Safety Data Sheet was compiled with data and information from the following sources: RTECS, ECOSAR, HSDB, SIDS SIAP, ChemWATCH, CESAR, Chemical DB

16.4. Classification procedure

- The mixture classification has been derived based on the classification of the individual components in accordance with the rules set out in Regulation (EC) No 1272/2008 (CLP) as well as the translation tables in Annex VII to the same regulation.

16.5. Training advice

- Not applicable

16.6. Further information

- The (M)SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings. Risks may be determined by reference to Exposures Scenarios. Scale of use, frequency of use and current or available engineering controls must be considered.
- This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only.
- It should not therefore be construed as guaranteeing any specific property of the product.
- Contact a poison control centre, List of Telephone Numbers : AUSTRIA (Vienna Wien) +43 1 406 43 43; BELGIUM (Brussels Bruxelles) +32 70 245 245; BULGARIA (Sofia) +359 2 9154 409; CZECH REPUBLIC (Prague Praha) +420 224 919 293; DENMARK (Copenhagen) 82 12 12 12; ESTONIA (Tallinn) 112; FINLAND (Helsinki) +358 9 471 977; FRANCE (Paris) +33 1 40 0548 48; GERMANY (Berlin) +49 30 19240; GREECE (Athens Athinai) +30 10 779 3777; HUNGARY (Budapest) 06 80 20 11 99; ICELAND (Reykjavik) +354 525 111, +354 543 2222; IRELAND (Dublin) +353 1 8379964; ITALY (Rome) +39 06 305 4343; LATVIA (Riga) +371 704 2468; LITHUANIA (Vilnius) +370 5 236 20 52 or +370 687 53378; MALTA (Valletta) 2425 0000; NETHERLANDS (Bilthoven) +31 30 274 88 88; NORWAY (Oslo) 22 591300; POLAND (Gdansk) +48 58301 65 16 or +48 58 349 2831; PORTUGAL (Lisbon Lisboa) 808 250 143; ROMANIA (Bucharest) +40 21 3183606 SLOVAKIA (Bratislava) +421 2 54 77 4166; SLOVENIA (Ljubljana) + 386 41 650 500; SPAIN (Barcelona) +34 93 227 98 33 or +34 93 227 54 00 bleep 190; SWEDEN (Stockholm) 112 or +46 8 33 12 31 (mon-fri 9.00-17.00); UNITED KINGDOM (London) 112 or 0845 4647 (NHS Direct).

Disclaimer of Liability

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Users assume all risks associated with the use of the material.

***** End of Documents



SAFETY DATA SHEET

According to Regulation (EC) No 1272/2008 (REACH),
Annex II (COMMISSION REGULATION (EU) No 2020/2017)

Date of issue: 2018-05-29
Revision date: 2022-06-21

SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1. Product identifier

Trade name/designation : PGI- YELLOW

1.2. Relevant identified uses of the substance or mixture and uses advised against

1.2.1. Relevant identified uses

- Water-soluble stationary ink

1.2.2. Uses advised against

- Not available

1.3. Details of the supplier of the safety data sheet

Manufacturer/Supplier : YOU&I CORPORATION
Address : 53, MTV 26-RO, SIHEUNG-SI, GYEONGGI-DO, KOREA
Telephone : +82-31-494-2030
Emergency telephone number : +82-31-494-2030 (This number is serviced during office hours only.)
Email : tech@youicolor.com

1.4. Emergency telephone number

EU-wide emergency number : 112

See section 16.6 for the list of telephone number of National Helpdesks in the European Economic Area.

SECTION 2: HAZARD IDENTIFICATION

2.1. Classification of the substance/mixture

2.1.1. Classification according to Regulation (EC) No 1272/2008 [CLP]

- Not applicable

2.2. Label elements

2.2.1. Labelling according to Regulation (EC) No 1272/2008 [CLP]

* Hazard Pictogram(s)

- Not applicable

* Signal word : Not applicable

* Hazard statement(s)

- Not applicable

* Precautionary statement(s)

1) Prevention

- Not applicable

2) Response

- Not applicable

3) Storage

- Not applicable

4) Disposal

- Not applicable

* Additional information

- EUH211 Hazardous respirable droplets may be formed when sprayed. Do not breathe spray or mist.

2.3. Other hazards

- Not available

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1. Substances

- Not applicable

3.2. Mixtures

Name	CAS No.	EINECS NO.	% [weight]	Annex VI of Regulation (EC) No 1272/2008 (CLP Classification)
Water	7732-18-5	231-791-2	45-65	Not classified
Titanium dioxide	13463-67-7	236-675-5	10-25	 Carcinogenicity 2 : H351
GLYCERINE	56-81-5	200-289-5	10-20	Not classified
C. I. Basic YELLOW 40	35869-60-4	252-770-4	0-5	 Eye Irritation 2 : H319
Xanthan gum	11138-66-2	234-394-2	0-1	Not classified

SECTION 4: FIRST AID MEASURES**4.1. Description of first aid measures****General**

- No general information.

Inhalation

- When exposed to large amounts of steam and mist, move to fresh air.
- Take specific treatment if needed.

Skin contact

- Flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes.
- Laundering enough contaminated clothing before reuse.

Eye contact

- Do not rub your eyes.
- Immediately flush eyes with plenty of water for at least 15 minutes and call a doctor/physician.

Ingestion

- Please be advised by doctor whether induction of vomit is demanded or not.
- Rinse your mouth with water immediately.

4.2. Most important symptoms and effects, both acute and delayed

- Not available

4.3. Indication of any immediate medical attention and special treatment needed

- Notify medical personnel of contaminated situations and have them take appropriate protective measures.

SECTION 5: FIREFIGHTING MEASURES**5.1. Extinguishing media****Suitable extinguishing media**

- A fire extinguisher water, foam, CO₂, NaHCO₃

Unsuitable extinguishing media

- Avoid use of water jet for extinguishing

5.2. Special hazards arising from the substance or mixture**Hazardous combustion products**

- Not available

5.3. Advice for firefighters

- Keep unauthorized personnel out.
- Notify your local fire station and inform the location of the fire and characteristics hazard.
- Using a unattended and water devices in case of large fire and leave alone to burn if you do not imperative.
- Avoid inhalation of materials or combustion by-products.

- Do not access if the tank on fire.
- Keep containers cool with water spray.
- Use fire fighting procedures suitable for surrounding area.
- Vapor or gas is burned at distant ignition sources can be spread quickly.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal Precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

- Protective equipment: Wear proper protective equipment.
- Emergency procedures: Not applicable
- If required, notify relevant authorities according to all applicable regulations.

6.1.2. For emergency responders

- Ventilate closed spaces before entering.
- Must work against the wind, let the upwind people to evacuate.
- Do not touch spilled material. Stop leak if you can do it without risk.
- Handling the damaged containers or spilled material after wearing protective equipment.
- Do not direct water at spill or source of leak.

6.2. Environmental precautions

- Prevent runoff and contact with waterways, drains or sewers.
- If large amounts have been spilled, inform the relevant authorities.
- Avoid dispersal of spilt material and runoff and contact with waterways, drains and sewers. If large spills, advise emergency services.

6.3. Methods and material for containment and cleaning up

6.3.1. For containment

- Control personal contact by using protective equipment.
- Clear area of personnel and move up wind.
- Stop leak if safe to do so.

6.3.2. For cleaning up

- Large spill : Stay upwind and keep out of low areas. Dike for later disposal.
- Notification to central government, local government. When emissions at least of the standard amount
- Dispose of waste in accordance with local regulation.
- Appropriate container for disposal of spilled material collected.
- Small leak: sand or other non-combustible material, please let use absorption.
- Wipe off the solvent.
- Dike for later disposal.

6.3.3. Other information

- Slippery when spilt.

6.4. Reference to other sections

- See Section 7 for information on safe handling.
- See Section 8 for information on personal protection equipment.
- See Section 13 for information on disposal.

SECTION 7: HANDLING AND STORAGE

7.1. Precautions for safe handling

- Wash thoroughly after handling.
- Avoid contact with incompatible materials.
- Comply with all applicable laws and regulations for handling
- Do not handle until all safety precautions have been read and understood.
- Do not inhale the steam prolonged or repeated.

7.2. Conditions for safe storage, including any incompatibilities

- Save in cool, dry and well ventilated place.

- Check regularly for leaks.
- Do not apply direct heat.
- Keep in the original container.
- Prevent static electricity and keep away from combustible materials or heat sources.

7.3. Specific end use(s)

- See Section 1 for information on 1.2 Relevant identified uses.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control parameters

8.1.1. Occupational exposure limits

European Union (EU) Commission Directive 2006/15/EC (IOELVs)

- Not available

European Union (EU) Commission Directive 2006/15/EC (IOELVs) - Skin

- Not available

8.1.2. Recommended Monitoring Procedures

- Personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment.

8.1.3. DNEL/PNEC - Values

- Not available

8.2. Exposure controls

8.2.1. Appropriate engineering controls

- A system of local and/or general exhaust is recommended to keep employee exposures above the Exposure Limits. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. The use of local exhaust ventilation is recommended to control emissions near the source.

8.2.2. Individual protection measures, such as personal protective equipment

Hand protection

- Wear appropriate glove.

Eye protection

- Wear primary eye protection such as splash resistant safety goggles with a secondary protection face shield.
- Provide an emergency eye wash station and quick drench shower in the immediate work area.

Respiratory Protection

- Under conditions of frequent use or heavy exposure, Respiratory protection may be needed.
- Respiratory protection is ranked in order from minimum to maximum.
- Consider warning properties before use.
- Any chemical cartridge respirator with organic vapor cartridge(s).
- Any chemical cartridge respirator with a full facepiece and organic vapor cartridge(s).
- Any air-purifying respirator with a full facepiece and an organic vapor canister.
- For Unknown Concentration or Immediately Dangerous to Life or Health : Any supplied-air respirator with full facepiece and operated in a pressure-demand or other positive-pressure mode in combination with a separate escape supply. Any self-contained breathing apparatus with a full facepiece.

Skin protection

- Wear appropriate clothing.

8.2.3 Environmental exposure controls

- Do not let product enter drains. For ecological information refer to section 12.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Appearance(State)	Liquid
Appearance(Color)	YELLOW
Odor	Odorless
Odor threshold	Not available
pH	8.0 ± 1.0

Melting point/Freezing point	Not available
Initial boiling point and boiling range	> 100 °C
Flash point	300 °C
Evaporation rate	Not available
Flammability(solid, gas)	Not applicable
Upper/Lower Flammability or explosive limits	Not explosive
Vapour pressure	Not available
Vapour density	Not available
Relative density	1.2 ± 0.05 g/cm3
Solubility	Fully miscible
Partition coefficient of n-octanol/water	Not available
Autoignition temperature	No self-igniting
Decomposition temperature	Not available
Viscosity	1600 ± 200 Cps
Explosive properties	Not explosive
Oxidising properties	Not available

9.2. Other information

- Not available

SECTION 10: STABILITY AND REACTIVITY**10.1. Reactivity**

- Not available

10.2. Chemical Stability

- This material is stable under recommended storage and handling conditions.

10.3. Possibility of hazardous reactions

- Hazardous Polymerization will not occur.

10.4. Conditions to avoid

- Avoid contact with incompatible materials and condition.
- Avoid : Accumulation of electrostatic charges, Heating, Flames and hot surfaces

10.5. Incompatible materials

- Not available

10.6. Hazardous decomposition products

- Not available

SECTION 11: TOXICOLOGICAL INFORMATION**11.1. Acute toxicity**

- **Oral**
 - Not available
- **Dermal**
 - Not available
- **Inhalation**
 - Not available

11.2. Skin corrosion/irritation

- Not available

11.3. Serious eye damage/irritation

- [C.I. BASIC YELLOW 40] : Classified as Category 2 (ECHA)

11.4. Respiratory sensitization

- Not available

11.5. Skin sensitization

- Not available

11.6. Germ cell mutagenicity

- Not available

11.7. Carcinogenicity**- IARC**

- [Titanium dioxide] : 2B (KOSHA)

- OSHA

- Not available

- ACGIH

- [Titanium dioxide] : A4 (KOSHA)

- NTP

- Not available

- EU CLP

- Not available

11.8. Reproductive toxicity

- Not available

11.9. Specific target organ toxicity(single exposure):

- Not available

11.10. Specific target organ toxicity(repeated exposure):

- Not available

11.11. Aspiration hazard

- Not available

SECTION 12: ECOLOGICAL INFORMATION**12.1. Toxicity****12.1.1. Fish**

- Not available

12.1.2. Invertebrate

- Not available

12.1.3. Algae

- Not available

12.2. Persistence and degradability**12.2.1. Persistence**

- Not available

12.2.2. Degradability

- Not available

12.3. Bioaccumulative potential**12.3.1. Bioaccumulation**

- Not available

12.3.2. Biodegradability

- Not available

12.4. Mobility in soil

- Not available

12.5. Results of PBT and vPvB assessment

- Not available

12.6. Other adverse effects

- Not available

SECTION 13: DISPOSAL CONSIDERATIONS**13.1. Waste treatment methods**

- Since more than two kinds of designated waste is mixed, it is difficult to treat separately, then can be reduction or stabilization by incineration or similar process.
- If water separation is possible, pre-process with Water separation process.
- Dispose by incineration.
- The user of this product must disposal by oneself or entrust to waste disposer or person who other's waste recycle and dispose, person who establish and operate waste disposal facilities.
- Dispose of waste in accordance with all applicable laws and regulations.

SECTION 14: TRANSPORT INFORMATION**14.1. UN No.****14.1.1. UN No. (ADR/RID/ADN)**

- Not applicable

14.1.2. UN No. (IMDG CODE/IATA DGR)

- Not applicable

14.1.3. UN No. (ICAO)

- Not applicable

14.2. UN proper shipping name

- Not applicable

14.3. Transport hazard class(es)**14.3.1. ADR/RID/ADN Class**

- Not applicable

14.3.2. ADR/RID/ADN Class

- Not applicable

14.3.3. ADR Label No.

- Not applicable

14.3.4. IMDG Class

- Not applicable

14.3.5. ICAO Class/Division

- Not applicable

14.3.6. Transport Labels

- Not applicable

14.4. Packing group**14.4.1. ADR/RID/ADN Packing group**

- Not applicable

14.4.2. IMDG Packing group

- Not applicable

14.4.3. ICAO Packing group

- Not applicable

14.5. Environmental hazards

- Not applicable

14.6. Special precautions for user

- Local transport follows in accordance with Dangerous goods Safety Management Law.
- Package and transport follow in accordance with Department of Transportation (DOT) and other regulatory agency requirements.
- EmS FIRE SCHEDULE : Not available
- EmS SPILLAGE SCHEDULE : Not available
- Air transport(IATA): Not subject to IATA regulations.

14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

- Not applicable

SECTION 15: REGULATORY INFORMATION**15.1. Safety, health and environmental regulation / legislation specific for the substance or mixture****15.1.1. Europe regulatory****15.1.1.1 REACH Restricted substance under REACH**

- Not applicable

15.1.1.2 REACH Substances subject to authorization under REACH

- Not applicable

15.1.1.3 REACH SVHC

- Not applicable

15.1.1.4 Europe PBT

- Not applicable

15.1.1.5 European Union (EU) Transport of Dangerous Goods by Road - Dangerous Goods List

- Not applicable

15.2. Chemical Safety Assessment

- Not conducted

SECTION 16: OTHER INFORMATION**16.1. Indication of changes**

- The Safety Data Sheet has been reviewed and the data therein were revised and laid out according the requirements of the Commission Regulation (EC) No. 1907/2006

16.2. Abbreviations and acronyms

- 1272/2008 CLP : Classification, Labelling and Packaging regulation.
- REACH : Registration, Evaluation and authorisation of chemical substances.
- DNEL : Derive no effects level
- PNEC : Predicted no effect concentration

16.3. Key literature references and sources for data

- This Safety Data Sheet was compiled with data and information from the following sources: RTECS, ECOSAR, HSDB, SIDS SIAP, ChemWATCH, CESAR, Chemical DB

16.4. Classification procedure

- The mixture classification has been derived based on the classification of the individual components in accordance with the rules set out in Regulation (EC) No 1272/2008 (CLP) as well as the translation tables in Annex VII to the same regulation.

16.5. Training advice

- Not applicable

16.6. Further information

- The (M)SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings. Risks may be determined by reference to Exposures Scenarios. Scale of use, frequency of use and current or available engineering controls must be considered.
- This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only.
- It should not therefore be construed as guaranteeing any specific property of the product.

- Contact National Helpdesks, List of Telephone Numbers : AUSTRIA (Vienna Wien) +43 1 515 61 0, BELGIUM (Brussels Bruxelles) +32 070 245 245, BULGARIA (Sofia) +359 2 9888 205, Croatia +385 1 2348 342 CZECH REPUBLIC (Prague Praha) +420 224 919 293 or +420 224 915 402, DENMARK (Copenhagen) 82 12 12 12, ESTONIA (Tallinn) 112, FINLAND (Helsinki) +358 9 471 977, FRANCE (Paris) +33 1 45 42 59 59, GERMANY (Berlin) +49 30 19240, GREECE (Athens Athinai) +30 210 77 93 777, HUNGARY (Budapest) +36 80 201 199, ICELAND (Reykjavik) +354 543 2222 or 112, IRELAND (Dublin) +353 1 8379964 or +353 1 809 2166, ITALY (Rome) +39 06 305 4343, LATVIA (Riga) 112 or +371 6704 2473, LITHUANIA (Vilnius) +370 5 236 20 52 or +370 687 53378, Luxembourg +352 70 245 245, MALTA +356 2122 4071, NETHERLANDS (Bilthoven) +31 30 274 88 88, NORWAY (Oslo) 22 591300, POLAND (Gdansk) +48 58301 65 16 or +48 58 349 2831, PORTUGAL (Lisbon Lisboa) 808 250 143, ROMANIA (Bucharest) +40 21 3183606 SLOVAKIA (Bratislava) +421 2 54 77 4166, SLOVENIA (Ljubljana) + 386 41 650 500, SPAIN +34 91 562 04 20(spanish language) or +34 91 768 98 00(You can request to be served in English), SWEDEN (Stockholm) 112 or +46 10 456 6700 (mon-fri 9.00-17.00), UNITED KINGDOM (London) 112 or 0845 4647 (NHS Direct).

***** End of Documents



SAFETY DATA SHEET

According to Regulation (EC) No 1272/2008 (REACH),
Annex II (COMMISSION REGULATION (EU) No 2020/2017)

Date of issue: 2019-06-14
Revision date: 2022-06-21

SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1. Product identifier

Trade name/designation : PGI-PINK

1.2. Relevant identified uses of the substance or mixture and uses advised against

1.2.1. Relevant identified uses

- Water-soluble stationary ink

1.2.2. Uses advised against

- Not available

1.3. Details of the supplier of the safety data sheet

Manufacturer/Supplier : YOU&I COPORATION
Address : 53, MTV 26-RO, SIHEUNG-SI, GYEONGGI-DO, KOREA
Telephone : +82-31-494-2030
Emergency telephone number : +82-31-494-2030 (This number is serviced during office hours only.)
Email : tech@youicolor.com

1.4. Emergency telephone number

EU-wide emergency number : 112
See section 16.6 for the list of telephone number of National Helpdesks in the European Economic Area.

SECTION 2: HAZARD IDENTIFICATION

2.1. Classification of the substance/mixture

2.1.1. Classification according to Regulation (EC) No 1272/2008 [CLP]

- Not applicable

2.2. Label elements

2.2.1. Labelling according to Regulation (EC) No 1272/2008 [CLP]

* Hazard Pictogram(s)

- Not applicable

* Signal word - Not applicable

* Hazard statement(s)

- Not applicable

* Precautionary statement(s)

1) Prevention

- Not applicable

2) Response

- Not applicable

3) Storage

- Not applicable

4) Disposal

- Not applicable

* Additional information

- EUH211 Hazardous respirable droplets may be formed when sprayed. Do not breathe spray or mist.

2.3. Other hazards

- Not available

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1. Substances

- Not applicable

3.2. Mixtures

Name	CAS No.	EINECS NO.	% [weight]	Annex VI of Regulation (EC) No 1272/2008 (CLP Classification)
Water	7732-18-5	231-791-2	45-65	Not classified
Titanium dioxide	13463-67-7	236-675-5	10-25	 Carcinogenicity 2 : H351
Glycerine	56-81-5	200-289-5	10-20	Not classified
C.I. PIGMENT RED 170	2786-76-7	220-509-3	0~5	Aquatic Chronic 4, H413
C.I. PIGMENT VIOLET 23	6358-30-1	228-767-9	0~5	 Specific target organ toxicity (single), H335
Xanthan gum	11138-66-2	234-394-2	0-1	Not classified

SECTION 4: FIRST AID MEASURES

4.1. Description of first aid measures

General

- No general information.

Inhalation

- When exposed to large amounts of steam and mist, move to fresh air.
- Take specific treatment if needed.

Skin contact

- Flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes.
- Laundering enough contaminated clothing before reuse.

Eye contact

- Do not rub your eyes.
- Immediately flush eyes with plenty of water for at least 15 minutes and call a doctor/physician.

Ingestion

- Please be advised by doctor whether induction of vomit is demanded or not.
- Rinse your mouth with water immediately.

4.2. Most important symptoms and effects, both acute and delayed

- Not available

4.3. Indication of any immediate medical attention and special treatment needed

- Notify medical personnel of contaminated situations and have them take appropriate protective measures.

SECTION 5: FIREFIGHTING MEASURES

5.1. Extinguishing media

Suitable extinguishing media

- A fire extinguisher water, foam, CO₂, NaHCO₃

Unsuitable extinguishing media

- Avoid use of water jet for extinguishing

5.2. Special hazards arising from the substance or mixture

Hazardous combustion products

- Not available

5.3. Advice for firefighters

- Keep unauthorized personnel out.
- Notify your local fire station and inform the location of the fire and characteristics hazard.
- Using a unattended and water devices in case of large fire and leave alone to burn if you do not imperative.
- Avoid inhalation of materials or combustion by-products.

- Do not access if the tank on fire.
- Keep containers cool with water spray.
- Use fire fighting procedures suitable for surrounding area.
- Vapor or gas is burned at distant ignition sources can be spread quickly.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal Precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

- Protective equipment: Wear proper protective equipment.
- Emergency procedures: Not applicable
- If required, notify relevant authorities according to all applicable regulations.

6.1.2. For emergency responders

- Ventilate closed spaces before entering.
- Must work against the wind, let the upwind people to evacuate.
- Do not touch spilled material. Stop leak if you can do it without risk.
- Handling the damaged containers or spilled material after wearing protective equipment.
- Do not direct water at spill or source of leak.

6.2. Environmental precautions

- Prevent runoff and contact with waterways, drains or sewers.
- If large amounts have been spilled, inform the relevant authorities.
- Avoid dispersal of spilt material and runoff and contact with waterways, drains and sewers. If large spills, advise emergency services.

6.3. Methods and material for containment and cleaning up

6.3.1. For containment

- Control personal contact by using protective equipment.
- Clear area of personnel and move up wind.
- Stop leak if safe to do so.

6.3.2. For cleaning up

- Large spill : Stay upwind and keep out of low areas. Dike for later disposal.
- Notification to central government, local government. When emissions at least of the standard amount
- Dispose of waste in accordance with local regulation.
- Appropriate container for disposal of spilled material collected.
- Small leak: sand or other non-combustible material, please let use absorption.
- Wipe off the solvent.
- Dike for later disposal.

6.3.3. Other information

- Slippery when spilt.

6.4. Reference to other sections

- See Section 7 for information on safe handling.
- See Section 8 for information on personal protection equipment.
- See Section 13 for information on disposal.

SECTION 7: HANDLING AND STORAGE

7.1. Precautions for safe handling

- Wash thoroughly after handling.
- Avoid contact with incompatible materials.
- Comply with all applicable laws and regulations for handling
- Do not handle until all safety precautions have been read and understood.
- Do not inhale the steam prolonged or repeated.

7.2. Conditions for safe storage, including any incompatibilities

- Save in cool, dry and well ventilated place.

- Check regularly for leaks.
- Do not apply direct heat.
- Keep in the original container.
- Prevent static electricity and keep away from combustible materials or heat sources.

7.3. Specific end use(s)

- See Section 1 for information on 1.2 Relevant identified uses.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control parameters

8.1.1. Occupational exposure limits

European Union (EU) Commission Directive 2006/15/EC (IOELVs)

- Not available

European Union (EU) Commission Directive 2006/15/EC (IOELVs) - Skin

- Not available

8.1.2. Recommended Monitoring Procedures

- Personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment.

8.1.3. DNEL/PNEC - Values

- Not available

8.2. Exposure controls

8.2.1. Appropriate engineering controls

- A system of local and/or general exhaust is recommended to keep employee exposures above the Exposure Limits. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. The use of local exhaust ventilation is recommended to control emissions near the source.

8.2.2. Individual protection measures, such as personal protective equipment

Hand protection

- Wear appropriate glove.

Eye protection

- Wear primary eye protection such as splash resistant safety goggles with a secondary protection face shield.
- Provide an emergency eye wash station and quick drench shower in the immediate work area.

Respiratory Protection

- Under conditions of frequent use or heavy exposure, Respiratory protection may be needed.
- Respiratory protection is ranked in order from minimum to maximum.
- Consider warning properties before use.
- Any chemical cartridge respirator with organic vapor cartridge(s).
- Any chemical cartridge respirator with a full facepiece and organic vapor cartridge(s).
- Any air-purifying respirator with a full facepiece and an organic vapor canister.
- For Unknown Concentration or Immediately Dangerous to Life or Health : Any supplied-air respirator with full facepiece and operated in a pressure-demand or other positive-pressure mode in combination with a separate escape supply. Any self-contained breathing apparatus with a full facepiece.

Skin protection

- Wear appropriate clothing.

8.2.3 Environmental exposure controls

- Do not let product enter drains. For ecological information refer to section 12.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Appearance(State)	Liquid
Appearance(Color)	PINK
Odor	Odorless
Odor threshold	Not available
pH	8.0 ± 1.0
Melting point/Freezing point	Not available

Initial boiling point and boiling range	> 100 °C
Flash point	300 °C
Evaporation rate	Not available
Flammability(solid, gas)	Not applicable
Upper/Lower Flammability or explosive limits	Not explosive
Vapour pressure	Not available
Vapour density	Not available
Relative density	1.2 ± 0.05 g/cm ³
Solubility	Fully miscible
Partition coefficient of n-octanol/water	Not available
Autoignition temperature	No self-igniting
Decomposition temperature	Not available
Viscosity	1600 ± 200 Cps
Explosive properties	Not explosive
Oxidising properties	Not available

9.2. Other information

- Not available

SECTION 10: STABILITY AND REACTIVITY**10.1. Reactivity**

- Not available

10.2. Chemical Stability

- This material is stable under recommended storage and handling conditions.

10.3. Possibility of hazardous reactions

- Hazardous Polymerization will not occur.

10.4. Conditions to avoid

- Avoid contact with incompatible materials and condition.
- Avoid : Accumulation of electrostatic charges, Heating, Flames and hot surfaces

10.5. Incompatible materials

- Not available

10.6. Hazardous decomposition products

- Not available

SECTION 11: TOXICOLOGICAL INFORMATION**11.1. Acute toxicity**

- **Oral**
- Not available

- **Dermal**
- Not available

Inhalation
- Not available

11.2. Skin corrosion/irritation

- Not available

11.3. Serious eye damage/irritation

- Not available

11.4. Respiratory sensitization

- Not available

11.5. Skin sensitization

- Not available

11.6. Germ cell mutagenicity

- Not available

11.7. Carcinogenicity**- IARC**

- [Titanium dioxide] : 2B (KOSHA)

- OSHA

- Not available

- ACGIH

- [Titanium dioxide] : A4 (KOSHA)

- NTP

- Not available

- EU CLP

- Not available

11.8. Reproductive toxicity

- Not available

11.9. Specific target organ toxicity(single exposure):

- [C.I. PIGMENT VIOLET 23] : Classified as Category 3 (Respiratory irritation) (KOSHA)

11.10. Specific target organ toxicity(repeated exposure):

- Not available

11.11. Aspiration hazard

- Not available

SECTION 12: ECOLOGICAL INFORMATION**12.1. Toxicity****12.1.1. Fish**

- [C.I. PIGMENT RED 170] : LC50 >0.217 mg/l 96 hr (ECOSAR)

12.1.2. Invertebrate

- [C.I. PIGMENT RED 170] : LC50 0.545 mg/l 48 hr (ECOSHA)

12.1.3. Algae

- [C.I. PIGMENT RED 170] : EC50 0.06 mg/l 96 hr (ECOSHA)

12.2. Persistence and degradability**12.2.1. Persistence**

- [C.I. PIGMENT RED 170] : 6.04 log Kow (ECOSAR)

12.2.2. Degradability

- Not available

12.3. Bioaccumulative potential**12.3.1. Bioaccumulation**

- [C.I. PIGMENT RED 170] : 10 (QSAR)

12.3.2. Biodegradability

- Not available

12.4. Mobility in soil

- Not available

12.5. Results of PBT and vPvB assessment

- Not available

12.6. Other adverse effects

- Not available

SECTION 13: DISPOSAL CONSIDERATIONS**13.1. Waste treatment methods**

- Since more than two kinds of designated waste is mixed, it is difficult to treat separately, then can be reduction or stabilization by incineration or similar process.
- If water separation is possible, pre-process with Water separation process.
- Dispose by incineration.
- The user of this product must disposal by oneself or entrust to waste disposer or person who other's waste recycle and dispose, person who establish and operate waste disposal facilities.
- Dispose of waste in accordance with all applicable laws and regulations.

SECTION 14: TRANSPORT INFORMATION**14.1. UN No.****14.1.1. UN No. (ADR/RID/ADN)**

- Not applicable

14.1.2. UN No. (IMDG CODE/IATA DGR)

- Not applicable

14.1.3. UN No. (ICAO)

- Not applicable

14.2. UN proper shipping name

- Not applicable

14.3. Transport hazard class(es)**14.3.1. ADR/RID/ADN Class**

- Not applicable

14.3.2. ADR/RID/ADN Class

- Not applicable

14.3.3. ADR Label No.

- Not applicable

14.3.4. IMDG Class

- Not applicable

14.3.5. ICAO Class/Division

- Not applicable

14.3.6. Transport Labels

- Not applicable

14.4. Packing group**14.4.1. ADR/RID/ADN Packing group**

- Not applicable

14.4.2. IMDG Packing group

- Not applicable

14.4.3. ICAO Packing group

- Not applicable

14.5. Environmental hazards

- Not applicable

14.6. Special precautions for user

- Local transport follows in accordance with Dangerous goods Safety Management Law.
- Package and transport follow in accordance with Department of Transportation (DOT) and other regulatory agency requirements.
- EmS FIRE SCHEDULE : Not available
- EmS SPILLAGE SCHEDULE : Not available
- Air transport(IATA): Not subject to IATA regulations.

14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

- Not applicable

SECTION 15: REGULATORY INFORMATION**15.1. Safety, health and environmental regulation / legislation specific for the substance or mixture****15.1.1. Europe regulatory****15.1.1.1 REACH Restricted substance under REACH**

- Not applicable

15.1.1.2 REACH Substances subject to authorization under REACH

- Not applicable

15.1.1.3 REACH SVHC

- Not applicable

15.1.1.4 Europe PBT

- Not applicable

15.1.1.5 European Union (EU) Transport of Dangerous Goods by Road - Dangerous Goods List

- Not applicable

15.2. Chemical Safety Assessment

- Not conducted

SECTION 16: OTHER INFORMATION**16.1. Indication of changes**

- The Safety Data Sheet has been reviewed and the data therein were revised and laid out according the requirements of the Commission Regulation (EC) No. 1907/2006

16.2. Abbreviations and acronyms

- 1272/2008 CLP : Classification, Labelling and Packaging regulation.
- REACH : Registration, Evaluation and authorisation of chemical substances.
- DNEL : Derive no effects level
- PNEC : Predicted no effect concentration

16.3. Key literature references and sources for data

- This Safety Data Sheet was compiled with data and information from the following sources: RTECS, ECOSAR, HSDB, SIDS SIAP, ChemWATCH, CESAR, Chemical DB

16.4. Classification procedure

- The mixture classification has been derived based on the classification of the individual components in accordance with the rules set out in Regulation (EC) No 1272/2008 (CLP) as well as the translation tables in Annex VII to the same regulation.

16.5. Training advice

- Not applicable

16.6. Further information

- The (M)SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings. Risks may be determined by reference to Exposures Scenarios. Scale of use, frequency of use and current or available engineering controls must be considered.
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- Contact National Helpdesks, List of Telephone Numbers : AUSTRIA (Vienna Wien) +43 1 515 61 0, BELGIUM (Brussels Bruxelles) +32 070 245 245, BULGARIA (Sofia) +359 2 9888 205, Croatia +385 1 2348 342 CZECH REPUBLIC (Prague Praha) +420 224 919 293 or +420 224 915 402, DENMARK (Copenhagen) 82 12 12 12, ESTONIA (Tallinn) 112, FINLAND (Helsinki) +358 9 471 977, FRANCE (Paris) +33 1 45 42 59 59, GERMANY (Berlin) +49 30 19240, GREECE (Athens Athinai) +30 210 77 93 777, HUNGARY (Budapest) +36 80 201 199, ICELAND (Reykjavik) +354 543 2222 or 112, IRELAND (Dublin) +353 1 8379964 or +353 1 809 2166, ITALY (Rome) +39 06 305 4343, LATVIA (Riga) 112 or +371 6704 2473, LITHUANIA (Vilnius) +370 5 236 20 52 or +370 687 53378, Luxembourg +352 70 245 245, MALTA +356 2122 4071, NETHERLANDS (Bilthoven) +31 30 274 88 88, NORWAY (Oslo) 22 591300, POLAND (Gdansk) +48 58301 65 16 or +48 58 349 2831, PORTUGAL (Lisbon Lisboa) 808 250 143, ROMANIA (Bucharest) +40 21 3183606 SLOVAKIA (Bratislava) +421 2 54 77 4166, SLOVENIA (Ljubljana) + 386 41 650 500, SPAIN +34 91 562 04 20(spanish language) or +34 91 768 98 00(You can request to be served in English), SWEDEN (Stockholm) 112 or +46 10 456 6700 (mon-fri 9.00-17.00), UNITED KINGDOM (London) 112 or 0845 4647 (NHS Direct).

***** End of Documents



SAFETY DATA SHEET

According to Regulation (EC) No 1272/2008 (REACH),
Annex II (COMMISSION REGULATION (EU) No 2020/2017)

Date of issue: 2018-05-29
Revision date: 2022-06-21

SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1. Product identifier

Trade name/designation : PGI- RED

1.2. Relevant identified uses of the substance or mixture and uses advised against

1.2.1. Relevant identified uses

- Water-soluble stationary ink

1.2.2. Uses advised against

- Not available

1.3. Details of the supplier of the safety data sheet

Manufacturer/Supplier : YOU&I COPORATION
Address : 53, MTV 26-RO, SIHEUNG-SI, GYEONGGI-DO, KOREA
Telephone : +82-31-494-2030
Emergency telephone number : +82-31-494-2030 (This number is serviced during office hours only.)
Email : tech@youicolor.com

1.4. Emergency telephone number

EU-wide emergency number : 112

See section 16.6 for the list of telephone number of National Helpdesks in the European Economic Area.

SECTION 2: HAZARD IDENTIFICATION

2.1. Classification of the substance/mixture

2.1.1. Classification according to Regulation (EC) No 1272/2008 [CLP]

- Not applicable

2.2. Label elements

2.2.1. Labelling according to Regulation (EC) No 1272/2008 [CLP]

* Hazard Pictogram(s)

- Not applicable

* Signal word - Not applicable

* Hazard statement(s)

- Not applicable

* Precautionary statement(s)

1) Prevention

- Not applicable

2) Response

- Not applicable

3) Storage

- Not applicable

4) Disposal

- Not applicable

* Additional information

- EUH211 Hazardous respirable droplets may be formed when sprayed. Do not breathe spray or mist.

2.3. Other hazards

- Not available

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1. Substances

- Not applicable

3.2. Mixtures

Name	CAS No.	EINECS NO.	% [weight]	Annex VI of Regulation (EC) No 1272/2008 (CLP Classification)
Water	7732-18-5	231-791-2	45-65	Not classified
Titanium dioxide	13463-67-7	236-675-5	10-25	 Carcinogenicity 2 : H351
GLYCERINE	56-81-5	200-289-5	10-20	Not classified
C.I. PIGMENT RED 170	2786-76-7	220-509-3	0~5	Aquatic Chronic 4, H413
C. I. Basic YELLOW 40	35869-60-4	252-770-4	0-5	 Eye Irritation 2 : H319
C.I. PIGMENT VIOLET 23	6358-30-1	228-767-9	0~5	 Specific target organ toxicity (single) 3, H335
Xanthan gum	11138-66-2	234-394-2	0-1	Not classified

SECTION 4: FIRST AID MEASURES**4.1. Description of first aid measures****General**

- No general information.

Inhalation

- When exposed to large amounts of steam and mist, move to fresh air.
- Take specific treatment if needed.

Skin contact

- Flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes.
- Laundering enough contaminated clothing before reuse.

Eye contact

- Do not rub your eyes.
- Immediately flush eyes with plenty of water for at least 15 minutes and call a doctor/physician.

Ingestion

- Please be advised by doctor whether induction of vomit is demanded or not.
- Rinse your mouth with water immediately.

4.2. Most important symptoms and effects, both acute and delayed

- Not available

4.3. Indication of any immediate medical attention and special treatment needed

- Notify medical personnel of contaminated situations and have them take appropriate protective measures.

SECTION 5: FIREFIGHTING MEASURES**5.1. Extinguishing media****Suitable extinguishing media**

- A fire extinguisher water, foam, CO₂, NaHCO₃

Unsuitable extinguishing media

- Avoid use of water jet for extinguishing

5.2. Special hazards arising from the substance or mixture**Hazardous combustion products**

- Not available

5.3. Advice for firefighters

- Keep unauthorized personnel out.
- Notify your local fire station and inform the location of the fire and characteristics hazard.
- Using a unattended and water devices in case of large fire and leave alone to burn if you do not imperative.
- Avoid inhalation of materials or combustion by-products.
- Do not access if the tank on fire.
- Keep containers cool with water spray.
- Use fire fighting procedures suitable for surrounding area.
- Vapor or gas is burned at distant ignition sources can be spread quickly.

SECTION 6: ACCIDENTAL RELEASE MEASURES**6.1. Personal Precautions, protective equipment and emergency procedures****6.1.1. For non-emergency personnel**

- Protective equipment: Wear proper protective equipment.
- Emergency procedures: Not applicable
- If required, notify relevant authorities according to all applicable regulations.

6.1.2. For emergency responders

- Ventilate closed spaces before entering.
- Must work against the wind, let the upwind people to evacuate.
- Do not touch spilled material. Stop leak if you can do it without risk.
- Handling the damaged containers or spilled material after wearing protective equipment.
- Do not direct water at spill or source of leak.

6.2. Environmental precautions

- Prevent runoff and contact with waterways, drains or sewers.
- If large amounts have been spilled, inform the relevant authorities.
- Avoid dispersal of spilt material and runoff and contact with waterways, drains and sewers. If large spills, advise emergency services.

6.3. Methods and material for containment and cleaning up**6.3.1. For containment**

- Control personal contact by using protective equipment.
- Clear area of personnel and move up wind.
- Stop leak if safe to do so.

6.3.2. For cleaning up

- Large spill : Stay upwind and keep out of low areas. Dike for later disposal.
- Notification to central government, local government. When emissions at least of the standard amount
- Dispose of waste in accordance with local regulation.
- Appropriate container for disposal of spilled material collected.
- Small leak: sand or other non-combustible material, please let use absorption.
- Wipe off the solvent.
- Dike for later disposal.

6.3.3. Other information

- Slippery when spilt.

6.4. Reference to other sections

- See Section 7 for information on safe handling.
- See Section 8 for information on personal protection equipment.
- See Section 13 for information on disposal.

SECTION 7: HANDLING AND STORAGE**7.1. Precautions for safe handling**

- Wash thoroughly after handling.
- Avoid contact with incompatible materials.
- Comply with all applicable laws and regulations for handling

- Do not handle until all safety precautions have been read and understood.
- Do not inhale the steam prolonged or repeated.

7.2. Conditions for safe storage, including any incompatibilities

- Save in cool, dry and well ventilated place.
- Check regularly for leaks.
- Do not apply direct heat.
- Keep in the original container.
- Prevent static electricity and keep away from combustible materials or heat sources.

7.3. Specific end use(s)

- See Section 1 for information on 1.2 Relevant identified uses.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control parameters

8.1.1. Occupational exposure limits

European Union (EU) Commission Directive 2006/15/EC (IOELVs)

- Not available

European Union (EU) Commission Directive 2006/15/EC (IOELVs) - Skin

- Not available

8.1.2. Recommended Monitoring Procedures

- Personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment.

8.1.3. DNEL/PNEC - Values

- Not available

8.2. Exposure controls

8.2.1. Appropriate engineering controls

- A system of local and/or general exhaust is recommended to keep employee exposures above the Exposure Limits. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. The use of local exhaust ventilation is recommended to control emissions near the source.

8.2.2. Individual protection measures, such as personal protective equipment

Hand protection

- Wear appropriate glove.

Eye protection

- Wear primary eye protection such as splash resistant safety goggles with a secondary protection face shield.
- Provide an emergency eye wash station and quick drench shower in the immediate work area.

Respiratory Protection

- Under conditions of frequent use or heavy exposure, Respiratory protection may be needed.
- Respiratory protection is ranked in order from minimum to maximum.
- Consider warning properties before use.
- Any chemical cartridge respirator with organic vapor cartridge(s).
- Any chemical cartridge respirator with a full facepiece and organic vapor cartridge(s).
- Any air-purifying respirator with a full facepiece and an organic vapor canister.
- For Unknown Concentration or Immediately Dangerous to Life or Health : Any supplied-air respirator with full facepiece and operated in a pressure-demand or other positive-pressure mode in combination with a separate escape supply. Any self-contained breathing apparatus with a full facepiece.

Skin protection

- Wear appropriate clothing.

8.2.3 Environmental exposure controls

- Do not let product enter drains. For ecological information refer to section 12.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Appearance(State)	Liquid
-------------------	--------

Appearance(Color)	RED
Odor	Odorless
Odor threshold	Not available
pH	8.0 ± 1.0
Melting point/Freezing point	Not available
Initial boiling point and boiling range	> 100 °C
Flash point	300 °C
Evaporation rate	Not available
Flammability(solid, gas)	Not applicable
Upper/Lower Flammability or explosive limits	Not explosive
Vapour pressure	Not available
Vapour density	Not available
Relative density	1.2 ± 0.05 g/cm ³
Solubility	Fully miscible
Partition coefficient of n-octanol/water	Not available
Autoignition temperature	No self-igniting
Decomposition temperature	Not available
Viscosity	1600 ± 200 Cps
Explosive properties	Not explosive
Oxidising properties	Not available

9.2. Other information

- Not available

SECTION 10: STABILITY AND REACTIVITY**10.1. Reactivity**

- Not available

10.2. Chemical Stability

- This material is stable under recommended storage and handling conditions.

10.3. Possibility of hazardous reactions

- Hazardous Polymerization will not occur.

10.4. Conditions to avoid

- Avoid contact with incompatible materials and condition.
- Avoid : Accumulation of electrostatic charges, Heating, Flames and hot surfaces

10.5. Incompatible materials

- Not available

10.6. Hazardous decomposition products

- Not available

SECTION 11: TOXICOLOGICAL INFORMATION**11.1. Acute toxicity**

- **Oral**
 - Not available
- **Dermal**
 - Not available
- **Inhalation**
 - Not available

11.2. Skin corrosion/irritation

- Not available

11.3. Serious eye damage/irritation

- [C.I. BASIC YELLOW 40] : Classified as Category 2 (ECHA)

11.4. Respiratory sensitization

- Not available

11.5. Skin sensitization

- Not available

11.6. Germ cell mutagenicity

- Not available

11.7. Carcinogenicity

- **IARC**
 - [Titanium dioxide] : 2B (KOSHA)
- **OSHA**
 - Not available
- **ACGIH**
 - [Titanium dioxide] : A4 (KOSHA)
- **NTP**
 - Not available
- **EU CLP**
 - Not available

11.8. Reproductive toxicity

- Not available

11.9. Specific target organ toxicity(single exposure):

- [C.I. PIGMENT VIOLET 23] : Classified as Category 3 (Respiratory irritation) (KOSHA)

11.10. Specific target organ toxicity(repeated exposure):

- Not available

11.11. Aspiration hazard

- Not available

SECTION 12: ECOLOGICAL INFORMATION**12.1. Toxicity****12.1.1. Fish**

- [C.I. PIGMENT RED 170] : LC50 >0.217 mg/l 96 hr (ECOSAR)

12.1.2. Invertebrate

- [C.I. PIGMENT RED 170] : LC50 0.545 mg/l 48 hr (ECOSHA)

12.1.3. Algae

- [C.I. PIGMENT RED 170] : EC50 0.06 mg/l 96 hr (ECOSHA)

12.2. Persistence and degradability**12.2.1. Persistence**

- [C.I. PIGMENT RED 170] : 6.04 log Kow (ECOSAR)

12.2.2. Degradability

- Not available

12.3. Bioaccumulative potential**12.3.1. Bioaccumulation**

- [C.I. PIGMENT RED 170] : 10 (QSAR)

12.3.2. Biodegradability

- Not available

12.4. Mobility in soil

- Not available

12.5. Results of PBT and vPvB assessment

- Not available

12.6. Other adverse effects

- Not available

SECTION 13: DISPOSAL CONSIDERATIONS**13.1. Waste treatment methods**

- Since more than two kinds of designated waste is mixed, it is difficult to treat separately, then can be reduction or stabilization by incineration or similar process.
- If water separation is possible, pre-process with Water separation process.
- Dispose by incineration.
- The user of this product must disposal by oneself or entrust to waste disposer or person who other's waste recycle and dispose, person who establish and operate waste disposal facilities.
- Dispose of waste in accordance with all applicable laws and regulations.

SECTION 14: TRANSPORT INFORMATION**14.1. UN No.****14.1.1. UN No. (ADR/RID/ADN)**

- Not applicable

14.1.2. UN No. (IMDG CODE/IATA DGR)

- Not applicable

14.1.3. UN No. (ICAO)

- Not applicable

14.2. UN proper shipping name

- Not applicable

14.3. Transport hazard class(es)**14.3.1. ADR/RID/ADN Class**

- Not applicable

14.3.2. ADR/RID/ADN Class

- Not applicable

14.3.3. ADR Label No.

- Not applicable

14.3.4. IMDG Class

- Not applicable

14.3.5. ICAO Class/Division

- Not applicable

14.3.6. Transport Labels

- Not applicable

14.4. Packing group**14.4.1. ADR/RID/ADN Packing group**

- Not applicable

14.4.2. IMDG Packing group

- Not applicable

14.4.3. ICAO Packing group

- Not applicable

14.5. Environmental hazards

- Not applicable

14.6. Special precautions for user

- Local transport follows in accordance with Dangerous goods Safety Management Law.
- Package and transport follow in accordance with Department of Transportation (DOT) and other regulatory agency requirements.
- EmS FIRE SCHEDULE : Not available
- EmS SPILLAGE SCHEDULE : Not available
- Air transport(IATA): Not subject to IATA regulations.

14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

- Not applicable

SECTION 15: REGULATORY INFORMATION**15.1. Safety, health and environmental regulation / legislation specific for the substance or mixture****15.1.1. Europe regulatory****15.1.1.1 REACH Restricted substance under REACH**

- Not applicable

15.1.1.2 REACH Substances subject to authorization under REACH

- Not applicable

15.1.1.3 REACH SVHC

- Not applicable

15.1.1.4 Europe PBT

- Not applicable

15.1.1.5 European Union (EU) Transport of Dangerous Goods by Road - Dangerous Goods List

- Not applicable

15.2. Chemical Safety Assessment

- Not conducted

SECTION 16: OTHER INFORMATION**16.1. Indication of changes**

- The Safety Data Sheet has been reviewed and the data therein were revised and laid out according the requirements of the Commission Regulation (EC) No. 1907/2006

16.2. Abbreviations and acronyms

- 1272/2008 CLP : Classification, Labelling and Packaging regulation.
- REACH : Registration, Evaluation and authorisation of chemical substances.
- DNEL : Derive no effects level
- PNEC : Predicted no effect concentration

16.3. Key literature references and sources for data

- This Safety Data Sheet was compiled with data and information from the following sources: RTECS, ECOSAR, HSDB, SIDS SIAP, ChemWATCH, CESAR, Chemical DB

16.4. Classification procedure

- The mixture classification has been derived based on the classification of the individual components in accordance with the rules set out in Regulation (EC) No 1272/2008 (CLP) as well as the translation tables in Annex VII to the same regulation.

16.5. Training advice

- Not applicable

16.6. Further information

- The (M)SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings. Risks may be determined by reference to Exposures Scenarios. Scale of use, frequency of use and current or available engineering controls must be considered.

- This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only.
- It should not therefore be construed as guaranteeing any specific property of the product.
- Contact National Helpdesks, List of Telephone Numbers : AUSTRIA (Vienna Wien) +43 1 515 61 0, BELGIUM (Brussels Bruxelles) +32 070 245 245, BULGARIA (Sofia) +359 2 9888 205, Croatia +385 1 2348 342 CZECH REPUBLIC (Prague Praha) +420 224 919 293 or +420 224 915 402, DENMARK (Copenhagen) 82 12 12 12, ESTONIA (Tallinn) 112, FINLAND (Helsinki) +358 9 471 977, FRANCE (Paris) +33 1 45 42 59 59, GERMANY (Berlin) +49 30 19240, GREECE (Athens Athinai) +30 210 77 93 777, HUNGARY (Budapest) +36 80 201 199, ICELAND (Reykjavik) +354 543 2222 or 112, IRELAND (Dublin) +353 1 8379964 or +353 1 809 2166, ITALY (Rome) +39 06 305 4343, LATVIA (Riga) 112 or +371 6704 2473, LITHUANIA (Vilnius) +370 5 236 20 52 or +370 687 53378, Luxembourg +352 70 245 245, MALTA +356 2122 4071, NETHERLANDS (Bilthoven) +31 30 274 88 88, NORWAY (Oslo) 22 591300, POLAND (Gdansk) +48 58301 65 16 or +48 58 349 2831, PORTUGAL (Lisbon Lisboa) 808 250 143, ROMANIA (Bucharest) +40 21 3183606 SLOVAKIA (Bratislava) +421 2 54 77 4166, SLOVENIA (Ljubljana) + 386 41 650 500, SPAIN +34 91 562 04 20(spanish language) or +34 91 768 98 00(You can request to be served in English), SWEDEN (Stockholm) 112 or +46 10 456 6700 (mon-fri 9.00-17.00), UNITED KINGDOM (London) 112 or 0845 4647 (NHS Direct).

***** End of Documents

SAFETY DATA SHEET

According to Regulation (EC) No 1907/2006 (REACH), Annex II (COMMISSION REGULATION (EU) No 2015/830)



Date of issue: 2018-04-13

Revision date: 2023-03-17

SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1. Product identifier

Trade : THE BLACK 33

1.2. Relevant identified uses of the substance or mixture and uses advised against

1.2.1. Relevant identified uses

- Water-soluble stationary ink

1.2.2. Uses advised against

- Not available

1.3. Details of the supplier of the safety data sheet

Manufacturer/Supplier : YOU&I CORPORATION

Address : 53, EMTIBEUI 26-RO, SIHEUNG-SI, GYEONGGI-DO, KOREA (ZIP CODE) 15118

Telephone : 82-31-494-2030

Email : tech@youicolor.com

1.4. Emergency telephone number

82-31-494-2030 (This number is serviced during office hours only.)

EU-wide emergency number : 112

See section 16.6 for the list of telephone number of poison centers in the European Economic Area.

SECTION 2: HAZARD IDENTIFICATION

2.1. Classification of the substance/mixture

2.1.1. Classification according to Regulation (EC) No 1272/2008 [CLP]

- Not applicable

2.2. Label elements

2.2.1. Labelling according to Regulation (EC) No 1272/2008 [CLP]

* Hazard Pictogram(s)

- Not applicable

* Signal word : Not applicable

* Hazard statement(s)

- Not applicable

* Precautionary statement(s)

1) Prevention

- Not applicable

2) Response

- Not applicable

3) Storage

- Not applicable

4) Disposal

- Not applicable

2.3. Other hazards

- Not available

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1. Substances

- Not applicable

3.2. Mixtures

Name	CAS No.	EINECS NO.	% [weight]	Classification [1272/2008/EC]
WATER	7732-18-5	231-791-2	50~70	Not classified
POLY ETHYLENE GLYCOL	25322-68-3	500-038-2	10~15	Not classified
C.I. PIGMENT BLACK 7	1333-86-4	215-609-9	5~10	Not classified
TRIETHYLENE GLYCOL	112-27-6	203-953-2	0~10	Not classified
2-AMINO-2-METHYL-1-PROPANOL	124-68-5	204-709-8	0~1	 Aquatic Chronic 4, H413 Eye Irrit. 1, H318 Skin Irrit. 2, H315

SECTION 4: FIRST AID MEASURES**4.1. Description of first aid measures****General**

- No general information.

Inhalation

- When exposed to large amounts of steam and mist, move to fresh air.
- Take specific treatment if needed.

Skin contact

- Flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes.
- Laundering enough contaminated clothing before reuse.

Eye contact

- Do not rub your eyes.
- Immediately flush eyes with plenty of water for at least 15 minutes and call a doctor/physician.

Ingestion

- Please be advised by doctor whether induction of vomit is demanded or not.
- Rinse your mouth with water immediately.

4.2. Most important symptoms and effects, both acute and delayed

- Not available

4.3. Indication of any immediate medical attention and special treatment needed

- Notify medical personnel of contaminated situations and have them take appropriate protective measures.

SECTION 5: FIREFIGHTING MEASURES**5.1. Extinguishing media****Suitable extinguishing media**

- Water, foam, CO₂, NaHCO₃

Unsuitable extinguishing media

- Avoid use of water jet for extinguishing

5.2. Special hazards arising from the substance or mixture**Hazardous combustion products**

- Not available

5.3. Advice for firefighters

- Cool containers with water until well after fire is out.
- Keep unauthorized personnel out.
- Withdraw immediately in case of rising sound from venting safety devices or discoloration of tank.
- Wear appropriate protective equipment.
- Keep containers cool with water spray.
- Use fire fighting procedures suitable for surrounding area.

- Vapor or gas is burned at distant ignition sources can be spread quickly.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal Precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

- Protective equipment: Wear proper protective equipment.
- Emergency procedures: Not applicable
- If required, notify relevant authorities according to all applicable regulations.

6.1.2. For emergency responders

- Ventilate closed spaces before entering.
- Must work against the wind, let the upwind people to evacuate.
- Do not touch spilled material. Stop leak if you can do it without risk.
- Handling the damaged containers or spilled material after wearing protective equipment.
- Do not direct water at spill or source of leak.

6.2. Environmental precautions

- Prevent runoff and contact with waterways, drains or sewers.
- If large amounts have been spilled, inform the relevant authorities.
- Avoid dispersal of spilt material and runoff and contact with waterways, drains and sewers. If large spills, advise

6.3. Methods and material for containment and cleaning up

6.3.1. For containment

- Clear spills immediately
- Clean up all spills immediately.
- Prevent, by any means available, spillage from entering drains or water course.

6.3.2. For cleaning up

- Large spill : Stay upwind and keep out of low areas. Dike for later disposal.
- Notification to central government, local government. When emissions at least of the standard amount
- Dispose of waste in accordance with local regulation.
- Appropriate container for disposal of spilled material collected.
- Small leak: sand or other non-combustible material, please let use absorption.
- Wipe off the solvent.
- Dike for later disposal.

6.3.3. Other information

- Slippery when spilt.

6.4. Reference to other sections

- See Section 7 for information on safe handling.
- See Section 8 for information on personal protection equipment.
- See Section 13 for information on disposal.

SECTION 7: HANDLING AND STORAGE

7.1. Precautions for safe handling

- Avoid direct physical contact.
- Get the manual before use.
- Refer to Engineering controls and personal protective equipment.
- Do not handle until all safety precautions have been read and understood.
- Do not inhale the steam prolonged or repeated.

7.2. Conditions for safe storage, including any incompatibilities

- Save in cool, dry and well ventilated place.
- Check regularly for leaks.
- Please pay attention to incompatibilities materials and conditions to avoid.

- Keep sealed when not in use.
- No open fire.

7.3. Specific end use(s)

- See Section 1 for information on 1.2 Relevant identified uses.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control parameters

8.1.1. Occupational exposure limits

European Union (EU) Commission Directive 2006/15/EC (IOELVs)

- Not available

European Union (EU) Commission Directive 2006/15/EC (IOELVs) - Skin

- Not available

8.1.2. Recommended Monitoring Procedures

- Personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment.

8.1.3. DNEL/PNEC - Values

- Not available

8.2. Exposure controls

8.2.1. Appropriate engineering controls

- A system of local and/or general exhaust is recommended to keep employee exposures above the Exposure Limits. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. The use of local exhaust ventilation is recommended to control emissions near the source.

8.2.2. Individual protection measures, such as personal protective equipment

Hand protection

- Wear appropriate glove.

Eye protection

- Wear primary eye protection such as splash resistant safety goggles with a secondary protection face shield.
- Provide an emergency eye wash station and quick drench shower in the immediate work area.

Respiratory Protection

- Under conditions of frequent use or heavy exposure, Respiratory protection may be needed.
- Respiratory protection is ranked in order from minimum to maximum.
- Consider warning properties before use.
- Any chemical cartridge respirator with organic vapor cartridge(s).
- Any chemical cartridge respirator with a full face piece and organic vapor cartridge(s).
- Any air-purifying respirator with a full face piece and an organic vapor canister.
- For Unknown Concentration or Immediately Dangerous to Life or Health : Any supplied-air respirator with full face piece and operated in a pressure-demand or other positive-pressure mode in combination with a separate escape supply. Any self-contained breathing apparatus with a full face piece.

Skin protection

- Wear appropriate clothing.

8.2.3 Environmental exposure controls

- Do not let product enter drains. For ecological information refer to section 12.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Appearance(State)	Liquid
Appearance(Color)	BLACK

Odor	Odorless
Odor threshold	Not available
pH	8.0 ± 1.0
Melting point/Freezing point	Not available
Initial boiling point and boiling range	> 100 °C
Flash point	300 °C
Evaporation rate	Not available
Flammability(solid, gas)	Not applicable
Upper/Lower Flammability or explosive	Not available
Vapour pressure	Not available
Vapour density	Not available
Relative density	1.1 ± 0.05 g/cm ³
Solubility	Fully miscible
Partition coefficient of n-octanol/water	Not available
Autoignition temperature	No self-igniting
Decomposition temperature	Not available
Viscosity	1100 ± 150 Cps
Explosive properties	Not explosive
Oxidizing properties	Not available

9.2. Other information

- Not available

SECTION 10: STABILITY AND REACTIVITY**10.1. Reactivity**

- Not available

10.2. Chemical Stability

- This material is stable under recommended storage and handling conditions.

10.3. Possibility of hazardous reactions

- Hazardous Polymerization will not occur.

10.4. Conditions to avoid

- Avoid contact with incompatible materials and condition.
- Avoid : Accumulation of electrostatic charges, Heating, Flames and hot surfaces

10.5. Incompatible materials

- Not available

10.6. Hazardous decomposition products

- Not available

SECTION 11: TOXICOLOGICAL INFORMATION**11.1. Acute toxicity**

- **Oral - ATE MIX : Not available**
 - Not available
- **Dermal - ATE MIX : Not available**
 - Not available
- **Inhalation - ATE MIX : Not available**
 - Not available

11.2. Skin corrosion/irritation

- [2-AMINO-2-METHYL-1-PROPANOL] : Classified as Category 2 (KOSHA)

11.3. Serious eye damage/irritation

- [2-AMINO-2-METHYL-1-PROPANOL] : Classified as Category 1 (KOSHA)

11.4. Respiratory sensitization

- Not available

11.5. Skin sensitization

- Not available

11.6. Germ cell mutagenicity

- Not available

11.7. Carcinogenicity**- IARC**

- Not available

- OSHA

- Not available

- ACGIH

- Not available

- NTP

- Not available

- EU CLP

- Not available

11.8. Reproductive toxicity

- Not available

11.9. Specific target organ toxicity(single exposure):

- Not available

11.10. Specific target organ toxicity(repeated exposure):

- Not available

11.11. Aspiration hazard

- Not available

SECTION 12: ECOLOGICAL INFORMATION**12.1. Toxicity****12.1.1. Fish**

- Not available

12.1.2. Invertebrate

- Not available

12.1.3. Algae

- Not available

12.2. Persistence and degradability**12.2.1. Persistence**

- Not available

12.2.2. Degradability

- [2-AMINO-2-METHYL-1-PROPANOL] : BOD5/COD 0.005 (KOSHA)

12.3. Bioaccumulative potential**12.3.1. Bioaccumulation**

- [2-AMINO-2-METHYL-1-PROPANOL] : 1.3 BSAF (Leuciscus idus(Fish, fresh water), 50ug/) (KOSHA)

12.3.2. Biodegradability

- [2-AMINO-2-METHYL-1-PROPANOL] : 40 (%) 28 days (KOSHA)

12.4. Mobility in soil

- Not available

12.5. Results of PBT and vPvB assessment

- Not available

12.6. Other adverse effects

- Not available

SECTION 13: DISPOSAL CONSIDERATIONS**13.1. Waste treatment methods**

- Since more than two kinds of designated waste is mixed, it is difficult to treat separately, then can be reduction or stabilization by incineration or similar process.
- If water separation is possible, pre-process with Water separation process.
- Dispose by incineration.
- The user of this product must disposal by oneself or entrust to waste disposer or person who other's waste recycle and dispose, person who establish and operate waste disposal facilities.
- Dispose of waste in accordance with all applicable laws and regulations.

SECTION 14: TRANSPORT INFORMATION**14.1. UN No.****14.1.1. UN No. (ADR/RID/ADN)**

- Not applicable

14.1.2. UN No. (IMDG CODE/IATA DGR)

- Not applicable

14.1.3. UN No. (ICAO)

- Not applicable

14.2. UN proper shipping name

- Not applicable

14.3. Transport hazard class(es)**14.3.1. ADR/RID/ADN Class**

- Not applicable

14.3.2. ADR/RID/ADN Class

- Not applicable

14.3.3. ADR Label No.

- Not applicable

14.3.4. IMDG Class

- Not applicable

14.3.5. ICAO Class/Division

- Not applicable

14.3.6. Transport Labels

- Not applicable

14.4. Packing group

14.4.1. ADR/RID/ADN Packing group

- Not applicable

14.4.2. IMDG Packing group

- Not applicable

14.4.3. ICAO Packing group

- Not applicable

14.5. Environmental hazards

- Not applicable

14.6. Special precautions for user

- Local transport follows in accordance with Dangerous goods Safety Management Law.
- Package and transport follow in accordance with Department of Transportation (DOT) and other regulatory agency
- EmS FIRE SCHEDULE : Not applicable
- EmS SPILLAGE SCHEDULE : Not applicable
- Air transport(IATA): Not subject to IATA regulations.

14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

- Not applicable

SECTION 15: REGULATORY INFORMATION**15.1. Safety, health and environmental regulation / legislation specific for the substance or mixture****15.1.1. Europe regulatory****15.1.1.1 REACH Restricted substance under REACH**

- Not applicable

15.1.1.2 REACH Substances subject to authorization under REACH

- Not applicable

15.1.1.3 REACH SVHC

- Not applicable

15.1.1.4 Europe PBT

- Not applicable

15.1.1.5 European Union (EU) Transport of Dangerous Goods by Road - Dangerous Goods List

- Not applicable

15.2. Chemical Safety Assessment

- Not conducted

SECTION 16: OTHER INFORMATION**16.1. Indication of changes**

- The Safety Data Sheet has been reviewed and the data therein were revised and laid out according to the requirements of the Commission Regulation (EC) No. 1907/2006

16.2. Abbreviations and acronyms

- 1272/2008 CLP : Classification, Labelling and Packaging regulation.
- REACH : Registration, Evaluation and authorization of chemical substances.
- DNEL : Derive no effects level
- PNEC : Predicted no effect concentration

16.3. Key literature references and sources for data

- This Safety Data Sheet was compiled with data and information from the following sources: RTECS, ECOSAR, HSDB, SIDS SIAP, ChemWATCH, CESAR, Chemical DB

16.4. Classification procedure

- The mixture classification has been derived based on the classification of the individual components in accordance with the rules set out in Regulation (EC) No 1272/2008 (CLP) as well as the translation tables in Annex VII to the same regulation.

16.5. Training advice

- Not applicable

16.6. Further information

- The (M)SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings. Risks may be determined by reference to Exposures Scenarios. Scale of use, frequency of use and current or available engineering controls must be considered.

- This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only.

- It should not therefore be construed as guaranteeing any specific property of the product.

- Contact a poison control centre, List of Telephone Numbers : AUSTRIA (Vienna Wien) +43 1 406 43 43; BELGIUM (Brussels Bruxelles) +32 70 245 245; BULGARIA (Sofia) +359 2 9154 409; CZECH REPUBLIC (Prague Praha) +420 224 919 293; DENMARK (Copenhagen) 82 12 12 12; ESTONIA (Tallinn) 112; FINLAND (Helsinki) +358 9 471 977; FRANCE (Paris) +33 1 40 0548 48; GERMANY (Berlin) +49 30 19240; GREECE (Athens Athina) +30 10 779 3777; HUNGARY (Budapest) 06 80 20 11 99; ICELAND (Reykjavik) +354 525 111, +354 543 2222; IRELAND (Dublin) +353 1 8379964; ITALY (Rome) +39 06 305 4343; LATVIA (Riga) +371 704 2468; LITHUANIA (Vilnius) +370 5 236 20 52 or +370 687 53378; MALTA (Valletta) 2425 0000; NETHERLANDS (Bilthoven) +31 30 274 88 88; NORWAY (Oslo) 22 591300; POLAND (Gdansk) +48 58301 65 16 or +48 58 349 2831; PORTUGAL (Lisbon Lisboa) 808 250 143; ROMANIA (Bucharest) +40 21 3183606 SLOVAKIA (Bratislava) +421 2 54 77 4166; SLOVENIA (Ljubljana) + 386 41 650 500; SPAIN (Barcelona) +34 93 227 98 33 or +34 93 227 54 00 bleep 190; SWEDEN (Stockholm) 112 or +46 8 33 12 31 (mon-fri 9.00-17.00); UNITED KINGDOM (London) 112 or 0845 4647 (NHS Direct).

Disclaimer of Liability

This information is based on our present state of knowledge. It should not therefore be construed as guaranteeing specific properties of the products Described or their suitability for a particular application. YOU&I Corporation assumes no responsibility for personal injury or property damage caused by the material. Users assume all risks associated with the use of the material.

***** End of Documents



SAFETY DATA SHEET

According to Regulation (EC) No 1272/2008 (REACH),
Annex II (COMMISSION REGULATION (EU) No 2020/2017)

Date of issue: 2019-06-14
Revision date: 2022-06-21

SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1. Product identifier

Trade name/designation : PGI- WHITE

1.2. Relevant identified uses of the substance or mixture and uses advised against

1.2.1. Relevant identified uses

- Water-soluble stationary ink

1.2.2. Uses advised against

- Not available

1.3. Details of the supplier of the safety data sheet

Manufacturer/Supplier : YOU&I COPORATION
Address : 53, MTV 26-RO, SIHEUNG-SI, GYEONGGI-DO, KOREA
Telephone : +82-31-494-2030
Emergency telephone number : +82-31-494-2030 (This number is serviced during office hours only.)
Email : tech@youicolor.com

1.4. Emergency telephone number

EU-wide emergency number : 112
See section 16.6 for the list of telephone number of National Helpdesks in the European Economic Area.

SECTION 2: HAZARD IDENTIFICATION

2.1. Classification of the substance/mixture

2.1.1. Classification according to Regulation (EC) No 1272/2008 [CLP]

- Not applicable

2.2. Label elements

2.2.1. Labelling according to Regulation (EC) No 1272/2008 [CLP]

* Hazard Pictogram(s)

- Not applicable

* Signal word : Not applicable

* Hazard statement(s)

- Not applicable

* Precautionary statement(s)

1) Prevention

- Not applicable

2) Response

- Not applicable

3) Storage

- Not applicable

4) Disposal

- Not applicable

* Additional information

- EUH211 Hazardous respirable droplets may be formed when sprayed. Do not breathe spray or mist.

2.3. Other hazards

- Not available

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1. Substances

- Not applicable

3.2. Mixtures

Name	CAS No.	EINECS NO.	% [weight]	Annex VI of Regulation (EC) No 1272/2008 (CLP Classification)
Water	7732-18-5	231-791-2	50~70	Not classified
Titanium dioxide	13463-67-7	236-675-5	10~25	 Carcinogenicity 2 : H351
GLYCERINE	56-81-5	200-289-5	10-20	Not classified
Xanthan gum	11138-66-2	234-394-2	0-1	Not classified

SECTION 4: FIRST AID MEASURES**4.1. Description of first aid measures****General**

- No general information.

Inhalation

- When exposed to large amounts of steam and mist, move to fresh air.
- Take specific treatment if needed.

Skin contact

- Flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes.
- Laundering enough contaminated clothing before reuse.

Eye contact

- Do not rub your eyes.
- Immediately flush eyes with plenty of water for at least 15 minutes and call a doctor/physician.

Ingestion

- Please be advised by doctor whether induction of vomit is demanded or not.
- Rinse your mouth with water immediately.

4.2. Most important symptoms and effects, both acute and delayed

- Not available

4.3. Indication of any immediate medical attention and special treatment needed

- Notify medical personnel of contaminated situations and have them take appropriate protective measures.

SECTION 5: FIREFIGHTING MEASURES**5.1. Extinguishing media****Suitable extinguishing media**

- A fire extinguisher water, form, CO₂, NaHCO₃

Unsuitable extinguishing media

- Avoid use of water jet for extinguishing

5.2. Special hazards arising from the substance or mixture**Hazardous combustion products**

- Not available

5.3. Advice for firefighters

- Keep unauthorized personnel out.
- Notify your local firestation and inform the location of the fire and characteristics hazard.
- Using a unattended and water devices in case of large fire and leave alone to burn if you do not imperative.
- Avoid inhalation of materials or combustion by-products.
- Do not access if the tank on fire.
- Keep containers cool with water spray.
- Use fire fighting procedures suitable for surrounding area.
- Vapor or gas is burned at distant ignition sources can be spread quickly.

SECTION 6: ACCIDENTAL RELEASE MEASURES**6.1. Personal Precautions, protective equipment and emergency procedures****6.1.1. For non-emergency personnel**

- Protective equipment: Wear proper protective equipment.
- Emergency procedures: Not applicable
- If required, notify relevant authorities according to all applicable regulations.

6.1.2. For emergency responders

- Ventilate closed spaces before entering.
- Must work against the wind, let the upwind people to evacuate.
- Do not touch spilled material. Stop leak if you can do it without risk.
- Handling the damaged containers or spilled material after wearing protective equipment.
- Do not direct water at spill or source of leak.

6.2. Environmental precautions

- Prevent runoff and contact with waterways, drains or sewers.
- If large amounts have been spilled, inform the relevant authorities.
- Avoid dispersal of spilt material and runoff and contact with waterways, drains and sewers. If large spills, advise emergency services.

6.3. Methods and material for containment and cleaning up**6.3.1. For containment**

- Control personal contact by using protective equipment.
- Clear area of personnel and move up wind.
- Stop leak if safe to do so.

6.3.2. For cleaning up

- Large spill : Stay upwind and keep out of low areas. Dike for later disposal.
- Notification to central government, local government. When emissions at least of the standard amount
- Dispose of waste in accordance with local regulation.
- Appropriate container for disposal of spilled material collected.
- Small leak: sand or other non-combustible material, please let use absorption.
- Wipe off the solvent.
- Dike for later disposal.

6.3.3. Other information

- Slippery when spilt.

6.4. Reference to other sections

- See Section 7 for information on safe handling.
- See Section 8 for information on personal protection equipment.
- See Section 13 for information on disposal.

SECTION 7: HANDLING AND STORAGE**7.1. Precautions for safe handling**

- Wash thoroughly after handling.
- Avoid contact with incompatible materials.
- Comply with all applicable laws and regulations for handling
- Do not handle until all safety precautions have been read and understood.
- Do not inhale the steam prolonged or repeated.

7.2. Conditions for safe storage, including any incompatibilities

- Save in cool, dry and well ventilated place.
- Check regularly for leaks.
- Do not apply direct heat.
- Keep in the original container.
- Prevent static electricity and keep away from combustible materials or heat sources.

7.3. Specific end use(s)

- See Section 1 for information on 1.2 Relevant identified uses.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION**8.1. Control parameters****8.1.1. Occupational exposure limits****European Union (EU) Commission Directive 2006/15/EC (IOELVs)**

- Not available

European Union (EU) Commission Directive 2006/15/EC (IOELVs) - Skin

- Not available

8.1.2. Recommended Monitoring Procedures

- Personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment.

8.1.3. DNEL/PNEC - Values

- Not available

8.2. Exposure controls**8.2.1. Appropriate engineering controls**

- A system of local and/or general exhaust is recommended to keep employee exposures above the Exposure Limits. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. The use of local exhaust ventilation is recommended to control emissions near the source.

8.2.2. Individual protection measures, such as personal protective equipment**Hand protection**

- Wear appropriate glove.

Eye protection

- Wear primary eye protection such as splash resistant safety goggles with a secondary protection face shield.
- Provide an emergency eye wash station and quick drench shower in the immediate work area.

Respiratory Protection

- Under conditions of frequent use or heavy exposure, Respiratory protection may be needed.
- Respiratory protection is ranked in order from minimum to maximum.
- Consider warning properties before use.
- Any chemical cartridge respirator with organic vapor cartridge(s).
- Any chemical cartridge respirator with a full facepiece and organic vapor cartridge(s).
- Any air-purifying respirator with a full facepiece and an organic vapor canister.
- For Unknown Concentration or Immediately Dangerous to Life or Health : Any supplied-air respirator with full facepiece and operated in a pressure-demand or other positive-pressure mode in combination with a separate escape supply. Any self-contained breathing apparatus with a full facepiece.

Skin protection

- Wear appropriate clothing.

8.2.3 Environmental exposure controls

- Do not let product enter drains. For ecological information refer to section 12.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES**9.1. Information on basic physical and chemical properties**

Appearance(State)	Liquid
Appearance(Color)	WHITE
Odor	Odorless
Odor threshold	Not available
pH	8.0 ± 1.0
Melting point/Freezing point	Not available
Initial boiling point and boiling range	> 100 °C
Flash point	300 °C
Evaporation rate	Not available
Flammability(solid, gas)	Not applicable

Upper/Lower Flammability or explosive limits	Not explosive
Vapour pressure	Not available
Vapour density	Not available
Relative density	1.2 ± 0.05 g/cm ³
Solubility	Fully miscible
Partition coefficient of n-octanol/water	Not available
Autoignition temperature	No self-igniting
Decomposition temperature	Not available
Viscosity	1600 ± 200 Cps
Explosive properties	Not explosive
Oxidising properties	Not available

9.2. Other information

- Not available

SECTION 10: STABILITY AND REACTIVITY**10.1. Reactivity**

- Not available

10.2. Chemical Stability

- This material is stable under recommended storage and handling conditions.

10.3. Possibility of hazardous reactions

- Hazardous Polymerization will not occur.

10.4. Conditions to avoid

- Avoid contact with incompatible materials and condition.
- Avoid : Accumulation of electrostatic charges, Heating, Flames and hot surfaces

10.5. Incompatible materials

- Not available

10.6. Hazardous decomposition products

- Not available

SECTION 11: TOXICOLOGICAL INFORMATION**11.1. Acute toxicity**

- **Oral**
 - Not available
- **Dermal**
 - Not available
- **Inhalation**
 - Not available

11.2. Skin corrosion/irritation

- Not available

11.3. Serious eye damage/irritation

- Not available

11.4. Respiratory sensitization

- Not available

11.5. Skin sensitization

- Not available

11.6. Germ cell mutagenicity

- Not available

11.7. Carcinogenicity**- IARC**

- [Titanium dioxide] : 2B (KOSHA)

- OSHA

- Not available

- ACGIH

- [Titanium dioxide] : A4 (KOSHA)

- NTP

- Not available

- EU CLP

- Not available

11.8. Reproductive toxicity

- Not available

11.9. Specific target organ toxicity(single exposure):

- Not available

11.10. Specific target organ toxicity(repeated exposure):

- Not available

11.11. Aspiration hazard

- Not available

SECTION 12: ECOLOGICAL INFORMATION**12.1. Toxicity****12.1.1. Fish**

- Not available

12.1.2. Invertebrate

- Not available

12.1.3. Algae

- Not available

12.2. Persistence and degradability**12.2.1. Persistence**

- Not available

12.2.2. Degradability

- Not available

12.3. Bioaccumulative potential**12.3.1. Bioaccumulation**

- Not available

12.3.2. Biodegradability

- Not available

12.4. Mobility in soil

- Not available

12.5. Results of PBT and vPvB assessment

- Not available

12.6. Other adverse effects

- Not available

SECTION 13: DISPOSAL CONSIDERATIONS**13.1. Waste treatment methods**

- Since more than two kinds of designated waste is mixed, it is difficult to treat separately, then can be reduction or stabilization by incineration or similar process.
- If water separation is possible, pre-process with Water separation process.
- Dispose by incineration.
- The user of this product must disposal by oneself or entrust to waste disposer or person who other's waste recycle and dispose, person who establish and operate waste disposal facilities.
- Dispose of waste in accordance with all applicable laws and regulations.

SECTION 14: TRANSPORT INFORMATION**14.1. UN No.****14.1.1. UN No. (ADR/RID/ADN)**

- Not applicable

14.1.2. UN No. (IMDG CODE/IATA DGR)

- Not applicable

14.1.3. UN No. (ICAO)

- Not applicable

14.2. UN proper shipping name

- Not applicable

14.3. Transport hazard class(es)**14.3.1. ADR/RID/ADN Class**

- Not applicable

14.3.2. ADR/RID/ADN Class

- Not applicable

14.3.3. ADR Label No.

- Not applicable

14.3.4. IMDG Class

- Not applicable

14.3.5. ICAO Class/Division

- Not applicable

14.3.6. Transport Labels

- Not applicable

14.4. Packing group**14.4.1. ADR/RID/ADN Packing group**

- Not applicable

14.4.2. IMDG Packing group

- Not applicable

14.4.3. ICAO Packing group

- Not applicable

14.5. Environmental hazards

- Not applicable

14.6. Special precautions for user

- Local transport follows in accordance with Dangerous goods Safety Management Law.

- Package and transport follow in accordance with Department of Transportation (DOT) and other regulatory agency requirements.
- EmS FIRE SCHEDULE : Not available
- EmS SPILLAGE SCHEDULE : Not available
- Air transport(IATA): Not subject to IATA regulations.

14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

- Not applicable

SECTION 15: REGULATORY INFORMATION**15.1. Safety, health and environmental regulation / legislation specific for the substance or mixture****15.1.1. Europe regulatory****15.1.1.1 REACH Restricted substance under REACH**

- Not applicable

15.1.1.2 REACH Substances subject to authorization under REACH

- Not applicable

15.1.1.3 REACH SVHC

- Not applicable

15.1.1.4 Europe PBT

- Not applicable

15.1.1.5 European Union (EU) Transport of Dangerous Goods by Road - Dangerous Goods List

- Not applicable

15.2. Chemical Safety Assessment

- Not conducted

SECTION 16: OTHER INFORMATION**16.1. Indication of changes**

- The Safety Data Sheet has been reviewed and the data therein were revised and laid out according the requirements of the Commission Regulation (EC) No. 1907/2006

16.2. Abbreviations and acronyms

- 1272/2008 CLP : Classification, Labelling and Packaging regulation.
- REACH : Registration, Evaluation and authorisation of chemical substances.
- DNEL : Derive no effects level
- PNEC : Predicted no effect concentration

16.3. Key literature references and sources for data

- This Safety Data Sheet was compiled with data and information from the following sources: RTECS, ECOSAR, HSDB, SIDS SIAP, ChemWATCH, CESAR, Chemical DB

16.4. Classification procedure

- The mixture classification has been derived based on the classification of the individual components in accordance with the rules set out in Regulation (EC) No 1272/2008 (CLP) as well as the translation tables in Annex VII to the same regulation.

16.5. Training advice

- Not applicable

16.6. Further information

- The (M)SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings. Risks may be determined by reference to Exposures Scenarios. Scale of use, frequency of use and current or available engineering controls must be considered.
- This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only.
- It should not therefore be construed as guaranteeing any specific property of the product.

- Contact National Helpdesks, List of Telephone Numbers : AUSTRIA (Vienna Wien) +43 1 515 61 0, BELGIUM (Brussels Bruxelles) +32 070 245 245, BULGARIA (Sofia) +359 2 9888 205, Croatia +385 1 2348 342 CZECH REPUBLIC (Prague Praha) +420 224 919 293 or +420 224 915 402, DENMARK (Copenhagen) 82 12 12 12, ESTONIA (Tallinn) 112, FINLAND (Helsinki) +358 9 471 977, FRANCE (Paris) +33 1 45 42 59 59, GERMANY (Berlin) +49 30 19240, GREECE (Athens Athinai) +30 210 77 93 777, HUNGARY (Budapest) +36 80 201 199, ICELAND (Reykjavik) +354 543 2222 or 112, IRELAND (Dublin) +353 1 8379964 or +353 1 809 2166, ITALY (Rome) +39 06 305 4343, LATVIA (Riga) 112 or +371 6704 2473, LITHUANIA (Vilnius) +370 5 236 20 52 or +370 687 53378, Luxembourg +352 70 245 245, MALTA +356 2122 4071, NETHERLANDS (Bilthoven) +31 30 274 88 88, NORWAY (Oslo) 22 591300, POLAND (Gdansk) +48 58301 65 16 or +48 58 349 2831, PORTUGAL (Lisbon Lisboa) 808 250 143, ROMANIA (Bucharest) +40 21 3183606 SLOVAKIA (Bratislava) +421 2 54 77 4166, SLOVENIA (Ljubljana) + 386 41 650 500, SPAIN +34 91 562 04 20(spanish language) or +34 91 768 98 00(You can request to be served in English), SWEDEN (Stockholm) 112 or +46 10 456 6700 (mon-fri 9.00-17.00), UNITED KINGDOM (London) 112 or 0845 4647 (NHS Direct).

***** End of Documents



SAFETY DATA SHEET

According to Regulation (EC) No 1272/2008 (REACH),
Annex II(COMMISSION REGULATION (EU) No 2020/2017)

Date of issue: 2019-06-14
Revision date: 2022-06-21

SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1. Product identifier

Trade name/designation : PGI- GREEN

1.2. Relevant identified uses of the substance or mixture and uses advised against

1.2.1. Relevant identified uses

- Water-soluble stationary ink

1.2.2. Uses advised against

- Not available

1.3. Details of the supplier of the safety data sheet

Manufacturer/Supplier : YOU&I COPORATION
Address : 53, MTV 26-RO, SIHEUNG-SI, GYEONGGI-DO, KOREA
Telephone : +82-31-494-2030
Emergency telephone number : +82-31-494-2030 (This number is serviced during office hours only.)
Email : tech@youicolor.com

1.4. Emergency telephone number

EU-wide emergency number : 112
See section 16.6 for the list of telephone number of National Helpdesks in the European Economic Area.

SECTION 2: HAZARD IDENTIFICATION

2.1. Classification of the substance/mixture

2.1.1. Classification according to Regulation (EC) No 1272/2008 [CLP]

- Not applicable

2.2. Label elements

2.2.1. Labelling according to Regulation (EC) No 1272/2008 [CLP]

- * **Hazard Pictogram(s)**
 - Not applicable
- * **Signal word** - Not applicable
- * **Hazard statement(s)**
 - Not applicable
- * **Precautionary statement(s)**
 - 1) Prevention**
 - Not applicable
 - 2) Response**
 - Not applicable
 - 3) Storage**
 - Not applicable
 - 4) Disposal**
 - Not applicable
- * **Additional inforamtion**
 - **EUH211** Hazardous respirable droplets may be formed when sprayed. Do not breathe spray or mist.

2.3. Other hazards

- Not available

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1. Substances

- Not applicable

3.2. Mixtures

Name	CAS No.	EINECS NO.	% [weight]	Annex VI of Regulation (EC) No 1272/2008 (CLP Classification)
Water	7732-18-5	231-791-2	45-65	Not classified
Titanium dioxide	13463-67-7	236-675-5	10-25	 Carcinogenicity 2 : H351
Glycerine	56-81-5	200-289-5	10-20	Not classified
C. I. Basic YELLOW 40	35869-60-4	252-770-4	0-5	 Eye Irritation 2 : H319
C.I. PIGMENT GREEN 7	1328-53-6	215-524-7	0-5	Not classified
Xanthan gum	11138-66-2	234-394-2	0-1	Not classified

SECTION 4: FIRST AID MEASURES

4.1. Description of first aid measures

General

- No general information.

Inhalation

- When exposed to large amounts of steam and mist, move to fresh air.
- Take specific treatment if needed.

Skin contact

- Flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes.
- Laundering enough contaminated clothing before reuse.

Eye contact

- Do not rub your eyes.
- Immediately flush eyes with plenty of water for at least 15 minutes and call a doctor/physician.

Ingestion

- Please be advised by doctor whether induction of vomit is demanded or not.
- Rinse your mouth with water immediately.

4.2. Most important symptoms and effects, both acute and delayed

- Not available

4.3. Indication of any immediate medical attention and special treatment needed

- Notify medical personnel of contaminated situations and have them take appropriate protective measures.

SECTION 5: FIREFIGHTING MEASURES

5.1. Extinguishing media

Suitable extinguishing media

- A fire extinguisher water, foam, CO₂, NaHCO₃

Unsuitable extinguishing media

- Avoid use of water jet for extinguishing

5.2. Special hazards arising from the substance or mixture

Hazardous combustion products

- Not available

5.3. Advice for firefighters

- Keep unauthorized personnel out.
- Notify your local firestation and inform the location of the fire and characteristics hazard.
- Using a unattended and water devices in case of large fire and leave alone to burn if you do not imperative.
- Avoid inhalation of materials or combustion by-products.

- Do not access if the tank on fire.
- Keep containers cool with water spray.
- Use fire fighting procedures suitable for surrounding area.
- Vapor or gas is burned at distant ignition sources can be spread quickly.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal Precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

- Protective equipment: Wear proper protective equipment.
- Emergency procedures: Not applicable
- If required, notify relevant authorities according to all applicable regulations.

6.1.2. For emergency responders

- Ventilate closed spaces before entering.
- Must work against the wind, let the upwind people to evacuate.
- Do not touch spilled material. Stop leak if you can do it without risk.
- Handling the damaged containers or spilled material after wearing protective equipment.
- Do not direct water at spill or source of leak.

6.2. Environmental precautions

- Prevent runoff and contact with waterways, drains or sewers.
- If large amounts have been spilled, inform the relevant authorities.
- Avoid dispersal of spilt material and runoff and contact with waterways, drains and sewers. If large spills, advise emergency services.

6.3. Methods and material for containment and cleaning up

6.3.1. For containment

- Control personal contact by using protective equipment.
- Clear area of personnel and move up wind.
- Stop leak if safe to do so.

6.3.2. For cleaning up

- Large spill : Stay upwind and keep out of low areas. Dike for later disposal.
- Notification to central government, local government. When emissions at least of the standard amount
- Dispose of waste in accordance with local regulation.
- Appropriate container for disposal of spilled material collected.
- Small leak: sand or other non-combustible material, please let use absorption.
- Wipe off the solvent.
- Dike for later disposal.

6.3.3. Other information

- Slippery when spilt.

6.4. Reference to other sections

- See Section 7 for information on safe handling.
- See Section 8 for information on personal protection equipment.
- See Section 13 for information on disposal.

SECTION 7: HANDLING AND STORAGE

7.1. Precautions for safe handling

- Wash thoroughly after handling.
- Avoid contact with incompatible materials.
- Comply with all applicable laws and regulations for handling
- Do not handle until all safety precautions have been read and understood.
- Do not inhale the steam prolonged or repeated.

7.2. Conditions for safe storage, including any incompatibilities

- Save in cool, dry and well ventilated place.

- Check regularly for leaks.
- Do not apply direct heat.
- Keep in the original container.
- Prevent static electricity and keep away from combustible materials or heat sources.

7.3. Specific end use(s)

- See Section 1 for information on 1.2 Relevant identified uses.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control parameters

8.1.1. Occupational exposure limits

European Union (EU) Commission Directive 2006/15/EC (IOELVs)

- Not available

European Union (EU) Commission Directive 2006/15/EC (IOELVs) - Skin

- Not available

8.1.2. Recommended Monitoring Procedures

- Personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment.

8.1.3. DNEL/PNEC - Values

- Not available

8.2. Exposure controls

8.2.1. Appropriate engineering controls

- A system of local and/or general exhaust is recommended to keep employee exposures above the Exposure Limits. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. The use of local exhaust ventilation is recommended to control emissions near the source.

8.2.2. Individual protection measures, such as personal protective equipment

Hand protection

- Wear appropriate glove.

Eye protection

- Wear primary eye protection such as splash resistant safety goggles with a secondary protection face shield.
- Provide an emergency eye wash station and quick drench shower in the immediate work area.

Respiratory Protection

- Under conditions of frequent use or heavy exposure, Respiratory protection may be needed.
- Respiratory protection is ranked in order from minimum to maximum.
- Consider warning properties before use.
- Any chemical cartridge respirator with organic vapor cartridge(s).
- Any chemical cartridge respirator with a full facepiece and organic vapor cartridge(s).
- Any air-purifying respirator with a full facepiece and an organic vapor canister.
- For Unknown Concentration or Immediately Dangerous to Life or Health : Any supplied-air respirator with full facepiece and operated in a pressure-demand or other positive-pressure mode in combination with a separate escape supply. Any self-contained breathing apparatus with a full facepiece.

Skin protection

- Wear appropriate clothing.

8.2.3 Environmental exposure controls

- Do not let product enter drains. For ecological information refer to section 12.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Appearance(State)	Liquid
Appearance(Color)	GREEN
Odor	Odorless
Odor threshold	Not available
pH	8.0 ± 1.0
Melting point/Freezing point	Not available

Initial boiling point and boiling range	> 100 °C
Flash point	300 °C
Evaporation rate	Not available
Flammability(solid, gas)	Not applicable
Upper/Lower Flammability or explosive limits	Not explosive
Vapour pressure	Not available
Vapour density	Not available
Relative density	1.2 ± 0.05 g/cm ³
Solubility	Fully miscible
Partition coefficient of n-octanol/water	Not available
Autoignition temperature	No self-igniting
Decomposition temperature	Not available
Viscosity	1600 ± 200 Cps
Explosive properties	Not explosive
Oxidising properties	Not available

9.2. Other information

- Not available

SECTION 10: STABILITY AND REACTIVITY**10.1. Reactivity**

- Not available

10.2. Chemical Stability

- This material is stable under recommended storage and handling conditions.

10.3. Possibility of hazardous reactions

- Hazardous Polymerization will not occur.

10.4. Conditions to avoid

- Avoid contact with incompatible materials and condition.
- Avoid : Accumulation of electrostatic charges, Heating, Flames and hot surfaces

10.5. Incompatible materials

- Not available

10.6. Hazardous decomposition products

- Not available

SECTION 11: TOXICOLOGICAL INFORMATION**11.1. Acute toxicity**

- **Oral**
 - Not available
- **Dermal**
 - Not available
- **Inhalation**
 - Not available

11.2. Skin corrosion/irritation

- Not available

11.3. Serious eye damage/irritation

- [C.I. BASIC YELLOW 40] : Classified as Category 2 (ECHA)

11.4. Respiratory sensitization

- Not available

11.5. Skin sensitization

- Not available

11.6. Germ cell mutagenicity

- Not available

11.7. Carcinogenicity

- **IARC**

- [Titanium dioxide] : 2B (KOSHA)

- **OSHA**

- Not available

- **ACGIH**

- [Titanium dioxide] : A4 (KOSHA)

- **NTP**

- Not available

- **EU CLP**

- Not available

11.8. Reproductive toxicity

- Not available

11.9. Specific target organ toxicity(single exposure):

- Not available

11.10. Specific target organ toxicity(repeated exposure):

- Not available

11.11. Aspiration hazard

- Not available

SECTION 12: ECOLOGICAL INFORMATION

12.1. Toxicity

12.1.1. Fish

- Not available

12.1.2. Invertebrate

- Not available

12.1.3. Algae

- Not available

12.2. Persistence and degradability

12.2.1. Persistence

- Not available

12.2.2. Degradability

- Not available

12.3. Bioaccumulative potential

12.3.1. Bioaccumulation

- Not available

12.3.2. Biodegradability

- Not available

12.4. Mobility in soil

- Not available

12.5. Results of PBT and vPvB assessment

- Not available

12.6. Other adverse effects

- Not available

SECTION 13: DISPOSAL CONSIDERATIONS**13.1. Waste treatment methods**

- Since more than two kinds of designated waste is mixed, it is difficult to treat separately, then can be reduction or stabilization by incineration or similar process.
- If water separation is possible, pre-process with Water separation process.
- Dispose by incineration.
- The user of this product must disposal by oneself or entrust to waste disposer or person who other's waste recycle and dispose, person who establish and operate waste disposal facilities.
- Dispose of waste in accordance with all applicable laws and regulations.

SECTION 14: TRANSPORT INFORMATION**14.1. UN No.****14.1.1. UN No. (ADR/RID/ADN)**

- Not applicable

14.1.2. UN No. (IMDG CODE/IATA DGR)

- Not applicable

14.1.3. UN No. (ICAO)

- Not applicable

14.2. UN proper shipping name

- Not applicable

14.3. Transport hazard class(es)**14.3.1. ADR/RID/ADN Class**

- Not applicable

14.3.2. ADR/RID/ADN Class

- Not applicable

14.3.3. ADR Label No.

- Not applicable

14.3.4. IMDG Class

- Not applicable

14.3.5. ICAO Class/Division

- Not applicable

14.3.6. Transport Labels

- Not applicable

14.4. Packing group**14.4.1. ADR/RID/ADN Packing group**

- Not applicable

14.4.2. IMDG Packing group

- Not applicable

14.4.3. ICAO Packing group

- Not applicable

14.5. Environmental hazards

- Not applicable

14.6. Special precautions for user

- Local transport follows in accordance with Dangerous goods Safety Management Law.
- Package and transport follow in accordance with Department of Transportation (DOT) and other regulatory agency requirements.
- EmS FIRE SCHEDULE : Not available
- EmS SPILLAGE SCHEDULE : Not available
- Air transport(IATA): Not subject to IATA regulations.

14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

- Not applicable

SECTION 15: REGULATORY INFORMATION**15.1. Safety, health and environmental regulation / legislation specific for the substance or mixture****15.1.1. Europe regulatory****15.1.1.1 REACH Restricted substance under REACH**

- Not applicable

15.1.1.2 REACH Substances subject to authorization under REACH

- Not applicable

15.1.1.3 REACH SVHC

- Not applicable

15.1.1.4 Europe PBT

- Not applicable

15.1.1.5 European Union (EU) Transport of Dangerous Goods by Road - Dangerous Goods List

- Not applicable

15.2. Chemical Safety Assessment

- Not conducted

SECTION 16: OTHER INFORMATION**16.1. Indication of changes**

- The Safety Data Sheet has been reviewed and the data therein were revised and laid out according the requirements of the Commission Regulation (EC) No. 1907/2006

16.2. Abbreviations and acronyms

- 1272/2008 CLP : Classification, Labelling and Packaging regulation.
- REACH : Registration, Evaluation and authorisation of chemical substances.
- DNEL : Derive no effects level
- PNEC : Predicted no effect concentration

16.3. Key literature references and sources for data

- This Safety Data Sheet was compiled with data and information from the following sources: RTECS, ECOSAR, HSDB, SIDS SIAP, ChemWATCH, CESAR, Chemical DB

16.4. Classification procedure

- The mixture classification has been derived based on the classification of the individual components in accordance with the rules set out in Regulation (EC) No 1272/2008 (CLP) as well as the translation tables in Annex VII to the same regulation.

16.5. Training advice

- Not applicable

16.6. Further information

- The (M)SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings. Risks may be determined by reference to Exposures Scenarios. Scale of use, frequency of use and current or available engineering controls must be considered.
- This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only.
- It should not therefore be construed as guaranteeing any specific property of the product.

- Contact National Helpdesks, List of Telephone Numbers : AUSTRIA (Vienna Wien) +43 1 515 61 0, BELGIUM (Brussels Bruxelles) +32 070 245 245, BULGARIA (Sofia) +359 2 9888 205, Croatia +385 1 2348 342 CZECH REPUBLIC (Prague Praha) +420 224 919 293 or +420 224 915 402, DENMARK (Copenhagen) 82 12 12 12, ESTONIA (Tallinn) 112, FINLAND (Helsinki) +358 9 471 977, FRANCE (Paris) +33 1 45 42 59 59, GERMANY (Berlin) +49 30 19240, GREECE (Athens Athinai) +30 210 77 93 777, HUNGARY (Budapest) +36 80 201 199, ICELAND (Reykjavik) +354 543 2222 or 112, IRELAND (Dublin) +353 1 8379964 or +353 1 809 2166, ITALY (Rome) +39 06 305 4343, LATVIA (Riga) 112 or +371 6704 2473, LITHUANIA (Vilnius) +370 5 236 20 52 or +370 687 53378, Luxembourg +352 70 245 245, MALTA +356 2122 4071, NETHERLANDS (Bilthoven) +31 30 274 88 88, NORWAY (Oslo) 22 591300, POLAND (Gdansk) +48 58301 65 16 or +48 58 349 2831, PORTUGAL (Lisbon Lisboa) 808 250 143, ROMANIA (Bucharest) +40 21 3183606 SLOVAKIA (Bratislava) +421 2 54 77 4166, SLOVENIA (Ljubljana) + 386 41 650 500, SPAIN +34 91 562 04 20(spanish language) or +34 91 768 98 00(You can request to be served in English), SWEDEN (Stockholm) 112 or +46 10 456 6700 (mon-fri 9.00-17.00), UNITED KINGDOM (London) 112 or 0845 4647 (NHS Direct).

***** End of Documents



SAFETY DATA SHEET

According to Regulation (EC) No 1272/2008 (REACH),
Annex II (COMMISSION REGULATION (EU) No 2020/2017)

Date of issue: 2019-06-14
Revision date: 2022-06-21

SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1. Product identifier

Trade name/designation : PGI-VIOLET

1.2. Relevant identified uses of the substance or mixture and uses advised against

1.2.1. Relevant identified uses

- Water-soluble stationary ink

1.2.2. Uses advised against

- Not available

1.3. Details of the supplier of the safety data sheet

Manufacturer/Supplier : YOU&I CORPORATION
Address : 53, MTV 26-RO, SIHEUNG-SI, GYEONGGI-DO, KOREA
Telephone : +82-31-494-2030
Emergency telephone number : +82-31-494-2030 (This number is serviced during office hours only.)
Email : tech@youicolor.com

1.4. Emergency telephone number

EU-wide emergency number : 112
See section 16.6 for the list of telephone number of National Helpdesks in the European Economic Area.

SECTION 2: HAZARD IDENTIFICATION

2.1. Classification of the substance/mixture

2.1.1. Classification according to Regulation (EC) No 1272/2008 [CLP]

- Not applicable

2.2. Label elements

2.2.1. Labelling according to Regulation (EC) No 1272/2008 [CLP]

* Hazard Pictogram(s)

- Not applicable

* Signal word : Not applicable

* Hazard statement(s)

- Not applicable

* Precautionary statement(s)

1) Prevention

- Not applicable

2) Response

- Not applicable

3) Storage

- Not applicable

4) Disposal

- Not applicable

* Additional information

- EUH211 Hazardous respirable droplets may be formed when sprayed. Do not breathe spray or mist.

2.3. Other hazards

- Not available

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1. Substances

- Not applicable

3.2. Mixtures

Name	CAS No.	EINECS NO.	% [weight]	Annex VI of Regulation (EC) No 1272/2008 (CLP Classification)
Water	7732-18-5	231-791-2	45-65	Not classified
Titanium dioxide	13463-67-7	236-675-5	10-25	 Carcinogenicity 2 : H351
GLYCERINE	56-81-5	200-289-5	10-20	Not classified
C. I. BASIC VIOLET 7	6441-82-3	229-227-5	0-5	Not classified
Xanthan gum	11138-66-2	234-394-2	0-1	Not classified

SECTION 4: FIRST AID MEASURES**4.1. Description of first aid measures****General**

- No general information.

Inhalation

- When exposed to large amounts of steam and mist, move to fresh air.
- Take specific treatment if needed.

Skin contact

- Flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes.
- Laundering enough contaminated clothing before reuse.

Eye contact

- Do not rub your eyes.
- Immediately flush eyes with plenty of water for at least 15 minutes and call a doctor/physician.

Ingestion

- Please be advised by doctor whether induction of vomit is demanded or not.
- Rinse your mouth with water immediately.

4.2. Most important symptoms and effects, both acute and delayed

- Not available

4.3. Indication of any immediate medical attention and special treatment needed

- Notify medical personnel of contaminated situations and have them take appropriate protective measures.

SECTION 5: FIREFIGHTING MEASURES**5.1. Extinguishing media****Suitable extinguishing media**

- A fire extinguisher water, form, CO₂, NaHCO₃

Unsuitable extinguishing media

- Avoid use of water jet for extinguishing

5.2. Special hazards arising from the substance or mixture**Hazardous combustion products**

- Not available

5.3. Advice for firefighters

- Keep unauthorized personnel out.
- Notify your local firestation and inform the location of the fire and characteristics hazard.
- Using a unattended and water devices in case of large fire and leave alone to burn if you do not imperative.
- Avoid inhalation of materials or combustion by-products.
- Do not access if the tank on fire.
- Keep containers cool with water spray.
- Use fire fighting procedures suitable for surrounding area.

- Vapor or gas is burned at distant ignition sources can be spread quickly.

SECTION 6: ACCIDENTAL RELEASE MEASURES**6.1. Personal Precautions, protective equipment and emergency procedures****6.1.1. For non-emergency personnel**

- Protective equipment: Wear proper protective equipment.
- Emergency procedures: Not applicable
- If required, notify relevant authorities according to all applicable regulations.

6.1.2. For emergency responders

- Ventilate closed spaces before entering.
- Must work against the wind, let the upwind people to evacuate.
- Do not touch spilled material. Stop leak if you can do it without risk.
- Handling the damaged containers or spilled material after wearing protective equipment.
- Do not direct water at spill or source of leak.

6.2. Environmental precautions

- Prevent runoff and contact with waterways, drains or sewers.
- If large amounts have been spilled, inform the relevant authorities.
- Avoid dispersal of spilt material and runoff and contact with waterways, drains and sewers. If large spills, advise emergency services.

6.3. Methods and material for containment and cleaning up**6.3.1. For containment**

- Control personal contact by using protective equipment.
- Clear area of personnel and move up wind.
- Stop leak if safe to do so.

6.3.2. For cleaning up

- Large spill : Stay upwind and keep out of low areas. Dike for later disposal.
- Notification to central government, local government. When emissions at least of the standard amount
- Dispose of waste in accordance with local regulation.
- Appropriate container for disposal of spilled material collected.
- Small leak: sand or other non-combustible material, please let use absorption.
- Wipe off the solvent.
- Dike for later disposal.

6.3.3. Other information

- Slippery when spilt.

6.4. Reference to other sections

- See Section 7 for information on safe handling.
- See Section 8 for information on personal protection equipment.
- See Section 13 for information on disposal.

SECTION 7: HANDLING AND STORAGE**7.1. Precautions for safe handling**

- Wash thoroughly after handling.
- Avoid contact with incompatible materials.
- Comply with all applicable laws and regulations for handling
- Do not handle until all safety precautions have been read and understood.
- Do not inhale the steam prolonged or repeated.

7.2. Conditions for safe storage, including any incompatibilities

- Save in cool, dry and well ventilated place.
- Check regularly for leaks.
- Do not apply direct heat.
- Keep in the original container.

- Prevent static electricity and keep away from combustible materials or heat sources.

7.3. Specific end use(s)

- See Section 1 for information on 1.2 Relevant identified uses.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control parameters

8.1.1. Occupational exposure limits

European Union (EU) Commission Directive 2006/15/EC (IOELVs)

- Not available

European Union (EU) Commission Directive 2006/15/EC (IOELVs) - Skin

- Not available

8.1.2. Recommended Monitoring Procedures

- Personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment.

8.1.3. DNEL/PNEC - Values

- Not available

8.2. Exposure controls

8.2.1. Appropriate engineering controls

- A system of local and/or general exhaust is recommended to keep employee exposures above the Exposure Limits. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. The use of local exhaust ventilation is recommended to control emissions near the source.

8.2.2. Individual protection measures, such as personal protective equipment

Hand protection

- Wear appropriate glove.

Eye protection

- Wear primary eye protection such as splash resistant safety goggles with a secondary protection face shield.
- Provide an emergency eye wash station and quick drench shower in the immediate work area.

Respiratory Protection

- Under conditions of frequent use or heavy exposure, Respiratory protection may be needed.
- Respiratory protection is ranked in order from minimum to maximum.
- Consider warning properties before use.
- Any chemical cartridge respirator with organic vapor cartridge(s).
- Any chemical cartridge respirator with a full facepiece and organic vapor cartridge(s).
- Any air-purifying respirator with a full facepiece and an organic vapor canister.
- For Unknown Concentration or Immediately Dangerous to Life or Health : Any supplied-air respirator with full facepiece and operated in a pressure-demand or other positive-pressure mode in combination with a separate escape supply. Any self-contained breathing apparatus with a full facepiece.

Skin protection

- Wear appropriate clothing.

8.2.3 Environmental exposure controls

- Do not let product enter drains. For ecological information refer to section 12.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Appearance(State)	Liquid
Appearance(Color)	VIOLET
Odor	Odorless
Odor threshold	Not available
pH	8.0 ± 1.0
Melting point/Freezing point	Not available
Initial boiling point and boiling range	> 100 °C
Flash point	300 °C
Evaporation rate	Not available

Flammability(solid, gas)	Not applicable
Upper/Lower Flammability or explosive limits	Not explosive
Vapour pressure	Not available
Vapour density	Not available
Relative density	1.2 ± 0.05 g/cm ³
Solubility	Fully miscible
Partition coefficient of n-octanol/water	Not available
Autoignition temperature	No self-igniting
Decomposition temperature	Not available
Viscosity	1600 ± 200 Cps
Explosive properties	Not explosive
Oxidising properties	Not available

9.2. Other information

- Not available

SECTION 10: STABILITY AND REACTIVITY**10.1. Reactivity**

- Not available

10.2. Chemical Stability

- This material is stable under recommended storage and handling conditions.

10.3. Possibility of hazardous reactions

- Hazardous Polymerization will not occur.

10.4. Conditions to avoid

- Avoid contact with incompatible materials and condition.
- Avoid : Accumulation of electrostatic charges, Heating, Flames and hot surfaces

10.5. Incompatible materials

- Not available

10.6. Hazardous decomposition products

- Not available

SECTION 11: TOXICOLOGICAL INFORMATION**11.1. Acute toxicity**

- **Oral**
 - Not available
- **Dermal**
 - Not available
- **Inhalation**
 - Not available

11.2. Skin corrosion/irritation

- Not available

11.3. Serious eye damage/irritation

- Not available

11.4. Respiratory sensitization

- Not available

11.5. Skin sensitization

- Not available

11.6. Germ cell mutagenicity

- Not available

11.7. Carcinogenicity**- IARC**

- [Titanium dioxide] : 2B (KOSHA)

- OSHA

- Not available

- ACGIH

- [Titanium dioxide] : A4 (KOSHA)

- NTP

- Not available

- EU CLP

- Not available

11.8. Reproductive toxicity

- Not available

11.9. Specific target organ toxicity(single exposure):

- Not available

11.10. Specific target organ toxicity(repeated exposure):

- Not available

11.11. Aspiration hazard

- Not available

SECTION 12: ECOLOGICAL INFORMATION**12.1. Toxicity****12.1.1. Fish**

- Not available

12.1.2. Invertebrate

- Not available

12.1.3. Algae

- Not available

12.2. Persistence and degradability**12.2.1. Persistence**

- Not available

12.2.2. Degradability

- Not available

12.3. Bioaccumulative potential**12.3.1. Bioaccumulation**

- Not available

12.3.2. Biodegradability

- Not available

12.4. Mobility in soil

- Not available

12.5. Results of PBT and vPvB assessment

- Not available

12.6. Other adverse effects

- Not available

SECTION 13: DISPOSAL CONSIDERATIONS**13.1. Waste treatment methods**

- Since more than two kinds of designated waste is mixed, it is difficult to treat separately, then can be reduction or stabilization by incineration or similar process.
- If water separation is possible, pre-process with Water separation process.
- Dispose by incineration.
- The user of this product must disposal by oneself or entrust to waste disposer or person who other's waste recycle and dispose, person who establish and operate waste disposal facilities.
- Dispose of waste in accordance with all applicable laws and regulations.

SECTION 14: TRANSPORT INFORMATION**14.1. UN No.****14.1.1. UN No. (ADR/RID/ADN)**

- Not applicable

14.1.2. UN No. (IMDG CODE/IATA DGR)

- Not applicable

14.1.3. UN No. (ICAO)

- Not applicable

14.2. UN proper shipping name

- Not applicable

14.3. Transport hazard class(es)**14.3.1. ADR/RID/ADN Class**

- Not applicable

14.3.2. ADR/RID/ADN Class

- Not applicable

14.3.3. ADR Label No.

- Not applicable

14.3.4. IMDG Class

- Not applicable

14.3.5. ICAO Class/Division

- Not applicable

14.3.6. Transport Labels

- Not applicable

14.4. Packing group**14.4.1. ADR/RID/ADN Packing group**

- Not applicable

14.4.2. IMDG Packing group

- Not applicable

14.4.3. ICAO Packing group

- Not applicable

14.5. Environmental hazards

- Not applicable

14.6. Special precautions for user

- Local transport follows in accordance with Dangerous goods Safety Management Law.

- Package and transport follow in accordance with Department of Transportation (DOT) and other regulatory agency requirements.
- EmS FIRE SCHEDULE : Not available
- EmS SPILLAGE SCHEDULE : Not available
- Air transport(IATA): Not subject to IATA regulations.

14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

- Not applicable

SECTION 15: REGULATORY INFORMATION**15.1. Safety, health and environmental regulation / legislation specific for the substance or mixture****15.1.1. Europe regulatory****15.1.1.1 REACH Restricted substance under REACH**

- Not applicable

15.1.1.2 REACH Substances subject to authorization under REACH

- Not applicable

15.1.1.3 REACH SVHC

- Not applicable

15.1.1.4 Europe PBT

- Not applicable

15.1.1.5 European Union (EU) Transport of Dangerous Goods by Road - Dangerous Goods List

- Not applicable

15.2. Chemical Safety Assessment

- Not conducted

SECTION 16: OTHER INFORMATION**16.1. Indication of changes**

- The Safety Data Sheet has been reviewed and the data therein were revised and laid out according the requirements of the Commission Regulation (EC) No. 1907/2006

16.2. Abbreviations and acronyms

- 1272/2008 CLP : Classification, Labelling and Packaging regulation.
- REACH : Registration, Evaluation and authorisation of chemical substances.
- DNEL : Derive no effects level
- PNEC : Predicted no effect concentration

16.3. Key literature references and sources for data

- This Safety Data Sheet was compiled with data and information from the following sources: RTECS, ECOSAR, HSDB, SIDS SIAP, ChemWATCH, CESAR, Chemical DB

16.4. Classification procedure

- The mixture classification has been derived based on the classification of the individual components in accordance with the rules set out in Regulation (EC) No 1272/2008 (CLP) as well as the translation tables in Annex VII to the same regulation.

16.5. Training advice

- Not applicable

16.6. Further information

- The (M)SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings. Risks may be determined by reference to Exposures Scenarios. Scale of use, frequency of use and current or available engineering controls must be considered.
- This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only.
- It should not therefore be construed as guaranteeing any specific property of the product.

- Contact National Helpdesks, List of Telephone Numbers : AUSTRIA (Vienna Wien) +43 1 515 61 0, BELGIUM (Brussels Bruxelles) +32 070 245 245, BULGARIA (Sofia) +359 2 9888 205, Croatia +385 1 2348 342 CZECH REPUBLIC (Prague Praha) +420 224 919 293 or +420 224 915 402, DENMARK (Copenhagen) 82 12 12 12, ESTONIA (Tallinn) 112, FINLAND (Helsinki) +358 9 471 977, FRANCE (Paris) +33 1 45 42 59 59, GERMANY (Berlin) +49 30 19240, GREECE (Athens Athinai) +30 210 77 93 777, HUNGARY (Budapest) +36 80 201 199, ICELAND (Reykjavik) +354 543 2222 or 112, IRELAND (Dublin) +353 1 8379964 or +353 1 809 2166, ITALY (Rome) +39 06 305 4343, LATVIA (Riga) 112 or +371 6704 2473, LITHUANIA (Vilnius) +370 5 236 20 52 or +370 687 53378, Luxembourg +352 70 245 245, MALTA +356 2122 4071, NETHERLANDS (Bilthoven) +31 30 274 88 88, NORWAY (Oslo) 22 591300, POLAND (Gdansk) +48 58301 65 16 or +48 58 349 2831, PORTUGAL (Lisbon Lisboa) 808 250 143, ROMANIA (Bucharest) +40 21 3183606 SLOVAKIA (Bratislava) +421 2 54 77 4166, SLOVENIA (Ljubljana) + 386 41 650 500, SPAIN +34 91 562 04 20(spanish language) or +34 91 768 98 00(You can request to be served in English), SWEDEN (Stockholm) 112 or +46 10 456 6700 (mon-fri 9.00-17.00), UNITED KINGDOM (London) 112 or 0845 4647 (NHS Direct).

***** End of Documents



SAFETY DATA SHEET

According to Regulation (EC) No 1272/2008 (REACH),
Annex II (COMMISSION REGULATION (EU) No 2020/2017)

Date of issue: 2019-06-14
Revision date: 2022-06-21

SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1. Product identifier

Trade name/designation : PGI-S.BLUE

1.2. Relevant identified uses of the substance or mixture and uses advised against

1.2.1. Relevant identified uses

- Water-soluble stationary ink

1.2.2. Uses advised against

- Not available

1.3. Details of the supplier of the safety data sheet

Manufacturer/Supplier : YOU&I COPORATION
Address : 53, MTV 26-RO, SIHEUNG-SI, GYEONGGI-DO, KOREA
Telephone : +82-31-494-2030
Emergency telephone number : +82-31-494-2030 (This number is serviced during office hours only.)
Email : tech@youicolor.com

1.4. Emergency telephone number

EU-wide emergency number : 112

See section 16.6 for the list of telephone number of National Helpdesks in the European Economic Area.

SECTION 2: HAZARD IDENTIFICATION

2.1. Classification of the substance/mixture

2.1.1. Classification according to Regulation (EC) No 1272/2008 [CLP]

- Not applicable

2.2. Label elements

2.2.1. Labelling according to Regulation (EC) No 1272/2008 [CLP]

* Hazard Pictogram(s)

- Not applicable

* Signal word - Not applicable

* Hazard statement(s)

- Not applicable

* Precautionary statement(s)

1) Prevention

- Not applicable

2) Response

- Not applicable

3) Storage

- Not applicable

4) Disposal

- Not applicable

* Additional information

- EUH211 Hazardous respirable droplets may be formed when sprayed. Do not breathe spray or mist.

2.3. Other hazards

- Not available

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1. Substances

- Not applicable

3.2. Mixtures

Name	CAS No.	EINECS NO.	% [weight]	Annex VI of Regulation (EC) No 1272/2008 (CLP Classification)
Water	7732-18-5	231-791-2	45-65	Not classified
Titanium dioxide	13463-67-7	236-675-5	10-25	 Carcinogenicity 2 : H351
GLYCERINE	56-81-5	200-289-5	10-20	Not classified
C.I. BASIC BLUE 3	55840-82-9	611-321-6	0-5	Not classified
Xanthan gum	11138-66-2	234-394-2	0-1	Not classified

SECTION 4: FIRST AID MEASURES

4.1. Description of first aid measures

General

- No general information.

Inhalation

- When exposed to large amounts of steam and mist, move to fresh air.
 - Take specific treatment if needed.

Skin contact

- Flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes.
 - Laundering enough contaminated clothing before reuse.

Eye contact

- Do not rub your eyes.
 - Immediately flush eyes with plenty of water for at least 15 minutes and call a doctor/physician.

Ingestion

- Please be advised by doctor whether induction of vomit is demanded or not.
 - Rinse your mouth with water immediately.

4.2. Most important symptoms and effects, both acute and delayed

- Not available

4.3. Indication of any immediate medical attention and special treatment needed

- Notify medical personnel of contaminated situations and have them take appropriate protective measures.

SECTION 5: FIREFIGHTING MEASURES

5.1. Extinguishing media

Suitable extinguishing media

- A fire extinguisher water, form, CO₂, NaHCO₃

Unsuitable extinguishing media

- Avoid use of water jet for extinguishing

5.2. Special hazards arising from the substance or mixture

Hazardous combustion products

- Not available

5.3. Advice for firefighters

- Keep unauthorized personnel out.
 - Notify your local firestation and inform the location of the fire and characteristics hazard.
 - Using a unattended and water devices in case of large fire and leave alone to burn if you do not imperative.
 - Avoid inhalation of materials or combustion by-products.
 - Do not access if the tank on fire.
 - Keep containers cool with water spray.
 - Use fire fighting procedures suitable for surrounding area.
 - Vapor or gas is burned at distant ignition sources can be spread quickly.

SECTION 6: ACCIDENTAL RELEASE MEASURES**6.1. Personal Precautions, protective equipment and emergency procedures****6.1.1. For non-emergency personnel**

- Protective equipment: Wear proper protective equipment.
- Emergency procedures: Not applicable
- If required, notify relevant authorities according to all applicable regulations.

6.1.2. For emergency responders

- Ventilate closed spaces before entering.
- Must work against the wind, let the upwind people to evacuate.
- Do not touch spilled material. Stop leak if you can do it without risk.
- Handling the damaged containers or spilled material after wearing protective equipment.
- Do not direct water at spill or source of leak.

6.2. Environmental precautions

- Prevent runoff and contact with waterways, drains or sewers.
- If large amounts have been spilled, inform the relevant authorities.
- Avoid dispersal of spilt material and runoff and contact with waterways, drains and sewers. If large spills, advise emergency services.

6.3. Methods and material for containment and cleaning up**6.3.1. For containment**

- Control personal contact by using protective equipment.
- Clear area of personnel and move up wind.
- Stop leak if safe to do so.

6.3.2. For cleaning up

- Large spill : Stay upwind and keep out of low areas. Dike for later disposal.
- Notification to central government, local government. When emissions at least of the standard amount
- Dispose of waste in accordance with local regulation.
- Appropriate container for disposal of spilled material collected.
- Small leak: sand or other non-combustible material, please let use absorption.
- Wipe off the solvent.
- Dike for later disposal.

6.3.3. Other information

- Slippery when spilt.

6.4. Reference to other sections

- See Section 7 for information on safe handling.
- See Section 8 for information on personal protection equipment.
- See Section 13 for information on disposal.

SECTION 7: HANDLING AND STORAGE**7.1. Precautions for safe handling**

- Wash thoroughly after handling.
- Avoid contact with incompatible materials.
- Comply with all applicable laws and regulations for handling
- Do not handle until all safety precautions have been read and understood.
- Do not inhale the steam prolonged or repeated.

7.2. Conditions for safe storage, including any incompatibilities

- Save in cool, dry and well ventilated place.
- Check regularly for leaks.
- Do not apply direct heat.
- Keep in the original container.
- Prevent static electricity and keep away from combustible materials or heat sources.

7.3. Specific end use(s)

- See Section 1 for information on 1.2 Relevant identified uses.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION**8.1. Control parameters****8.1.1. Occupational exposure limits****European Union (EU) Commission Directive 2006/15/EC (IOELVs)**

- Not available

European Union (EU) Commission Directive 2006/15/EC (IOELVs) - Skin

- Not available

8.1.2. Recommended Monitoring Procedures

- Personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment.

8.1.3. DNEL/PNEC - Values

- Not available

8.2. Exposure controls**8.2.1. Appropriate engineering controls**

- A system of local and/or general exhaust is recommended to keep employee exposures above the Exposure Limits. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. The use of local exhaust ventilation is recommended to control emissions near the source.

8.2.2. Individual protection measures, such as personal protective equipment**Hand protection**

- Wear appropriate glove.

Eye protection

- Wear primary eye protection such as splash resistant safety goggles with a secondary protection face shield.
- Provide an emergency eye wash station and quick drench shower in the immediate work area.

Respiratory Protection

- Under conditions of frequent use or heavy exposure, Respiratory protection may be needed.
- Respiratory protection is ranked in order from minimum to maximum.
- Consider warning properties before use.
- Any chemical cartridge respirator with organic vapor cartridge(s).
- Any chemical cartridge respirator with a full facepiece and organic vapor cartridge(s).
- Any air-purifying respirator with a full facepiece and an organic vapor canister.
- For Unknown Concentration or Immediately Dangerous to Life or Health : Any supplied-air respirator with full facepiece and operated in a pressure-demand or other positive-pressure mode in combination with a separate escape supply. Any self-contained breathing apparatus with a full facepiece.

Skin protection

- Wear appropriate clothing.

8.2.3 Environmental exposure controls

- Do not let product enter drains. For ecological information refer to section 12.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES**9.1. Information on basic physical and chemical properties**

Appearance(State)	Liquid
Appearance(Color)	S.BLUE
Odor	Odorless
Odor threshold	Not available
pH	8.0 ± 1.0
Melting point/Freezing point	Not available
Initial boiling point and boiling range	> 100 °C
Flash point	300 °C
Evaporation rate	Not available
Flammability(solid, gas)	Not applicable

Upper/Lower Flammability or explosive limits	Not explosive
Vapour pressure	Not available
Vapour density	Not available
Relative density	1.2 ± 0.05 g/cm ³
Solubility	Fully miscible
Partition coefficient of n-octanol/water	Not available
Autoignition temperature	No self-igniting
Decomposition temperature	Not available
Viscosity	1600 ± 200 Cps
Explosive properties	Not explosive
Oxidising properties	Not available

9.2. Other information

- Not available

SECTION 10: STABILITY AND REACTIVITY**10.1. Reactivity**

- Not available

10.2. Chemical Stability

- This material is stable under recommended storage and handling conditions.

10.3. Possibility of hazardous reactions

- Hazardous Polymerization will not occur.

10.4. Conditions to avoid

- Avoid contact with incompatible materials and condition.
- Avoid : Accumulation of electrostatic charges, Heating, Flames and hot surfaces

10.5. Incompatible materials

- Not available

10.6. Hazardous decomposition products

- Not available

SECTION 11: TOXICOLOGICAL INFORMATION**11.1. Acute toxicity**

- **Oral**
 - Not available
- **Dermal**
 - Not available
- **Inhalation**
 - Not available

11.2. Skin corrosion/irritation

- Not available

11.3. Serious eye damage/irritation

- Not available

11.4. Respiratory sensitization

- Not available

11.5. Skin sensitization

- Not available

11.6. Germ cell mutagenicity

- Not available

11.7. Carcinogenicity**- IARC**

- [Titanium dioxide] : 2B (KOSHA)

- OSHA

- Not available

- ACGIH

- [Titanium dioxide] : A4 (KOSHA)

- NTP

- Not available

- EU CLP

- Not available

11.8. Reproductive toxicity

- Not available

11.9. Specific target organ toxicity(single exposure):

- Not available

11.10. Specific target organ toxicity(repeated exposure):

- Not available

11.11. Aspiration hazard

- Not available

SECTION 12: ECOLOGICAL INFORMATION**12.1. Toxicity****12.1.1. Fish**

- Not available

12.1.2. Invertebrate

- Not available

12.1.3. Algae

- Not available

12.2. Persistence and degradability**12.2.1. Persistence**

- Not available

12.2.2. Degradability

- Not available

12.3. Bioaccumulative potential**12.3.1. Bioaccumulation**

- Not available

12.3.2. Biodegradability

- Not available

12.4. Mobility in soil

- Not available

12.5. Results of PBT and vPvB assessment

- Not available

12.6. Other adverse effects

- Not available

SECTION 13: DISPOSAL CONSIDERATIONS**13.1. Waste treatment methods**

- Since more than two kinds of designated waste is mixed, it is difficult to treat separately, then can be reduction or stabilization by incineration or similar process.
- If water separation is possible, pre-process with Water separation process.
- Dispose by incineration.
- The user of this product must disposal by oneself or entrust to waste disposer or person who other's waste recycle and dispose, person who establish and operate waste disposal facilities.
- Dispose of waste in accordance with all applicable laws and regulations.

SECTION 14: TRANSPORT INFORMATION**14.1. UN No.****14.1.1. UN No. (ADR/RID/ADN)**

- Not applicable

14.1.2. UN No. (IMDG CODE/IATA DGR)

- Not applicable

14.1.3. UN No. (ICAO)

- Not applicable

14.2. UN proper shipping name

- Not applicable

14.3. Transport hazard class(es)**14.3.1. ADR/RID/ADN Class**

- Not applicable

14.3.2. ADR/RID/ADN Class

- Not applicable

14.3.3. ADR Label No.

- Not applicable

14.3.4. IMDG Class

- Not applicable

14.3.5. ICAO Class/Division

- Not applicable

14.3.6. Transport Labels

- Not applicable

14.4. Packing group**14.4.1. ADR/RID/ADN Packing group**

- Not applicable

14.4.2. IMDG Packing group

- Not applicable

14.4.3. ICAO Packing group

- Not applicable

14.5. Environmental hazards

- Not applicable

14.6. Special precautions for user

- Local transport follows in accordance with Dangerous goods Safety Management Law.

- Package and transport follow in accordance with Department of Transportation (DOT) and other regulatory agency requirements.
- EmS FIRE SCHEDULE : Not available
- EmS SPILLAGE SCHEDULE : Not available
- Air transport(IATA): Not subject to IATA regulations.

14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

- Not applicable

SECTION 15: REGULATORY INFORMATION**15.1. Safety, health and environmental regulation / legislation specific for the substance or mixture****15.1.1. Europe regulatory****15.1.1.1 REACH Restricted substance under REACH**

- Not applicable

15.1.1.2 REACH Substances subject to authorization under REACH

- Not applicable

15.1.1.3 REACH SVHC

- Not applicable

15.1.1.4 Europe PBT

- Not applicable

15.1.1.5 European Union (EU) Transport of Dangerous Goods by Road - Dangerous Goods List

- Not applicable

15.2. Chemical Safety Assessment

- Not conducted

SECTION 16: OTHER INFORMATION**16.1. Indication of changes**

- The Safety Data Sheet has been reviewed and the data therein were revised and laid out according the requirements of the Commission Regulation (EC) No. 1907/2006

16.2. Abbreviations and acronyms

- 1272/2008 CLP : Classification, Labelling and Packaging regulation.
- REACH : Registration, Evaluation and authorisation of chemical substances.
- DNEL : Derive no effects level
- PNEC : Predicted no effect concentration

16.3. Key literature references and sources for data

- This Safety Data Sheet was compiled with data and information from the following sources: RTECS, ECOSAR, HSDB, SIDS SIAP, ChemWATCH, CESAR, Chemical DB

16.4. Classification procedure

- The mixture classification has been derived based on the classification of the individual components in accordance with the rules set out in Regulation (EC) No 1272/2008 (CLP) as well as the translation tables in Annex VII to the same regulation.

16.5. Training advice

- Not applicable

16.6. Further information

- The (M)SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings. Risks may be determined by reference to Exposures Scenarios. Scale of use, frequency of use and current or available engineering controls must be considered.
- This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only.
- It should not therefore be construed as guaranteeing any specific property of the product.

- Contact National Helpdesks, List of Telephone Numbers : AUSTRIA (Vienna Wien) +43 1 515 61 0, BELGIUM (Brussels Bruxelles) +32 070 245 245, BULGARIA (Sofia) +359 2 9888 205, Croatia +385 1 2348 342 CZECH REPUBLIC (Prague Praha) +420 224 919 293 or +420 224 915 402, DENMARK (Copenhagen) 82 12 12 12, ESTONIA (Tallinn) 112, FINLAND (Helsinki) +358 9 471 977, FRANCE (Paris) +33 1 45 42 59 59, GERMANY (Berlin) +49 30 19240, GREECE (Athens Athinai) +30 210 77 93 777, HUNGARY (Budapest) +36 80 201 199, ICELAND (Reykjavik) +354 543 2222 or 112, IRELAND (Dublin) +353 1 8379964 or +353 1 809 2166, ITALY (Rome) +39 06 305 4343, LATVIA (Riga) 112 or +371 6704 2473, LITHUANIA (Vilnius) +370 5 236 20 52 or +370 687 53378, Luxembourg +352 70 245 245, MALTA +356 2122 4071, NETHERLANDS (Bilthoven) +31 30 274 88 88, NORWAY (Oslo) 22 591300, POLAND (Gdansk) +48 58301 65 16 or +48 58 349 2831, PORTUGAL (Lisbon Lisboa) 808 250 143, ROMANIA (Bucharest) +40 21 3183606 SLOVAKIA (Bratislava) +421 2 54 77 4166, SLOVENIA (Ljubljana) + 386 41 650 500, SPAIN +34 91 562 04 20(spanish language) or +34 91 768 98 00(You can request to be served in English), SWEDEN (Stockholm) 112 or +46 10 456 6700 (mon-fri 9.00-17.00), UNITED KINGDOM (London) 112 or 0845 4647 (NHS Direct).

***** End of Documents



SAFETY DATA SHEET

According to Regulation (EC) No 1272/2008 (REACH),
Annex II (COMMISSION REGULATION (EU) No 2020/2017)

Date of issue: 2019-06-14
Revision date: 2022-06-21

SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1. Product identifier

Trade name/designation : PGI- ORANGE

1.2. Relevant identified uses of the substance or mixture and uses advised against

1.2.1. Relevant identified uses

- Water-soluble stationary ink

1.2.2. Uses advised against

- Not available

1.3. Details of the supplier of the safety data sheet

Manufacturer/Supplier : YOU&I CORPORATION
Address : 53, MTV 26-RO, SIHEUNG-SI, GYEONGGI-DO, KOREA
Telephone : +82-31-494-2030
Emergency telephone number : +82-31-494-2030 (This number is serviced during office hours only.)
Email : tech@youicolor.com

1.4. Emergency telephone number

EU-wide emergency number : 112

See section 16.6 for the list of telephone number of National Helpdesks in the European Economic Area.

SECTION 2: HAZARD IDENTIFICATION

2.1. Classification of the substance/mixture

2.1.1. Classification according to Regulation (EC) No 1272/2008 [CLP]

- Not applicable

2.2. Label elements

2.2.1. Labelling according to Regulation (EC) No 1272/2008 [CLP]

* Hazard Pictogram(s)

- Not applicable

* Signal word

- Not applicable

* Hazard statement(s)

- Not applicable

* Precautionary statement(s)

1) Prevention

- Not applicable

2) Response

- Not applicable

3) Storage

- Not applicable

4) Disposal

- Not applicable

* Additional information

- EUH211 Hazardous respirable droplets may be formed when sprayed. Do not breathe spray or mist.

2.3. Other hazards

- Not available

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1. Substances

- Not applicable

3.2. Mixtures

Name	CAS No.	EINECS NO.	% [weight]	Annex VI of Regulation (EC) No 1272/2008 (CLP Classification)
Water	7732-18-5	231-791-2	45-65	Not classified
Titanium dioxide	13463-67-7	236-675-5	10-25	 Carcinogenicity 2 : H351
Glycerine	56-81-5	200-289-5	10-20	Not classified
C.I. PIGMENT RED 170	2786-76-7	220-509-3	0~5	Aquatic Chronic 4, H413
C.I. PIGMENT VIOLET 23	6358-30-1	228-767-9	0~5	 Specific target organ toxicity (single) 3, H335
C. I. Basic YELLOW 40	35869-60-4	252-770-4	0-5	 Eye Irritation 2 : H319
Xanthan gum	11138-66-2	234-394-2	0-1	Not classified

SECTION 4: FIRST AID MEASURES

4.1. Description of first aid measures

General

- No general information.

Inhalation

- When exposed to large amounts of steam and mist, move to fresh air.
- Take specific treatment if needed.

Skin contact

- Flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes.
- Laundering enough contaminated clothing before reuse.

Eye contact

- Do not rub your eyes.
- Immediately flush eyes with plenty of water for at least 15 minutes and call a doctor/physician.

Ingestion

- Please be advised by doctor whether induction of vomit is demanded or not.
- Rinse your mouth with water immediately.

4.2. Most important symptoms and effects, both acute and delayed

- Not available

4.3. Indication of any immediate medical attention and special treatment needed

- Notify medical personnel of contaminated situations and have them take appropriate protective measures.

SECTION 5: FIREFIGHTING MEASURES

5.1. Extinguishing media

Suitable extinguishing media

- A fire extinguisher water, foam, CO₂, NaHCO₃

Unsuitable extinguishing media

- Avoid use of water jet for extinguishing

5.2. Special hazards arising from the substance or mixture

Hazardous combustion products

- Not available

5.3. Advice for firefighters

- Keep unauthorized personnel out.
- Notify your local firestation and inform the location of the fire and characteristics hazard.
- Using a unattended and water devices in case of large fire and leave alone to burn if you do not imperative.
- Avoid inhalation of materials or combustion by-products.
- Do not access if the tank on fire.
- Keep containers cool with water spray.
- Use fire fighting procedures suitable for surrounding area.
- Vapor or gas is burned at distant ignition sources can be spread quickly.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal Precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

- Protective equipment: Wear proper protective equipment.
- Emergency procedures: Not applicable
- If required, notify relevant authorities according to all applicable regulations.

6.1.2. For emergency responders

- Ventilate closed spaces before entering.
- Must work against the wind, let the upwind people to evacuate.
- Do not touch spilled material. Stop leak if you can do it without risk.
- Handling the damaged containers or spilled material after wearing protective equipment.
- Do not direct water at spill or source of leak.

6.2. Environmental precautions

- Prevent runoff and contact with waterways, drains or sewers.
- If large amounts have been spilled, inform the relevant authorities.
- Avoid dispersal of spilt material and runoff and contact with waterways, drains and sewers. If large spills, advise emergency services.

6.3. Methods and material for containment and cleaning up

6.3.1. For containment

- Control personal contact by using protective equipment.
- Clear area of personnel and move up wind.
- Stop leak if safe to do so.

6.3.2. For cleaning up

- Large spill : Stay upwind and keep out of low areas. Dike for later disposal.
- Notification to central government, local government. When emissions at least of the standard amount
- Dispose of waste in accordance with local regulation.
- Appropriate container for disposal of spilled material collected.
- Small leak: sand or other non-combustible material, please let use absorption.
- Wipe off the solvent.
- Dike for later disposal.

6.3.3. Other information

- Slippery when spilt.

6.4. Reference to other sections

- See Section 7 for information on safe handling.
- See Section 8 for information on personal protection equipment.
- See Section 13 for information on disposal.

SECTION 7: HANDLING AND STORAGE

7.1. Precautions for safe handling

- Wash thoroughly after handling.
- Avoid contact with incompatible materials.
- Comply with all applicable laws and regulations for handling

- Do not handle until all safety precautions have been read and understood.
- Do not inhale the steam prolonged or repeated.

7.2. Conditions for safe storage, including any incompatibilities

- Store in cool, dry and well ventilated place.
- Check regularly for leaks.
- Do not apply direct heat.
- Keep in the original container.
- Prevent static electricity and keep away from combustible materials or heat sources.

7.3. Specific end use(s)

- See Section 1 for information on 1.2 Relevant identified uses.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control parameters

8.1.1. Occupational exposure limits

European Union (EU) Commission Directive 2006/15/EC (IOELVs)

- Not available

European Union (EU) Commission Directive 2006/15/EC (IOELVs) - Skin

- Not available

8.1.2. Recommended Monitoring Procedures

- Personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment.

8.1.3. DNEL/PNEC - Values

- Not available

8.2. Exposure controls

8.2.1. Appropriate engineering controls

- A system of local and/or general exhaust is recommended to keep employee exposures above the Exposure Limits. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. The use of local exhaust ventilation is recommended to control emissions near the source.

8.2.2. Individual protection measures, such as personal protective equipment

Hand protection

- Wear appropriate glove.

Eye protection

- Wear primary eye protection such as splash resistant safety goggles with a secondary protection face shield.
- Provide an emergency eye wash station and quick drench shower in the immediate work area.

Respiratory Protection

- Under conditions of frequent use or heavy exposure, Respiratory protection may be needed.
- Respiratory protection is ranked in order from minimum to maximum.
- Consider warning properties before use.
- Any chemical cartridge respirator with organic vapor cartridge(s).
- Any chemical cartridge respirator with a full facepiece and organic vapor cartridge(s).
- Any air-purifying respirator with a full facepiece and an organic vapor canister.
- For Unknown Concentration or Immediately Dangerous to Life or Health : Any supplied-air respirator with full facepiece and operated in a pressure-demand or other positive-pressure mode in combination with a separate escape supply. Any self-contained breathing apparatus with a full facepiece.

Skin protection

- Wear appropriate clothing.

8.2.3 Environmental exposure controls

- Do not let product enter drains. For ecological information refer to section 12.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Appearance(State)	Liquid
Appearance(Color)	ORANGE
Odor	Odorless
Odor threshold	Not available
pH	8.0 ± 1.0
Melting point/Freezing point	Not available
Initial boiling point and boiling range	> 100 °C
Flash point	300 °C
Evaporation rate	Not available
Flammability(solid, gas)	Not applicable
Upper/Lower Flammability or explosive limits	Not explosive
Vapour pressure	Not available
Vapour density	Not available
Relative density	1.2 ± 0.05 g/cm3
Solubility	Fully miscible
Partition coefficient of n-octanol/water	Not available
Autoignition temperature	No self-igniting
Decomposition temperature	Not available
Viscosity	1600 ± 200 Cps
Explosive properties	Not explosive
Oxidising properties	Not available

9.2. Other information

- Not available

SECTION 10: STABILITY AND REACTIVITY**10.1. Reactivity**

- Not available

10.2. Chemical Stability

- This material is stable under recommended storage and handling conditions.

10.3. Possibility of hazardous reactions

- Hazardous Polymerization will not occur.

10.4. Conditions to avoid

- Avoid contact with incompatible materials and condition.
- Avoid : Accumulation of electrostatic charges, Heating, Flames and hot surfaces

10.5. Incompatible materials

- Not available

10.6. Hazardous decomposition products

- Not available

SECTION 11: TOXICOLOGICAL INFORMATION**11.1. Acute toxicity**

- **Oral**
 - Not available
- **Dermal**
 - Not available
- **Inhalation**
 - Not available

11.2. Skin corrosion/irritation

- Not available

11.3. Serious eye damage/irritation

- [C.I. BASIC YELLOW 40] : Classified as Category 2 (ECHA)

11.4. Respiratory sensitization

- Not available

11.5. Skin sensitization

- Not available

11.6. Germ cell mutagenicity

- Not available

11.7. Carcinogenicity

- IARC

- [Titanium dioxide] : 2B (KOSHA)

- OSHA

- Not available

- ACGIH

- [Titanium dioxide] : A4 (KOSHA)

- NTP

- Not available

- EU CLP

- Not available

11.8. Reproductive toxicity

- Not available

11.9. Specific target organ toxicity(single exposure):

- [C.I. PIGMENT VIOLET 23] : Classified as Category 3 (Respiratory irritation) (KOSHA)

11.10. Specific target organ toxicity(repeated exposure):

- Not available

11.11. Aspiration hazard

- Not available

SECTION 12: ECOLOGICAL INFORMATION

12.1. Toxicity

12.1.1. Fish

- [C.I. PIGMENT RED 170] : LC50 >0.217 mg/l 96 hr (ECOSAR)

12.1.2. Invertebrate

- [C.I. PIGMENT RED 170] : LC50 0.545 mg/l 48 hr (ECOSHA)

12.1.3. Algae

- [C.I. PIGMENT RED 170] : EC50 0.06 mg/l 96 hr (ECOSHA)

12.2. Persistence and degradability

12.2.1. Persistence

- [C.I. PIGMENT RED 170] : 6.04 log Kow (ECOSAR)

12.2.2. Degradability

- Not available

12.3. Bioaccumulative potential

12.3.1. Bioaccumulation

- [C.I. PIGMENT RED 170] : 10 (QSAR)

12.3.2. Biodegradability

- Not available

12.4. Mobility in soil

- Not available

12.5. Results of PBT and vPvB assessment

- Not available

12.6. Other adverse effects

- Not available

SECTION 13: DISPOSAL CONSIDERATIONS**13.1. Waste treatment methods**

- Since more than two kinds of designated waste is mixed, it is difficult to treat separately, then can be reduction or stabilization by incineration or similar process.
- If water separation is possible, pre-process with Water separation process.
- Dispose by incineration.
- The user of this product must disposal by oneself or entrust to waste disposer or person who other's waste recycle and dispose, person who establish and operate waste disposal facilities.
- Dispose of waste in accordance with all applicable laws and regulations.

SECTION 14: TRANSPORT INFORMATION**14.1. UN No.****14.1.1. UN No. (ADR/RID/ADN)**

- Not applicable

14.1.2. UN No. (IMDG CODE/IATA DGR)

- Not applicable

14.1.3. UN No. (ICAO)

- Not applicable

14.2. UN proper shipping name

- Not applicable

14.3. Transport hazard class(es)**14.3.1. ADR/RID/ADN Class**

- Not applicable

14.3.2. ADR/RID/ADN Class

- Not applicable

14.3.3. ADR Label No.

- Not applicable

14.3.4. IMDG Class

- Not applicable

14.3.5. ICAO Class/Division

- Not applicable

14.3.6. Transport Labels

- Not applicable

14.4. Packing group**14.4.1. ADR/RID/ADN Packing group**

- Not applicable

14.4.2. IMDG Packing group

- Not applicable

14.4.3. ICAO Packing group

- Not applicable

14.5. Environmental hazards

- Not applicable

14.6. Special precautions for user

- Local transport follows in accordance with Dangerous goods Safety Management Law.
- Package and transport follow in accordance with Department of Transportation (DOT) and other regulatory agency requirements.
- EmS FIRE SCHEDULE : Not available
- EmS SPILLAGE SCHEDULE : Not available
- Air transport(IATA): Not subject to IATA regulations.

14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

- Not applicable

SECTION 15: REGULATORY INFORMATION**15.1. Safety, health and environmental regulation / legislation specific for the substance or mixture****15.1.1. Europe regulatory****15.1.1.1 REACH Restricted substance under REACH**

- Not applicable

15.1.1.2 REACH Substances subject to authorization under REACH

- Not applicable

15.1.1.3 REACH SVHC

- Not applicable

15.1.1.4 Europe PBT

- Not applicable

15.1.1.5 European Union (EU) Transport of Dangerous Goods by Road - Dangerous Goods List

- Not applicable

15.2. Chemical Safety Assessment

- Not conducted

SECTION 16: OTHER INFORMATION**16.1. Indication of changes**

- The Safety Data Sheet has been reviewed and the data therein were revised and laid out according the requirements of the Commission Regulation (EC) No. 1907/2006

16.2. Abbreviations and acronyms

- 1272/2008 CLP : Classification, Labelling and Packaging regulation.
- REACH : Registration, Evaluation and authorisation of chemical substances.
- DNEL : Derive no effects level
- PNEC : Predicted no effect concentration

16.3. Key literature references and sources for data

- This Safety Data Sheet was compiled with data and information from the following sources: RTECS, ECOSAR, HSDB, SIDS SIAP, ChemWATCH, CESAR, Chemical DB

16.4. Classification procedure

- The mixture classification has been derived based on the classification of the individual components in accordance with the rules set out in Regulation (EC) No 1272/2008 (CLP) as well as the translation tables in Annex VII to the same regulation.

16.5. Training advice

- Not applicable

16.6. Further information

- The (M)SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings. Risks may be determined by reference to Exposures Scenarios. Scale of use, frequency of use and current or available engineering controls must be considered.
- This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only.
- It should not therefore be construed as guaranteeing any specific property of the product.
- Contact National Helpdesks, List of Telephone Numbers : AUSTRIA (Vienna Wien) +43 1 515 61 0, BELGIUM (Brussels Bruxelles) +32 070 245 245, BULGARIA (Sofia) +359 2 9888 205, Croatia +385 1 2348 342 CZECH REPUBLIC (Prague Praha) +420 224 919 293 or +420 224 915 402, DENMARK (Copenhagen) 82 12 12 12, ESTONIA (Tallinn) 112, FINLAND (Helsinki) +358 9 471 977, FRANCE (Paris) +33 1 45 42 59 59, GERMANY (Berlin) +49 30 19240, GREECE (Athens Athinai) +30 210 77 93 777, HUNGARY (Budapest) +36 80 201 199, ICELAND (Reykjavik) +354 543 2222 or 112, IRELAND (Dublin) +353 1 8379964 or +353 1 809 2166, ITALY (Rome) +39 06 305 4343, LATVIA (Riga) 112 or +371 6704 2473, LITHUANIA (Vilnius) +370 5 236 20 52 or +370 687 53378, Luxembourg +352 70 245 245, MALTA +356 2122 4071, NETHERLANDS (Bilthoven) +31 30 274 88 88, NORWAY (Oslo) 22 591300, POLAND (Gdansk) +48 58301 65 16 or +48 58 349 2831, PORTUGAL (Lisbon Lisboa) 808 250 143, ROMANIA (Bucharest) +40 21 3183606 SLOVAKIA (Bratislava) +421 2 54 77 4166, SLOVENIA (Ljubljana) + 386 41 650 500, SPAIN +34 91 562 04 20(spanish language) or +34 91 768 98 00(You can request to be served in English), SWEDEN (Stockholm) 112 or +46 10 456 6700 (mon-fri 9.00-17.00), UNITED KINGDOM (London) 112 or 0845 4647 (NHS Direct).

***** End of Documents



SAFETY DATA SHEET

According to Regulation (EC) No 1272/2008 (REACH),
Annex II (COMMISSION REGULATION (EU) No 2020/2017)

Date of issue: 2019-06-14
Revision date: 2022-06-21

SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1. Product identifier

Trade name/designation : PGI- Y.ORANGE

1.2. Relevant identified uses of the substance or mixture and uses advised against

1.2.1. Relevant identified uses

- Water-soluble stationary ink

1.2.2. Uses advised against

- Not available

1.3. Details of the supplier of the safety data sheet

Manufacturer/Supplier : YOU&I CORPORATION
Address : 53, MTV 26-RO, SIHEUNG-SI, GYEONGGI-DO, KOREA
Telephone : +82-31-494-2030
Emergency telephone number : +82-31-494-2030 (This number is serviced during office hours only.)
Email : tech@youicolor.com

1.4. Emergency telephone number

EU-wide emergency number : 112

See section 16.6 for the list of telephone number of National Helpdesks in the European Economic Area.

SECTION 2: HAZARD IDENTIFICATION

2.1. Classification of the substance/mixture

2.1.1. Classification according to Regulation (EC) No 1272/2008 [CLP]

- Not applicable

2.2. Label elements

2.2.1. Labelling according to Regulation (EC) No 1272/2008 [CLP]

* Hazard Pictogram(s)

- Not applicable

* Signal word - Not applicable

* Hazard statement(s)

- Not applicable

* Precautionary statement(s)

1) Prevention

- Not applicable

2) Response

- Not applicable

3) Storage

- Not applicable

4) Disposal

- Not applicable

* Additional information

- EUH211 Hazardous respirable droplets may be formed when sprayed. Do not breathe spray or mist.

2.3. Other hazards

- Not available

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1. Substances

- Not applicable

3.2. Mixtures

Name	CAS No.	EINECS NO.	% [weight]	Annex VI of Regulation (EC) No 1272/2008 (CLP Classification)
Water	7732-18-5	231-791-2	45-65	Not classified
Titanium dioxide	13463-67-7	236-675-5	10-25	 Carcinogenicity 2 : H351
Glycerine	56-81-5	200-289-5	10-20	Not classified
C.I. PIGMENT RED 170	2786-76-7	220-509-3	0~5	Aquatic Chronic 4, H413
C.I. PIGMENT VIOLET 23	6358-30-1	228-767-9	0~5	 Specific target organ toxicity (single) 3, H335
C. I. Basic YELLOW 40	35869-60-4	252-770-4	0-5	 Eye Irritation 2 : H319
Xanthan gum	11138-66-2	234-394-2	0-1	Not classified

SECTION 4: FIRST AID MEASURES

4.1. Description of first aid measures

General

- No general information.

Inhalation

- When exposed to large amounts of steam and mist, move to fresh air.
- Take specific treatment if needed.

Skin contact

- Flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes.
- Laundering enough contaminated clothing before reuse.

Eye contact

- Do not rub your eyes.
- Immediately flush eyes with plenty of water for at least 15 minutes and call a doctor/physician.

Ingestion

- Please be advised by doctor whether induction of vomit is demanded or not.
- Rinse your mouth with water immediately.

4.2. Most important symptoms and effects, both acute and delayed

- Not available

4.3. Indication of any immediate medical attention and special treatment needed

- Notify medical personnel of contaminated situations and have them take appropriate protective measures.

SECTION 5: FIREFIGHTING MEASURES

5.1. Extinguishing media

Suitable extinguishing media

- A fire extinguisher water, foam, CO₂, NaHCO₃

Unsuitable extinguishing media

- Avoid use of water jet for extinguishing

5.2. Special hazards arising from the substance or mixture

Hazardous combustion products

- Not available

5.3. Advice for firefighters

- Keep unauthorized personnel out.
- Notify your local firestation and inform the location of the fire and characteristics hazard.
- Using a unattended and water devices in case of large fire and leave alone to burn if you do not imperative.
- Avoid inhalation of materials or combustion by-products.
- Do not access if the tank on fire.
- Keep containers cool with water spray.
- Use fire fighting procedures suitable for surrounding area.
- Vapor or gas is burned at distant ignition sources can be spread quickly.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal Precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

- Protective equipment: Wear proper protective equipment.
- Emergency procedures: Not applicable
- If required, notify relevant authorities according to all applicable regulations.

6.1.2. For emergency responders

- Ventilate closed spaces before entering.
- Must work against the wind, let the upwind people to evacuate.
- Do not touch spilled material. Stop leak if you can do it without risk.
- Handling the damaged containers or spilled material after wearing protective equipment.
- Do not direct water at spill or source of leak.

6.2. Environmental precautions

- Prevent runoff and contact with waterways, drains or sewers.
- If large amounts have been spilled, inform the relevant authorities.
- Avoid dispersal of spilt material and runoff and contact with waterways, drains and sewers. If large spills, advise emergency services.

6.3. Methods and material for containment and cleaning up

6.3.1. For containment

- Control personal contact by using protective equipment.
- Clear area of personnel and move up wind.
- Stop leak if safe to do so.

6.3.2. For cleaning up

- Large spill : Stay upwind and keep out of low areas. Dike for later disposal.
- Notification to central government, local government. When emissions at least of the standard amount
- Dispose of waste in accordance with local regulation.
- Appropriate container for disposal of spilled material collected.
- Small leak: sand or other non-combustible material, please let use absorption.
- Wipe off the solvent.
- Dike for later disposal.

6.3.3. Other information

- Slippery when spilt.

6.4. Reference to other sections

- See Section 7 for information on safe handling.
- See Section 8 for information on personal protection equipment.
- See Section 13 for information on disposal.

SECTION 7: HANDLING AND STORAGE

7.1. Precautions for safe handling

- Wash thoroughly after handling.
- Avoid contact with incompatible materials.
- Comply with all applicable laws and regulations for handling

- Do not handle until all safety precautions have been read and understood.
- Do not inhale the steam prolonged or repeated.

7.2. Conditions for safe storage, including any incompatibilities

- Store in cool, dry and well ventilated place.
- Check regularly for leaks.
- Do not apply direct heat.
- Keep in the original container.
- Prevent static electricity and keep away from combustible materials or heat sources.

7.3. Specific end use(s)

- See Section 1 for information on 1.2 Relevant identified uses.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control parameters

8.1.1. Occupational exposure limits

European Union (EU) Commission Directive 2006/15/EC (IOELVs)

- Not available

European Union (EU) Commission Directive 2006/15/EC (IOELVs) - Skin

- Not available

8.1.2. Recommended Monitoring Procedures

- Personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment.

8.1.3. DNEL/PNEC - Values

- Not available

8.2. Exposure controls

8.2.1. Appropriate engineering controls

- A system of local and/or general exhaust is recommended to keep employee exposures above the Exposure Limits. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. The use of local exhaust ventilation is recommended to control emissions near the source.

8.2.2. Individual protection measures, such as personal protective equipment

Hand protection

- Wear appropriate glove.

Eye protection

- Wear primary eye protection such as splash resistant safety goggles with a secondary protection face shield.
- Provide an emergency eye wash station and quick drench shower in the immediate work area.

Respiratory Protection

- Under conditions of frequent use or heavy exposure, Respiratory protection may be needed.
- Respiratory protection is ranked in order from minimum to maximum.
- Consider warning properties before use.
- Any chemical cartridge respirator with organic vapor cartridge(s).
- Any chemical cartridge respirator with a full facepiece and organic vapor cartridge(s).
- Any air-purifying respirator with a full facepiece and an organic vapor canister.
- For Unknown Concentration or Immediately Dangerous to Life or Health : Any supplied-air respirator with full facepiece and operated in a pressure-demand or other positive-pressure mode in combination with a separate escape supply. Any self-contained breathing apparatus with a full facepiece.

Skin protection

- Wear appropriate clothing.

8.2.3 Environmental exposure controls

- Do not let product enter drains. For ecological information refer to section 12.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Appearance(State)	Liquid
Appearance(Color)	ORANGE
Odor	Odorless
Odor threshold	Not available
pH	8.0 ± 1.0
Melting point/Freezing point	Not available
Initial boiling point and boiling range	> 100 °C
Flash point	300 °C
Evaporation rate	Not available
Flammability(solid, gas)	Not applicable
Upper/Lower Flammability or explosive limits	Not explosive
Vapour pressure	Not available
Vapour density	Not available
Relative density	1.2 ± 0.05 g/cm3
Solubility	Fully miscible
Partition coefficient of n-octanol/water	Not available
Autoignition temperature	No self-igniting
Decomposition temperature	Not available
Viscosity	1600 ± 200 Cps
Explosive properties	Not explosive
Oxidising properties	Not available

9.2. Other information

- Not available

SECTION 10: STABILITY AND REACTIVITY**10.1. Reactivity**

- Not available

10.2. Chemical Stability

- This material is stable under recommended storage and handling conditions.

10.3. Possibility of hazardous reactions

- Hazardous Polymerization will not occur.

10.4. Conditions to avoid

- Avoid contact with incompatible materials and condition.
- Avoid : Accumulation of electrostatic charges, Heating, Flames and hot surfaces

10.5. Incompatible materials

- Not available

10.6. Hazardous decomposition products

- Not available

SECTION 11: TOXICOLOGICAL INFORMATION**11.1. Acute toxicity**

- **Oral**
 - Not available
- **Dermal**
 - Not available
- **Inhalation**
 - Not available

11.2. Skin corrosion/irritation

- Not available

11.3. Serious eye damage/irritation

- [C.I. BASIC YELLOW 40] : Classified as Category 2 (ECHA)

11.4. Respiratory sensitization

- Not available

11.5. Skin sensitization

- Not available

11.6. Germ cell mutagenicity

- Not available

11.7. Carcinogenicity

- IARC

- [Titanium dioxide] : 2B (KOSHA)

- OSHA

- Not available

- ACGIH

- [Titanium dioxide] : A4 (KOSHA)

- NTP

- Not available

- EU CLP

- Not available

11.8. Reproductive toxicity

- Not available

11.9. Specific target organ toxicity(single exposure):

- [C.I. PIGMENT VIOLET 23] : Classified as Category 3 (Respiratory irritation) (KOSHA)

11.10. Specific target organ toxicity(repeated exposure):

- Not available

11.11. Aspiration hazard

- Not available

SECTION 12: ECOLOGICAL INFORMATION

12.1. Toxicity

12.1.1. Fish

- [C.I. PIGMENT RED 170] : LC50 >0.217 mg/l 96 hr (ECOSAR)

12.1.2. Invertebrate

- [C.I. PIGMENT RED 170] : LC50 0.545 mg/l 48 hr (ECOSHA)

12.1.3. Algae

- [C.I. PIGMENT RED 170] : EC50 0.06 mg/l 96 hr (ECOSHA)

12.2. Persistence and degradability

12.2.1. Persistence

- [C.I. PIGMENT RED 170] : 6.04 log Kow (ECOSAR)

12.2.2. Degradability

- Not available

12.3. Bioaccumulative potential

12.3.1. Bioaccumulation

- [C.I. PIGMENT RED 170] : 10 (QSAR)

12.3.2. Biodegradability

- Not available

12.4. Mobility in soil

- Not available

12.5. Results of PBT and vPvB assessment

- Not available

12.6. Other adverse effects

- Not available

SECTION 13: DISPOSAL CONSIDERATIONS**13.1. Waste treatment methods**

- Since more than two kinds of designated waste is mixed, it is difficult to treat separately, then can be reduction or stabilization by incineration or similar process.
- If water separation is possible, pre-process with Water separation process.
- Dispose by incineration.
- The user of this product must disposal by oneself or entrust to waste disposer or person who other's waste recycle and dispose, person who establish and operate waste disposal facilities.
- Dispose of waste in accordance with all applicable laws and regulations.

SECTION 14: TRANSPORT INFORMATION**14.1. UN No.****14.1.1. UN No. (ADR/RID/ADN)**

- Not applicable

14.1.2. UN No. (IMDG CODE/IATA DGR)

- Not applicable

14.1.3. UN No. (ICAO)

- Not applicable

14.2. UN proper shipping name

- Not applicable

14.3. Transport hazard class(es)**14.3.1. ADR/RID/ADN Class**

- Not applicable

14.3.2. ADR/RID/ADN Class

- Not applicable

14.3.3. ADR Label No.

- Not applicable

14.3.4. IMDG Class

- Not applicable

14.3.5. ICAO Class/Division

- Not applicable

14.3.6. Transport Labels

- Not applicable

14.4. Packing group**14.4.1. ADR/RID/ADN Packing group**

- Not applicable

14.4.2. IMDG Packing group

- Not applicable

14.4.3. ICAO Packing group

- Not applicable

14.5. Environmental hazards

- Not applicable

14.6. Special precautions for user

- Local transport follows in accordance with Dangerous goods Safety Management Law.
- Package and transport follow in accordance with Department of Transportation (DOT) and other regulatory agency requirements.
- EmS FIRE SCHEDULE : Not available
- EmS SPILLAGE SCHEDULE : Not available
- Air transport(IATA): Not subject to IATA regulations.

14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

- Not applicable

SECTION 15: REGULATORY INFORMATION**15.1. Safety, health and environmental regulation / legislation specific for the substance or mixture****15.1.1. Europe regulatory****15.1.1.1 REACH Restricted substance under REACH**

- Not applicable

15.1.1.2 REACH Substances subject to authorization under REACH

- Not applicable

15.1.1.3 REACH SVHC

- Not applicable

15.1.1.4 Europe PBT

- Not applicable

15.1.1.5 European Union (EU) Transport of Dangerous Goods by Road - Dangerous Goods List

- Not applicable

15.2. Chemical Safety Assessment

- Not conducted

SECTION 16: OTHER INFORMATION**16.1. Indication of changes**

- The Safety Data Sheet has been reviewed and the data therein were revised and laid out according the requirements of the Commission Regulation (EC) No. 1907/2006

16.2. Abbreviations and acronyms

- 1272/2008 CLP : Classification, Labelling and Packaging regulation.
- REACH : Registration, Evaluation and authorisation of chemical substances.
- DNEL : Derive no effects level
- PNEC : Predicted no effect concentration

16.3. Key literature references and sources for data

- This Safety Data Sheet was compiled with data and information from the following sources: RTECS, ECOSAR, HSDB, SIDS SIAP, ChemWATCH, CESAR, Chemical DB

16.4. Classification procedure

- The mixture classification has been derived based on the classification of the individual components in accordance with the rules set out in Regulation (EC) No 1272/2008 (CLP) as well as the translation tables in Annex VII to the same regulation.

16.5. Training advice

- Not applicable

16.6. Further information

- The (M)SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings. Risks may be determined by reference to Exposures Scenarios. Scale of use, frequency of use and current or available engineering controls must be considered.
- This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only.
- It should not therefore be construed as guaranteeing any specific property of the product.
- Contact National Helpdesks, List of Telephone Numbers : AUSTRIA (Vienna Wien) +43 1 515 61 0, BELGIUM (Brussels Bruxelles) +32 070 245 245, BULGARIA (Sofia) +359 2 9888 205, Croatia +385 1 2348 342 CZECH REPUBLIC (Prague Praha) +420 224 919 293 or +420 224 915 402, DENMARK (Copenhagen) 82 12 12 12, ESTONIA (Tallinn) 112, FINLAND (Helsinki) +358 9 471 977, FRANCE (Paris) +33 1 45 42 59 59, GERMANY (Berlin) +49 30 19240, GREECE (Athens Athinai) +30 210 77 93 777, HUNGARY (Budapest) +36 80 201 199, ICELAND (Reykjavik) +354 543 2222 or 112, IRELAND (Dublin) +353 1 8379964 or +353 1 809 2166, ITALY (Rome) +39 06 305 4343, LATVIA (Riga) 112 or +371 6704 2473, LITHUANIA (Vilnius) +370 5 236 20 52 or +370 687 53378, Luxembourg +352 70 245 245, MALTA +356 2122 4071, NETHERLANDS (Bilthoven) +31 30 274 88 88, NORWAY (Oslo) 22 591300, POLAND (Gdansk) +48 58301 65 16 or +48 58 349 2831, PORTUGAL (Lisbon Lisboa) 808 250 143, ROMANIA (Bucharest) +40 21 3183606 SLOVAKIA (Bratislava) +421 2 54 77 4166, SLOVENIA (Ljubljana) + 386 41 650 500, SPAIN +34 91 562 04 20(spanish language) or +34 91 768 98 00(You can request to be served in English), SWEDEN (Stockholm) 112 or +46 10 456 6700 (mon-fri 9.00-17.00), UNITED KINGDOM (London) 112 or 0845 4647 (NHS Direct).

***** End of Documents

21741-7010
21741-1009

1/9

SAFETY DATA SHEET

According to Regulation (EC) No 1907/2006 (REACH), Annex II (COMMISSION REGULATION (EU) No 2015/830)

Date of issue: 2018-06-20
Revision date: 2022-06-21**SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING****1.1. Product identifier**

Trade name/designation : SGI- GREEN

1.2. Relevant identified uses of the substance or mixture and uses advised against**1.2.1. Relevant identified uses**

- Water-soluble stationary ink

1.2.2. Uses advised against

- Not available

1.3. Details of the supplier of the safety data sheetManufacturer/Supplier : YOU&I COPORATION
Address : 53, EMTIBEUI 26-RO, SIHEUNG-SI, GYEONGGI-DO, KOREA (ZIP CODE) 15118
Telephone : 82-31-494-2030
Email : tech@youicolor.com**1.4. Emergency telephone number**82-31-494-2030 (This number is serviced during office hours only.)
EU-wide emergency number : 112
See section 16.6 for the list of telephone number of poison centers in the European Economic Area.**SECTION 2: HAZARD IDENTIFICATION****2.1. Classification of the substance/mixture****2.1.1. Classification according to Regulation (EC) No 1272/2008 [CLP]**

H411-Aquatic Chronic 2

2.2. Label elements**2.2.1. Labelling according to Regulation (EC) No 1272/2008 [CLP]***** Hazard Pictogram(s)***** Signal word** : Warning*** Hazard statement(s)**

H411: Toxic to aquatic life with long-lasting effects

*** Precautionary statement(s)****1) Prevention**

P273: Avoid release to the environment.

2) Response

P391: Collect spillage.

3) Storage

- Not applicable

4) Disposal

P501: Disposal contents/ container to in accordance with local national regulation.

2.3. Other hazards

- Not available

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS**3.1. Substances**

- Not applicable

3.2. Mixtures

Name	CAS No.	EINECS NO.	% [weight]	Classification [1272/2008/EC]
WATER	7732-18-5	231-791-2	40~60	Not classified
GLYCERINE	56-81-5	200-289-5	15~20	Not classified
ALUMINIUM POWDER	7429-90-5	231-072-3	3~7	   Flam. Solid 1, H228 Pyr. Liq. 1, H250 Water-react 2, H261 Specific target organ toxicity (repeated) 2, H373 Aquatic Chronic 1: H410 (M-factor: 1)
C.I. PIGMENT GREEN 7	1328-53-6	215-524-7	0~5	Not classified
POLY ETHYLENE GLYCOL	25322-68-3	500-038-2	10~15	 Acute toxicity (Oral) 4, H302
2-AMINO-2-METHYL-1-PROPANOL	124-68-5	204-709-8	0~1	 Aquatic Chronic 4, H413 Eye Irrit. 1, H318 Skin Irrit. 2, H315

SECTION 4: FIRST AID MEASURES**4.1. Description of first aid measures****General**

- No general information.

Inhalation

- When exposed to large amounts of steam and mist, move to fresh air.
- Take specific treatment if needed.

Skin contact

- Flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes.
- Laundering enough contaminated clothing before reuse.

Eye contact

- Do not rub your eyes.
- Immediately flush eyes with plenty of water for at least 15 minutes and call a doctor/physician.

Ingestion

- Please be advised by doctor whether induction of vomit is demanded or not.
- Rinse your mouth with water immediately.

4.2. Most important symptoms and effects, both acute and delayed

- Not available

4.3. Indication of any immediate medical attention and special treatment needed

- Notify medical personnel of contaminated situations and have them take appropriate protective measures.

SECTION 5: FIREFIGHTING MEASURES**5.1. Extinguishing media****Suitable extinguishing media**

- Water, foam, CO₂, NaHCO₃

Unsuitable extinguishing media

- Avoid use of water jet for extinguishing

5.2. Special hazards arising from the substance or mixture**Hazardous combustion products**

- Not available

5.3. Advice for firefighters

- Cool containers with water until well after fire is out.
- Keep unauthorized personnel out.
- Withdraw immediately in case of rising sound from venting safety devices or discoloration of tank.
- Wear appropriate protective equipment.
- Keep containers cool with water spray.
- Use fire fighting procedures suitable for surrounding area.
- Vapor or gas is burned at distant ignition sources can be spread quickly.

SECTION 6: ACCIDENTAL RELEASE MEASURES**6.1. Personal Precautions, protective equipment and emergency procedures****6.1.1. For non-emergency personnel**

- Protective equipment: Wear proper protective equipment.
- Emergency procedures: Not applicable
- If required, notify relevant authorities according to all applicable regulations.

6.1.2. For emergency responders

- Ventilate closed spaces before entering.
- Must work against the wind, let the upwind people to evacuate.
- Do not touch spilled material. Stop leak if you can do it without risk.
- Handling the damaged containers or spilled material after wearing protective equipment.
- Do not direct water at spill or source of leak.

6.2. Environmental precautions

- Prevent runoff and contact with waterways, drains or sewers.
- If large amounts have been spilled, inform the relevant authorities.
- Avoid dispersal of spilt material and runoff and contact with waterways, drains and sewers. If large spills, advise

6.3. Methods and material for containment and cleaning up**6.3.1. For containment**

- Clear spills immediately
- Clean up all spills immediately.
- Prevent, by any means available, spillage from entering drains or water course.

6.3.2. For cleaning up

- Large spill : Stay upwind and keep out of low areas. Dike for later disposal.
- Notification to central government, local government. When emissions at least of the standard amount
- Dispose of waste in accordance with local regulation.
- Appropriate container for disposal of spilled material collected.
- Small leak: sand or other non-combustible material, please let use absorption.
- Wipe off the solvent.
- Dike for later disposal.

6.3.3. Other information

- Slippery when spilt.

6.4. Reference to other sections

- See Section 7 for information on safe handling.
- See Section 8 for information on personal protection equipment.
- See Section 13 for information on disposal.

SECTION 7: HANDLING AND STORAGE**7.1. Precautions for safe handling**

- Avoid direct physical contact.
- Get the manual before use.
- Refer to Engineering controls and personal protective equipment.
- Do not handle until all safety precautions have been read and understood.

- Do not inhale the steam prolonged or repeated.

7.2. Conditions for safe storage, including any incompatibilities

- Save in cool, dry and well ventilated place.
- Check regularly for leaks.
- Please pay attention to incompatibilities materials and conditions to avoid.
- Keep sealed when not in use.
- No open fire.

7.3. Specific end use(s)

- See Section 1 for information on 1.2 Relevant identified uses.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control parameters

8.1.1. Occupational exposure limits

European Union (EU) Commission Directive 2006/15/EC (IOELVs)

- Not available

European Union (EU) Commission Directive 2006/15/EC (IOELVs) - Skin

- Not available

8.1.2. Recommended Monitoring Procedures

- Personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment.

8.1.3. DNEL/PNEC - Values

- Not available

8.2. Exposure controls

8.2.1. Appropriate engineering controls

- A system of local and/or general exhaust is recommended to keep employee exposures above the Exposure Limits. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. The use of local exhaust ventilation is recommended to control emissions near the source.

8.2.2. Individual protection measures, such as personal protective equipment

Hand protection

- Wear appropriate glove.

Eye protection

- Wear primary eye protection such as splash resistant safety goggles with a secondary protection face shield.
- Provide an emergency eye wash station and quick drench shower in the immediate work area.

Respiratory Protection

- Under conditions of frequent use or heavy exposure, Respiratory protection may be needed.
- Respiratory protection is ranked in order from minimum to maximum.
- Consider warning properties before use.
- Any chemical cartridge respirator with organic vapor cartridge(s).
- Any chemical cartridge respirator with a full face piece and organic vapor cartridge(s).
- Any air-purifying respirator with a full face piece and an organic vapor canister.
- For Unknown Concentration or Immediately Dangerous to Life or Health : Any supplied-air respirator with full face piece and operated in a pressure-demand or other positive-pressure mode in combination with a separate escape supply. Any self-contained breathing apparatus with a full face piece.

Skin protection

- Wear appropriate clothing.

8.2.3 Environmental exposure controls

- Do not let product enter drains. For ecological information refer to section 12.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Appearance(State)	Liquid
Appearance(Color)	GREEN
Odor	Odorless
Odor threshold	Not available
pH	8.0 ± 1.0
Melting point/Freezing point	Not available
Initial boiling point and boiling range	> 100 °C
Flash point	300 °C
Evaporation rate	Not available
Flammability(solid, gas)	Not applicable
Upper/Lower Flammability or explosive	Not available
Vapour pressure	Not available
Vapour density	Not available
Relative density	1.1 ± 0.05 g/cm ³
Solubility	Fully miscible
Partition coefficient of n-octanol/water	Not available
Autoignition temperature	No self-igniting
Decomposition temperature	Not available
Viscosity	650 ± 150 Cps
Explosive properties	Not explosive
Oxidizing properties	Not available

9.2. Other information

- Not available

SECTION 10: STABILITY AND REACTIVITY**10.1. Reactivity**

- Not available

10.2. Chemical Stability

- This material is stable under recommended storage and handling conditions.

10.3. Possibility of hazardous reactions

- Hazardous Polymerization will not occur.

10.4. Conditions to avoid

- Avoid contact with incompatible materials and condition.
 - Avoid : Accumulation of electrostatic charges, Heating, Flames and hot surfaces

10.5. Incompatible materials

- Not available

10.6. Hazardous decomposition products

- Not available

SECTION 11: TOXICOLOGICAL INFORMATION**11.1. Acute toxicity****- Oral**

- Product (ATEmix) : >5000mg/kg
 - [GLYCERINE] : LD50 = 12600 mg/kg Rat (ChemIDplus)
 - [POLY ETHYLENE GLYCOL] : LD50 = 600 mg/kg Rat (KOSHA)

- Dermal

- Product (ATEmix) : >5000mg/kg
 - [GLYCERINE] : LD50 > 10000 mg/kg Rat (ChemIDplus)

- Inhalation

- Product (ATEmix) : Not available
 - [GLYCERINE] : LC50 >2.75 mg/ℓ 4 hr Rat (ECHA)

11.2. Skin corrosion/irritation

- [2-AMINO-2-METHYL-1-PROPANOL] : Classified as Category 2 (KOSHA)

11.3. Serious eye damage/irritation

- [2-AMINO-2-METHYL-1-PROPANOL] : Classified as Category 1 (KOSHA)

11.4. Respiratory sensitization

- Not available

11.5. Skin sensitization

- Not available

11.6. Germ cell mutagenicity

- Not available

11.7. Carcinogenicity**- IARC**

- Not available

- OSHA

- Not available

- ACGIH

- [ALUMINIUM POWDER] : A4

- NTP

- Not available

- EU CLP

- Not available

11.8. Reproductive toxicity

- Not available

11.9. Specific target organ toxicity(single exposure):

- Not available

11.10. Specific target organ toxicity(repeated exposure):

- [ALUMINIUM POWDER] : Classified as Category 2 (KOSHA)

11.11. Aspiration hazard

- Not available

SECTION 12: ECOLOGICAL INFORMATION**12.1. Toxicity****12.1.1. Fish**

- [GLYCERINE] : LC50 >11 mg/ℓ 96 hr Cyprinodon variegatus (ECHA)

12.1.2. Invertebrate

- [GLYCERINE] : LC50 1955 mg/ℓ 48 hr Daphnia magna (ECHA)

- [ALUMINIUM POWDER] : NOEC > 100 mg/ℓ 48 hr Daphnia magna (IUCLID)

12.1.3. Algae

- [ALUMINIUM POWDER] : NOEC > 0.052 mg/ℓ 48 hr Selenastrum capricornutum (M = 1) (OECD TG 201, GLP) (ECHA)

12.2. Persistence and degradability**12.2.1. Persistence**

- Not available

12.2.2. Degradability

- [2-AMINO-2-METHYL-1-PROPANOL] : BOD5/COD 0.005 (KOSHA)

12.3. Bioaccumulative potential**12.3.1. Bioaccumulation**

- [2-AMINO-2-METHYL-1-PROPANOL] : 1.3 BSAF (Leuciscus idus(Fish, fresh water), 50ug/) (KOSHA)

12.3.2. Biodegradability

- [2-AMINO-2-METHYL-1-PROPANOL] : 40 (%) 28 days (KOSHA)

12.4. Mobility in soil

- Not available

12.5. Results of PBT and vPvB assessment

- Not available

12.6. Other adverse effects

- Not available

SECTION 13: DISPOSAL CONSIDERATIONS**13.1. Waste treatment methods**

- Since more than two kinds of designated waste is mixed, it is difficult to treat separately, then can be reduction or stabilization by incineration or similar process.
- If water separation is possible, pre-process with Water separation process.
- Dispose by incineration.
- The user of this product must disposal by oneself or entrust to waste disposer or person who other's waste recycle and dispose, person who establish and operate waste disposal facilities.
- Dispose of waste in accordance with all applicable laws and regulations.

SECTION 14: TRANSPORT INFORMATION**14.1. UN No.**

14.1.1. UN No. (ADR/RID/ADN)
3082

14.1.2. UN No. (IMDG CODE/IATA DGR)
3082

14.1.3. UN No. (ICAO)
3082

14.2. UN proper shipping name

- Not applicable

14.3. Transport hazard class(es)

14.3.1. ADR/RID/ADN Class
- Not applicable

14.3.2. ADR/RID/ADN Class
- Not applicable

14.3.3. ADR Label No.
- Not applicable

14.3.4. IMDG Class
- Not applicable

14.3.5. ICAO Class/Division
- Not applicable

14.3.6. Transport Labels
- Not applicable

14.4. Packing group

14.4.1. ADR/RID/ADN Packing group

- Not applicable

14.4.2. IMDG Packing group

- Not applicable

14.4.3. ICAO Packing group

- Not applicable

14.5. Environmental hazards

- Not applicable

14.6. Special precautions for user

- Local transport follows in accordance with Dangerous goods Safety Management Law.
- Package and transport follow in accordance with Department of Transportation (DOT) and other regulatory agency
- EmS FIRE SCHEDULE : Not applicable
- EmS SPILLAGE SCHEDULE : Not applicable
- Air transport(IATA): Not subject to IATA regulations.

14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

- Not applicable

SECTION 15: REGULATORY INFORMATION**15.1. Safety, health and environmental regulation / legislation specific for the substance or mixture****15.1.1. Europe regulatory****15.1.1.1 REACH Restricted substance under REACH**

- Not applicable

15.1.1.2 REACH Substances subject to authorization under REACH

- Not applicable

15.1.1.3 REACH SVHC

- Not applicable

15.1.1.4 Europe PBT

- Not applicable

15.1.1.5 European Union (EU) Transport of Dangerous Goods by Road - Dangerous Goods List

- Not applicable

15.2. Chemical Safety Assessment

- Not conducted

SECTION 16: OTHER INFORMATION**16.1. Indication of changes**

- The Safety Data Sheet has been reviewed and the data therein were revised and laid out according the requirements of the Commission Regulation (EC) No. 1907/2006

16.2. Abbreviations and acronyms

- 1272/2008 CLP : Classification, Labelling and Packaging regulation.
- REACH : Registration, Evaluation and authorization of chemical substances.
- DNEL : Derive no effects level
- PNEC : Predicted no effect concentration

16.3. Key literature references and sources for data

- This Safety Data Sheet was compiled with data and information from the following sources: RTECS, ECOSAR, HSDB, SIDS SIAP, ChemWATCH, CESAR, Chemical DB

16.4. Classification procedure

- The mixture classification has been derived based on the classification of the individual components in accordance with the rules set out in Regulation (EC) No 1272/2008 (CLP) as well as the translation tables in Annex VII to the same regulation.

16.5. Training advice

- Not applicable

16.6. Further information

- The (M)SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings. Risks may be determined by reference to Exposures Scenarios. Scale of use, frequency of use and current or available engineering controls must be considered.

- This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only.

- It should not therefore be construed as guaranteeing any specific property of the product.

- Contact a poison control centre, List of Telephone Numbers : AUSTRIA (Vienna Wien) +43 1 406 43 43; BELGIUM (Brussels Bruxelles) +32 70 245 245; BULGARIA (Sofia) +359 2 9154 409; CZECH REPUBLIC (Prague Praha) +420 224 919 293; DENMARK (Copenhagen) 82 12 12 12; ESTONIA (Tallinn) 112; FINLAND (Helsinki) +358 9 471 977; FRANCE (Paris) +33 1 40 0548 48; GERMANY (Berlin) +49 30 19240; GREECE (Athens Athina) +30 10 779 3777; HUNGARY (Budapest) 06 80 20 11 99; ICELAND (Reykjavik) +354 525 111, +354 543 2222; IRELAND (Dublin) +353 1 8379964; ITALY (Rome) +39 06 305 4343; LATVIA (Riga) +371 704 2468; LITHUANIA (Vilnius) +370 5 236 20 52 or +370 687 53378; MALTA (Valletta) 2425 0000; NETHERLANDS (Bilthoven) +31 30 274 88 88; NORWAY (Oslo) 22 591300; POLAND (Gdansk) +48 58301 65 16 or +48 58 349 2831; PORTUGAL (Lisbon Lisboa) 808 250 143; ROMANIA (Bucharest) +40 21 3183606 SLOVAKIA (Bratislava) +421 2 54 77 4166; SLOVENIA (Ljubljana) + 386 41 650 500; SPAIN (Barcelona) +34 93 227 98 33 or +34 93 227 54 00 bleep 190; SWEDEN (Stockholm) 112 or +46 8 33 12 31 (mon-fri 9.00-17.00); UNITED KINGDOM (London) 112 or 0845 4647 (NHS Direct).

Disclaimer of Liability

This information is based on our present state of knowledge.

It should not therefore be construed as guaranteeing specific properties of the products

Described or their suitability for a particular application. YOU&I Corporation assumes

no responsibility for personal injury or property damage caused by the material.

Users assume all risks associated with the use of the material.

***** End of Documents

21741-9010

1/9

SAFETY DATA SHEET

According to Regulation (EC) No 1907/2006 (REACH), Annex II (COMMISSION REGULATION (EU) No 2015/830)



Date of issue: 2019-06-14

Revision date: 2022-06-21

SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING**1.1. Product identifier**

Trade name/designation : SGI- GOLD

1.2. Relevant identified uses of the substance or mixture and uses advised against**1.2.1. Relevant identified uses**

- Water-soluble stationary ink

1.2.2. Uses advised against

- Not available

1.3. Details of the supplier of the safety data sheet

Manufacturer/Supplier : YOU&I COPORATION
Address : 53, EMTIBEUI 26-RO, SIHEUNG-SI, GYEONGGI-DO, KOREA (ZIP CODE) 15118
Telephone : 82-31-494-2030
Email : tech@youicolor.com

1.4. Emergency telephone number

82-31-494-2030 (This number is serviced during office hours only.)
EU-wide emergency number : 112
See section 16.6 for the list of telephone number of poison centers in the European Economic Area.

SECTION 2: HAZARD IDENTIFICATION**2.1. Classification of the substance/mixture****2.1.1. Classification according to Regulation (EC) No 1272/2008 [CLP]**

H411-Aquatic Chronic 2

2.2. Label elements**2.2.1. Labelling according to Regulation (EC) No 1272/2008 [CLP]***** Hazard Pictogram(s)***** Signal word** : Warning*** Hazard statement(s)**

H411: Toxic to aquatic life with long-lasting effects

*** Precautionary statement(s)****1) Prevention**

P273: Avoid release to the environment.

2) Response

P391: Collect spillage.

3) Storage

- Not applicable

4) Disposal

P501: Disposal contents/ container to in accordance with local national regulation.

2.3. Other hazards

- Not available

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS**3.1. Substances**

- Not applicable

3.2. Mixtures

Name	CAS No.	EINECS NO.	% [weight]	Classification [1272/2008/EC]
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ALUMINIUM POWDER	7429-90-5	231-072-3	3~7	   Flam. Solid 1, H228 Pyr. Liq. 1, H250 Water-react 2, H261 Specific target organ toxicity (repeated) 2, H373 Aquatic Chronic 1: H410 (M-factor: 1)
C.I. PIGMENT RED 170	2786-76-7	220-509-3	0~5	Aquatic Chronic 4, H413
C.I. PIGMENT YELLOW 83	5567-15-7	226-939-8	0~5	Aquatic Chronic 3, H412
POLY ETHYLENE GLYCOL	25322-68-3	500-038-2	10~15	 Acute toxicity (Oral) 4, H302
2-AMINO-2-METHYL-1-PROPANOL	124-68-5	204-709-8	0~1	 Aquatic Chronic 4, H413 Eye Irrit. 1, H318 Skin Irrit. 2, H315

SECTION 4: FIRST AID MEASURES**4.1. Description of first aid measures****General**

- No general information.

Inhalation

- When exposed to large amounts of steam and mist, move to fresh air.
- Take specific treatment if needed.

Skin contact

- Flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes.
- Laundering enough contaminated clothing before reuse.

Eye contact

- Do not rub your eyes.
- Immediately flush eyes with plenty of water for at least 15 minutes and call a doctor/physician.

Ingestion

- Please be advised by doctor whether induction of vomit is demanded or not.
- Rinse your mouth with water immediately.

4.2. Most important symptoms and effects, both acute and delayed

- Not available

4.3. Indication of any immediate medical attention and special treatment needed

- Notify medical personnel of contaminated situations and have them take appropriate protective measures.

SECTION 5: FIREFIGHTING MEASURES**5.1. Extinguishing media****Suitable extinguishing media**

- Water, foam, CO2, NaHCO3

Unsuitable extinguishing media

- Avoid use of water jet for extinguishing

5.2. Special hazards arising from the substance or mixture

Hazardous combustion products

- Not available

5.3. Advice for firefighters

- Cool containers with water until well after fire is out.
- Keep unauthorized personnel out.
- Withdraw immediately in case of rising sound from venting safety devices or discoloration of tank.
- Wear appropriate protective equipment.
- Keep containers cool with water spray.
- Use fire fighting procedures suitable for surrounding area.
- Vapor or gas is burned at distant ignition sources can be spread quickly.

SECTION 6: ACCIDENTAL RELEASE MEASURES**6.1. Personal Precautions, protective equipment and emergency procedures****6.1.1. For non-emergency personnel**

- Protective equipment: Wear proper protective equipment.
- Emergency procedures: Not applicable
- If required, notify relevant authorities according to all applicable regulations.

6.1.2. For emergency responders

- Ventilate closed spaces before entering.
- Must work against the wind, let the upwind people to evacuate.
- Do not touch spilled material. Stop leak if you can do it without risk.
- Handling the damaged containers or spilled material after wearing protective equipment.
- Do not direct water at spill or source of leak.

6.2. Environmental precautions

- Prevent runoff and contact with waterways, drains or sewers.
- If large amounts have been spilled, inform the relevant authorities.
- Avoid dispersal of spilt material and runoff and contact with waterways, drains and sewers. If large spills, advise

6.3. Methods and material for containment and cleaning up**6.3.1. For containment**

- Clear spills immediately
- Clean up all spills immediately.
- Prevent, by any means available, spillage from entering drains or water course.

6.3.2. For cleaning up

- Large spill : Stay upwind and keep out of low areas. Dike for later disposal.
- Notification to central government, local government. When emissions at least of the standard amount
- Dispose of waste in accordance with local regulation.
- Appropriate container for disposal of spilled material collected.
- Small leak: sand or other non-combustible material, please let use absorption.
- Wipe off the solvent.
- Dike for later disposal.

6.3.3. Other information

- Slippery when spilt.

6.4. Reference to other sections

- See Section 7 for information on safe handling.
- See Section 8 for information on personal protection equipment.
- See Section 13 for information on disposal.

SECTION 7: HANDLING AND STORAGE**7.1. Precautions for safe handling**

- Avoid direct physical contact.
- Get the manual before use.

- Refer to Engineering controls and personal protective equipment.
- Do not handle until all safety precautions have been read and understood.
- Do not inhale the steam prolonged or repeated.

7.2. Conditions for safe storage, including any incompatibilities

- Save in cool, dry and well ventilated place.
- Check regularly for leaks.
- Please pay attention to incompatibilities materials and conditions to avoid.
- Keep sealed when not in use.
- No open fire.

7.3. Specific end use(s)

- See Section 1 for information on 1.2 Relevant identified uses.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION**8.1. Control parameters****8.1.1. Occupational exposure limits****European Union (EU) Commission Directive 2006/15/EC (IOELVs)**

- Not available

European Union (EU) Commission Directive 2006/15/EC (IOELVs) - Skin

- Not available

8.1.2. Recommended Monitoring Procedures

- Personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment.

8.1.3. DNEL/PNEC - Values

- Not available

8.2. Exposure controls**8.2.1. Appropriate engineering controls**

- A system of local and/or general exhaust is recommended to keep employee exposures above the Exposure Limits. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. The use of local exhaust ventilation is recommended to control emissions near the source.

8.2.2. Individual protection measures, such as personal protective equipment**Hand protection**

- Wear appropriate glove.

Eye protection

- Wear primary eye protection such as splash resistant safety goggles with a secondary protection face shield.
- Provide an emergency eye wash station and quick drench shower in the immediate work area.

Respiratory Protection

- Under conditions of frequent use or heavy exposure, Respiratory protection may be needed.
- Respiratory protection is ranked in order from minimum to maximum.
- Consider warning properties before use.
- Any chemical cartridge respirator with organic vapor cartridge(s).
- Any chemical cartridge respirator with a full face piece and organic vapor cartridge(s).
- Any air-purifying respirator with a full face piece and an organic vapor canister.
- For Unknown Concentration or Immediately Dangerous to Life or Health : Any supplied-air respirator with full face piece and operated in a pressure-demand or other positive-pressure mode in combination with a separate escape supply. Any self-contained breathing apparatus with a full face piece.

Skin protection

- Wear appropriate clothing.

8.2.3 Environmental exposure controls

- Do not let product enter drains. For ecological information refer to section 12.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES**9.1. Information on basic physical and chemical properties**

Appearance(State)	Liquid
Appearance(Color)	GOLD
Odor	Odorless
Odor threshold	Not available
pH	8.0 ± 1.0
Melting point/Freezing point	Not available
Initial boiling point and boiling range	> 100 °C
Flash point	300 °C
Evaporation rate	Not available
Flammability(solid, gas)	Not applicable
Upper/Lower Flammability or explosive	Not available
Vapour pressure	Not available
Vapour density	Not available
Relative density	1.1 ± 0.05 g/cm ³
Solubility	Fully miscible
Partition coefficient of n-octanol/water	Not available
Autoignition temperature	No self-igniting
Decomposition temperature	Not available
Viscosity	650 ± 150 Cps
Explosive properties	Not explosive
Oxidizing properties	Not available

9.2. Other information

- Not available

SECTION 10: STABILITY AND REACTIVITY**10.1. Reactivity**

- Not available

10.2. Chemical Stability

- This material is stable under recommended storage and handling conditions.

10.3. Possibility of hazardous reactions

- Hazardous Polymerization will not occur.

10.4. Conditions to avoid

- Avoid contact with incompatible materials and condition.
- Avoid : Accumulation of electrostatic charges, Heating, Flames and hot surfaces

10.5. Incompatible materials

- Not available

10.6. Hazardous decomposition products

- Not available

SECTION 11: TOXICOLOGICAL INFORMATION**11.1. Acute toxicity****- Oral**

- Product (ATEmix) : >5000mg/kg
- [GLYCERINE] : LD50 = 12600 mg/kg Rat (ChemIDplus)
- [POLY ETHYLENE GLYCOL] : LD50 = 600 mg/kg Rat (KOSHA)

- Dermal

- Product (ATEmix) : >5000mg/kg
- [GLYCERINE] : LD50 > 10000 mg/kg Rat (ChemIDplus)

- **Inhalation**
- Product (ATEmix) : Not available
- [GLYCERINE] : LC50 >2.75 mg/ℓ 4 hr Rat (ECHA)

11.2. Skin corrosion/irritation

- [2-AMINO-2-METHYL-1-PROPANOL] : Classified as Category 2 (KOSHA)

11.3. Serious eye damage/irritation

- [2-AMINO-2-METHYL-1-PROPANOL] : Classified as Category 1 (KOSHA)

11.4. Respiratory sensitization

- Not available

11.5. Skin sensitization

- Not available

11.6. Germ cell mutagenicity

- Not available

11.7. Carcinogenicity

- **IARC**
- Not available
- **OSHA**
- Not available
- **ACGIH**
- [ALUMINIUM POWDER] : A4
- **NTP**
- Not available
- **EU CLP**
- Not available

11.8. Reproductive toxicity

- Not available

11.9. Specific target organ toxicity(single exposure):

- Not available

11.10. Specific target organ toxicity(repeated exposure):

- [ALUMINIUM POWDER] : Classified as Category 2 (KOSHA)

11.11. Aspiration hazard

- Not available

SECTION 12: ECOLOGICAL INFORMATION**12.1. Toxicity****12.1.1. Fish**

- [GLYCERINE] : LC50 >11 mg/ℓ 96 hr Cyprinodon variegatus (ECHA)
- [C.I. PIGMENT RED 170] : LC50 >0.217 mg/ℓ 96 hr (ECOSAR)
- [C.I. PIGMENT YELLOW 83] : LC50 45 mg/ℓ 48 hr Oncorhynchus mykiss (ECOTOX)

12.1.2. Invertebrate

- [GLYCERINE] : LC50 1955 mg/ℓ 48 hr Daphnia magna (ECHA)
- [ALUMINIUM POWDER] : NOEC > 100 mg/ℓ 48 hr Daphnia magna (IUCLID)
- [C.I. PIGMENT RED 170] : LC50 0.545 mg/ℓ 48 hr (ECOSHA)

12.1.3. Algae

- [ALUMINIUM POWDER] : NOEC > 0.052 mg/ℓ 48 hr Selenastrum capricornutum (M = 1) (OECD TG 201, GLP) (ECHA)
- [C.I. PIGMENT RED 170] : EC50 0.06 mg/ℓ 96 hr (ECOSHA)

12.2. Persistence and degradability**12.2.1. Persistence**

- [C.I. PIGMENT RED 170] : 6.04 log Kow (ECOSAR)
- [C.I. PIGMENT YELLOW 83] : 7.54 log Kow (IUCLID)

12.2.2. Degradability

- [2-AMINO-2-METHYL-1-PROPANOL] : BOD5/COD 0.005 (KOSHA)

12.3. Bioaccumulative potential**12.3.1. Bioaccumulation**

- [2-AMINO-2-METHYL-1-PROPANOL] : 1.3 BSAF (Leuciscus idus(Fish, fresh water), 50ug/) (KOSHA)
- [C.I. PIGMENT RED 170] : 10 (QSAR)
- [C.I. PIGMENT YELLOW 83] : 10 (QSAR)

12.3.2. Biodegradability

- [2-AMINO-2-METHYL-1-PROPANOL] : 40 (%) 28 days (KOSHA)
- [C.I. PIGMENT YELLOW 83] : 6 (%) 28 days (NITE)

12.4. Mobility in soil

- Not available

12.5. Results of PBT and vPvB assessment

- Not available

12.6. Other adverse effects

- Not available

SECTION 13: DISPOSAL CONSIDERATIONS**13.1. Waste treatment methods**

- Since more than two kinds of designated waste is mixed, it is difficult to treat separately, then can be reduction or stabilization by incineration or similar process.
- If water separation is possible, pre-process with Water separation process.
- Dispose by incineration.
- The user of this product must disposal by oneself or entrust to waste disposer or person who other's waste recycle and dispose, person who establish and operate waste disposal facilities.
- Dispose of waste in accordance with all applicable laws and regulations.

SECTION 14: TRANSPORT INFORMATION**14.1. UN No.****14.1.1. UN No. (ADR/RID/ADN)**

3082

14.1.2. UN No. (IMDG CODE/IATA DGR)

3082

14.1.3. UN No. (ICAO)

3082

14.2. UN proper shipping name

- Not applicable

14.3. Transport hazard class(es)**14.3.1. ADR/RID/ADN Class**

- Not applicable

14.3.2. ADR/RID/ADN Class

- Not applicable

14.3.3. ADR Label No.

- Not applicable

14.3.4. IMDG Class

- Not applicable

14.3.5. ICAO Class/Division

- Not applicable

14.3.6. Transport Labels

- Not applicable

14.4. Packing group**14.4.1. ADR/RID/ADN Packing group**

- Not applicable

14.4.2. IMDG Packing group

- Not applicable

14.4.3. ICAO Packing group

- Not applicable

14.5. Environmental hazards

- Not applicable

14.6. Special precautions for user

- Local transport follows in accordance with Dangerous goods Safety Management Law.
- Package and transport follow in accordance with Department of Transportation (DOT) and other regulatory agency
- EmS FIRE SCHEDULE : Not applicable
- EmS SPILLAGE SCHEDULE : Not applicable
- Air transport(IATA): Not subject to IATA regulations.

14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

- Not applicable

SECTION 15: REGULATORY INFORMATION**15.1. Safety, health and environmental regulation / legislation specific for the substance or mixture****15.1.1. Europe regulatory****15.1.1.1 REACH Restricted substance under REACH**

- Not applicable

15.1.1.2 REACH Substances subject to authorization under REACH

- Not applicable

15.1.1.3 REACH SVHC

- Not applicable

15.1.1.4 Europe PBT

- Not applicable

15.1.1.5 European Union (EU) Transport of Dangerous Goods by Road - Dangerous Goods List

- Not applicable

15.2. Chemical Safety Assessment

- Not conducted

SECTION 16: OTHER INFORMATION**16.1. Indication of changes**

- The Safety Data Sheet has been reviewed and the data therein were revised and laid out according the requirements of the Commission Regulation (EC) No. 1907/2006

16.2. Abbreviations and acronyms

- 1272/2008 CLP : Classification, Labelling and Packaging regulation.
- REACH : Registration, Evaluation and authorization of chemical substances.
- DNEL : Derive no effects level
- PNEC : Predicted no effect concentration

16.3. Key literature references and sources for data

- This Safety Data Sheet was compiled with data and information from the following sources: RTECS, ECOSAR, HSDB, SIDS SIAP, ChemWATCH, CESAR, Chemical DB

16.4. Classification procedure

- The mixture classification has been derived based on the classification of the individual components in accordance with the rules set out in Regulation (EC) No 1272/2008 (CLP) as well as the translation tables in Annex VII to the same regulation.

16.5. Training advice

- Not applicable

16.6. Further information

- The (M)SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings. Risks may be determined by reference to Exposures Scenarios. Scale of use, frequency of use and current or available engineering controls must be considered.

- This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only.

- It should not therefore be construed as guaranteeing any specific property of the product.

- Contact a poison control centre, List of Telephone Numbers : AUSTRIA (Vienna Wien) +43 1 406 43 43; BELGIUM (Brussels Bruxelles) +32 70 245 245; BULGARIA (Sofia) +359 2 9154 409; CZECH REPUBLIC (Prague Praha) +420 224 919 293; DENMARK (Copenhagen) 82 12 12 12; ESTONIA (Tallinn) 112; FINLAND (Helsinki) +358 9 471 977; FRANCE (Paris) +33 1 40 0548 48; GERMANY (Berlin) +49 30 19240; GREECE (Athens Athinai) +30 10 779 3777; HUNGARY (Budapest) 06 80 20 11 99; ICELAND (Reykjavik) +354 525 111, +354 543 2222; IRELAND (Dublin) +353 1 8379964; ITALY (Rome) +39 06 305 4343; LATVIA (Riga) +371 704 2468; LITHUANIA (Vilnius) +370 5 236 20 52 or +370 687 53378; MALTA (Valletta) 2425 0000; NETHERLANDS (Bilthoven) +31 30 274 88 88; NORWAY (Oslo) 22 591300; POLAND (Gdansk) +48 58301 65 16 or +48 58 349 2831; PORTUGAL (Lisbon Lisboa) 808 250 143; ROMANIA (Bucharest) +40 21 3183606 SLOVAKIA (Bratislava) +421 2 54 77 4166; SLOVENIA (Ljubljana) + 386 41 650 500; SPAIN (Barcelona) +34 93 227 98 33 or +34 93 227 54 00 bleep 190; SWEDEN (Stockholm) 112 or +46 8 33 12 31 (mon-fri 9.00-17.00); UNITED KINGDOM (London) 112 or 0845 4647 (NHS Direct).

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This information is based on our present state of knowledge.

It should not therefore be construed as guaranteeing specific properties of the products Described or their suitability for a particular application. YOU&I Corporation assumes no responsibility for personal injury or property damage caused by the material. Users assume all risks associated with the use of the material.

***** End of Documents

21741-8000

1/9

SAFETY DATA SHEET

According to Regulation (EC) No 1907/2006 (REACH), Annex II (COMMISSION REGULATION (EU) No 2015/830)



Date of issue: 2018-06-20

Revision date: 2022-06-21

SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING**1.1. Product identifier**

Trade name/designation : SGI- BROWN

1.2. Relevant identified uses of the substance or mixture and uses advised against**1.2.1. Relevant identified uses**

- Water-soluble stationary ink

1.2.2. Uses advised against

- Not available

1.3. Details of the supplier of the safety data sheet

Manufacturer/Supplier : YOU&I COPORATION

Address : 53, EMTIBEUI 26-RO, SIHEUNG-SI, GYEONGGI-DO, KOREA (ZIP CODE) 15118

Telephone : 82-31-494-2030

Email : tech@youicolor.com

1.4. Emergency telephone number

82-31-494-2030 (This number is serviced during office hours only.)

EU-wide emergency number : 112

See section 16.6 for the list of telephone number of poison centers in the European Economic Area.

SECTION 2: HAZARD IDENTIFICATION**2.1. Classification of the substance/mixture****2.1.1. Classification according to Regulation (EC) No 1272/2008 [CLP]**

H411-Aquatic Chronic 2

2.2. Label elements**2.2.1. Labelling according to Regulation (EC) No 1272/2008 [CLP]***** Hazard Pictogram(s)***** Signal word** : Warning*** Hazard statement(s)**

H411: Toxic to aquatic life with long-lasting effects

*** Precautionary statement(s)****1) Prevention**

P273: Avoid release to the environment.

2) Response

P391: Collect spillage.

3) Storage

- Not applicable

4) Disposal

P501: Disposal contents/ container to in accordance with local national regulation.

2.3. Other hazards

- Not available

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS**3.1. Substances**

- Not applicable

3.2. Mixtures

Name	CAS No.	EINECS NO.	% [weight]	Classification [1272/2008/EC]
WATER	7732-18-5	231-791-2	40~60	Not classified
GLYCERINE	56-81-5	200-289-5	15~20	Not classified
ALUMINIUM POWDER	7429-90-5	231-072-3	3~7	   Flam. Solid 1, H228 Pyr. Liq. 1, H250 Water-react 2, H261 Specific target organ toxicity (repeated) 2, H373 Aquatic Chronic 1: H410 (M-factor: 1)
C.I. PIGMENT RED 170	2786-76-7	220-509-3	0~5	Aquatic Chronic 4, H413
C.I. PIGMENT YELLOW 83	5567-15-7	226-939-8	0~5	Aquatic Chronic 3, H412
C.I. PIGMENT BLACK 7	1333-86-4	215-609-9	0~5	Not classified
POLY ETHYLENE GLYCOL	25322-68-3	500-038-2	10~15	 Acute toxicity (Oral) 4, H302
2-AMINO-2-METHYL-1-PROPANOL	124-68-5	204-709-8	0~1	 Aquatic Chronic 4, H413 Eye Irrit. 1, H318 Skin Irrit. 2, H315

SECTION 4: FIRST AID MEASURES**4.1. Description of first aid measures****General**

- No general information.

Inhalation

- When exposed to large amounts of steam and mist, move to fresh air.
- Take specific treatment if needed.

Skin contact

- Flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes.
- Laundering enough contaminated clothing before reuse.

Eye contact

- Do not rub your eyes.
- Immediately flush eyes with plenty of water for at least 15 minutes and call a doctor/physician.

Ingestion

- Please be advised by doctor whether induction of vomit is demanded or not.
- Rinse your mouth with water immediately.

4.2. Most important symptoms and effects, both acute and delayed

- Not available

4.3. Indication of any immediate medical attention and special treatment needed

- Notify medical personnel of contaminated situations and have them take appropriate protective measures.

SECTION 5: FIREFIGHTING MEASURES**5.1. Extinguishing media****Suitable extinguishing media**

- Water, foam, CO₂, NaHCO₃

Unsuitable extinguishing media

- Avoid use of water jet for extinguishing

5.2. Special hazards arising from the substance or mixture**Hazardous combustion products**

- Not available

5.3. Advice for firefighters

- Cool containers with water until well after fire is out.
- Keep unauthorized personnel out.
- Withdraw immediately in case of rising sound from venting safety devices or discoloration of tank.
- Wear appropriate protective equipment.
- Keep containers cool with water spray.
- Use fire fighting procedures suitable for surrounding area.
- Vapor or gas is burned at distant ignition sources can be spread quickly.

SECTION 6: ACCIDENTAL RELEASE MEASURES**6.1. Personal Precautions, protective equipment and emergency procedures****6.1.1. For non-emergency personnel**

- Protective equipment: Wear proper protective equipment.
- Emergency procedures: Not applicable
- If required, notify relevant authorities according to all applicable regulations.

6.1.2. For emergency responders

- Ventilate closed spaces before entering.
- Must work against the wind, let the upwind people to evacuate.
- Do not touch spilled material. Stop leak if you can do it without risk.
- Handling the damaged containers or spilled material after wearing protective equipment.
- Do not direct water at spill or source of leak.

6.2. Environmental precautions

- Prevent runoff and contact with waterways, drains or sewers.
- If large amounts have been spilled, inform the relevant authorities.
- Avoid dispersal of spilt material and runoff and contact with waterways, drains and sewers. If large spills, advise

6.3. Methods and material for containment and cleaning up**6.3.1. For containment**

- Clear spills immediately
- Clean up all spills immediately.
- Prevent, by any means available, spillage from entering drains or water course.

6.3.2. For cleaning up

- Large spill : Stay upwind and keep out of low areas. Dike for later disposal.
- Notification to central government, local government. When emissions at least of the standard amount
- Dispose of waste in accordance with local regulation.
- Appropriate container for disposal of spilled material collected.
- Small leak: sand or other non-combustible material, please let use absorption.
- Wipe off the solvent.
- Dike for later disposal.

6.3.3. Other information

- Slippery when spilt.

6.4. Reference to other sections

- See Section 7 for information on safe handling.
- See Section 8 for information on personal protection equipment.
- See Section 13 for information on disposal.

SECTION 7: HANDLING AND STORAGE**7.1. Precautions for safe handling**

- Avoid direct physical contact.

- Get the manual before use.
- Refer to Engineering controls and personal protective equipment.
- Do not handle until all safety precautions have been read and understood.
- Do not inhale the steam prolonged or repeated.

7.2. Conditions for safe storage, including any incompatibilities

- Save in cool, dry and well ventilated place.
- Check regularly for leaks.
- Please pay attention to incompatibilities materials and conditions to avoid.
- Keep sealed when not in use.
- No open fire.

7.3. Specific end use(s)

- See Section 1 for information on 1.2 Relevant identified uses.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION**8.1. Control parameters****8.1.1. Occupational exposure limits****European Union (EU) Commission Directive 2006/15/EC (IOELVs)**

- Not available

European Union (EU) Commission Directive 2006/15/EC (IOELVs) - Skin

- Not available

8.1.2. Recommended Monitoring Procedures

- Personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment.

8.1.3. DNEL/PNEC - Values

- Not available

8.2. Exposure controls**8.2.1. Appropriate engineering controls**

- A system of local and/or general exhaust is recommended to keep employee exposures above the Exposure Limits. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. The use of local exhaust ventilation is recommended to control emissions near the source.

8.2.2. Individual protection measures, such as personal protective equipment**Hand protection**

- Wear appropriate glove.

Eye protection

- Wear primary eye protection such as splash resistant safety goggles with a secondary protection face shield.
- Provide an emergency eye wash station and quick drench shower in the immediate work area.

Respiratory Protection

- Under conditions of frequent use or heavy exposure, Respiratory protection may be needed.
- Respiratory protection is ranked in order from minimum to maximum.
- Consider warning properties before use.
- Any chemical cartridge respirator with organic vapor cartridge(s).
- Any chemical cartridge respirator with a full face piece and organic vapor cartridge(s).
- Any air-purifying respirator with a full face piece and an organic vapor canister.
- For Unknown Concentration or Immediately Dangerous to Life or Health : Any supplied-air respirator with full face piece and operated in a pressure-demand or other positive-pressure mode in combination with a separate escape supply. Any self-contained breathing apparatus with a full face piece.

Skin protection

- Wear appropriate clothing.

8.2.3 Environmental exposure controls

- Do not let product enter drains. For ecological information refer to section 12.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES**9.1. Information on basic physical and chemical properties**

Appearance(State)	Liquid
Appearance(Color)	BROWN
Odor	Odorless
Odor threshold	Not available
pH	8.0 ± 1.0
Melting point/Freezing point	Not available
Initial boiling point and boiling range	> 100 °C
Flash point	300 °C
Evaporation rate	Not available
Flammability(solid, gas)	Not applicable
Upper/Lower Flammability or explosive	Not available
Vapour pressure	Not available
Vapour density	Not available
Relative density	1.1 ± 0.05 g/cm3
Solubility	Fully miscible
Partition coefficient of n-octanol/water	Not available
Autoignition temperature	No self-igniting
Decomposition temperature	Not available
Viscosity	650 ± 150 Cps
Explosive properties	Not explosive
Oxidizing properties	Not available

9.2. Other information

- Not available

SECTION 10: STABILITY AND REACTIVITY**10.1. Reactivity**

- Not available

10.2. Chemical Stability

- This material is stable under recommended storage and handling conditions.

10.3. Possibility of hazardous reactions

- Hazardous Polymerization will not occur.

10.4. Conditions to avoid

- Avoid contact with incompatible materials and condition.
- Avoid : Accumulation of electrostatic charges, Heating, Flames and hot surfaces

10.5. Incompatible materials

- Not available

10.6. Hazardous decomposition products

- Not available

SECTION 11: TOXICOLOGICAL INFORMATION**11.1. Acute toxicity****- Oral**

- Product (ATEmix) : >5000mg/kg
- [GLYCERINE] : LD50 = 12600 mg/kg Rat (ChemIDplus)
- [POLY ETHYLENE GLYCOL] : LD50 = 600 mg/kg Rat (KOSHA)

- Dermal

- Product (ATEmix) : >5000mg/kg

- [GLYCERINE] : LD50 > 10000 mg/kg Rat (ChemIDplus)
- **Inhalation**
- Product (ATEmix) : Not available
- [GLYCERINE] : LC50 > 2.75 mg/ℓ 4 hr Rat (ECHA)

11.2. Skin corrosion/irritation

- [2-AMINO-2-METHYL-1-PROPANOL] : Classified as Category 2 (KOSHA)

11.3. Serious eye damage/irritation

- [2-AMINO-2-METHYL-1-PROPANOL] : Classified as Category 1 (KOSHA)

11.4. Respiratory sensitization

- Not available

11.5. Skin sensitization

- Not available

11.6. Germ cell mutagenicity

- Not available

11.7. Carcinogenicity

- **IARC**
- Not available
- **OSHA**
- Not available
- **ACGIH**
- [ALUMINIUM POWDER] : A4 (KOSHA)
- **NTP**
- Not available
- **EU CLP**
- Not available

11.8. Reproductive toxicity

- Not available

11.9. Specific target organ toxicity(single exposure):

- Not available

11.10. Specific target organ toxicity(repeated exposure):

- [ALUMINIUM POWDER] : Classified as Category 2 (KOSHA)

11.11. Aspiration hazard

- Not available

SECTION 12: ECOLOGICAL INFORMATION**12.1. Toxicity****12.1.1. Fish**

- [GLYCERINE] : LC50 > 11 mg/ℓ 96 hr Cyprinodon variegatus (ECHA)
- [C.I. PIGMENT RED 170] : LC50 > 0.217 mg/ℓ 96 hr (ECOSAR)
- [C.I. PIGMENT YELLOW 83] : LC50 45 mg/ℓ 48 hr Oncorhynchus mykiss (ECOTOX)

12.1.2. Invertebrate

- [GLYCERINE] : LC50 1955 mg/ℓ 48 hr Daphnia magna (ECHA)
- [ALUMINIUM POWDER] : NOEC > 100 mg/ℓ 48 hr Daphnia magna (IUCLID)
- [C.I. PIGMENT RED 170] : LC50 0.545 mg/ℓ 48 hr (ECOSHA)

12.1.3. Algae

- [ALUMINIUM POWDER] : NOEC > 0.052 mg/ℓ 48 hr Selenastrum capricornutum (M = 1) (OECD TG 201, GLP) (ECHA)
- [C.I. PIGMENT RED 170] : EC50 0.06 mg/ℓ 96 hr (ECOSHA)

12.2. Persistence and degradability**12.2.1. Persistence**

- [C.I. PIGMENT RED 170] : 6.04 log Kow (ECOSAR)

- [C.I. PIGMENT YELLOW 83] : 7.54 log Kow (IUCLID)

12.2.2. Degradability

- [2-AMINO-2-METHYL-1-PROPANOL] : BOD5/COD 0.005 (KOSHA)

12.3. Bioaccumulative potential**12.3.1. Bioaccumulation**

- [2-AMINO-2-METHYL-1-PROPANOL] : 1.3 BSAF (Leuciscus idus(Fish, fresh water), 50ug/) (KOSHA)

- [C.I. PIGMENT RED 170] : 10 (QSAR)

- [C.I. PIGMENT YELLOW 83] : 10 (QSAR)

12.3.2. Biodegradability

- [2-AMINO-2-METHYL-1-PROPANOL] : 40 (%) 28 days (KOSHA)

- [C.I. PIGMENT YELLOW 83] : 6 (%) 28 days (NITE)

12.4. Mobility in soil

- Not available

12.5. Results of PBT and vPvB assessment

- Not available

12.6. Other adverse effects

- Not available

SECTION 13: DISPOSAL CONSIDERATIONS**13.1. Waste treatment methods**

- Since more than two kinds of designated waste is mixed, it is difficult to treat separately, then can be reduction or stabilization by incineration or similar process.
- If water separation is possible, pre-process with Water separation process.
- Dispose by incineration.
- The user of this product must disposal by oneself or entrust to waste disposer or person who other's waste recycle and dispose, person who establish and operate waste disposal facilities.
- Dispose of waste in accordance with all applicable laws and regulations.

SECTION 14: TRANSPORT INFORMATION**14.1. UN No.****14.1.1. UN No. (ADR/RID/ADN)**

3082

14.1.2. UN No. (IMDG CODE/IATA DGR)

3082

14.1.3. UN No. (ICAO)

3082

14.2. UN proper shipping name

- Not applicable

14.3. Transport hazard class(es)**14.3.1. ADR/RID/ADN Class**

- Not applicable

14.3.2. ADR/RID/ADN Class

- Not applicable

14.3.3. ADR Label No.

- Not applicable

14.3.4. IMDG Class

- Not applicable

14.3.5. ICAO Class/Division

- Not applicable

14.3.6. Transport Labels

- Not applicable

14.4. Packing group

14.4.1. ADR/RID/ADN Packing group

- Not applicable

14.4.2. IMDG Packing group

- Not applicable

14.4.3. ICAO Packing group

- Not applicable

14.5. Environmental hazards

- Not applicable

14.6. Special precautions for user

- Local transport follows in accordance with Dangerous goods Safety Management Law.
- Package and transport follow in accordance with Department of Transportation (DOT) and other regulatory agency
- EmS FIRE SCHEDULE : Not applicable
- EmS SPILLAGE SCHEDULE : Not applicable
- Air transport(IATA): Not subject to IATA regulations.

14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

- Not applicable

SECTION 15: REGULATORY INFORMATION

15.1. Safety, health and environmental regulation / legislation specific for the substance or mixture

15.1.1. Europe regulatory

15.1.1.1 REACH Restricted substance under REACH

- Not applicable

15.1.1.2 REACH Substances subject to authorization under REACH

- Not applicable

15.1.1.3 REACH SVHC

- Not applicable

15.1.1.4 Europe PBT

- Not applicable

15.1.1.5 European Union (EU) Transport of Dangerous Goods by Road - Dangerous Goods List

- Not applicable

15.2. Chemical Safety Assessment

- Not conducted

SECTION 16: OTHER INFORMATION

16.1. Indication of changes

- The Safety Data Sheet has been reviewed and the data therein were revised and laid out according the requirements of the Commission Regulation (EC) No. 1907/2006

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16.3. Key literature references and sources for data

- This Safety Data Sheet was compiled with data and information from the following sources: RTECS, ECOSAR, HSDB, SIDS SIAP, ChemWATCH, CESAR, Chemical DB

16.4. Classification procedure

- The mixture classification has been derived based on the classification of the individual components in accordance with the rules set out in Regulation (EC) No 1272/2008 (CLP) as well as the translation tables in Annex VII to the same regulation.

16.5. Training advice

- Not applicable

16.6. Further information

- The (M)SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings. Risks may be determined by reference to Exposures Scenarios. Scale of use, frequency of use and current or available engineering controls must be considered.

- This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only.

- It should not therefore be construed as guaranteeing any specific property of the product.

- Contact a poison control centre, List of Telephone Numbers : AUSTRIA (Vienna Wien) +43 1 406 43 43; BELGIUM (Brussels Bruxelles) +32 70 245 245; BULGARIA (Sofia) +359 2 9154 409; CZECH REPUBLIC (Prague Praha) +420 224 919 293; DENMARK (Copenhagen) 82 12 12 12; ESTONIA (Tallinn) 112; FINLAND (Helsinki) +358 9 471 977; FRANCE (Paris) +33 1 40 0548 48; GERMANY (Berlin) +49 30 19240; GREECE (Athens Athinai) +30 10 779 3777; HUNGARY (Budapest) 06 80 20 11 99; ICELAND (Reykjavik) +354 525 111, +354 543 2222; IRELAND (Dublin) +353 1 8379964; ITALY (Rome) +39 06 305 4343; LATVIA (Riga) +371 704 2468; LITHUANIA (Vilnius) +370 5 236 20 52 or +370 687 53378; MALTA (Valletta) 2425 0000; NETHERLANDS (Bilthoven) +31 30 274 88 88; NORWAY (Oslo) 22 591300; POLAND (Gdansk) +48 58301 65 16 or +48 58 349 2831; PORTUGAL (Lisbon Lisboa) 808 250 143; ROMANIA (Bucharest) +40 21 3183606 SLOVAKIA (Bratislava) +421 2 54 77 4166; SLOVENIA (Ljubljana) + 386 41 650 500; SPAIN (Barcelona) +34 93 227 98 33 or +34 93 227 54 00 bleep 190; SWEDEN (Stockholm) 112 or +46 8 33 12 31 (mon-fri 9.00-17.00); UNITED KINGDOM (London) 112 or 0845 4647 (NHS Direct).

• Disclaimer of Liability

This information is based on our present state of knowledge.

It should not therefore be construed as guaranteeing specific properties of the products

Described or their suitability for a particular application. YOU&I Corporation assumes

no responsibility for personal injury or property damage caused by the material.

Users assume all risks associated with the use of the material.

***** End of Documents

21741-2020

1/9

SAFETY DATA SHEET

According to Regulation (EC) No 1907/2006 (REACH), Annex II (COMMISSION REGULATION (EU) No 2015/830)



Date of issue: 2018-06-20

Revision date: 2022-06-21

SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING**1.1. Product identifier**

Trade name/designation : SGI- BLACK

1.2. Relevant identified uses of the substance or mixture and uses advised against**1.2.1. Relevant identified uses**

- Water-soluble stationary ink

1.2.2. Uses advised against

- Not available

1.3. Details of the supplier of the safety data sheet

Manufacturer/Supplier : YOU&I COPORATION
 Address : 53, EMTIBEUI 26-RO, SIHEUNG-SI, GYEONGGI-DO, KOREA (ZIP CODE) 15118
 Telephone : 82-31-494-2030
 Email : tech@youicolor.com

1.4. Emergency telephone number

82-31-494-2030 (This number is serviced during office hours only.)
 EU-wide emergency number : 112
 See section 16.6 for the list of telephone number of poison centers in the European Economic Area.

SECTION 2: HAZARD IDENTIFICATION**2.1. Classification of the substance/mixture**

2.1.1. Classification according to Regulation (EC) No 1272/2008 [CLP]
 H411-Aquatic Chronic 2

2.2. Label elements**2.2.1. Labelling according to Regulation (EC) No 1272/2008 [CLP]***** Hazard Pictogram(s)***** Signal word** : Warning*** Hazard statement(s)**
H411: Toxic to aquatic life with long-lasting effects*** Precautionary statement(s)****1) Prevention**

P273: Avoid release to the environment.

2) Response

P391: Collect spillage.

3) Storage

- Not applicable

4) Disposal

P501: Disposal contents/ container to in accordance with local national regulation.

2.3. Other hazards

- Not available

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS**3.1. Substances**

- Not applicable

3.2. Mixtures

Name	CAS No.	EINECS NO.	% [weight]	Classification [1272/2008/EC]
WATER	7732-18-5	231-791-2	40~60	Not classified
GLYCERINE	56-81-5	200-289-5	15~20	Not classified
ALUMINIUM POWDER	7429-90-5	231-072-3	3~7	   Flam. Solid 1, H228 Pyr. Liq. 1, H250 Water-react 2, H261 Specific target organ toxicity (repeated) 2, H373 Aquatic Chronic 1: H410 (M-factor: 1)
C.I. PIGMENT BLACK 7	1333-86-4	215-609-9	0~5	Not classified
POLY ETHYLENE GLYCOL	25322-68-3	500-038-2	10~15	 Acute toxicity (Oral) 4, H302
2-AMINO-2-METHYL-1-PROPANOL	124-68-5	204-709-8	0~1	 Aquatic Chronic 4, H413 Eye Irrit. 1, H318 Skin Irrit. 2, H315

SECTION 4: FIRST AID MEASURES

4.1. Description of first aid measures

General

- No general information.

Inhalation

- When exposed to large amounts of steam and mist, move to fresh air.
- Take specific treatment if needed.

Skin contact

- Flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes.
- Laundering enough contaminated clothing before reuse.

Eye contact

- Do not rub your eyes.
- Immediately flush eyes with plenty of water for at least 15 minutes and call a doctor/physician.

Ingestion

- Please be advised by doctor whether induction of vomit is demanded or not.
- Rinse your mouth with water immediately.

4.2. Most important symptoms and effects, both acute and delayed

- Not available

4.3. Indication of any immediate medical attention and special treatment needed

- Notify medical personnel of contaminated situations and have them take appropriate protective measures.

SECTION 5: FIREFIGHTING MEASURES

5.1. Extinguishing media

Suitable extinguishing media

- Water, foam, CO₂, NaHCO₃

Unsuitable extinguishing media

- Avoid use of water jet for extinguishing

5.2. Special hazards arising from the substance or mixture

Hazardous combustion products

- Not available

5.3. Advice for firefighters

- Cool containers with water until well after fire is out.
- Keep unauthorized personnel out.
- Withdraw immediately in case of rising sound from venting safety devices or discoloration of tank.
- Wear appropriate protective equipment.
- Keep containers cool with water spray.
- Use fire fighting procedures suitable for surrounding area.
- Vapor or gas is burned at distant ignition sources can be spread quickly.

SECTION 6: ACCIDENTAL RELEASE MEASURES**6.1. Personal Precautions, protective equipment and emergency procedures****6.1.1. For non-emergency personnel**

- Protective equipment: Wear proper protective equipment.
- Emergency procedures: Not applicable
- If required, notify relevant authorities according to all applicable regulations.

6.1.2. For emergency responders

- Ventilate closed spaces before entering.
- Must work against the wind, let the upwind people to evacuate.
- Do not touch spilled material. Stop leak if you can do it without risk.
- Handling the damaged containers or spilled material after wearing protective equipment.
- Do not direct water at spill or source of leak.

6.2. Environmental precautions

- Prevent runoff and contact with waterways, drains or sewers.
- If large amounts have been spilled, inform the relevant authorities.
- Avoid dispersal of spilt material and runoff and contact with waterways, drains and sewers. If large spills, advise

6.3. Methods and material for containment and cleaning up**6.3.1. For containment**

- Clear spills immediately
- Clean up all spills immediately.
- Prevent, by any means available, spillage from entering drains or water course.

6.3.2. For cleaning up

- Large spill : Stay upwind and keep out of low areas. Dike for later disposal.
- Notification to central government, local government. When emissions at least of the standard amount
- Dispose of waste in accordance with local regulation.
- Appropriate container for disposal of spilled material collected.
- Small leak: sand or other non-combustible material, please let use absorption.
- Wipe off the solvent.
- Dike for later disposal.

6.3.3. Other information

- Slippery when spilt.

6.4. Reference to other sections

- See Section 7 for information on safe handling.
- See Section 8 for information on personal protection equipment.
- See Section 13 for information on disposal.

SECTION 7: HANDLING AND STORAGE**7.1. Precautions for safe handling**

- Avoid direct physical contact.
- Get the manual before use.

- Refer to Engineering controls and personal protective equipment.
- Do not handle until all safety precautions have been read and understood.
- Do not inhale the steam prolonged or repeated.

7.2. Conditions for safe storage, including any incompatibilities

- Save in cool, dry and well ventilated place.
- Check regularly for leaks.
- Please pay attention to incompatibilities materials and conditions to avoid.
- Keep sealed when not in use.
- No open fire.

7.3. Specific end use(s)

- See Section 1 for information on 1.2 Relevant identified uses.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION**8.1. Control parameters****8.1.1. Occupational exposure limits****European Union (EU) Commission Directive 2006/15/EC (IOELVs)**

- Not available

European Union (EU) Commission Directive 2006/15/EC (IOELVs) - Skin

- Not available

8.1.2. Recommended Monitoring Procedures

- Personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment.

8.1.3. DNEL/PNEC - Values

- Not available

8.2. Exposure controls**8.2.1. Appropriate engineering controls**

- A system of local and/or general exhaust is recommended to keep employee exposures above the Exposure Limits. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. The use of local exhaust ventilation is recommended to control emissions near the source.

8.2.2. Individual protection measures, such as personal protective equipment**Hand protection**

- Wear appropriate glove.

Eye protection

- Wear primary eye protection such as splash resistant safety goggles with a secondary protection face shield.
- Provide an emergency eye wash station and quick drench shower in the immediate work area.

Respiratory Protection

- Under conditions of frequent use or heavy exposure, Respiratory protection may be needed.
- Respiratory protection is ranked in order from minimum to maximum.
- Consider warning properties before use.
- Any chemical cartridge respirator with organic vapor cartridge(s).
- Any chemical cartridge respirator with a full face piece and organic vapor cartridge(s).
- Any air-purifying respirator with a full face piece and an organic vapor canister.
- For Unknown Concentration or Immediately Dangerous to Life or Health : Any supplied-air respirator with full face piece and operated in a pressure-demand or other positive-pressure mode in combination with a separate escape supply. Any self-contained breathing apparatus with a full face piece.

Skin protection

- Wear appropriate clothing.

8.2.3 Environmental exposure controls

- Do not let product enter drains. For ecological information refer to section 12.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES**9.1. Information on basic physical and chemical properties**

Appearance(State)	Liquid
Appearance(Color)	BLACK
Odor	Odorless
Odor threshold	Not available
pH	8.0 ± 1.0
Melting point/Freezing point	Not available
Initial boiling point and boiling range	> 100 °C
Flash point	300 °C
Evaporation rate	Not available
Flammability(solid, gas)	Not applicable
Upper/Lower Flammability or explosive	Not available
Vapour pressure	Not available
Vapour density	Not available
Relative density	1.1 ± 0.05 g/cm ³
Solubility	Fully miscible
Partition coefficient of n-octanol/water	Not available
Autoignition temperature	No self-igniting
Decomposition temperature	Not available
Viscosity	650 ± 150 Cps
Explosive properties	Not explosive
Oxidizing properties	Not available

9.2. Other information

- Not available

SECTION 10: STABILITY AND REACTIVITY**10.1. Reactivity**

- Not available

10.2. Chemical Stability

- This material is stable under recommended storage and handling conditions.

10.3. Possibility of hazardous reactions

- Hazardous Polymerization will not occur.

10.4. Conditions to avoid

- Avoid contact with incompatible materials and condition.
- Avoid : Accumulation of electrostatic charges, Heating, Flames and hot surfaces

10.5. Incompatible materials

- Not available

10.6. Hazardous decomposition products

- Not available

SECTION 11: TOXICOLOGICAL INFORMATION**11.1. Acute toxicity****- Oral**

- Product (ATEmix) : >5000mg/kg
- [GLYCERINE] : LD50 = 12600 mg/kg Rat (ChemIDplus)
- [POLY ETHYLENE GLYCOL] : LD50 = 600 mg/kg Rat (KOSHA)

- Dermal

- Product (ATEmix) : >5000mg/kg
- [GLYCERINE] : LD50 > 10000 mg/kg Rat (ChemIDplus)

- **Inhalation**
 - Product (ATEmix) : Not available
 - [GLYCERINE] : LC50 >2.75 mg/ℓ 4 hr Rat (ECHA)

11.2. Skin corrosion/irritation

- [2-AMINO-2-METHYL-1-PROPANOL] : Classified as Category 2 (KOSHA)

11.3. Serious eye damage/irritation

- [2-AMINO-2-METHYL-1-PROPANOL] : Classified as Category 1 (KOSHA)

11.4. Respiratory sensitization

- Not available

11.5. Skin sensitization

- Not available

11.6. Germ cell mutagenicity

- Not available

11.7. Carcinogenicity

- **IARC**
 - Not available
- **OSHA**
 - Not available
- **ACGIH**
 - [ALUMINIUM POWDER] : A4 (KOSHA)
- **NTP**
 - Not available
- **EU CLP**
 - Not available

11.8. Reproductive toxicity

- Not available

11.9. Specific target organ toxicity(single exposure):

- Not available

11.10. Specific target organ toxicity(repeated exposure):

- [ALUMINIUM POWDER] : Classified as Category 2 (KOSHA)

11.11. Aspiration hazard

- Not available

SECTION 12: ECOLOGICAL INFORMATION**12.1. Toxicity****12.1.1. Fish**

- [GLYCERINE] : LC50 >11 mg/ℓ 96 hr Cyprinodon variegatus (ECHA)

12.1.2. Invertebrate

- [GLYCERINE] : LC50 1955 mg/ℓ 48 hr Daphnia magna (ECHA)
- [ALUMINIUM POWDER] : NOEC > 100 mg/ℓ 48 hr Daphnia magna (IUCLID)

12.1.3. Algae

- [ALUMINIUM POWDER] : NOEC > 0.052 mg/ℓ 48 hr Selenastrum capricornutum (M = 1) (OECD TG 201, GLP) (ECHA)

12.2. Persistence and degradability**12.2.1. Persistence**

- Not available

12.2.2. Degradability

- [2-AMINO-2-METHYL-1-PROPANOL] : BOD5/COD 0.005 (KOSHA)

12.3. Bioaccumulative potential**12.3.1. Bioaccumulation**

- [2-AMINO-2-METHYL-1-PROPANOL] : 1.3 BSAF (Leuciscus idus(Fish, fresh water), 50ug/) (KOSHA)

12.3.2. Biodegradability

- [2-AMINO-2-METHYL-1-PROPANOL] : 40 (%) 28 days (KOSHA)

12.4. Mobility in soil

- Not available

12.5. Results of PBT and vPvB assessment

- Not available

12.6. Other adverse effects

- Not available

SECTION 13: DISPOSAL CONSIDERATIONS**13.1. Waste treatment methods**

- Since more than two kinds of designated waste is mixed, it is difficult to treat separately, then can be reduction or stabilization by incineration or similar process.
- If water separation is possible, pre-process with Water separation process.
- Dispose by incineration.
- The user of this product must disposal by oneself or entrust to waste disposer or person who other's waste recycle and dispose, person who establish and operate waste disposal facilities.
- Dispose of waste in accordance with all applicable laws and regulations.

SECTION 14: TRANSPORT INFORMATION**14.1. UN No.****14.1.1. UN No. (ADR/RID/ADN)**

3082

14.1.2. UN No. (IMDG CODE/IATA DGR)

3082

14.1.3. UN No. (ICAO)

3082

14.2. UN proper shipping name

- Not applicable

14.3. Transport hazard class(es)**14.3.1. ADR/RID/ADN Class**

- Not applicable

14.3.2. ADR/RID/ADN Class

- Not applicable

14.3.3. ADR Label No.

- Not applicable

14.3.4. IMDG Class

- Not applicable

14.3.5. ICAO Class/Division

- Not applicable

14.3.6. Transport Labels

- Not applicable

14.4. Packing group**14.4.1. ADR/RID/ADN Packing group**

- Not applicable

14.4.2. IMDG Packing group

- Not applicable

14.4.3. ICAO Packing group

- Not applicable

14.5. Environmental hazards

- Not applicable

14.6. Special precautions for user

- Local transport follows in accordance with Dangerous goods Safety Management Law.
- Package and transport follow in accordance with Department of Transportation (DOT) and other regulatory agency
- EmS FIRE SCHEDULE : Not applicable
- EmS SPILLAGE SCHEDULE : Not applicable
- Air transport(IATA): Not subject to IATA regulations.

14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

- Not applicable

SECTION 15: REGULATORY INFORMATION**15.1. Safety, health and environmental regulation / legislation specific for the substance or mixture****15.1.1. Europe regulatory****15.1.1.1 REACH Restricted substance under REACH**

- Not applicable

15.1.1.2 REACH Substances subject to authorization under REACH

- Not applicable

15.1.1.3 REACH SVHC

- Not applicable

15.1.1.4 Europe PBT

- Not applicable

15.1.1.5 European Union (EU) Transport of Dangerous Goods by Road - Dangerous Goods List

- Not applicable

15.2. Chemical Safety Assessment

- Not conducted

SECTION 16: OTHER INFORMATION**16.1. Indication of changes**

- The Safety Data Sheet has been reviewed and the data therein were revised and laid out according the requirements of the Commission Regulation (EC) No. 1907/2006

16.2. Abbreviations and acronyms

- 1272/2008 CLP : Classification, Labelling and Packaging regulation.
- REACH : Registration, Evaluation and authorization of chemical substances.
- DNEL : Derive no effects level
- PNEC : Predicted no effect concentration

16.3. Key literature references and sources for data

- This Safety Data Sheet was compiled with data and information from the following sources: RTECS, ECOSAR, HSDB, SIDS SIAP, ChemWATCH, CESAR, Chemical DB

16.4. Classification procedure

- The mixture classification has been derived based on the classification of the individual components in accordance with the rules set out in Regulation (EC) No 1272/2008 (CLP) as well as the translation tables in Annex VII to the same regulation.

16.5. Training advice

- Not applicable

16.6. Further information

- The (M)SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings. Risks may be determined by reference to Exposures Scenarios. Scale of use, frequency of use and current or available engineering controls must be considered.

- This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only.

- It should not therefore be construed as guaranteeing any specific property of the product.

- Contact a poison control centre, List of Telephone Numbers : AUSTRIA (Vienna Wien) +43 1 406 43 43; BELGIUM (Brussels Bruxelles) +32 70 245 245; BULGARIA (Sofia) +359 2 9154 409; CZECH REPUBLIC (Prague Praha) +420 224 919 293; DENMARK (Copenhagen) 82 12 12 12; ESTONIA (Tallinn) 112; FINLAND (Helsinki) +358 9 471 977; FRANCE (Paris) +33 1 40 0548 48; GERMANY (Berlin) +49 30 19240; GREECE (Athens Athina) +30 10 779 3777; HUNGARY (Budapest) 06 80 20 11 99; ICELAND (Reykjavik) +354 525 111, +354 543 2222; IRELAND (Dublin) +353 1 8379964; ITALY (Rome) +39 06 305 4343; LATVIA (Riga) +371 704 2468; LITHUANIA (Vilnius) +370 5 236 20 52 or +370 687 53378; MALTA (Valletta) 2425 0000; NETHERLANDS (Bilthoven) +31 30 274 88 88; NORWAY (Oslo) 22 591300; POLAND (Gdansk) +48 58301 65 16 or +48 58 349 2831; PORTUGAL (Lisbon Lisboa) 808 250 143; ROMANIA (Bucharest) +40 21 3183606 SLOVAKIA (Bratislava) +421 2 54 77 4166; SLOVENIA (Ljubljana) + 386 41 650 500; SPAIN (Barcelona) +34 93 227 98 33 or +34 93 227 54 00 bleep 190; SWEDEN (Stockholm) 112 or +46 8 33 12 31 (mon-fri 9.00-17.00); UNITED KINGDOM (London) 112 or 0845 4647 (NHS Direct).

• Disclaimer of Liability

This information is based on our present state of knowledge.

It should not therefore be construed as guaranteeing specific properties of the products Described or their suitability for a particular application. YOU&I Corporation assumes no responsibility for personal injury or property damage caused by the material. Users assume all risks associated with the use of the material.

***** End of Documents

SAFETY DATA SHEET



Date of issue: 2019-07-04
Revision date: Not applicable

SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1. Product identifier

Trade name/designation : SGI- Y. BROWN 330

1.2. Relevant identified uses of the substance or mixture and uses advised against

1.2.1. Relevant identified uses

- Water-soluble stationary ink

1.2.2. Uses advised against

- Not available

1.3. Details of the supplier of the safety data sheet

Manufacturer/Supplier : YOU&I COPORATION
Address : 53, EMTIBEUI 26-RO, SIHEUNG-SI, GYEONGGI-DO, KOREA (ZIP CODE) 15118
Telephone : 82-31-494-2030
Email : tech@youicolor.com

1.4. Emergency telephone number

82-31-494-2030 (This number is serviced during office hours only.)
EU-wide emergency number : 112
See section 16.6 for the list of telephone number of poison centers in the European Economic Area.

SECTION 2: HAZARD IDENTIFICATION

A. GHS CLASSIFICATION

- Skin corrosion/irritation : Category3
- Serious eye damage/irritation : Category2A
- Carcinogenicity : Category2
- Specific target organ toxicity(Repeated exposure) : Category2
- Chronic aquatic toxicity : Category2

B. GHS LABEL ELEMENTS

Hazard symbols



Signal words

- Warning

Hazard statements

- H316 Cause mild skin irritation.
- H319 Causes serious eye irritation
- H351 Suspected of causing cancer
- H373 May cause damage to organs through prolonged or repeated exposure (Refer Section SDS 11)
- H411 Toxic to aquatic life with long lasting effects

Precautionary statements

1) Prevention

- P201 Obtain special instructions before use.
- P202 Do not handle until all safety precautions have been read and understood.
- P260 Do not breathe gas/mist/vapours/spray.
- P264 Wash hands thoroughly after handling.
- P273 Avoid release to the environment.

- P280 Wear protective gloves/protective clothing/eye protection/face protection.

2) Response

- P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- P308+P313 If exposed or concerned: Get medical advice/attention.
- P314 Get medical advice/attention if you feel unwell.
- P332+P313 If skin irritation occurs: Get medical advice/attention.
- P337+P313 If eye irritation persists: Get medical advice/attention.
- P391 Collect spillage.

3) Storage

- P405 Store locked up.

4) Disposal

- P501 Dispose of contents/container in accordance with local/regional/national/international regulation

C. Other hazards which do not result in classification : (NFPA Classification), (HMIS Classification)○ **NFPA grade (0 ~ 4 level)**

- Health : 2, Flammability : 1, Reactivity : 0

○ **HMIS ratings (0 ~ 4 level)**

- Health : 2, Flammability : 1, Reactivity : 0

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Name	Trade names and Synonyms	CAS No.	% [weight]
WATER	Not applicable	7732-18-5	40~60
GLYCERINE	Not applicable	56-81-5	15~20
ALUMINIUM POWDER	Not applicable	7429-90-5	3~7
POLY ETHYLENE GLYCOL	Not applicable	25322-68-3	10~15
C.I. PIGMENT YELLOW 83	Not applicable	5567-15-7	0~5
C.I. PIGMENT RED 170	Not applicable	2786-76-7	0~5
C.I. PIGMENT BLACK 7	Not applicable	1333-86-4	0~5
2-AMINO-2-METHYL-1-PROPANOL	Not applicable	124-68-5	0~1

4. FIRST AID MEASURES**A. Eye contact**

- Do not rub your eyes.
- Immediately flush eyes with plenty of water for at least 15 minutes and call a doctor/physician.
- Get medical attention immediately.
- Go to the hospital immediately if symptoms(flare, irritate) occur.
- Remove contact lenses if worn.

B. Skin contact

- Flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes.
- Wash contaminated clothing thoroughly before re-using.
- Get medical attention immediately.

C. Inhalation contact

- When exposed to large amounts of steam and mist, move to fresh air.
- Take specific treatment if needed.
- Get medical attention immediately.
- If breathing is stopped or irregular, give artificial respiration and supply oxygen.

D. Ingestion contact

- Please be advised by doctor whether induction of vomit is demanded or not.
- Rinse your mouth with water immediately.
- Get medical attention immediately.

E. Delayed and immediate effects and also chronic effects from short and long term exposure

- Not available

F. Notes to physician

- Notify medical personnel of contaminated situations and have them take appropriate protective measures.
- If exposed or concerned, get medical attention/advice.

5. FIREFIGHTING MEASURES**A. Suitable (Unsuitable) extinguishing media**

- Water, foam, CO₂, NaHCO₃
- Avoid use of water jet for extinguishing

B. Specific hazards arising from the chemical

- Not available

C. Special protective actions for firefighters

- Notify your local fire station and inform the location of the fire and characteristics hazard.
- Avoid inhalation of materials or combustion by-products.
- Do not access if the tank on fire.
- Use appropriate extinguishing measure suitable for surrounding fire.
- Wear appropriate protective equipment.
- Keep containers cool with water spray.
- Vapor or gas is burned at distant ignition sources can be spread quickly.

6. ACCIDENTAL RELEASE MEASURES**A. Personal precautions, protective equipment and emergency procedures**

- Wear proper personal protective apparatus as indicated in Section 8 and avoid skin contact and inhalation.
- Must work against the wind, let the upwind people to evacuate.
- Move container to safe area from the leak area.
- Do not direct water at spill or source of leak.
- Avoid skin contact and inhalation.
- Cleanup and disposal under expert supervision is advised.
- Keep unauthorized people away, isolate hazard area and deny entry.

B. Environmental precautions

- Prevent runoff and contact with waterways, drains or sewers.
- If large amounts have been spilled, inform the relevant authorities.

C. Methods and materials for containment and cleaning up

- Large spill : Stay upwind and keep out of low areas. Dike for later disposal.
- Notification to central government, local government. When emissions at least of the standard amount
- Dispose of waste in accordance with local regulation.
- Appropriate container for disposal of spilled material collected.
- Small leak: sand or other non-combustible material, please let use absorption.
- Wipe off the solvent.
- Dike for later disposal.
- Prevent the influx to waterways, sewers, basements or confined spaces.

D. PACs (Protective Action Criteria)

- o **PAC-1**
 - [POLY ETHYLENE GLYCOL] : 30 mg/m³
 - [C.I.PIGMENT BLACK 7] : 9 mg/m³
 - [2-AMINO-2-METHYL-1-PROPANOL] : 17 mg/m³
- o **PAC-2**
 - [POLY ETHYLENE GLYCOL] : 1,300 mg/m³
 - [C.I.PIGMENT BLACK 7] : 99 mg/m³
 - [2-AMINO-2-METHYL-1-PROPANOL] : 190 mg/m³

- **PAC-3**
- [POLY ETHYLENE GLYCOL] : 7,700 mg/m³
- [C.I.PIGMENT BLACK 7] : 590 mg/m³
- [2-AMINO-2-METHYL-1-PROPANOL] : 570 mg/m³

7. HANDLING AND STORAGE

A. Precautions for safe handling

- Avoid direct physical contact.
- Since emptied containers retain product residue(vapor, liquid, solid) follow all MSDS and label warnings even after container is emptied.
- Avoid contact with incompatible materials.
- Get the manual before use.
- Do not inhale the steam prolonged or repeated.
- Contaminated work clothing should not be allowed out of the workplace.

B. Conditions for safe storage, including any incompatibilities

- Do not apply any physical shock to container.
- Avoid direct sunlight.
- Keep in the original container.
- Please pay attention to incompatibilities materials and conditions to avoid.
- Keep sealed when not in use.
- By specifying a storage area for carcinogenic substances.
- Collected them in sealed containers.
- Store away from water and sewer.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

A. Exposure limits

- **ACGIH TLV**
 - [C.I.PIGMENT BLACK 7] : TWA, 3 mg/m³, Inhalable particulate matter
 - [ALUMINIUM POWDER] : TWA, 1 mg/m³, Respirable Particulate Matter
- **OSHA PEL**
 - [C.I.PIGMENT BLACK 7]: 3.5mg/m³
 - [ALUMINIUM POWDER]: 15 mg/m³ (Total dust), 5 mg/m³ (Respirable fraction)

B. Engineering controls

- Business owner is recommended to maintain below recommended exposure limits for the working place with general exhaust of gas/vapour/mist/fume.

C. Individual protection measures, such as personal protective equipment

- **Respiratory protection**
 - Under conditions of frequent use or heavy exposure, Respiratory protection may be needed.
 - Respiratory protection is ranked in order from minimum to maximum.
 - Consider warning properties before use.
 - Any chemical cartridge respirator with organic vapor cartridge(s).
 - Any chemical cartridge respirator with a full facepiece and organic vaporcartridge(s).
 - Any air-purifying respirator with a full facepiece and an organic vapor canister.
 - For Unknown Concentration or Immediately Dangerous to Life or Health : Any supplied-air respirator with full facepiece and operated in a pressure-demand or other positive-pressure mode in combination with a separate escape supply. Any self-contained breathing apparatus with a full facepiece.
- **Eye protection**
 - Wear primary eye protection such as splash resistant safety goggles with a secondary protection face shield.
 - Provide an emergency eye wash station and quick drench shower in the immediate work area.
- **Hand protection**
 - Wear appropriate glove.
- **Skin protection**
 - Wear appropriate clothing.
- **Others**

- Not available

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Appearance(State)	Liquid
Appearance(Color)	Y. BROWN
Odor	Odorless
Odor threshold	Not available
pH	8.0 ± 1.0
Melting point/Freezing point	Not available
Initial boiling point and boiling range	> 100 °C
Flash point	300 °C
Evaporation rate	Not available
Flammability(solid, gas)	Not applicable
Upper/Lower Flammability or explosive	Not available
Vapour pressure	Not available
Vapour density	Not available
Relative density	1.1 ± 0.05 g/cm ³
Solubility	Fully miscible
Partition coefficient of n-octanol/water	Not available
Autoignition temperature	No self-igniting
Decomposition temperature	Not available
Viscosity	650 ± 150 Cps
Explosive properties	Not explosive
Oxidizing properties	Not available

10. STABILITY AND REACTIVITY

A. Chemical Stability

- This material is stable under recommended storage and handling conditions.

B. Possibility of hazardous reactions

- Hazardous Polymerization will not occur.

C. Conditions to avoid

- Avoid contact with incompatible materials and condition.
- Avoid : Accumulation of electrostatic charges, Heating, Flames and hot surfaces

D. Incompatible materials

- Not available

E. Hazardous decomposition products

- May emit flammable vapour if involved in fire.

11. TOXICOLOGICAL INFORMATION

A. Information on the likely routes of exposure

- (Respiratory tracts)
 - Not available
- (Oral)
 - Not available
- (Eye-Skin)
 - Cause mild skin irritation.
 - Causes serious eye irritation

B. Delayed and immediate effects and also chronic effects from short and long term exposure

- Acute toxicity

*** Oral**

- Product (ATEmix) : >5,000mg/kg
- [WATER] : LD50 > 90,000 mg/kg Rat (KOSHA)
- [POLY ETHYLENE GLYCOL] : LD50 = 600 mg/kg Rat (NLM: ChemIDPLus)
- [C.I.PIGMENT BLACK 7] : LD50 = 15,400 mg/kg Rat (NITE(2006))
- [C.I.PIGMENT YELLOW 83] : LD50 > 5,000 mg/kg Rat (IUCLID; THOMSON)
- [ALUMINIUM POWDER] : LD50 > 15,900 mg/kg Rat (OECD TG 401)
- [2-AMINO-2-METHYL-1-PROPANOL] : LD50 = 2,900 mg/kg Rat (NITE)

*** Dermal**

- Product (ATEmix) : >5,000mg/kg
- [C.I.PIGMENT BLACK 7] : LD50 > 3,000 mg/kg rabbit (NITE)
- [2-AMINO-2-METHYL-1-PROPANOL] : LD50 > 2,000 mg/kg Rabbit (IUCLID)

*** Inhalation**

- Product (ATEmix) : Not available
- [ALUMINIUM POWDER] : Dust LC50 > 0.888 mg/L 4 hr Rat (OECD TG 403, GLP)

 Skin corrosion/irritation

- Cause mild skin irritation.

 Serious eye damage/irritation

- Causes serious eye irritation

 Respiratory sensitization

- Not available

 Skin sensitization

- Not available

 Carcinogenicity*** IARC**

- [C.I.PIGMENT BLACK 7] : Group 2B

*** OSHA**

- Not available

*** ACGIH**

- [C.I.PIGMENT BLACK 7] : A3
- [ALUMINIUM POWDER] : A4

*** NTP**

- Not available

*** EU CLP**

- Not available

 Germ cell mutagenicity

- Not available

 Reproductive toxicity

- Not available

 STOT-single exposure

- Not available

 STOT-repeated exposure

- May cause damage to organs through prolonged or repeated exposure

 Aspiration hazard

- Not available

12. ECOLOGICAL INFORMATION**A. Ecotoxicity** **Fish**

- [POLY ETHYLENE GLYCOL] : LC50 > 20,000 mg/L 96 hr Oncorhynchus mykiss (ECOTOX)
- [C.I.PIGMENT RED 170] : LC50 = 0.217 mg/L 96 hr (Estimate)
- [C.I.PIGMENT YELLOW 83] : LC50 = 45 mg/L 48 hr Oncorhynchus mykiss (ECOTOX)

 Crustaceans

- [C.I.PIGMENT BLACK 7] : EC50 > 5,600 mg/L 24 hr (NITE)
- [C.I.PIGMENT RED 170] : LC50 = 0.545 mg/L 48 hr (Estimate)
- [ALUMINIUM POWDER] : NOEC > 100 mg/L 48 hr Daphnia magna (IUCLID)

○ **Algae**

- [C.I.PIGMENT RED 170] : EC50 = 0.060 mg/L 96 hr (Estimate)
- [ALUMINIUM POWDER] : NOEC ≥ 0.052 mg/L 72 hr Selenastrum capricornutum (OECD TG 201, GLP)

B. Persistence and degradability

○ **Persistence**

- [WATER] : log Kow -1.38
- [C.I.PIGMENT RED 170] : log Kow 6.04 (Estimate)
- [C.I.PIGMENT YELLOW 83] : log Kow 7.54 (IUCLID)

○ **Degradability**

- [C.I.PIGMENT YELLOW 83] : log Kow 7.54 (IUCLID)
- [2-AMINO-2-METHYL-1-PROPANOL] : BOD5/COD = 0.005

C. Bioaccumulative potential

○ **Bioaccumulative potential**

- [2-AMINO-2-METHYL-1-PROPANOL] : BCF 1 ~ 3 (Leuciscus idus(Fish, fresh water), 50ug/l)
- [C.I.PIGMENT YELLOW 83] : BCF 10 (Estimate)
- [C.I.PIGMENT RED 170] : BCF 10 (Estimate)

○ **Biodegradation**

- [C.I.PIGMENT YELLOW 83] : Biodegradability = 6 (%) 28 day (Non-biodegradability) (NITE)
- [2-AMINO-2-METHYL-1-PROPANOL] : Biodegradability = 40 (%) 28 day (NITE)

D. Mobility in soil

- Not available

E. Other adverse effects

- Not available

13. DISPOSAL CONSIDERATIONS

A. Disposal methods

- Since more than two kinds of designated waste is mixed, it is difficult to treat separately, then can be reduction or stabilization by incineration or similar process.
- If water separation is possible, pre-process with Water separation process.
- Dispose by incineration.

B. Special precautions for disposal

- The user of this product must dispose by oneself or entrust it to a waste disposer, a person who recycles other's waste or establishes and operates waste disposal facilities.
- Dispose of waste in accordance with all applicable laws and regulations.

14. TRANSPORT INFORMATION

A. UN No. (IMDG CODE/IATA DGR)

- 3082

B. Proper shipping name

- ENVIRONMENTALLY HAZARDOUS SUBSTANCES, LIQUID, N.O.S.

C. Hazard Class

- 9

D. IMDG CODE/IATA DGR Packing group

- III

E. Marine pollutant

- Applicable

F. Special precautions for user related to transport or transportation measures

- Local transport follows in accordance with Dangerous goods Safety Management Law.
- Package and transport follow in accordance with Department of Transportation (DOT) and other regulatory agency requirements.
- EmS FIRE SCHEDULE : F-A (General fire schedule)
- EmS SPILLAGE SCHEDULE : S-F (Water-soluble marine pollutants)

15. REGULATORY INFORMATION**A. National and/or international regulatory information**

- POPs Management Law**
 - Not applicable
- Information of EU Classification**
 - * **Classification**
 - [ALUMINIUM POWDER] : H261, H250, H228
 - [2-AMINO-2-METHYL-1-PROPANOL] : H319, H315, H412
- U.S. Federal regulations**
 - * **OSHA PROCESS SAFETY (29CFR1910.119)**
 - Not applicable
 - * **CERCLA Section 103 (40CFR302.4)**
 - Not applicable
 - * **EPCRA Section 302 (40CFR355.30)**
 - Not applicable
 - * **EPCRA Section 304 (40CFR355.40)**
 - Not applicable
 - * **EPCRA Section 313 (40CFR372.65)**
 - [ALUMINIUM POWDER] : Applicable
- Rotterdam Convention listed ingredients**
 - Not applicable
- Stockholm Convention listed ingredients**
 - Not applicable
- Montreal Protocol listed ingredients**
 - Not applicable

16. OTHER INFORMATION**A. Reference**

- The information contained herein is believed to be accurate. It is provided independently of any sale of the product for purpose of hazard communication. It is not intended to constitute performance information concerning the product. No express warranty, or implied warranty of merchantability or fitness for a particular purpose is made with respect to the product or the information contained herein.
- This Safety Data Sheet was compiled with data and information from the following sources: KOSHA, NITE, ESIS, NLM, SIDS, IPCS

Disclaimer of Liability

This information is based on our present state of knowledge. It should not therefore be construed as guaranteeing specific properties of the products Described or their suitability for a particular application. YOU&I Corporation assumes no responsibility for personal injury or property damage caused by the material. Users assume all risks associated with the use of the material.

***** End of Documents

SAFETY DATA SHEET



Date of issue: 2019-07-04
Revision date: Not applicable

SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1. Product identifier

Trade name/designation : SGI- T.BLUE 330

1.2. Relevant identified uses of the substance or mixture and uses advised against

1.2.1. Relevant identified uses

- Water-soluble stationary ink

1.2.2. Uses advised against

- Not available

1.3. Details of the supplier of the safety data sheet

Manufacturer/Supplier : YOU&I COPORATION
Address : 53, EMTIBEUI 26-RO, SIHEUNG-SI, GYEONGGI-DO, KOREA (ZIP CODE) 15118
Telephone : 82-31-494-2030
Email : tech@youicolor.com

1.4. Emergency telephone number

82-31-494-2030 (This number is serviced during office hours only.)
EU-wide emergency number : 112
See section 16.6 for the list of telephone number of poison centers in the European Economic Area.

SECTION 2: HAZARD IDENTIFICATION

A. GHS CLASSIFICATION

- Skin corrosion/irritation : Category3
- Serious eye damage/irritation : Category2A
- Carcinogenicity : Category2
- Specific target organ toxicity(Repeated exposure) : Category2
- Chronic aquatic toxicity : Category2

B. GHS LABEL ELEMENTS

Hazard symbols



Signal words

- Warning

Hazard statements

- H316 Cause mild skin irritation.
- H319 Causes serious eye irritation
- H351 Suspected of causing cancer
- H373 May cause damage to organs through prolonged or repeated exposure (Refer Section SDS 11)
- H411 Toxic to aquatic life with long lasting effects

Precautionary statements

1) Prevention

- P201 Obtain special instructions before use.
- P202 Do not handle until all safety precautions have been read and understood.
- P260 Do not breathe gas/mist/vapours/spray.
- P264 Wash hands thoroughly after handling.
- P273 Avoid release to the environment.

- P280 Wear protective gloves/protective clothing/eye protection/face protection.

2) Response

- P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- P308+P313 If exposed or concerned: Get medical advice/attention.
- P314 Get medical advice/attention if you feel unwell.
- P332+P313 If skin irritation occurs: Get medical advice/attention.
- P337+P313 If eye irritation persists: Get medical advice/attention.
- P391 Collect spillage.

3) Storage

- P405 Store locked up.

4) Disposal

- P501 Dispose of contents/container in accordance with local/regional/national/international regulation

C. Other hazards which do not result in classification : (NFPA Classification), (HMIS Classification)○ **NFPA grade (0 ~ 4 level)**

- Health : 2, Flammability : 1, Reactivity : 0

○ **HMIS ratings (0 ~ 4 level)**

- Health : 2, Flammability : 1, Reactivity : 0

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Name	Trade names and Synonyms	CAS No.	% [weight]
WATER	Not applicable	7732-18-5	40~60
GLYCERINE	Not applicable	56-81-5	15~20
ALUMINIUM POWDER	Not applicable	7429-90-5	3~7
POLY ETHYLENE GLYCOL	Not applicable	25322-68-3	10~15
C.I. PIGMENT BLUE 15:3	Not applicable	147-14-8	0~5
C.I. PIGMENT GREEN 7	Not applicable	1328-53-6	0~5
2-AMINO-2-METHYL-1-PROPANOL	Not applicable	124-68-5	0~1

4. FIRST AID MEASURES**A. Eye contact**

- Do not rub your eyes.
- Immediately flush eyes with plenty of water for at least 15 minutes and call a doctor/physician.
- Get medical attention immediately.
- Go to the hospital immediately if symptoms(flare, irritate) occur.
- Remove contact lenses if worn.

B. Skin contact

- Flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes.
- Wash contaminated clothing thoroughly before re-using.
- Get medical attention immediately.

C. Inhalation contact

- When exposed to large amounts of steam and mist, move to fresh air.
- Take specific treatment if needed.
- Get medical attention immediately.
- If breathing is stopped or irregular, give artificial respiration and supply oxygen.

D. Ingestion contact

- Please be advised by doctor whether induction of vomit is demanded or not.
- Rinse your mouth with water immediately.
- Get medical attention immediately.

E. Delayed and immediate effects and also chronic effects from short and long term exposure

- Not available

F. Notes to physician

- Notify medical personnel of contaminated situations and have them take appropriate protective measures.
- If exposed or concerned, get medical attention/advice.

5. FIREFIGHTING MEASURES**A. Suitable (Unsuitable) extinguishing media**

- Water, foam, CO₂, NaHCO₃
- Avoid use of water jet for extinguishing

B. Specific hazards arising from the chemical

- Not available

C. Special protective actions for firefighters

- Notify your local firestation and inform the location of the fire and characteristics hazard.
- Avoid inhalation of materials or combustion by-products.
- Do not access if the tank on fire.
- Use appropriate extinguishing measure suitable for surrounding fire.
- Wear appropriate protective equipment.
- Keep containers cool with water spray.
- Vapor or gas is burned at distant ignition sources can be spread quickly.

6. ACCIDENTAL RELEASE MEASURES**A. Personal precautions, protective equipment and emergency procedures**

- Wear proper personal protective apparatus as indicated in Section 8 and avoid skin contact and inhalation.
- Must work against the wind, let the upwind people to evacuate.
- Move container to safe area from the leak area.
- Do not direct water at spill or source of leak.
- Avoid skin contact and inhalation.
- Cleanup and disposal under expert supervision is advised.
- Keep unauthorized people away, isolate hazard area and deny entry.

B. Environmental precautions

- Prevent runoff and contact with waterways, drains or sewers.
- If large amounts have been spilled, inform the relevant authorities.

C. Methods and materials for containment and cleaning up

- Large spill : Stay upwind and keep out of low areas. Dike for later disposal.
- Notification to central government, local government. When emissions at least of the standard amount
- Dispose of waste in accordance with local regulation.
- Appropriate container for disposal of spilled material collected.
- Small leak: sand or other non-combustible material, please let use absorption.
- Wipe off the solvent.
- Dike for later disposal.
- Prevent the influx to waterways, sewers, basements or confined spaces.

D. PACs (Protective Action Criteria)

- o **PAC-1**
 - [POLY ETHYLENE GLYCOL] : 30 mg/m³
 - [2-AMINO-2-METHYL-1-PROPANOL] : 17 mg/m³
- o **PAC-2**
 - [POLY ETHYLENE GLYCOL] : 1,300 mg/m³
 - [2-AMINO-2-METHYL-1-PROPANOL] : 190 mg/m³
- o **PAC-3**

- [POLY ETHYLENE GLYCOL] : 7,700 mg/m³
- [2-AMINO-2-METHYL-1-PROPANOL] : 570 mg/m³

7. HANDLING AND STORAGE

A. Precautions for safe handling

- Avoid direct physical contact.
- Since emptied containers retain product residue(vapor, liquid, solid) follow all MSDS and label warnings even after container is emptied.
- Avoid contact with incompatible materials.
- Get the manual before use.
- Do not inhale the steam prolonged or repeated.
- Contaminated work clothing should not be allowed out of the workplace.

B. Conditions for safe storage, including any incompatibilities

- Do not apply any physical shock to container.
- Avoid direct sunlight.
- Keep in the original container.
- Please pay attention to incompatibilities materials and conditions to avoid.
- Keep sealed when not in use.
- By specifying a storage area for carcinogenic substances.
- Collected them in sealed containers.
- Store away from water and sewer.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

A. Exposure limits

- ACGIH TLV**
 - [ALUMINIUM POWDER] : TWA, 1 mg/m³, Respirable Particulate Matter
- OSHA PEL**
 - [ALUMINIUM POWDER]: 15 mg/m³ (Total dust), 5 mg/m³ (Respirable fraction)

B. Engineering controls

- Business owner is recommended to maintain below recommended exposure limits for the working place with general exhaust of gas/vapour/mist/fume.

C. Individual protection measures, such as personal protective equipment

- Respiratory protection**
 - Under conditions of frequent use or heavy exposure, Respiratory protection may be needed.
 - Respiratory protection is ranked in order from minimum to maximum.
 - Consider warning properties before use.
 - Any chemical cartridge respirator with organic vapor cartridge(s).
 - Any chemical cartridge respirator with a full facepiece and organic vaporcartridge(s).
 - Any air-purifying respirator with a full facepiece and an organic vapor canister.
 - For Unknown Concentration or Immediately Dangerous to Life or Health : Any supplied-air respirator with full facepiece and operated in a pressure-demand or other positive-pressure mode in combination with a separate escape supply. Any self-contained breathing apparatus with a full facepiece.
- Eye protection**
 - Wear primary eye protection such as splash resistant safety goggles with a secondary protection face shield.
 - Provide an emergency eye wash station and quick drench shower in the immediate work area.
- Hand protection**
 - Wear appropriate glove.
- Skin protection**
 - Wear appropriate clothing.
- Others**
 - Not available

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance(State)	Liquid
Appearance(Color)	T. BLUE
Odor	Odorless
Odor threshold	Not available
pH	8.0 ± 1.0
Melting point/Freezing point	Not available
Initial boiling point and boiling range	> 100 °C
Flash point	300 °C
Evaporation rate	Not available
Flammability(solid, gas)	Not applicable
Upper/Lower Flammability or explosive	Not available
Vapour pressure	Not available
Vapour density	Not available
Relative density	1.1 ± 0.05 g/cm3
Solubility	Fully miscible
Partition coefficient of n-octanol/water	Not available
Autoignition temperature	No self-igniting
Decomposition temperature	Not available
Viscosity	650 ± 150 Cps
Explosive properties	Not explosive
Oxidizing properties	Not available

10. STABILITY AND REACTIVITY

A. Chemical Stability

- This material is stable under recommended storage and handling conditions.

B. Possibility of hazardous reactions

- Hazardous Polymerization will not occur.

C. Conditions to avoid

- Avoid contact with incompatible materials and condition.
- Avoid : Accumulation of electrostatic charges, Heating, Flames and hot surfaces

D. Incompatible materials

- Not available

E. Hazardous decomposition products

- May emit flammable vapour if involved in fire.

11. TOXICOLOGICAL INFORMATION

A. Information on the likely routes of exposure

- (Respiratory tracts)
 - Not available
- (Oral)
 - Not available
- (Eye-Skin)
 - Cause mild skin irritation.
 - Causes serious eye irritation

B. Delayed and immediate effects and also chronic effects from short and long term exposure

- Acute toxicity
 - * Oral
 - Product (ATEmix) : >5,000mg/kg
 - [WATER] : LD50 > 90,000 mg/kg Rat (KOSHA)
 - [POLY ETHYLENE GLYCOL] : LD50 = 600 mg/kg Rat (NLM: ChemIDPlus)
 - [C.I.PIGMENT GREEN 7] : LD50 > 3,000 mg/kg Rat (IUCLID)

- [C.I. PIGMENT BLUE 15:3] : LD50 > 6,400 mg/kg Rat (IUCLID)
- [ALUMINIUM POWDER] : LD50 > 15,900 mg/kg Rat (OECD TG 401)
- [2-AMINO-2-METHYL-1-PROPANOL] : LD50 = 2,900 mg/kg Rat (NITE)

*** Dermal**

- Product (ATEmix) : >5,000mg/kg
- [C.I. PIGMENT BLUE 15:3] : LD50 >5,000 mg/kg Rabbit (OECD TG 402)
- [2-AMINO-2-METHYL-1-PROPANOL] : LD50 > 2,000 mg/kg Rabbit (IUCLID)

*** Inhalation**

- Product (ATEmix) : Not available
- [ALUMINIUM POWDER] : Dust LC50 > 0.888 mg/L 4 hr Rat (OECD TG 403, GLP)

Skin corrosion/irritation

- Cause mild skin irritation.

Serious eye damage/irritation

- Causes serious eye irritation

Respiratory sensitization

- Not available

Skin sensitization

- Not available

Carcinogenicity

*** IARC**

- Not available

*** OSHA**

- Not available

*** ACGIH**

- [ALUMINIUM POWDER] : A4

*** NTP**

- Not available

*** EU CLP**

- Not available

Germ cell mutagenicity

- Not available

Reproductive toxicity

- Not available

STOT-single exposure

- Not available

STOT-repeated exposure

- May cause damage to organs through prolonged or repeated exposure

Aspiration hazard

- Not available

12. ECOLOGICAL INFORMATION

A. Ecotoxicity

Fish

- [POLY ETHYLENE GLYCOL] : LC50 >20,000 mg/L 96 hr Oncorhynchus mykiss (ECOTOX)
- [C.I. PIGMENT BLUE 15:3] : LC50 = 100 ~ 355.6 mg/L 96 hr (ECHA)
- [C.I.PIGMENT GREEN 7] : LC50 = 355.6 mg/L 96 hr Salmo gairdneri (SIDS)

Crustaceans

- [C.I.PIGMENT GREEN 7] : EC50 = 153.6 mg/L Daphnia magna (SIDS)
- [ALUMINIUM POWDER] : NOEC > 100 mg/L 48 hr Daphnia magna (IUCLID)

Algae

- [ALUMINIUM POWDER] : NOEC ≥ 0.052 mg/L 72 hr Selenastrum capricornutum (OECD TG 201, GLP)

B. Persistence and degradability

Persistence

- [WATER] : log Kow -1.38
- [C.I. PIGMENT BLUE 15:3] : log Kow 6.60 (Estimate)
- [C.I.PIGMENT GREEN 7] : log Kow 7.4 (SIDS)

○ **Degradability**

- [2-AMINO-2-METHYL-1-PROPANOL] : BOD5/COD = 0.005

C. Bioaccumulative potential

○ **Bioaccumulative potential**

- [C.I. PIGMENT BLUE 15:3] : BCF 0.33 ~ 11 (OECD 305C, IUCLID)
- [C.I.PIGMENT GREEN 7] : BCF 2.1 (SIDS)
- [2-AMINO-2-METHYL-1-PROPANOL] : BCF 1 ~ 3 (Leuciscus idus(Fish, fresh water), 50ug/l)

○ **Biodegradation**

- [C.I. PIGMENT BLUE 15:3] : Biodegradability = 1 (%) 28 day (IUCLID), water solubility : 4~9 ug/L (ECHA)
- [2-AMINO-2-METHYL-1-PROPANOL] : Biodegradability = 40 (%) 28 day (NITE)

D. Mobility in soil

- Not available

E. Other adverse effects

- Not available

13. DISPOSAL CONSIDERATIONS

A. Disposal methods

- Since more than two kinds of designated waste is mixed, it is difficult to treat separately, then can be reduction or stabilization by incineration or similar process.
- If water separation is possible, pre-process with Water separation process.
- Dispose by incineration.

B. Special precautions for disposal

- The user of this product must dispose by oneself or entrust it to a waste disposer, a person who recycles other's waste or establishes and operates waste disposal facilities.
- Dispose of waste in accordance with all applicable laws and regulations.

14. TRANSPORT INFORMATION

A. UN No. (IMDG CODE/IATA DGR)

- 3082

B. Proper shipping name

- ENVIRONMENTALLY HAZARDOUS SUBSTANCES, LIQUID, N.O.S.

C. Hazard Class

- 9

D. IMDG CODE/IATA DGR Packing group

- III

E. Marine pollutant

- Applicable

F. Special precautions for user related to transport or transportation measures

- Local transport follows in accordance with Dangerous goods Safety Management Law.
- Package and transport follow in accordance with Department of Transportation (DOT) and other regulatory agency requirements.
- EmS FIRE SCHEDULE : F-A (General fire schedule)
- EmS SPILLAGE SCHEDULE : S-F (Water-soluble marine pollutants)

15. REGULATORY INFORMATION

A. National and/or international regulatory information

- **POPs Management Law**
 - Not applicable
- **Information of EU Classification**
 - * **Classification**
 - [ALUMINIUM POWDER] : H261, H250, H228
 - [2-AMINO-2-METHYL-1-PROPANOL] : H319, H315, H412
- **U.S. Federal regulations**
 - * **OSHA PROCESS SAFETY (29CFR1910.119)**
 - Not applicable
 - * **CERCLA Section 103 (40CFR302.4)**
 - Not applicable
 - * **EPCRA Section 302 (40CFR355.30)**
 - Not applicable
 - * **EPCRA Section 304 (40CFR355.40)**
 - Not applicable
 - * **EPCRA Section 313 (40CFR372.65)**
 - [ALUMINIUM POWDER] : Applicable
- **Rotterdam Convention listed ingredients**
 - Not applicable
- **Stockholm Convention listed ingredients**
 - Not applicable
- **Montreal Protocol listed ingredients**
 - Not applicable

16. OTHER INFORMATION

A. Reference

- The information contained herein is believed to be accurate. It is provided independently of any sale of the product for purpose of hazard communication. It is not intended to constitute performance information concerning the product. No express warranty, or implied warranty of merchantability or fitness for a particular purpose is made with respect to the product or the information contained herein.

- This Safety Data Sheet was compiled with data and information from the following sources: KOSHA, NITE, ESIS, NLM, SIDS, IPCS

Disclaimer of Liability

This information is based on our present state of knowledge.

It should not therefore be construed as guaranteeing specific properties of the products

Described or their suitability for a particular application. YOU&I Corporation assumes

no responsibility for personal injury or property damage caused by the material.

Users assume all risks associated with the use of the material.

***** End of Documents

SAFETY DATA SHEET



Date of issue: 2019-07-04
Revision date: Not applicable

SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1. Product identifier

Trade name/designation : SGI- ROSE 330

1.2. Relevant identified uses of the substance or mixture and uses advised against

1.2.1. Relevant identified uses

- Water-soluble stationary ink

1.2.2. Uses advised against

- Not available

1.3. Details of the supplier of the safety data sheet

Manufacturer/Supplier : YOU&I COPORATION
Address : 53, EMTIBEUI 26-RO, SIHEUNG-SI, GYEONGGI-DO, KOREA (ZIP CODE) 15118
Telephone : 82-31-494-2030
Email : tech@youicolor.com

1.4. Emergency telephone number

82-31-494-2030 (This number is serviced during office hours only.)

EU-wide emergency number : 112

See section 16.6 for the list of telephone number of poison centers in the European Economic Area.

SECTION 2: HAZARD IDENTIFICATION

A. GHS CLASSIFICATION

- Skin corrosion/irritation : Category3
- Serious eye damage/irritation : Category2A
- Carcinogenicity : Category2
- Specific target organ toxicity(Repeated exposure) : Category2
- Chronic aquatic toxicity : Category2

B. GHS LABEL ELEMENTS

 Hazard symbols Signal words

- Warning

 Hazard statements

- H316 Cause mild skin irritation.
- H319 Causes serious eye irritation
- H351 Suspected of causing cancer
- H373 May cause damage to organs through prolonged or repeated exposure (Refer Section SDS 11)
- H411 Toxic to aquatic life with long lasting effects

 Precautionary statements

1) Prevention

- P201 Obtain special instructions before use.
- P202 Do not handle until all safety precautions have been read and understood.
- P260 Do not breathe gas/mist/vapours/spray.
- P264 Wash hands thoroughly after handling.
- P273 Avoid release to the environment.

- P280 Wear protective gloves/protective clothing/eye protection/face protection.

2) Response

- P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- P308+P313 If exposed or concerned: Get medical advice/attention.
- P314 Get medical advice/attention if you feel unwell.
- P332+P313 If skin irritation occurs: Get medical advice/attention.
- P337+P313 If eye irritation persists: Get medical advice/attention.
- P391 Collect spillage.

3) Storage

- P405 Store locked up.

4) Disposal

- P501 Dispose of contents/container in accordance with local/regional/national/international regulation

C. Other hazards which do not result in classification : (NFPA Classification), (HMIS Classification)○ **NFPA grade (0 ~ 4 level)**

- Health : 2, Flammability : 1, Reactivity : 0

○ **HMIS ratings (0 ~ 4 level)**

- Health : 2, Flammability : 1, Reactivity : 0

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Name	Trade names and Synonyms	CAS No.	% [weight]
WATER	Not applicable	7732-18-5	40~60
GLYCERINE	Not applicable	56-81-5	15~20
ALUMINIUM POWDER	Not applicable	7429-90-5	3~7
POLY ETHYLENE GLYCOL	Not applicable	25322-68-3	10~15
C.I. PIGMENT RED 122	Not applicable	980-26-7	0~5
C.I. PIGMENT RED 170	Not applicable	2786-76-7	0~5
2-AMINO-2-METHYL-1-PROPANOL	Not applicable	124-68-5	0~1

4. FIRST AID MEASURES**A. Eye contact**

- Do not rub your eyes.
- Immediately flush eyes with plenty of water for at least 15 minutes and call a doctor/physician.
- Get medical attention immediately.
- Go to the hospital immediately if symptoms(flare, irritate) occur.
- Remove contact lenses if worn.

B. Skin contact

- Flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes.
- Wash contaminated clothing thoroughly before re-using.
- Get medical attention immediately.

C. Inhalation contact

- When exposed to large amounts of steam and mist, move to fresh air.
- Take specific treatment if needed.
- Get medical attention immediately.
- If breathing is stopped or irregular, give artificial respiration and supply oxygen.

D. Ingestion contact

- Please be advised by doctor whether induction of vomit is demanded or not.
- Rinse your mouth with water immediately.
- Get medical attention immediately.

E. Delayed and immediate effects and also chronic effects from short and long term exposure

- Not available

F. Notes to physician

- Notify medical personnel of contaminated situations and have them take appropriate protective measures.
- If exposed or concerned, get medical attention/advice.

5. FIREFIGHTING MEASURES**A. Suitable (Unsuitable) extinguishing media**

- Water, foam, CO₂, NaHCO₃
- Avoid use of water jet for extinguishing

B. Specific hazards arising from the chemical

- Not available

C. Special protective actions for firefighters

- Notify your local firestation and inform the location of the fire and characteristics hazard.
- Avoid inhalation of materials or combustion by-products.
- Do not access if the tank on fire.
- Use appropriate extinguishing measure suitable for surrounding fire.
- Wear appropriate protective equipment.
- Keep containers cool with water spray.
- Vapor or gas is burned at distant ignition sources can be spread quickly.

6. ACCIDENTAL RELEASE MEASURES**A. Personal precautions, protective equipment and emergency procedures**

- Wear proper personal protective apparatus as indicated in Section 8 and avoid skin contact and inhalation.
- Must work against the wind, let the upwind people to evacuate.
- Move container to safe area from the leak area.
- Do not direct water at spill or source of leak.
- Avoid skin contact and inhalation.
- Cleanup and disposal under expert supervision is advised.
- Keep unauthorized people away, isolate hazard area and deny entry.

B. Environmental precautions

- Prevent runoff and contact with waterways, drains or sewers.
- If large amounts have been spilled, inform the relevant authorities.

C. Methods and materials for containment and cleaning up

- Large spill : Stay upwind and keep out of low areas. Dike for later disposal.
- Notification to central government, local government. When emissions at least of the standard amount
- Dispose of waste in accordance with local regulation.
- Appropriate container for disposal of spilled material collected.
- Small leak: sand or other non-combustible material, please let use absorption.
- Wipe off the solvent.
- Dike for later disposal.
- Prevent the influx to waterways, sewers, basements or confined spaces.

D. PACs (Protective Action Criteria)

- o **PAC-1**
 - [POLY ETHYLENE GLYCOL] : 30 mg/m³
 - [2-AMINO-2-METHYL-1-PROPANOL] : 17 mg/m³
- o **PAC-2**
 - [POLY ETHYLENE GLYCOL] : 1,300 mg/m³
 - [2-AMINO-2-METHYL-1-PROPANOL] : 190 mg/m³
- o **PAC-3**

- [POLY ETHYLENE GLYCOL] : 7,700 mg/m³
- [2-AMINO-2-METHYL-1-PROPANOL] : 570 mg/m³

7. HANDLING AND STORAGE

A. Precautions for safe handling

- Avoid direct physical contact.
- Since emptied containers retain product residue(vapor, liquid, solid) follow all MSDS and label warnings even after container is emptied.
- Avoid contact with incompatible materials.
- Get the manual before use.
- Do not inhale the steam prolonged or repeated.
- Contaminated work clothing should not be allowed out of the workplace.

B. Conditions for safe storage, including any incompatibilities

- Do not apply any physical shock to container.
- Avoid direct sunlight.
- Keep in the original container.
- Please pay attention to incompatibilities materials and conditions to avoid.
- Keep sealed when not in use.
- By specifying a storage area for carcinogenic substances.
- Collected them in sealed containers.
- Store away from water and sewer.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

A. Exposure limits

- ACGIH TLV**
 - [ALUMINIUM POWDER] : TWA, 1 mg/m³, Respirable Particulate Matter
- OSHA PEL**
 - [ALUMINIUM POWDER]: 15 mg/m³ (Total dust), 5 mg/m³ (Respirable fraction)

B. Engineering controls

- Business owner is recommended to maintain below recommended exposure limits for the working place with general exhaust of gas/vapour/mist/fume.

C. Individual protection measures, such as personal protective equipment

- Respiratory protection**
 - Under conditions of frequent use or heavy exposure, Respiratory protection may be needed.
 - Respiratory protection is ranked in order from minimum to maximum.
 - Consider warning properties before use.
 - Any chemical cartridge respirator with organic vapor cartridge(s).
 - Any chemical cartridge respirator with a full facepiece and organic vaporcartridge(s).
 - Any air-purifying respirator with a full facepiece and an organic vapor canister.
 - For Unknown Concentration or Immediately Dangerous to Life or Health : Any supplied-air respirator with full facepiece and operated in a pressure-demand or other positive-pressure mode in combination with a separate escape supply. Any self-contained breathing apparatus with a full facepiece.
- Eye protection**
 - Wear primary eye protection such as splash resistant safety goggles with a secondary protection face shield.
 - Provide an emergency eye wash station and quick drench shower in the immediate work area.
- Hand protection**
 - Wear appropriate glove.
- Skin protection**
 - Wear appropriate clothing.
- Others**
 - Not available

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance(State)	Liquid
Appearance(Color)	ROSE
Odor	Odorless
Odor threshold	Not available
pH	8.0 ± 1.0
Melting point/Freezing point	Not available
Initial boiling point and boiling range	> 100 °C
Flash point	300 °C
Evaporation rate	Not available
Flammability(solid, gas)	Not applicable
Upper/Lower Flammability or explosive	Not available
Vapour pressure	Not available
Vapour density	Not available
Relative density	1.1 ± 0.05 g/cm3
Solubility	Fully miscible
Partition coefficient of n-octanol/water	Not available
Autoignition temperature	No self-igniting
Decomposition temperature	Not available
Viscosity	650 ± 150 Cps
Explosive properties	Not explosive
Oxidizing properties	Not available

10. STABILITY AND REACTIVITY

A. Chemical Stability

- This material is stable under recommended storage and handling conditions.

B. Possibility of hazardous reactions

- Hazardous Polymerization will not occur.

C. Conditions to avoid

- Avoid contact with incompatible materials and condition.
- Avoid : Accumulation of electrostatic charges, Heating, Flames and hot surfaces

D. Incompatible materials

- Not available

E. Hazardous decomposition products

- May emit flammable vapour if involved in fire.

11. TOXICOLOGICAL INFORMATION

A. Information on the likely routes of exposure

- (Respiratory tracts)
 - Not available
- (Oral)
 - Not available
- (Eye-Skin)
 - Cause mild skin irritation.
 - Causes serious eye irritation

B. Delayed and immediate effects and also chronic effects from short and long term exposure

- Acute toxicity
 - * Oral
 - Product (ATEmix) : >5,000mg/kg
 - [WATER] : LD50 > 90,000 mg/kg Rat (KOSHA)
 - [C.I. PIGMENT RED 122] : LD50 > 23,000 mg/kg Rat (NLM,TOMES;RTECS,Loil)
 - [POLY ETHYLENE GLYCOL] : LD50 = 600 mg/kg Rat (NLM: ChemIDPLus)

- [ALUMINIUM POWDER] : LD50 > 15,900 mg/kg Rat (OECD TG 401)
- [2-AMINO-2-METHYL-1-PROPANOL] : LD50 = 2,900 mg/kg Rat (NITE)
- * **Dermal**
 - Product (ATEmix) : >5,000mg/kg
 - [C.I. PIGMENT RED 122] : LD50 > 3,000 mg/kg Rabbit (NLM,TOMES;RTECS)
 - [2-AMINO-2-METHYL-1-PROPANOL] : LD50 > 2,000 mg/kg Rabbit (IUCLID)
- * **Inhalation**
 - Product (ATEmix) : Not available
 - [ALUMINIUM POWDER] : Dust LC50 > 0.888 mg/L 4 hr Rat (OECD TG 403, GLP)
- Skin corrosion/irritation**
 - Cause mild skin irritation.
- Serious eye damage/irritation**
 - Causes serious eye irritation
- Respiratory sensitization**
 - Not available
- Skin sensitization**
 - Not available
- Carcinogenicity**
 - * **IARC**
 - Not available
 - * **OSHA**
 - Not available
 - * **ACGIH**
 - [ALUMINIUM POWDER] : A4
 - * **NTP**
 - Not available
 - * **EU CLP**
 - Not available
- Germ cell mutagenicity**
 - Not available
- Reproductive toxicity**
 - Not available
- STOT-single exposure**
 - Not available
- STOT-repeated exposure**
 - May cause damage to organs through prolonged or repeated exposure
- Aspiration hazard**
 - Not available

12. ECOLOGICAL INFORMATION

A. Ecotoxicity

- Fish**
 - [POLY ETHYLENE GLYCOL] : LC50 > 20,000 mg/L 96 hr Oncorhynchus mykiss (ECOTOX)
 - [C.I. PIGMENT RED 122] : LD50 = 91.237 mg/L 96 hr (Estimate)
 - [C.I.PIGMENT RED 170] : LC50 = 0.217 mg/L 96 hr (Estimate)
- Crustaceans**
 - [ALUMINIUM POWDER] : NOEC > 100 mg/L 48 hr Daphnia magna (IUCLID)
 - [C.I. PIGMENT RED 122] : LC50 = 100.988 mg/L 48 hr (Estimate)
 - [C.I.PIGMENT RED 170] : LC50 = 0.545 mg/L 48 hr (Estimate)
- Algae**
 - [C.I. PIGMENT RED 122] : EC50 = 64.866 mg/L 96 hr (Estimate)
 - [C.I.PIGMENT RED 170] : EC50 = 0.060 mg/L 96 hr (Estimate)
 - [ALUMINIUM POWDER] : NOEC ≥ 0.052 mg/L 72 hr Selenastrum capricornutum (OECD TG 201, GLP)

B. Persistence and degradability

- Persistence**
 - [WATER] : log Kow -1.38

- [C.I. PIGMENT RED 122] : log Kow 2.47 (Safety and Health Information Service)
- [C.I.PIGMENT RED 170] : log Kow 6.04 (Estimate)

○ **Degradability**

- [2-AMINO-2-METHYL-1-PROPANOL] : BOD5/COD = 0.005

C. Bioaccumulative potential

○ **Bioaccumulative potential**

- [C.I.PIGMENT RED 170] : BCF 10 (Estimate)
- [C.I. PIGMENT RED 122] : BCF 2.307 (Estimate)
- [2-AMINO-2-METHYL-1-PROPANOL] : BCF 1 ~ 3 (Leuciscus idus(Fish, fresh water), 50ug/l)

○ **Biodegradation**

- [2-AMINO-2-METHYL-1-PROPANOL] : Biodegradability = 40 (%) 28 day (NITE)

D. Mobility in soil

- Not available

E. Other adverse effects

- Not available

13. DISPOSAL CONSIDERATIONS

A. Disposal methods

- Since more than two kinds of designated waste is mixed, it is difficult to treat separately, then can be reduction or stabilization by incineration or similar process.
- If water separation is possible, pre-process with Water separation process.
- Dispose by incineration.

B. Special precautions for disposal

- The user of this product must dispose by oneself or entrust it to a waste disposer, a person who recycles other's waste or establishes and operates waste disposal facilities.
- Dispose of waste in accordance with all applicable laws and regulations.

14. TRANSPORT INFORMATION

A. UN No. (IMDG CODE/IATA DGR)

- 3082

B. Proper shipping name

- ENVIRONMENTALLY HAZARDOUS SUBSTANCES, LIQUID, N.O.S.

C. Hazard Class

- 9

D. IMDG CODE/IATA DGR Packing group

- III

E. Marine pollutant

- Applicable

F. Special precautions for user related to transport or transportation measures

- Local transport follows in accordance with Dangerous goods Safety Management Law.
- Package and transport follow in accordance with Department of Transportation (DOT) and other regulatory agency requirements.
- EmS FIRE SCHEDULE : F-A (General fire schedule)
- EmS SPILLAGE SCHEDULE : S-F (Water-soluble marine pollutants)

15. REGULATORY INFORMATION

A. National and/or international regulatory information

- POPs Management Law**
 - Not applicable
- Information of EU Classification**
 - * **Classification**
 - [ALUMINIUM POWDER] : H261, H250, H228
 - [2-AMINO-2-METHYL-1-PROPANOL] : H319, H315, H412
- U.S. Federal regulations**
 - * **OSHA PROCESS SAFETY (29CFR1910.119)**
 - Not applicable
 - * **CERCLA Section 103 (40CFR302.4)**
 - Not applicable
 - * **EPCRA Section 302 (40CFR355.30)**
 - Not applicable
 - * **EPCRA Section 304 (40CFR355.40)**
 - Not applicable
 - * **EPCRA Section 313 (40CFR372.65)**
 - [ALUMINIUM POWDER] : Applicable
- Rotterdam Convention listed ingredients**
 - Not applicable
- Stockholm Convention listed ingredients**
 - Not applicable
- Montreal Protocol listed ingredients**
 - Not applicable

16. OTHER INFORMATION**A. Reference**

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***** End of Documents

SAFETY DATA SHEET



Date of issue: 2019-07-04

Revision date: Not

SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1. Product identifier

Trade : SGI- R.BLUE 330

1.2. Relevant identified uses of the substance or mixture and uses advised against

1.2.1. Relevant identified uses

- Water-soluble stationary ink

1.2.2. Uses advised against

- Not available

1.3. Details of the supplier of the safety data sheet

Manufacturer/Supplier : YOU&I COPORATION

Address : 53, EMTIBEU1 26-RO, SIHEUNG-SI, GYEONGGI-DO, KOREA (ZIP CODE) 15118

Telephone : 82-31-494-2030

Email : tech@youicolor.com

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- Serious eye damage/irritation : Category2A
- Carcinogenicity : Category2
- Specific target organ toxicity(Repeated exposure) : Category2
- Chronic aquatic toxicity : Category2

B. GHS LABEL ELEMENTS

Hazard symbols



Signal words

- Warning

Hazard statements

- H316 Cause mild skin irritation.
- H319 Causes serious eye irritation
- H351 Suspected of causing cancer
- H373 May cause damage to organs through prolonged or repeated exposure (Refer Section SDS 11)
- H411 Toxic to aquatic life with long lasting effects

Precautionary statements

1) Prevention

- P201 Obtain special instructions before use.
- P202 Do not handle until all safety precautions have been read and understood.
- P260 Do not breathe gas/mist/vapours/spray.
- P264 Wash hands thoroughly after handling.
- P273 Avoid release to the environment.

- P280 Wear protective gloves/protective clothing/eye protection/face protection.

2) Response

- P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- P308+P313 If exposed or concerned: Get medical advice/attention.
- P314 Get medical advice/attention if you feel unwell.
- P332+P313 If skin irritation occurs: Get medical advice/attention.
- P337+P313 If eye irritation persists: Get medical advice/attention.
- P391 Collect spillage.

3) Storage

- P405 Store locked up.

4) Disposal

- P501 Dispose of contents/container in accordance with local/regional/national/international regulation

C. Other hazards which do not result in classification : (NFPA Classification), (HMIS Classification)**○ NFPA grade (0 ~ 4 level)**

- Health : 2, Flammability : 1, Reactivity : 0

○ HMIS ratings (0 ~ 4 level)

- Health : 2, Flammability : 1, Reactivity : 0

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Name	Trade names and Synonyms	CAS No.	% [weight]
WATER	Not applicable	7732-18-5	40~60
GLYCERINE	Not applicable	56-81-5	15~20
ALUMINIUM POWDER	Not applicable	7429-90-5	3~7
POLY ETHYLENE GLYCOL	Not applicable	25322-68-3	10~15
C.I. PIGMENT VIOLET 23	Not applicable	6358-30-1	0~5
C.I. PIGMENT BLUE 15:3	Not applicable	147-14-8	0~5
2-AMINO-2-METHYL-1-PROPANOL	Not applicable	124-68-5	0~1

4. FIRST AID MEASURES**A. Eye contact**

- Do not rub your eyes.
- Immediately flush eyes with plenty of water for at least 15 minutes and call a doctor/physician.
- Get medical attention immediately.
- Go to the hospital immediately if symptoms(flare, irritate) occur.
- Remove contact lenses if worn.

B. Skin contact

- Flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes.
- Wash contaminated clothing thoroughly before re-using.
- Get medical attention immediately.

C. Inhalation contact

- When exposed to large amounts of steam and mist, move to fresh air.
- Take specific treatment if needed.
- Get medical attention immediately.
- If breathing is stopped or irregular, give artificial respiration and supply oxygen.

D. Ingestion contact

- Please be advised by doctor whether induction of vomit is demanded or not.
- Rinse your mouth with water immediately.
- Get medical attention immediately.

E. Delayed and immediate effects and also chronic effects from short and long term exposure

- Not available

F. Notes to physician

- Notify medical personnel of contaminated situations and have them take appropriate protective measures.
- If exposed or concerned, get medical attention/advice.

5. FIREFIGHTING MEASURES**A. Suitable (Unsuitable) extinguishing media**

- Water, foam, CO₂, NaHCO₃
- Avoid use of water jet for extinguishing

B. Specific hazards arising from the chemical

- Not available

C. Special protective actions for firefighters

- Notify your local firestation and inform the location of the fire and characteristics hazard.
- Avoid inhalation of materials or combustion by-products.
- Do not access if the tank on fire.
- Use appropriate extinguishing measure suitable for surrounding fire.
- Wear appropriate protective equipment.
- Keep containers cool with water spray.
- Vapor or gas is burned at distant ignition sources can be spread quickly.

6. ACCIDENTAL RELEASE MEASURES**A. Personal precautions, protective equipment and emergency procedures**

- Wear proper personal protective apparatus as indicated in Section 8 and avoid skin contact and inhalation.
- Must work against the wind, let the upwind people to evacuate.
- Move container to safe area from the leak area.
- Do not direct water at spill or source of leak.
- Avoid skin contact and inhalation.
- Cleanup and disposal under expert supervision is advised.
- Keep unauthorized people away, isolate hazard area and deny entry.

B. Environmental precautions

- Prevent runoff and contact with waterways, drains or sewers.
- If large amounts have been spilled, inform the relevant authorities.

C. Methods and materials for containment and cleaning up

- Large spill : Stay upwind and keep out of low areas. Dike for later disposal.
- Notification to central government, local government. When emissions at least of the standard amount
- Dispose of waste in accordance with local regulation.
- Appropriate container for disposal of spilled material collected.
- Small leak: sand or other non-combustible material, please let use absorption.
- Wipe off the solvent.
- Dike for later disposal.
- Prevent the influx to waterways, sewers, basements or confined spaces.

D. PACs (Protective Action Criteria)

- o **PAC-1**
 - [POLY ETHYLENE GLYCOL] : 30 mg/m³
 - [2-AMINO-2-METHYL-1-PROPANOL] : 17 mg/m³
- o **PAC-2**
 - [POLY ETHYLENE GLYCOL] : 1,300 mg/m³
 - [2-AMINO-2-METHYL-1-PROPANOL] : 190 mg/m³
- o **PAC-3**
 - [POLY ETHYLENE GLYCOL] : 7,700 mg/m³
 - [2-AMINO-2-METHYL-1-PROPANOL] : 570 mg/m³

7. HANDLING AND STORAGE**A. Precautions for safe handling**

- Avoid direct physical contact.
- Since emptied containers retain product residue(vapor, liquid, solid) follow all MSDS and label warnings even after container is emptied.
- Avoid contact with incompatible materials.
- Get the manual before use.
- Do not inhale the steam prolonged or repeated.
- Contaminated work clothing should not be allowed out of the workplace.

B. Conditions for safe storage, including any incompatibilities

- Do not apply any physical shock to container.
- Avoid direct sunlight.
- Keep in the original container.
- Please pay attention to incompatibilities materials and conditions to avoid.
- Keep sealed when not in use.
- By specifying a storage area for carcinogenic substances.
- Collected them in sealed containers.
- Store away from water and sewer.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION**A. Exposure limits**

- ACGIH TLV**
 - [ALUMINIUM POWDER] : TWA, 1 mg/m³, Respirable Particulate Matter
- OSHA PEL**
 - [ALUMINIUM POWDER]: 15 mg/m³ (Total dust), 5 mg/m³ (Respirable fraction)

B. Engineering controls

- Business owner is recommended to maintain below recommended exposure limits for the working place with general exhaust of gas/vapour/mist/fume.

C. Individual protection measures, such as personal protective equipment

- Respiratory protection**
 - Under conditions of frequent use or heavy exposure, Respiratory protection may be needed.
 - Respiratory protection is ranked in order from minimum to maximum.
 - Consider warning properties before use.
 - Any chemical cartridge respirator with organic vapor cartridge(s).
 - Any chemical cartridge respirator with a full facepiece and organic vaporcartridge(s).
 - Any air-purifying respirator with a full facepiece and an organic vapor canister.
 - For Unknown Concentration or Immediately Dangerous to Life or Health : Any supplied-air respirator with full facepiece and operated in a pressure-demand or other positive-pressure mode in combination with a separate escape supply. Any self-contained breathing apparatus with a full facepiece.
- Eye protection**
 - Wear primary eye protection such as splash resistant safety goggles with a secondary protection face shield.
 - Provide an emergency eye wash station and quick drench shower in the immediate work area.
- Hand protection**
 - Wear appropriate glove.
- Skin protection**
 - Wear appropriate clothing.
- Others**
 - Not available

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES**9.1. Information on basic physical and chemical properties**

Appearance(State)	Liquid
-------------------	--------

Appearance(Color)	R.BLUE
Odor	Odorless
Odor threshold	Not available
pH	8.0 ± 1.0
Melting point/Freezing point	Not available
Initial boiling point and boiling range	> 100 °C
Flash point	300 °C
Evaporation rate	Not available
Flammability(solid, gas)	Not applicable
Upper/Lower Flammability or explosive	Not available
Vapour pressure	Not available
Vapour density	Not available
Relative density	1.1 ± 0.05 g/cm3
Solubility	Fully miscible
Partition coefficient of n-octanol/water	Not available
Autoignition temperature	No self-igniting
Decomposition temperature	Not available
Viscosity	650 ± 150 Cps
Explosive properties	Not explosive
Oxidizing properties	Not available

10. STABILITY AND REACTIVITY

A. Chemical Stability

- This material is stable under recommended storage and handling conditions.

B. Possibility of hazardous reactions

- Hazardous Polymerization will not occur.

C. Conditions to avoid

- Avoid contact with incompatible materials and condition.
- Avoid : Accumulation of electrostatic charges, Heating, Flames and hot surfaces

D. Incompatible materials

- Not available

E. Hazardous decomposition products

- May emit flammable vapour if involved in fire.

11. TOXICOLOGICAL INFORMATION

A. Information on the likely routes of exposure

- (Respiratory tracts)
 - Not available
- (Oral)
 - Not available
- (Eye-Skin)
 - Cause mild skin irritation.
 - Causes serious eye irritation

B. Delayed and immediate effects and also chronic effects from short and long term exposure

- Acute toxicity
 - * Oral
 - Product (ATEmix) : >5,000mg/kg
 - [WATER] : LD50 > 90,000 mg/kg Rat (KOSHA)
 - [POLY ETHYLENE GLYCOL] : LD50 = 600 mg/kg Rat (NLM: ChemIDPLus)
 - [C.I. PIGMENT BLUE 15:3] : LD50 > 6,400 mg/kg Rat (IUCLID)
 - [ALUMINIUM POWDER] : LD50 > 15,900 mg/kg Rat (OECD TG 401)

- [2-AMINO-2-METHYL-1-PROPANOL] : LD50 = 2,900 mg/kg Rat (NITE)
- * **Dermal**
 - Product (ATEmix) : >5,000mg/kg
 - [C.I. PIGMENT BLUE 15:3] : LD50 >5,000 mg/kg Rabbit (OECD TG 402)
 - [2-AMINO-2-METHYL-1-PROPANOL] : LD50 > 2,000 mg/kg Rabbit (IUCLID)
- * **Inhalation**
 - Product (ATEmix) : Not available
 - [ALUMINIUM POWDER] : Dust LC50 > 0.888 mg/L 4 hr Rat (OECD TG 403, GLP)
- Skin corrosion/irritation**
 - Cause mild skin irritation.
- Serious eye damage/irritation**
 - Causes serious eye irritation
- Respiratory sensitization**
 - Not available
- Skin sensitization**
 - Not available
- Carcinogenicity**
 - * **IARC**
 - Not available
 - * **OSHA**
 - Not available
 - * **ACGIH**
 - [ALUMINIUM POWDER] : A4
 - * **NTP**
 - Not available
 - * **EU CLP**
 - Not available
- Germ cell mutagenicity**
 - Not available
- Reproductive toxicity**
 - Not available
- STOT-single exposure**
 - Not available
- STOT-repeated exposure**
 - May cause damage to organs through prolonged or repeated exposure
- Aspiration hazard**
 - Not available

12. ECOLOGICAL INFORMATION

A. Ecotoxicity

- Fish**
 - [POLY ETHYLENE GLYCOL] : LC50 >20,000 mg/L 96 hr Oncorhynchus mykiss (ECOTOX)
 - [C.I. PIGMENT BLUE 15:3] : LC50 = 100 ~ 355.6 mg/L 96 hr (ECHA)
- Crustaceans**
 - [ALUMINIUM POWDER] : NOEC > 100 mg/L 48 hr Daphnia magna (IUCLID)
- Algae**
 - [ALUMINIUM POWDER] : NOEC ≥ 0.052 mg/L 72 hr Selenastrum capricornutum (OECD TG 201, GLP)

B. Persistence and degradability

- Persistence**
 - [WATER] : log Kow -1.38
 - [C.I. PIGMENT BLUE 15:3] : log Kow 6.60 (Estimate)
- Degradability**
 - Not available

C. Bioaccumulative potential

- Bioaccumulative potential**

- [C.I. PIGMENT BLUE 15:3] : BCF 0.33 ~ 11 (OECD 305C, IUCLID)
- [2-AMINO-2-METHYL-1-PROPANOL] : BCF 1 ~ 3 (Leuciscus idus(Fish, fresh water), 50ug/l)

Biodegradation

- [C.I. PIGMENT BLUE 15:3] : Biodegradability = 1 (%) 28 day (IUCLID), water solubility : 4~9 ug/L (ECHA)
- [2-AMINO-2-METHYL-1-PROPANOL] : Biodegradability = 40 (%) 28 day (NITE)

D. Mobility in soil

- Not available

E. Other adverse effects

- Not available

13. DISPOSAL CONSIDERATIONS

A. Disposal methods

- Since more than two kinds of designated waste is mixed, it is difficult to treat separately, then can be reduction or stabilization by incineration or similar process.
- If water separation is possible, pre-process with Water separation process.
- Dispose by incineration.

B. Special precautions for disposal

- The user of this product must dispose by oneself or entrust it to a waste disposer, a person who recycles other's waste or establishes and operates waste disposal facilities.
- Dispose of waste in accordance with all applicable laws and regulations.

14. TRANSPORT INFORMATION

A. UN No. (IMDG CODE/IATA DGR)

- 3082

B. Proper shipping name

- ENVIRONMENTALLY HAZARDOUS SUBSTANCES, LIQUID, N.O.S.

C. Hazard Class

- 9

D. IMDG CODE/IATA DGR Packing group

- III

E. Marine pollutant

- Applicable

F. Special precautions for user related to transport or transportation measures

- Local transport follows in accordance with Dangerous goods Safety Management Law.
- Package and transport follow in accordance with Department of Transportation (DOT) and other regulatory agency requirements.
- EmS FIRE SCHEDULE : F-A (General fire schedule)
- EmS SPILLAGE SCHEDULE : S-F (Water-soluble marine pollutants)

15. REGULATORY INFORMATION

A. National and/or international regulatory information

POPs Management Law

- Not applicable

Information of EU Classification

* **Classification**

- [ALUMINIUM POWDER] : H261, H228, H250
- [2-AMINO-2-METHYL-1-PROPANOL] : H319, H315, H412

U.S. Federal regulations

- * **OSHA PROCESS SAFETY (29CFR1910.119)**
 - Not applicable
- * **CERCLA Section 103 (40CFR302.4)**
 - Not applicable
- * **EPCRA Section 302 (40CFR355.30)**
 - Not applicable
- * **EPCRA Section 304 (40CFR355.40)**
 - Not applicable
- * **EPCRA Section 313 (40CFR372.65)**
 - [ALUMINIUM POWDER] : Applicable
- Rotterdam Convention listed ingredients**
 - Not applicable
- Stockholm Convention listed ingredients**
 - Not applicable
- Montreal Protocol listed ingredients**
 - Not applicable

16. OTHER INFORMATION

A. Reference

- The information contained herein is believed to be accurate. It is provided independently of any sale of the product for purpose of hazard communication. It is not intended to constitute performance information concerning the product. No express warranty, or implied warranty of merchantability or fitness for a particular purpose is made with respect to the product or the information contained herein.
- This Safety Data Sheet was compiled with data and information from the following sources: KOSHA, NITE, ESIS, NLM, SIDS, IPCS

- Disclaimer of Liability

This information is based on our present state of knowledge. It should not therefore be construed as guaranteeing specific properties of the products Described or their suitability for a particular application. YOU&I Corporation assumes no responsibility for personal injury or property damage caused by the material. Users assume all risks associated with the use of the material.

***** End of Documents

SAFETY DATA SHEET



Date of issue: 2019-07-04
Revision date: Not applicable

SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1. Product identifier

Trade name/designation : SGI- P.VIOLET 330

1.2. Relevant identified uses of the substance or mixture and uses advised against

1.2.1. Relevant identified uses

- Water-soluble stationary ink

1.2.2. Uses advised against

- Not available

1.3. Details of the supplier of the safety data sheet

Manufacturer/Supplier : YOU&I COPORATION
Address : 53, EMTIBEUI 26-RO, SIHEUNG-SI, GYEONGGI-DO, KOREA (ZIP CODE) 15118
Telephone : 82-31-494-2030
Email : tech@youicolor.com

1.4. Emergency telephone number

82-31-494-2030 (This number is serviced during office hours only.)
EU-wide emergency number : 112
See section 16.6 for the list of telephone number of poison centers in the European Economic Area.

SECTION 2: HAZARD IDENTIFICATION

A. GHS CLASSIFICATION

- Skin corrosion/irritation : Category3
- Serious eye damage/irritation : Category2A
- Carcinogenicity : Category2
- Specific target organ toxicity(Repeated exposure) : Category2
- Chronic aquatic toxicity : Category2

B. GHS LABEL ELEMENTS

 Hazard symbols Signal words

- Warning

 Hazard statements

- H316 Cause mild skin irritation.
- H319 Causes serious eye irritation
- H351 Suspected of causing cancer
- H373 May cause damage to organs through prolonged or repeated exposure (Refer Section SDS 11)
- H411 Toxic to aquatic life with long lasting effects

 Precautionary statements

1) Prevention

- P201 Obtain special instructions before use.
- P202 Do not handle until all safety precautions have been read and understood.
- P260 Do not breathe gas/mist/vapours/spray.
- P264 Wash hands thoroughly after handling.
- P273 Avoid release to the environment.

- P280 Wear protective gloves/protective clothing/eye protection/face protection.

2) Response

- P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- P308+P313 If exposed or concerned: Get medical advice/attention.
- P314 Get medical advice/attention if you feel unwell.
- P332+P313 If skin irritation occurs: Get medical advice/attention.
- P337+P313 If eye irritation persists: Get medical advice/attention.
- P391 Collect spillage.

3) Storage

- P405 Store locked up.

4) Disposal

- P501 Dispose of contents/container in accordance with local/regional/national/international regulation

C. Other hazards which do not result in classification : (NFPA Classification), (HMIS Classification)**○ NFPA grade (0 ~ 4 level)**

- Health : 2, Flammability : 1, Reactivity : 0

○ HMIS ratings (0 ~ 4 level)

- Health : 2, Flammability : 1, Reactivity : 0

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Name	Trade names and Synonyms	CAS No.	% [weight]
WATER	Not applicable	7732-18-5	40~60
GLYCERINE	Not applicable	56-81-5	15~20
ALUMINIUM POWDER	Not applicable	7429-90-5	3~7
POLY ETHYLENE GLYCOL	Not applicable	25322-68-3	10~15
C.I. PIGMENT VIOLET 23	Not applicable	6358-30-1	0~5
C.I. PIGMENT RED 122	Not applicable	980-26-7	0~5
2-AMINO-2-METHYL-1-PROPANOL	Not applicable	124-68-5	0~1

4. FIRST AID MEASURES**A. Eye contact**

- Do not rub your eyes.
- Immediately flush eyes with plenty of water for at least 15 minutes and call a doctor/physician.
- Get medical attention immediately.
- Go to the hospital immediately if symptoms(flare, irritate) occur.
- Remove contact lenses if worn.

B. Skin contact

- Flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes.
- Wash contaminated clothing thoroughly before re-using.
- Get medical attention immediately.

C. Inhalation contact

- When exposed to large amounts of steam and mist, move to fresh air.
- Take specific treatment if needed.
- Get medical attention immediately.
- If breathing is stopped or irregular, give artificial respiration and supply oxygen.

D. Ingestion contact

- Please be advised by doctor whether induction of vomit is demanded or not.
- Rinse your mouth with water immediately.
- Get medical attention immediately.

E. Delayed and immediate effects and also chronic effects from short and long term exposure

- Not available

F. Notes to physician

- Notify medical personnel of contaminated situations and have them take appropriate protective measures.
- If exposed or concerned, get medical attention/advice.

5. FIREFIGHTING MEASURES**A. Suitable (Unsuitable) extinguishing media**

- Water, foam, CO₂, NaHCO₃
- Avoid use of water jet for extinguishing

B. Specific hazards arising from the chemical

- Not available

C. Special protective actions for firefighters

- Notify your local firestation and inform the location of the fire and characteristics hazard.
- Avoid inhalation of materials or combustion by-products.
- Do not access if the tank on fire.
- Use appropriate extinguishing measure suitable for surrounding fire.
- Wear appropriate protective equipment.
- Keep containers cool with water spray.
- Vapor or gas is burned at distant ignition sources can be spread quickly.

6. ACCIDENTAL RELEASE MEASURES**A. Personal precautions, protective equipment and emergency procedures**

- Wear proper personal protective apparatus as indicated in Section 8 and avoid skin contact and inhalation.
- Must work against the wind, let the upwind people to evacuate.
- Move container to safe area from the leak area.
- Do not direct water at spill or source of leak.
- Avoid skin contact and inhalation.
- Cleanup and disposal under expert supervision is advised.
- Keep unauthorized people away, isolate hazard area and deny entry.

B. Environmental precautions

- Prevent runoff and contact with waterways, drains or sewers.
- If large amounts have been spilled, inform the relevant authorities.

C. Methods and materials for containment and cleaning up

- Large spill : Stay upwind and keep out of low areas. Dike for later disposal.
- Notification to central government, local government. When emissions at least of the standard amount
- Dispose of waste in accordance with local regulation.
- Appropriate container for disposal of spilled material collected.
- Small leak: sand or other non-combustible material, please let use absorption.
- Wipe off the solvent.
- Dike for later disposal.
- Prevent the influx to waterways, sewers, basements or confined spaces.

D. PACs (Protective Action Criteria)

- o **PAC-1**
 - [POLY ETHYLENE GLYCOL] : 30 mg/m³
 - [2-AMINO-2-METHYL-1-PROPANOL] : 17 mg/m³
- o **PAC-2**
 - [POLY ETHYLENE GLYCOL] : 1,300 mg/m³
 - [2-AMINO-2-METHYL-1-PROPANOL] : 190 mg/m³
- o **PAC-3**

- [POLY ETHYLENE GLYCOL] : 7,700 mg/m³
- [2-AMINO-2-METHYL-1-PROPANOL] : 570 mg/m³

7. HANDLING AND STORAGE

A. Precautions for safe handling

- Avoid direct physical contact.
- Since emptied containers retain product residue(vapor, liquid, solid) follow all MSDS and label warnings even after container is emptied.
- Avoid contact with incompatible materials.
- Get the manual before use.
- Do not inhale the steam prolonged or repeated.
- Contaminated work clothing should not be allowed out of the workplace.

B. Conditions for safe storage, including any incompatibilities

- Do not apply any physical shock to container.
- Avoid direct sunlight.
- Keep in the original container.
- Please pay attention to incompatibilities materials and conditions to avoid.
- Keep sealed when not in use.
- By specifying a storage area for carcinogenic substances.
- Collected them in sealed containers.
- Store away from water and sewer.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

A. Exposure limits

- ACGIH TLV**
 - [ALUMINIUM POWDER] : TWA, 1 mg/m³, Respirable Particulate Matter
- OSHA PEL**
 - [ALUMINIUM POWDER]: 15 mg/m³ (Total dust), 5 mg/m³ (Respirable fraction)

B. Engineering controls

- Business owner is recommended to maintain below recommended exposure limits for the working place with general exhaust of gas/vapour/mist/fume.

C. Individual protection measures, such as personal protective equipment

- Respiratory protection**
 - Under conditions of frequent use or heavy exposure, Respiratory protection may be needed.
 - Respiratory protection is ranked in order from minimum to maximum.
 - Consider warning properties before use.
 - Any chemical cartridge respirator with organic vapor cartridge(s).
 - Any chemical cartridge respirator with a full facepiece and organic vaporcartridge(s).
 - Any air-purifying respirator with a full facepiece and an organic vapor canister.
 - For Unknown Concentration or Immediately Dangerous to Life or Health : Any supplied-air respirator with full facepiece and operated in a pressure-demand or other positive-pressure mode in combination with a separate escape supply. Any self-contained breathing apparatus with a full facepiece.
- Eye protection**
 - Wear primary eye protection such as splash resistant safety goggles with a secondary protection face shield.
 - Provide an emergency eye wash station and quick drench shower in the immediate work area.
- Hand protection**
 - Wear appropriate glove.
- Skin protection**
 - Wear appropriate clothing.
- Others**
 - Not available

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance(State)	Liquid
Appearance(Color)	P. VIOLET
Odor	Odorless
Odor threshold	Not available
pH	8.0- ± 1.0
Melting point/Freezing point	Not available
Initial boiling point and boiling range	> 100 °C
Flash point	300 °C
Evaporation rate	Not available
Flammability(solid, gas)	Not applicable
Upper/Lower Flammability or explosive	Not available
Vapour pressure	Not available
Vapour density	Not available
Relative density	1.1 ± 0.05 g/cm3
Solubility	Fully miscible
Partition coefficient of n-octanol/water	Not available
Autoignition temperature	No self-igniting
Decomposition temperature	Not available
Viscosity	650 ± 150 Cps
Explosive properties	Not explosive
Oxidizing properties	Not available

10. STABILITY AND REACTIVITY

A. Chemical Stability

- This material is stable under recommended storage and handling conditions.

B. Possibility of hazardous reactions

- Hazardous Polymerization will not occur.

C. Conditions to avoid

- Avoid contact with incompatible materials and condition.
- Avoid : Accumulation of electrostatic charges, Heating, Flames and hot surfaces

D. Incompatible materials

- Not available

E. Hazardous decomposition products

- May emit flammable vapour if involved in fire.

11. TOXICOLOGICAL INFORMATION

A. Information on the likely routes of exposure

- (Respiratory tracts)
 - Not available
- (Oral)
 - Not available
- (Eye-Skin)
 - Cause mild skin irritation.
 - Causes serious eye irritation

B. Delayed and immediate effects and also chronic effects from short and long term exposure

- Acute toxicity
 - * Oral
 - Product (ATEmix) : >5,000mg/kg
 - [WATER] : LD50 > 90,000 mg/kg Rat (KOSHA)
 - [POLY ETHYLENE GLYCOL] : LD50 = 600 mg/kg Rat (NLM: ChemIDPlus)
 - [C.I. PIGMENT RED 122] : LD50 > 23,000 mg/kg Rat (NLM,TOMES;RTECS,Loil)

- [ALUMINIUM POWDER] : LD50 > 15,900 mg/kg Rat (OECD TG 401)
- [2-AMINO-2-METHYL-1-PROPANOL] : LD50 = 2,900 mg/kg Rat (NITE)

* **Dermal**

- Product (ATEmix) : >5,000mg/kg
- [C.I. PIGMENT RED 122] : LD50 > 3,000 mg/kg Rabbit (NLM,TOMES;RTECS)
- [2-AMINO-2-METHYL-1-PROPANOL] : LD50 > 2,000 mg/kg Rabbit (IUCLID)

* **Inhalation**

- Product (ATEmix) : Not available
- [ALUMINIUM POWDER] : Dust LC50 > 0.888 mg/L 4 hr Rat (OECD TG 403, GLP)

Skin corrosion/irritation

- Cause mild skin irritation.

Serious eye damage/irritation

- Causes serious eye irritation

Respiratory sensitization

- Not available

Skin sensitization

- Not available

Carcinogenicity

* **IARC**

- Not available

* **OSHA**

- Not available

* **ACGIH**

- [ALUMINIUM POWDER] : A4

* **NTP**

- Not available

* **EU CLP**

- Not available

Germ cell mutagenicity

- Not available

Reproductive toxicity

- Not available

STOT-single exposure

- Not available

STOT-repeated exposure

- May cause damage to organs through prolonged or repeated exposure

Aspiration hazard

- Not available

12. ECOLOGICAL INFORMATION

A. Ecotoxicity

Fish

- [POLY ETHYLENE GLYCOL] : LC50 >20,000 mg/L 96 hr Oncorhynchus mykiss (ECOTOX)
- [C.I. PIGMENT RED 122] : LD50 = 91.237 mg/L 96 hr (Estimate)

Crustaceans

- [C.I. PIGMENT RED 122] : LC50 = 100.988 mg/L 48 hr (Estimate)
- [ALUMINIUM POWDER] : NOEC > 100 mg/L 48 hr Daphnia magna (IUCLID)

Algae

- [C.I. PIGMENT RED 122] : EC50 = 64.866 mg/L 96 hr (Estimate)
- [ALUMINIUM POWDER] : NOEC ≥ 0.052 mg/L 72 hr Selenastrum capricornutum (OECD TG 201, GLP)

B. Persistence and degradability

Persistence

- [WATER] : log Kow -1.38
- [C.I. PIGMENT RED 122] : log Kow 2.47 (Safety and Health Information Service)

Degradability

- [2-AMINO-2-METHYL-1-PROPANOL] : BOD5/COD = 0.005

C. Bioaccumulative potential **Bioaccumulative potential**

- [C.I. PIGMENT RED 122] : BCF 2.307 (Estimate)
- [2-AMINO-2-METHYL-1-PROPANOL] : BCF 1 ~ 3 (Leuciscus idus(Fish, fresh water), 50ug/l)

 Biodegradation

- [2-AMINO-2-METHYL-1-PROPANOL] : Biodegradability = 40 (%) 28 day (NITE)

D. Mobility in soil

- Not available

E. Other adverse effects

- Not available

13. DISPOSAL CONSIDERATIONS**A. Disposal methods**

- Since more than two kinds of designated waste is mixed, it is difficult to treat separately, then can be reduction or stabilization by incineration or similar process.
- If water separation is possible, pre-process with Water separation process.
- Dispose by incineration.

B. Special precautions for disposal

- The user of this product must dispose by oneself or entrust it to a waste disposer, a person who recycles other's waste or establishes and operates waste disposal facilities.
- Dispose of waste in accordance with all applicable laws and regulations.

14. TRANSPORT INFORMATION**A. UN No. (IMDG CODE/IATA DGR)**

- 3082

B. Proper shipping name

- ENVIRONMENTALLY HAZARDOUS SUBSTANCES, LIQUID, N.O.S.

C. Hazard Class

- 9

D. IMDG CODE/IATA DGR Packing group

- III

E. Marine pollutant

- Applicable

F. Special precautions for user related to transport or transportation measures

- Local transport follows in accordance with Dangerous goods Safety Management Law.
- Package and transport follow in accordance with Department of Transportation (DOT) and other regulatory agency requirements.
- EmS FIRE SCHEDULE : F-A (General fire schedule)
- EmS SPILLAGE SCHEDULE : S-F (Water-soluble marine pollutants)

15. REGULATORY INFORMATION**A. National and/or international regulatory information** **POPs Management Law**

- Not applicable

 Information of EU Classification

- * **Classification**
 - [ALUMINIUM POWDER] : H261, H250, H228
 - [2-AMINO-2-METHYL-1-PROPANOL] : H319, H315, H412
- **U.S. Federal regulations**
 - * **OSHA PROCESS SAFETY (29CFR1910.119)**
 - Not applicable
 - * **CERCLA Section 103 (40CFR302.4)**
 - Not applicable
 - * **EPCRA Section 302 (40CFR355.30)**
 - Not applicable
 - * **EPCRA Section 304 (40CFR355.40)**
 - Not applicable
 - * **EPCRA Section 313 (40CFR372.65)**
 - [ALUMINIUM POWDER] : Applicable
- **Rotterdam Convention listed ingredients**
 - Not applicable
- **Stockholm Convention listed ingredients**
 - Not applicable
- **Montreal Protocol listed ingredients**
 - Not applicable

16. OTHER INFORMATION

A. Reference

- The information contained herein is believed to be accurate. It is provided independently of any sale of the product for purpose of hazard communication. It is not intended to constitute performance information concerning the product. No express warranty, or implied warranty of merchantability or fitness for a particular purpose is made with respect to the product or the information contained herein.

- This Safety Data Sheet was compiled with data and information from the following sources: KOSHA, NITE, ESIS, NLM, SIDS, IPCS

- Disclaimer of Liability

This information is based on our present state of knowledge.

It should not therefore be construed as guaranteeing specific properties of the products

Described or their suitability for a particular application. YOU&I Corporation assumes

no responsibility for personal injury or property damage caused by the material.

Users assume all risks associated with the use of the material.

***** End of Documents

SAFETY DATA SHEET



Date of issue: 2019-07-04
Revision date: Not applicable

SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1. Product identifier

Trade name/designation : SGI- LVIOLET 330

1.2. Relevant identified uses of the substance or mixture and uses advised against

1.2.1. Relevant identified uses

- Water-soluble stationary ink

1.2.2. Uses advised against

- Not available

1.3. Details of the supplier of the safety data sheet

Manufacturer/Supplier : YOU&I COPORATION
Address : 53, EMTIBEUI 26-RO, SIHEUNG-SI, GYEONGGI-DO, KOREA (ZIP CODE) 15118
Telephone : 82-31-494-2030
Email : tech@youicolor.com

1.4. Emergency telephone number

82-31-494-2030 (This number is serviced during office hours only.)
EU-wide emergency number : 112
See section 16.6 for the list of telephone number of poison centers in the European Economic Area.

SECTION 2: HAZARD IDENTIFICATION

A. GHS CLASSIFICATION

- Skin corrosion/irritation : Category3
- Serious eye damage/irritation : Category2A
- Carcinogenicity : Category2
- Specific target organ toxicity(Repeated exposure) : Category2
- Chronic aquatic toxicity : Category2

B. GHS LABEL ELEMENTS

 Hazard symbols Signal words

- Warning

 Hazard statements

- H316 Cause mild skin irritation.
- H319 Causes serious eye irritation
- H351 Suspected of causing cancer
- H373 May cause damage to organs through prolonged or repeated exposure (Refer Section SDS 11)
- H411 Toxic to aquatic life with long lasting effects

 Precautionary statements

1) Prevention

- P201 Obtain special instructions before use.
- P202 Do not handle until all safety precautions have been read and understood.
- P260 Do not breathe gas/mist/vapours/spray.
- P264 Wash hands thoroughly after handling.
- P273 Avoid release to the environment.

- P280 Wear protective gloves/protective clothing/eye protection/face protection.

2) Response

- P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- P308+P313 If exposed or concerned: Get medical advice/attention.
- P314 Get medical advice/attention if you feel unwell.
- P332+P313 If skin irritation occurs: Get medical advice/attention.
- P337+P313 If eye irritation persists: Get medical advice/attention.
- P391 Collect spillage.

3) Storage

- P405 Store locked up.

4) Disposal

- P501 Dispose of contents/container in accordance with local/regional/national/international regulation

C. Other hazards which do not result in classification : (NFPA Classification), (HMIS Classification)○ **NFPA grade (0 ~ 4 level)**

- Health : 2, Flammability : 1, Reactivity : 0

○ **HMIS ratings (0 ~ 4 level)**

- Health : 2, Flammability : 1, Reactivity : 0

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Name	Trade names and Synonyms	CAS No.	% [weight]
WATER	Not applicable	7732-18-5	40~60
GLYCERINE	Not applicable	56-81-5	15~20
ALUMINIUM POWDER	Not applicable	7429-90-5	3~7
POLY ETHYLENE GLYCOL	Not applicable	25322-68-3	10~15
C.I. PIGMENT VIOLET 23	Not applicable	6358-30-1	0~5
C.I. PIGMENT RED 122	Not applicable	980-26-7	0~5
2-AMINO-2-METHYL-1-PROPANOL	Not applicable	124-68-5	0~1

4. FIRST AID MEASURES**A. Eye contact**

- Do not rub your eyes.
- Immediately flush eyes with plenty of water for at least 15 minutes and call a doctor/physician.
- Get medical attention immediately.
- Go to the hospital immediately if symptoms(flare, irritate) occur.
- Remove contact lenses if worn.

B. Skin contact

- Flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes.
- Wash contaminated clothing thoroughly before re-using.
- Get medical attention immediately.

C. Inhalation contact

- When exposed to large amounts of steam and mist, move to fresh air.
- Take specific treatment if needed.
- Get medical attention immediately.
- If breathing is stopped or irregular, give artificial respiration and supply oxygen.

D. Ingestion contact

- Please be advised by doctor whether induction of vomit is demanded or not.
- Rinse your mouth with water immediately.
- Get medical attention immediately.

E. Delayed and immediate effects and also chronic effects from short and long term exposure

- Not available

F. Notes to physician

- Notify medical personnel of contaminated situations and have them take appropriate protective measures.
- If exposed or concerned, get medical attention/advice.

5. FIREFIGHTING MEASURES**A. Suitable (Unsuitable) extinguishing media**

- Water, foam, CO₂, NaHCO₃
- Avoid use of water jet for extinguishing

B. Specific hazards arising from the chemical

- Not available

C. Special protective actions for firefighters

- Notify your local firestation and inform the location of the fire and characteristics hazard.
- Avoid inhalation of materials or combustion by-products.
- Do not access if the tank on fire.
- Use appropriate extinguishing measure suitable for surrounding fire.
- Wear appropriate protective equipment.
- Keep containers cool with water spray.
- Vapor or gas is burned at distant ignition sources can be spread quickly.

6. ACCIDENTAL RELEASE MEASURES**A. Personal precautions, protective equipment and emergency procedures**

- Wear proper personal protective apparatus as indicated in Section 8 and avoid skin contact and inhalation.
- Must work against the wind, let the upwind people to evacuate.
- Move container to safe area from the leak area.
- Do not direct water at spill or source of leak.
- Avoid skin contact and inhalation.
- Cleanup and disposal under expert supervision is advised.
- Keep unauthorized people away, isolate hazard area and deny entry.

B. Environmental precautions

- Prevent runoff and contact with waterways, drains or sewers.
- If large amounts have been spilled, inform the relevant authorities.

C. Methods and materials for containment and cleaning up

- Large spill : Stay upwind and keep out of low areas. Dike for later disposal.
- Notification to central government, local government. When emissions at least of the standard amount
- Dispose of waste in accordance with local regulation.
- Appropriate container for disposal of spilled material collected.
- Small leak: sand or other non-combustible material, please let use absorption.
- Wipe off the solvent.
- Dike for later disposal.
- Prevent the influx to waterways, sewers, basements or confined spaces.

D. PACs (Protective Action Criteria)

- o **PAC-1**
 - [POLY ETHYLENE GLYCOL] : 30 mg/m³
 - [2-AMINO-2-METHYL-1-PROPANOL] : 17 mg/m³
- o **PAC-2**
 - [POLY ETHYLENE GLYCOL] : 1,300 mg/m³
 - [2-AMINO-2-METHYL-1-PROPANOL] : 190 mg/m³
- o **PAC-3**

- [POLY ETHYLENE GLYCOL] : 7,700 mg/m³
- [2-AMINO-2-METHYL-1-PROPANOL] : 570 mg/m³

7. HANDLING AND STORAGE

A. Precautions for safe handling

- Avoid direct physical contact.
- Since emptied containers retain product residue(vapor, liquid, solid) follow all MSDS and label warnings even after container is emptied.
- Avoid contact with incompatible materials.
- Get the manual before use.
- Do not inhale the steam prolonged or repeated.
- Contaminated work clothing should not be allowed out of the workplace.

B. Conditions for safe storage, including any incompatibilities

- Do not apply any physical shock to container.
- Avoid direct sunlight.
- Keep in the original container.
- Please pay attention to incompatibilities materials and conditions to avoid.
- Keep sealed when not in use.
- By specifying a storage area for carcinogenic substances.
- Collected them in sealed containers.
- Store away from water and sewer.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

A. Exposure limits

- ACGIH TLV**
 - [ALUMINIUM POWDER] : TWA, 1 mg/m³, Respirable Particulate Matter
- OSHA PEL**
 - [ALUMINIUM POWDER]: 15 mg/m³ (Total dust), 5 mg/m³ (Respirable fraction)

B. Engineering controls

- Business owner is recommended to maintain below recommended exposure limits for the working place with general exhaust of gas/vapour/mist/fume.

C. Individual protection measures, such as personal protective equipment

- Respiratory protection**
 - Under conditions of frequent use or heavy exposure, Respiratory protection may be needed.
 - Respiratory protection is ranked in order from minimum to maximum.
 - Consider warning properties before use.
 - Any chemical cartridge respirator with organic vapor cartridge(s).
 - Any chemical cartridge respirator with a full facepiece and organic vaporcartridge(s).
 - Any air-purifying respirator with a full facepiece and an organic vapor canister.
 - For Unknown Concentration or Immediately Dangerous to Life or Health : Any supplied-air respirator with full facepiece and operated in a pressure-demand or other positive-pressure mode in combination with a separate escape supply. Any self-contained breathing apparatus with a full facepiece.
- Eye protection**
 - Wear primary eye protection such as splash resistant safety goggles with a secondary protection face shield.
 - Provide an emergency eye wash station and quick drench shower in the immediate work area.
- Hand protection**
 - Wear appropriate glove.
- Skin protection**
 - Wear appropriate clothing.
- Others**
 - Not available

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance(State)	Liquid
Appearance(Color)	L. VIOLET
Odor	Odorless
Odor threshold	Not available
pH	8.0- ± 1.0
Melting point/Freezing point	Not available
Initial boiling point and boiling range	> 100 °C
Flash point	300 °C
Evaporation rate	Not available
Flammability(solid, gas)	Not applicable
Upper/Lower Flammability or explosive	Not available
Vapour pressure	Not available
Vapour density	Not available
Relative density	1.1 ± 0.05 g/cm3
Solubility	Fully miscible
Partition coefficient of n-octanol/water	Not available
Autoignition temperature	No self-igniting
Decomposition temperature	Not available
Viscosity	650 ± 150 Cps
Explosive properties	Not explosive
Oxidizing properties	Not available

10. STABILITY AND REACTIVITY

A. Chemical Stability

- This material is stable under recommended storage and handling conditions.

B. Possibility of hazardous reactions

- Hazardous Polymerization will not occur.

C. Conditions to avoid

- Avoid contact with incompatible materials and condition.
- Avoid : Accumulation of electrostatic charges, Heating, Flames and hot surfaces

D. Incompatible materials

- Not available

E. Hazardous decomposition products

- May emit flammable vapour if involved in fire.

11. TOXICOLOGICAL INFORMATION

A. Information on the likely routes of exposure

- (Respiratory tracts)
 - Not available
- (Oral)
 - Not available
- (Eye-Skin)
 - Cause mild skin irritation.
 - Causes serious eye irritation

B. Delayed and immediate effects and also chronic effects from short and long term exposure

- Acute toxicity
 - * Oral
 - Product (ATEmix) : >5,000mg/kg
 - [WATER] : LD50 > 90,000 mg/kg Rat (KOSHA)
 - [POLY ETHYLENE GLYCOL] : LD50 = 600 mg/kg Rat (NLM: ChemIDPlus)
 - [C.I. PIGMENT RED 122] : LD50 > 23,000 mg/kg Rat (NLM,TOMES;RTECS,Loil)

- [ALUMINIUM POWDER] : LD50 > 15,900 mg/kg Rat (OECD TG 401)
- [2-AMINO-2-METHYL-1-PROPANOL] : LD50 = 2,900 mg/kg Rat (NITE)

* **Dermal**

- Product (ATEmix) : >5,000mg/kg
- [C.I. PIGMENT RED 122] : LD50 > 3,000 mg/kg Rabbit (NLM,TOMES;RTECS)
- [2-AMINO-2-METHYL-1-PROPANOL] : LD50 > 2,000 mg/kg Rabbit (IUCLID)

* **Inhalation**

- Product (ATEmix) : Not available
- [ALUMINIUM POWDER] : Dust LC50 > 0.888 mg/L 4 hr Rat (OECD TG 403, GLP)

Skin corrosion/irritation

- Cause mild skin irritation.

Serious eye damage/irritation

- Causes serious eye irritation

Respiratory sensitization

- Not available

Skin sensitization

- Not available

Carcinogenicity

* **IARC**

- Not available

* **OSHA**

- Not available

* **ACGIH**

- [ALUMINIUM POWDER] : A4

* **NTP**

- Not available

* **EU CLP**

- Not available

Germ cell mutagenicity

- Not available

Reproductive toxicity

- Not available

STOT-single exposure

- Not available

STOT-repeated exposure

- May cause damage to organs through prolonged or repeated exposure

Aspiration hazard

- Not available

12. ECOLOGICAL INFORMATION

A. Ecotoxicity

Fish

- [POLY ETHYLENE GLYCOL] : LC50 >20,000 mg/L 96 hr Oncorhynchus mykiss (ECOTOX)
- [C.I. PIGMENT RED 122] : LD50 = 91.237 mg/L 96 hr (Estimate)

Crustaceans

- [C.I. PIGMENT RED 122] : LC50 = 100.988 mg/L 48 hr (Estimate)
- [ALUMINIUM POWDER] : NOEC > 100 mg/L 48 hr Daphnia magna (IUCLID)

Algae

- [C.I. PIGMENT RED 122] : EC50 = 64.866 mg/L 96 hr (Estimate)
- [ALUMINIUM POWDER] : NOEC ≥ 0.052 mg/L 72 hr Selenastrum capricornutum (OECD TG 201, GLP)

B. Persistence and degradability

Persistence

- [WATER] : log Kow -1.38
- [C.I. PIGMENT RED 122] : log Kow 2.47 (Safety and Health Information Service)

Degradability

- [2-AMINO-2-METHYL-1-PROPANOL] : BOD5/COD = 0.005

C. Bioaccumulative potential **Bioaccumulative potential**

- [C.I. PIGMENT RED 122] : BCF 2.307 (Estimate)
- [2-AMINO-2-METHYL-1-PROPANOL] : BCF 1 ~ 3 (Leuciscus idus(Fish, fresh water), 50ug/l)

 Biodegradation

- [2-AMINO-2-METHYL-1-PROPANOL] : Biodegradability = 40 (%) 28 day (NITE)

D. Mobility in soil

- Not available

E. Other adverse effects

- Not available

13. DISPOSAL CONSIDERATIONS**A. Disposal methods**

- Since more than two kinds of designated waste is mixed, it is difficult to treat separately, then can be reduction or stabilization by incineration or similar process.
- If water separation is possible, pre-process with Water separation process.
- Dispose by incineration.

B. Special precautions for disposal

- The user of this product must dispose by oneself or entrust it to a waste disposer, a person who recycles other's waste or establishes and operates waste disposal facilities.
- Dispose of waste in accordance with all applicable laws and regulations.

14. TRANSPORT INFORMATION**A. UN No. (IMDG CODE/IATA DGR)**

- 3082

B. Proper shipping name

- ENVIRONMENTALLY HAZARDOUS SUBSTANCES, LIQUID, N.O.S.

C. Hazard Class

- 9

D. IMDG CODE/IATA DGR Packing group

- III

E. Marine pollutant

- Applicable

F. Special precautions for user related to transport or transportation measures

- Local transport follows in accordance with Dangerous goods Safety Management Law.
- Package and transport follow in accordance with Department of Transportation (DOT) and other regulatory agency requirements.
- EmS FIRE SCHEDULE : F-A (General fire schedule)
- EmS SPILLAGE SCHEDULE : S-F (Water-soluble marine pollutants)

15. REGULATORY INFORMATION**A. National and/or international regulatory information** **POPs Management Law**

- Not applicable

 Information of EU Classification

- * **Classification**
 - [ALUMINIUM POWDER] : H261, H250, H228
 - [2-AMINO-2-METHYL-1-PROPANOL] : H319, H315, H412
- **U.S. Federal regulations**
 - * **OSHA PROCESS SAFETY (29CFR1910.119)**
 - Not applicable
 - * **CERCLA Section 103 (40CFR302.4)**
 - Not applicable
 - * **EPCRA Section 302 (40CFR355.30)**
 - Not applicable
 - * **EPCRA Section 304 (40CFR355.40)**
 - Not applicable
 - * **EPCRA Section 313 (40CFR372.65)**
 - [ALUMINIUM POWDER] : Applicable
- **Rotterdam Convention listed ingredients**
 - Not applicable
- **Stockholm Convention listed ingredients**
 - Not applicable
- **Montreal Protocol listed ingredients**
 - Not applicable

16. OTHER INFORMATION

A. Reference

- The information contained herein is believed to be accurate. It is provided independently of any sale of the product for purpose of hazard communication. It is not intended to constitute performance information concerning the product. No express warranty, or implied warranty of merchantability or fitness for a particular purpose is made with respect to the product or the information contained herein.

- This Safety Data Sheet was compiled with data and information from the following sources: KOSHA, NITE, ESIS, NLM, SIDS, IPCS

- Disclaimer of Liability

This information is based on our present state of knowledge.

It should not therefore be construed as guaranteeing specific properties of the products

Described or their suitability for a particular application. YOU&I Corporation assumes

no responsibility for personal injury or property damage caused by the material.

Users assume all risks associated with the use of the material.

***** End of Documents

SAFETY DATA SHEET



Date of issue: 2019-07-04

Revision date: Not applicable

SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1. Product identifier

Trade name/designation : SGI- KHAKI 330

1.2. Relevant identified uses of the substance or mixture and uses advised against

1.2.1. Relevant identified uses

- Water-soluble stationary ink

1.2.2. Uses advised against

- Not available

1.3. Details of the supplier of the safety data sheet

Manufacturer/Supplier : YOU&I COPORATION
 Address : 53, EMTIBEUI 26-RO, SIHEUNG-SI, GYEONGGI-DO, KOREA (ZIP CODE) 15118
 Telephone : 82-31-494-2030
 Email : tech@youicolor.com

1.4. Emergency telephone number

82-31-494-2030 (This number is serviced during office hours only.)

EU-wide emergency number : 112

See section 16.6 for the list of telephone number of poison centers in the European Economic Area.

SECTION 2: HAZARD IDENTIFICATION

A. GHS CLASSIFICATION

- Skin corrosion/irritation : Category3
- Serious eye damage/irritation : Category2A
- Carcinogenicity : Category2
- Specific target organ toxicity(Repeated exposure) : Category2
- Chronic aquatic toxicity : Category2

B. GHS LABEL ELEMENTS

Hazard symbols



Signal words

- Warning

Hazard statements

- H316 Cause mild skin irritation.
- H319 Causes serious eye irritation
- H351 Suspected of causing cancer
- H373 May cause damage to organs through prolonged or repeated exposure (Refer Section SDS 11)
- H411 Toxic to aquatic life with long lasting effects

Precautionary statements

1) Prevention

- P201 Obtain special instructions before use.
- P202 Do not handle until all safety precautions have been read and understood.
- P260 Do not breathe gas/mist/vapours/spray.
- P264 Wash hands thoroughly after handling.
- P273 Avoid release to the environment.

- P280 Wear protective gloves/protective clothing/eye protection/face protection.

2) Response

- P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- P308+P313 If exposed or concerned: Get medical advice/attention.
- P314 Get medical advice/attention if you feel unwell.
- P332+P313 If skin irritation occurs: Get medical advice/attention.
- P337+P313 If eye irritation persists: Get medical advice/attention.
- P391 Collect spillage.

3) Storage

- P405 Store locked up.

4) Disposal

- P501 Dispose of contents/container in accordance with local/regional/national/international regulation

C. Other hazards which do not result in classification : (NFPA Classification), (HMIS Classification)○ **NFPA grade (0 ~ 4 level)**

- Health : 2, Flammability : 1, Reactivity : 0

○ **HMIS ratings (0 ~ 4 level)**

- Health : 2, Flammability : 1, Reactivity : 0

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Name	Trade names and Synonyms	CAS No.	% [weight]
WATER	Not applicable	7732-18-5	40~60
GLYCERINE	Not applicable	56-81-5	15~20
ALUMINIUM POWDER	Not applicable	7429-90-5	3~7
POLY ETHYLENE GLYCOL	Not applicable	25322-68-3	10~15
C.I. PIGMENT BLUE 15:3	Not applicable	205-685-1	0~5
C.I. PIGMENT YELLOW 83	Not applicable	5567-15-7	0~5
2-AMINO-2-METHYL-1-PROPANOL	Not applicable	124-68-5	0~1

4. FIRST AID MEASURES**A. Eye contact**

- Do not rub your eyes.
- Immediately flush eyes with plenty of water for at least 15 minutes and call a doctor/physician.
- Get medical attention immediately.
- Go to the hospital immediately if symptoms(flare, irritate) occur.
- Remove contact lenses if worn.

B. Skin contact

- Flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes.
- Wash contaminated clothing thoroughly before re-using.
- Get medical attention immediately.

C. Inhalation contact

- When exposed to large amounts of steam and mist, move to fresh air.
- Take specific treatment if needed.
- Get medical attention immediately.
- If breathing is stopped or irregular, give artificial respiration and supply oxygen.

D. Ingestion contact

- Please be advised by doctor whether induction of vomit is demanded or not.
- Rinse your mouth with water immediately.
- Get medical attention immediately.

E. Delayed and immediate effects and also chronic effects from short and long term exposure

- Not available

F. Notes to physician

- Notify medical personnel of contaminated situations and have them take appropriate protective measures.
- If exposed or concerned, get medical attention/advice.

5. FIREFIGHTING MEASURES**A. Suitable (Unsuitable) extinguishing media**

- Water, foam, CO₂, NaHCO₃
- Avoid use of water jet for extinguishing

B. Specific hazards arising from the chemical

- Not available

C. Special protective actions for firefighters

- Notify your local firestation and inform the location of the fire and characteristics hazard.
- Avoid inhalation of materials or combustion by-products.
- Do not access if the tank on fire.
- Use appropriate extinguishing measure suitable for surrounding fire.
- Wear appropriate protective equipment.
- Keep containers cool with water spray.
- Vapor or gas is burned at distant ignition sources can be spread quickly.

6. ACCIDENTAL RELEASE MEASURES**A. Personal precautions, protective equipment and emergency procedures**

- Wear proper personal protective apparatus as indicated in Section 8 and avoid skin contact and inhalation.
- Must work against the wind, let the upwind people to evacuate.
- Move container to safe area from the leak area.
- Do not direct water at spill or source of leak.
- Avoid skin contact and inhalation.
- Cleanup and disposal under expert supervision is advised.
- Keep unauthorized people away, isolate hazard area and deny entry.

B. Environmental precautions

- Prevent runoff and contact with waterways, drains or sewers.
- If large amounts have been spilled, inform the relevant authorities.

C. Methods and materials for containment and cleaning up

- Large spill : Stay upwind and keep out of low areas. Dike for later disposal.
- Notification to central government, local government. When emissions at least of the standard amount
- Dispose of waste in accordance with local regulation.
- Appropriate container for disposal of spilled material collected.
- Small leak: sand or other non-combustible material, please let use absorption.
- Wipe off the solvent.
- Dike for later disposal.
- Prevent the influx to waterways, sewers, basements or confined spaces.

D. PACs (Protective Action Criteria)

- o **PAC-1**
 - [POLY ETHYLENE GLYCOL] : 30 mg/m³
 - [2-AMINO-2-METHYL-1-PROPANOL] : 17 mg/m³
- o **PAC-2**
 - [POLY ETHYLENE GLYCOL] : 1,300 mg/m³
 - [2-AMINO-2-METHYL-1-PROPANOL] : 190 mg/m³
- o **PAC-3**
 - [POLY ETHYLENE GLYCOL] : 7,700 mg/m³
 - [2-AMINO-2-METHYL-1-PROPANOL] : 570 mg/m³

7. HANDLING AND STORAGE**A. Precautions for safe handling**

- Avoid direct physical contact.
- Since emptied containers retain product residue(vapor, liquid, solid) follow all MSDS and label warnings even after container is emptied.
- Avoid contact with incompatible materials.
- Get the manual before use.
- Do not inhale the steam prolonged or repeated.
- Contaminated work clothing should not be allowed out of the workplace.

B. Conditions for safe storage, including any incompatibilities

- Do not apply any physical shock to container.
- Avoid direct sunlight.
- Keep in the original container.
- Please pay attention to incompatibilities materials and conditions to avoid.
- Keep sealed when not in use.
- By specifying a storage area for carcinogenic substances.
- Collected them in sealed containers.
- Store away from water and sewer.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION**A. Exposure limits**

- ACGIH TLV**
 - [ALUMINIUM POWDER] : TWA, 1 mg/m³, Respirable Particulate Matter
- OSHA PEL**
 - [ALUMINIUM POWDER]: 15 mg/m³ (Total dust), 5 mg/m³ (Respirable fraction)

B. Engineering controls

- Business owner is recommended to maintain below recommended exposure limits for the working place with general exhaust of gas/vapour/mist/fume.

C. Individual protection measures, such as personal protective equipment

- Respiratory protection**
 - Under conditions of frequent use or heavy exposure, Respiratory protection may be needed.
 - Respiratory protection is ranked in order from minimum to maximum.
 - Consider warning properties before use.
 - Any chemical cartridge respirator with organic vapor cartridge(s).
 - Any chemical cartridge respirator with a full facepiece and organic vaporcartridge(s).
 - Any air-purifying respirator with a full facepiece and an organic vapor canister.
 - For Unknown Concentration or Immediately Dangerous to Life or Health : Any supplied-air respirator with full facepiece and operated in a pressure-demand or other positive-pressure mode in combination with a separate escape supply. Any self-contained breathing apparatus with a full facepiece.
- Eye protection**
 - Wear primary eye protection such as splash resistant safety goggles with a secondary protection face shield.
 - Provide an emergency eye wash station and quick drench shower in the immediate work area.
- Hand protection**
 - Wear appropriate glove.
- Skin protection**
 - Wear appropriate clothing.
- Others**
 - Not available

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES**9.1. Information on basic physical and chemical properties**

Appearance(State)	Liquid
-------------------	--------

Appearance(Color)	KHAKI
Odor	Odorless
Odor threshold	Not available
pH	8.0 ± 1.0
Melting point/Freezing point	Not available
Initial boiling point and boiling range	> 100 °C
Flash point	300 °C
Evaporation rate	Not available
Flammability(solid, gas)	Not applicable
Upper/Lower Flammability or explosive	Not available
Vapour pressure	Not available
Vapour density	Not available
Relative density	1.1 ± 0.05 g/cm3
Solubility	Fully miscible
Partition coefficient of n-octanol/water	Not available
Autoignition temperature	No self-igniting
Decomposition temperature	Not available
Viscosity	650 ± 150 Cps
Explosive properties	Not explosive
Oxidizing properties	Not available

10. STABILITY AND REACTIVITY

A. Chemical Stability

- This material is stable under recommended storage and handling conditions.

B. Possibility of hazardous reactions

- Hazardous Polymerization will not occur.

C. Conditions to avoid

- Avoid contact with incompatible materials and condition.
- Avoid : Accumulation of electrostatic charges, Heating, Flames and hot surfaces

D. Incompatible materials

- Not available

E. Hazardous decomposition products

- May emit flammable vapour if involved in fire.

11. TOXICOLOGICAL INFORMATION

A. Information on the likely routes of exposure

- (Respiratory tracts)
 - Not available
- (Oral)
 - Not available
- (Eye-Skin)
 - Cause mild skin irritation.
 - Causes serious eye irritation

B. Delayed and immediate effects and also chronic effects from short and long term exposure

- Acute toxicity
 - * Oral
 - Product (ATEmix) : > 5,000mg/kg
 - [WATER] : LD50 > 90,000 mg/kg Rat (KOSHA)
 - [POLY ETHYLENE GLYCOL] : LD50 = 600 mg/kg Rat (NLM: ChemIDPlus)
 - [C.I.PIGMENT YELLOW 83] : LD50 > 5,000 mg/kg Rat (IUCLID; THOMSON)
 - [C.I. PIGMENT BLUE 15:3] : LD50 > 6,400 mg/kg Rat (IUCLID)

- [ALUMINIUM POWDER] : LD50 > 15,900 mg/kg Rat (OECD TG 401)
- [2-AMINO-2-METHYL-1-PROPANOL] : LD50 = 2,900 mg/kg Rat (NITE)

* **Dermal**

- Product (ATEmix) : >5,000mg/kg
- [C.I. PIGMENT BLUE 15:3] : LD50 >5,000 mg/kg Rabbit (OECD TG 402)
- [2-AMINO-2-METHYL-1-PROPANOL] : LD50 > 2,000 mg/kg Rabbit (IUCLID)

* **Inhalation**

- Product (ATEmix) : Not available
- [ALUMINIUM POWDER] : Dust LC50 > 0.888 mg/L 4 hr Rat (OECD TG 403, GLP)

Skin corrosion/irritation

- Cause mild skin irritation.

Serious eye damage/irritation

- Causes serious eye irritation

Respiratory sensitization

- Not available

Skin sensitization

- Not available

Carcinogenicity

* **IARC**

- Not available

* **OSHA**

- Not available

* **ACGIH**

- [ALUMINIUM POWDER] : A4

* **NTP**

- Not available

* **EU CLP**

- Not available

Germ cell mutagenicity

- Not available

Reproductive toxicity

- Not available

STOT-single exposure

- Not available

STOT-repeated exposure

- May cause damage to organs through prolonged or repeated exposure

Aspiration hazard

- Not available

12. ECOLOGICAL INFORMATION

A. Ecotoxicity

Fish

- [POLY ETHYLENE GLYCOL] : LC50 >20,000 mg/L 96 hr Oncorhynchus mykiss (ECOTOX)
- [C.I.PIGMENT YELLOW 83] : LC50 = 45 mg/L 48 hr Oncorhynchus mykiss (ECOTOX)
- [C.I. PIGMENT BLUE 15:3] : LC50 = 100 ~ 355.6 mg/L 96 hr (ECHA)

Crustaceans

- [ALUMINIUM POWDER] : NOEC > 100 mg/L 48 hr Daphnia magna (IUCLID)

Algae

- [ALUMINIUM POWDER] : NOEC ≥ 0.052 mg/L 72 hr Selenastrum capricornutum (OECD TG 201, GLP)

B. Persistence and degradability

Persistence

- [WATER] : log Kow -1.38
- [C.I. PIGMENT BLUE 15:3] : log Kow 6.60 (Estimate)
- [C.I.PIGMENT YELLOW 83] : log Kow 7.54 (IUCLID)

Degradability

- [C.I.PIGMENT YELLOW 83] : log Kow 7.54 (IUCLID)
- [2-AMINO-2-METHYL-1-PROPANOL] : BOD5/COD = 0.005

C. Bioaccumulative potential

○ Bioaccumulative potential

- [2-AMINO-2-METHYL-1-PROPANOL] : BCF 1 ~ 3 (Leuciscus idus(Fish, fresh water), 50ug/l)
- [C.I.PIGMENT YELLOW 83] : BCF 10 (Estimate)
- [C.I. PIGMENT BLUE 15:3] : BCF 0.33 ~ 11 (OECD 305C, IUCLID)

○ Biodegradation

- [C.I. PIGMENT BLUE 15:3] : Biodegradability = 1 (%) 28 day (IUCLID), water solubility : 4~9 ug/L (ECHA)
- [C.I.PIGMENT YELLOW 83] : Biodegradability = 6 (%) 28 day (Non-biodegradability) (NITE)
- [2-AMINO-2-METHYL-1-PROPANOL] : Biodegradability = 40 (%) 28 day (NITE)

D. Mobility in soil

- Not available

E. Other adverse effects

- Not available

13. DISPOSAL CONSIDERATIONS

A. Disposal methods

- Since more than two kinds of designated waste is mixed, it is difficult to treat separately, then can be reduction or stabilization by incineration or similar process.
- If water separation is possible, pre-process with Water separation process.
- Dispose by incineration.

B. Special precautions for disposal

- The user of this product must dispose by oneself or entrust it to a waste disposer, a person who recycles other's waste or establishes and operates waste disposal facilities.
- Dispose of waste in accordance with all applicable laws and regulations.

14. TRANSPORT INFORMATION

A. UN No. (IMDG CODE/IATA DGR)

- 3082

B. Proper shipping name

- ENVIRONMENTALLY HAZARDOUS SUBSTANCES, LIQUID, N.O.S.

C. Hazard Class

- 9

D. IMDG CODE/IATA DGR Packing group

- III

E. Marine pollutant

- Applicable

F. Special precautions for user related to transport or transportation measures

- Local transport follows in accordance with Dangerous goods Safety Management Law.
- Package and transport follow in accordance with Department of Transportation (DOT) and other regulatory agency requirements.
- EmS FIRE SCHEDULE : F-A (General fire schedule)
- EmS SPILLAGE SCHEDULE : S-F (Water-soluble marine pollutants)

15. REGULATORY INFORMATION

A. National and/or international regulatory information

- POPs Management Law**
 - Not applicable
- Information of EU Classification**
 - * **Classification**
 - [ALUMINIUM POWDER] : H261, H250, H228
 - [2-AMINO-2-METHYL-1-PROPANOL] : H319, H315, H412
- U.S. Federal regulations**
 - * **OSHA PROCESS SAFETY (29CFR1910.119)**
 - Not applicable
 - * **CERCLA Section 103 (40CFR302.4)**
 - Not applicable
 - * **EPCRA Section 302 (40CFR355.30)**
 - Not applicable
 - * **EPCRA Section 304 (40CFR355.40)**
 - Not applicable
 - * **EPCRA Section 313 (40CFR372.65)**
 - [ALUMINIUM POWDER] : Applicable
- Rotterdam Convention listed ingredients**
 - Not applicable
- Stockholm Convention listed ingredients**
 - Not applicable
- Montreal Protocol listed ingredients**
 - Not applicable

16. OTHER INFORMATION**A. Reference**

- The information contained herein is believed to be accurate. It is provided independently of any sale of the product for purpose of hazard communication. It is not intended to constitute performance information concerning the product. No express warranty, or implied warranty of merchantability or fitness for a particular purpose is made with respect to the product or the information contained herein.

- This Safety Data Sheet was compiled with data and information from the following sources: KOSHA, NITE, ESIS, NLM, SIDS, IPCS

Disclaimer of Liability

This information is based on our present state of knowledge.

It should not therefore be construed as guaranteeing specific properties of the products

Described or their suitability for a particular application. YOU&I Corporation assumes

no responsibility for personal injury or property damage caused by the material.

Users assume all risks associated with the use of the material.

***** End of Documents

SAFETY DATA SHEET



Date of issue: 2019-06-04
Revision date: Not

SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1. Product identifier

Trade : SGI- D. BLUE 330

1.2. Relevant identified uses of the substance or mixture and uses advised against

1.2.1. Relevant identified uses

- Water-soluble stationary ink

1.2.2. Uses advised against

- Not available

1.3. Details of the supplier of the safety data sheet

Manufacturer/Supplier : YOU&I COPORATION
Address : 53, EMTIBEU1 26-RO, SIHEUNG-SI, GYEONGGI-DO, KOREA (ZIP CODE) 15118
Telephone : 82-31-494-2030
Email : tech@youicolor.com

1.4. Emergency telephone number

82-31-494-2030 (This number is serviced during office hours only.)
EU-wide emergency number : 112
See section 16.6 for the list of telephone number of poison centers in the European Economic Area.

SECTION 2: HAZARD IDENTIFICATION

A. GHS CLASSIFICATION

- Skin corrosion/irritation : Category3
- Serious eye damage/irritation : Category2A
- Carcinogenicity : Category2
- Specific target organ toxicity(Repeated exposure) : Category2
- Chronic aquatic toxicity : Category2

B. GHS LABEL ELEMENTS

Hazard symbols



Signal words

- Warning

Hazard statements

- H316 Cause mild skin irritation.
- H319 Causes serious eye irritation
- H351 Suspected of causing cancer
- H373 May cause damage to organs through prolonged or repeated exposure (Refer Section SDS 11)
- H411 Toxic to aquatic life with long lasting effects

Precautionary statements

1) Prevention

- P201 Obtain special instructions before use.
- P202 Do not handle until all safety precautions have been read and understood.
- P260 Do not breathe gas/mist/vapours/spray.
- P264 Wash hands thoroughly after handling.
- P273 Avoid release to the environment.

- P280 Wear protective gloves/protective clothing/eye protection/face protection.

2) Response

- P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- P308+P313 If exposed or concerned: Get medical advice/attention.
- P314 Get medical advice/attention if you feel unwell.
- P332+P313 If skin irritation occurs: Get medical advice/attention.
- P337+P313 If eye irritation persists: Get medical advice/attention.
- P391 Collect spillage.

3) Storage

- P405 Store locked up.

4) Disposal

- P501 Dispose of contents/container in accordance with local/regional/national/international regulation

C. Other hazards which do not result in classification : (NFPA Classification), (HMIS Classification)**○ NFPA grade (0 ~ 4 level)**

- Health : 2, Flammability : 1, Reactivity : 0

○ HMIS ratings (0 ~ 4 level)

- Health : 2, Flammability : 1, Reactivity : 0

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Name	Trade names and Synonyms	CAS No.	% [weight]
WATER	Not applicable	7732-18-5	40~60
GLYCERINE	Not applicable	56-81-5	15~20
ALUMINIUM POWDER	Not applicable	7429-90-5	3~7
POLY ETHYLENE GLYCOL	Not applicable	25322-68-3	10~15
C.I. PIGMENT VIOLET 23	Not applicable	6358-30-1	0~5
C.I. PIGMENT BLUE 15:3	Not applicable	147-14-8	0~5
2-AMINO-2-METHYL-1-PROPANOL	Not applicable	124-68-5	0~1

4. FIRST AID MEASURES**A. Eye contact**

- Do not rub your eyes.
- Immediately flush eyes with plenty of water for at least 15 minutes and call a doctor/physician.
- Get medical attention immediately.
- Go to the hospital immediately if symptoms(flare, irritate) occur.
- Remove contact lenses if worn.

B. Skin contact

- Flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes.
- Wash contaminated clothing thoroughly before re-using.
- Get medical attention immediately.

C. Inhalation contact

- When exposed to large amounts of steam and mist, move to fresh air.
- Take specific treatment if needed.
- Get medical attention immediately.
- If breathing is stopped or irregular, give artificial respiration and supply oxygen.

D. Ingestion contact

- Please be advised by doctor whether induction of vomit is demanded or not.
- Rinse your mouth with water immediately.
- Get medical attention immediately.

E. Delayed and immediate effects and also chronic effects from short and long term exposure

- Not available

F. Notes to physician

- Notify medical personnel of contaminated situations and have them take appropriate protective measures.
- If exposed or concerned, get medical attention/advice.

5. FIREFIGHTING MEASURES**A. Suitable (Unsuitable) extinguishing media**

- Water, foam, CO₂, NaHCO₃
- Avoid use of water jet for extinguishing

B. Specific hazards arising from the chemical

- Not available

C. Special protective actions for firefighters

- Notify your local firestation and inform the location of the fire and characteristics hazard.
- Avoid inhalation of materials or combustion by-products.
- Do not access if the tank on fire.
- Use appropriate extinguishing measure suitable for surrounding fire.
- Wear appropriate protective equipment.
- Keep containers cool with water spray.
- Vapor or gas is burned at distant ignition sources can be spread quickly.

6. ACCIDENTAL RELEASE MEASURES**A. Personal precautions, protective equipment and emergency procedures**

- Wear proper personal protective apparatus as indicated in Section 8 and avoid skin contact and inhalation.
- Must work against the wind, let the upwind people to evacuate.
- Move container to safe area from the leak area.
- Do not direct water at spill or source of leak.
- Avoid skin contact and inhalation.
- Cleanup and disposal under expert supervision is advised.
- Keep unauthorized people away, isolate hazard area and deny entry.

B. Environmental precautions

- Prevent runoff and contact with waterways, drains or sewers.
- If large amounts have been spilled, inform the relevant authorities.

C. Methods and materials for containment and cleaning up

- Large spill : Stay upwind and keep out of low areas. Dike for later disposal.
- Notification to central government, local government. When emissions at least of the standard amount
- Dispose of waste in accordance with local regulation.
- Appropriate container for disposal of spilled material collected.
- Small leak: sand or other non-combustible material, please let use absorption.
- Wipe off the solvent.
- Dike for later disposal.
- Prevent the influx to waterways, sewers, basements or confined spaces.

D. PACs (Protective Action Criteria)

- o **PAC-1**
 - [POLY ETHYLENE GLYCOL] : 30 mg/m³
 - [2-AMINO-2-METHYL-1-PROPANOL] : 17 mg/m³
- o **PAC-2**
 - [POLY ETHYLENE GLYCOL] : 1,300 mg/m³
 - [2-AMINO-2-METHYL-1-PROPANOL] : 190 mg/m³
- o **PAC-3**
 - [POLY ETHYLENE GLYCOL] : 7,700 mg/m³
 - [2-AMINO-2-METHYL-1-PROPANOL] : 570 mg/m³

7. HANDLING AND STORAGE**A. Precautions for safe handling**

- Avoid direct physical contact.
- Since emptied containers retain product residue(vapor, liquid, solid) follow all MSDS and label warnings even after container is emptied.
- Avoid contact with incompatible materials.
- Get the manual before use.
- Do not inhale the steam prolonged or repeated.
- Contaminated work clothing should not be allowed out of the workplace.

B. Conditions for safe storage, including any incompatibilities

- Do not apply any physical shock to container.
- Avoid direct sunlight.
- Keep in the original container.
- Please pay attention to incompatibilities materials and conditions to avoid.
- Keep sealed when not in use.
- By specifying a storage area for carcinogenic substances.
- Collected them in sealed containers.
- Store away from water and sewer.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION**A. Exposure limits**

- ACGIH TLV**
 - [ALUMINIUM POWDER] : TWA, 1 mg/m³, Respirable Particulate Matter
- OSHA PEL**
 - [ALUMINIUM POWDER]: 15 mg/m³ (Total dust), 5 mg/m³ (Respirable fraction)

B. Engineering controls

- Business owner is recommended to maintain below recommended exposure limits for the working place with general exhaust of gas/vapour/mist/fume.

C. Individual protection measures, such as personal protective equipment

- Respiratory protection**
 - Under conditions of frequent use or heavy exposure, Respiratory protection may be needed.
 - Respiratory protection is ranked in order from minimum to maximum.
 - Consider warning properties before use.
 - Any chemical cartridge respirator with organic vapor cartridge(s).
 - Any chemical cartridge respirator with a full facepiece and organic vaporcartridge(s).
 - Any air-purifying respirator with a full facepiece and an organic vapor canister.
 - For Unknown Concentration or Immediately Dangerous to Life or Health : Any supplied-air respirator with full facepiece and operated in a pressure-demand or other positive-pressure mode in combination with a separate escape supply. Any self-contained breathing apparatus with a full facepiece.
- Eye protection**
 - Wear primary eye protection such as splash resistant safety goggles with a secondary protection face shield.
 - Provide an emergency eye wash station and quick drench shower in the immediate work area.
- Hand protection**
 - Wear appropriate glove.
- Skin protection**
 - Wear appropriate clothing.
- Others**
 - Not available

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES**9.1. Information on basic physical and chemical properties**

Appearance(State)	Liquid
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Appearance(Color)	D. BLUE
Odor	Odorless
Odor threshold	Not available
pH	8.0 ± 1.0
Melting point/Freezing point	Not available
Initial boiling point and boiling range	> 100 °C
Flash point	300 °C
Evaporation rate	Not available
Flammability(solid, gas)	Not applicable
Upper/Lower Flammability or explosive	Not available
Vapour pressure	Not available
Vapour density	Not available
Relative density	1.1 ± 0.05 g/cm3
Solubility	Fully miscible
Partition coefficient of n-octanol/water	Not available
Autoignition temperature	No self-igniting
Decomposition temperature	Not available
Viscosity	650 ± 150 Cps
Explosive properties	Not explosive
Oxidizing properties	Not available

10. STABILITY AND REACTIVITY

A. Chemical Stability

- This material is stable under recommended storage and handling conditions.

B. Possibility of hazardous reactions

- Hazardous Polymerization will not occur.

C. Conditions to avoid

- Avoid contact with incompatible materials and condition.
- Avoid : Accumulation of electrostatic charges, Heating, Flames and hot surfaces

D. Incompatible materials

- Not available

E. Hazardous decomposition products

- May emit flammable vapour if involved in fire.

11. TOXICOLOGICAL INFORMATION

A. Information on the likely routes of exposure

- (Respiratory tracts)
 - Not available
- (Oral)
 - Not available
- (Eye-Skin)
 - Cause mild skin irritation.
 - Causes serious eye irritation

B. Delayed and immediate effects and also chronic effects from short and long term exposure

- Acute toxicity
 - * Oral
 - Product (ATEmix) : >5,000mg/kg
 - [WATER] : LD50 > 90,000 mg/kg Rat (KOSHA)
 - [POLY ETHYLENE GLYCOL] : LD50 = 600 mg/kg Rat (NLM: ChemIDPLus)
 - [C.I. PIGMENT BLUE 15:3] : LD50 > 6,400 mg/kg Rat (IUCLID)
 - [ALUMINIUM POWDER] : LD50 > 15,900 mg/kg Rat (OECD TG 401)

- [2-AMINO-2-METHYL-1-PROPANOL] : LD50 = 2,900 mg/kg Rat (NITE)
- * **Dermal**
 - Product (ATEmix) : >5,000mg/kg
 - [C.I. PIGMENT BLUE 15:3] : LD50 >5,000 mg/kg Rabbit (OECD TG 402)
 - [2-AMINO-2-METHYL-1-PROPANOL] : LD50 > 2,000 mg/kg Rabbit (IUCLID)
- * **Inhalation**
 - Product (ATEmix) : Not available
 - [ALUMINIUM POWDER] : Dust LC50 > 0.888 mg/L 4 hr Rat (OECD TG 403, GLP)
- Skin corrosion/irritation**
 - Cause mild skin irritation.
- Serious eye damage/irritation**
 - Causes serious eye irritation
- Respiratory sensitization**
 - Not available
- Skin sensitization**
 - Not available
- Carcinogenicity**
 - * **IARC**
 - Not available
 - * **OSHA**
 - Not available
 - * **ACGIH**
 - [ALUMINIUM POWDER] : A4
 - * **NTP**
 - Not available
 - * **EU CLP**
 - Not available
- Germ cell mutagenicity**
 - Not available
- Reproductive toxicity**
 - Not available
- STOT-single exposure**
 - Not available
- STOT-repeated exposure**
 - May cause damage to organs through prolonged or repeated exposure
- Aspiration hazard**
 - Not available

12. ECOLOGICAL INFORMATION

A. Ecotoxicity

- Fish**
 - [POLY ETHYLENE GLYCOL] : LC50 >20,000 mg/L 96 hr Oncorhynchus mykiss (ECOTOX)
 - [C.I. PIGMENT BLUE 15:3] : LC50 = 100 ~ 355.6 mg/L 96 hr (ECHA)
- Crustaceans**
 - [ALUMINIUM POWDER] : NOEC > 100 mg/L 48 hr Daphnia magna (IUCLID)
- Algae**
 - [ALUMINIUM POWDER] : NOEC ≥ 0.052 mg/L 72 hr Selenastrum capricornutum (OECD TG 201, GLP)

B. Persistence and degradability

- Persistence**
 - [WATER] : log Kow -1.38
 - [C.I. PIGMENT BLUE 15:3] : log Kow 6.60 (Estimate)
- Degradability**
 - Not available

C. Bioaccumulative potential

- Bioaccumulative potential**

- [C.I. PIGMENT BLUE 15:3] : BCF 0.33 ~ 11 (OECD 305C, IUCLID)
- [2-AMINO-2-METHYL-1-PROPANOL] : BCF 1 ~ 3 (Leuciscus idus(Fish, fresh water), 50ug/l)

Biodegradation

- [C.I. PIGMENT BLUE 15:3] : Biodegradability = 1 (%) 28 day (IUCLID), water solubility : 4~9 ug/L (ECHA)
- [2-AMINO-2-METHYL-1-PROPANOL] : Biodegradability = 40 (%) 28 day (NITE)

D. Mobility in soil

- Not available

E. Other adverse effects

- Not available

13. DISPOSAL CONSIDERATIONS

A. Disposal methods

- Since more than two kinds of designated waste is mixed, it is difficult to treat separately, then can be reduction or stabilization by incineration or similar process.
- If water separation is possible, pre-process with Water separation process.
- Dispose by incineration.

B. Special precautions for disposal

- The user of this product must dispose by oneself or entrust it to a waste disposer, a person who recycles other's waste or establishes and operates waste disposal facilities.
- Dispose of waste in accordance with all applicable laws and regulations.

14. TRANSPORT INFORMATION

A. UN No. (IMDG CODE/IATA DGR)

- 3082

B. Proper shipping name

- ENVIRONMENTALLY HAZARDOUS SUBSTANCES, LIQUID, N.O.S.

C. Hazard Class

- 9

D. IMDG CODE/IATA DGR Packing group

- III

E. Marine pollutant

- Applicable

F. Special precautions for user related to transport or transportation measures

- Local transport follows in accordance with Dangerous goods Safety Management Law.
- Package and transport follow in accordance with Department of Transportation (DOT) and other regulatory agency requirements.
- EmS FIRE SCHEDULE : F-A (General fire schedule)
- EmS SPILLAGE SCHEDULE : S-F (Water-soluble marine pollutants)

15. REGULATORY INFORMATION

A. National and/or international regulatory information

POPs Management Law

- Not applicable

Information of EU Classification

* **Classification**

- [ALUMINIUM POWDER] : H261, H228, H250
- [2-AMINO-2-METHYL-1-PROPANOL] : H319, H315, H412

U.S. Federal regulations

- * **OSHA PROCESS SAFETY (29CFR1910.119)**
 - Not applicable
- * **CERCLA Section 103 (40CFR302.4)**
 - Not applicable
- * **EPCRA Section 302 (40CFR355.30)**
 - Not applicable
- * **EPCRA Section 304 (40CFR355.40)**
 - Not applicable
- * **EPCRA Section 313 (40CFR372.65)**
 - [ALUMINIUM POWDER] : Applicable
- Rotterdam Convention listed ingredients**
 - Not applicable
- Stockholm Convention listed ingredients**
 - Not applicable
- Montreal Protocol listed ingredients**
 - Not applicable

16. OTHER INFORMATION

A. Reference

- The information contained herein is believed to be accurate. It is provided independently of any sale of the product for purpose of hazard communication. It is not intended to constitute performance information concerning the product. No express warranty, or implied warranty of merchantability or fitness for a particular purpose is made with respect to the product or the information contained herein.
- This Safety Data Sheet was compiled with data and information from the following sources: KOSHA, NITE, ESIS, NLM, SIDS, IPCS

- Disclaimer of Liability

This information is based on our present state of knowledge. It should not therefore be construed as guaranteeing specific properties of the products Described or their suitability for a particular application. YOU&I Corporation assumes no responsibility for personal injury or property damage caused by the material. Users assume all risks associated with the use of the material.

***** End of Documents



SAFETY DATA SHEET

According to Regulation (EC) No 1272/2008 (REACH),
Annex II (COMMISSION REGULATION (EU) No 2015/830)

Date of issue: 2018-06-20
Revision date: 2022-10-19

SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1. Product identifier

Trade : SGI- Y. GREEN

1.2. Relevant identified uses of the substance or mixture and uses advised against

1.2.1. Relevant identified uses

- Water-soluble stationary ink

1.2.2. Uses advised against

- Not available

1.3. Details of the supplier of the safety data sheet

Manufacturer/Supplier : YOU&I COPORATION
Address : 53, EMTIBEUI 26-RO, SIHEUNG-SI, GYEONGGI-DO, KOREA (ZIP CODE) 15118
Telephone : 82-31-494-2030
Email : tech@youicolor.com

1.4. Emergency telephone number

82-31-494-2030 (This number is serviced during office hours only.)
EU-wide emergency number : 112
See section 16.6 for the list of telephone number of poison centers in the European Economic Area.

SECTION 2: HAZARD IDENTIFICATION

2.1. Classification of the substance/mixture

2.1.1. Classification according to Regulation (EC) No 1272/2008 [CLP]

H228 - Flammable Solids 1
H261 - Substances and Mixtures which in contact with water emit flammable gases 2
H315 - Skin Corrosion / Irritation 2
H319 - Serious Eye Damage / Eye Irritation 2
H412 - Hazardous to the aquatic environment - chronic 3

2.2. Label elements

2.2.1. Labelling according to Regulation (EC) No 1272/2008 [CLP]

* Hazard Pictogram(s)



* Signal word : Danger

* Hazard statement(s)

H228 - Flammable solid
H261 - In contact with water releases flammable gases
H315 - Causes skin irritation
H319 - Causes serious eye irritation
H412 - Harmful to aquatic life with long lasting effects

* Precautionary statement(s)

- 1) Prevention
 - Not applicable
- 2) Response
 - Not applicable
- 3) Storage
 - Not applicable
- 4) Disposal

- Not applicable

2.3. Other hazards

- Not available

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1. Substances

- Not applicable

3.2. Mixtures

Name	CAS No.	EINECS NO.	% [weight]	Annex VI of Regulation (EC) No 1272/2008 (CLP Classification)
WATER	7732-18-5	231-791-2	40~60	Not classified
GLYCERINE	56-81-5	200-289-5	15~20	Not classified
ALUMINIUM POWDER	7429-90-5	231-072-3	3~7	 Flammable Solids 1 : H228 Substances and Mixtures which in contact with water emit flammable gases 2 : H261
C.I. PIGMENT YELLOW 83	5567-15-7	226-939-8	0~5	Not classified
C.I. PIGMENT GREEN 7	1328-53-6	215-524-7	0~5	Not classified
POLY ETHYLENE GLYCOL	25322-68-3	500-038-2	10~15	Not classified
2-AMINO-2-METHYL-1-PROPANOL	124-68-5	204-709-8	0~1	 Skin Corrosion / Irritation 2 : H315 Serious Eye Damage / Eye Irritation 2 : H319 Hazardous to the aquatic environment - chronic 3 : H412

SECTION 4: FIRST AID MEASURES

4.1. Description of first aid measures

General

- No general information.

Inhalation

- When exposed to large amounts of steam and mist, move to fresh air.
- Take specific treatment if needed.

Skin contact

- Flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes.
- Laundering enough contaminated clothing before reuse.

Eye contact

- Do not rub your eyes.
- Immediately flush eyes with plenty of water for at least 15 minutes and call a doctor/physician.

Ingestion

- Please be advised by doctor whether induction of vomit is demanded or not.
- Rinse your mouth with water immediately.

4.2. Most important symptoms and effects, both acute and delayed

- Not available

4.3. Indication of any immediate medical attention and special treatment needed

- Notify medical personnel of contaminated situations and have them take appropriate protective measures.

SECTION 5: FIREFIGHTING MEASURES

5.1. Extinguishing media

Suitable extinguishing media

- Water, foam, CO₂, NaHCO₃

Unsuitable extinguishing media

- Avoid use of water jet for extinguishing

5.2. Special hazards arising from the substance or mixture**Hazardous combustion products**

- Not available

5.3. Advice for firefighters

- Cool containers with water until well after fire is out.
- Keep unauthorized personnel out.
- Withdraw immediately in case of rising sound from venting safety devices or discoloration of tank.
- Wear appropriate protective equipment.
- Keep containers cool with water spray.
- Use fire fighting procedures suitable for surrounding area.
- Vapor or gas is burned at distant ignition sources can be spread quickly.

SECTION 6: ACCIDENTAL RELEASE MEASURES**6.1. Personal Precautions, protective equipment and emergency procedures****6.1.1. For non-emergency personnel**

- Protective equipment: Wear proper protective equipment.
- Emergency procedures: Not applicable
- If required, notify relevant authorities according to all applicable regulations.

6.1.2. For emergency responders

- Ventilate closed spaces before entering.
- Must work against the wind, let the upwind people to evacuate.
- Do not touch spilled material. Stop leak if you can do it without risk.
- Handling the damaged containers or spilled material after wearing protective equipment.
- Do not direct water at spill or source of leak.

6.2. Environmental precautions

- Prevent runoff and contact with waterways, drains or sewers.
- If large amounts have been spilled, inform the relevant authorities.
- Avoid dispersal of spilt material and runoff and contact with waterways, drains and sewers. If large spills, advise

6.3. Methods and material for containment and cleaning up**6.3.1. For containment**

- Clear spills immediately
- Clean up all spills immediately.
- Prevent, by any means available, spillage from entering drains or water course.

6.3.2. For cleaning up

- Large spill : Stay upwind and keep out of low areas. Dike for later disposal.
- Notification to central government, local government. When emissions at least of the standard amount
- Dispose of waste in accordance with local regulation.
- Appropriate container for disposal of spilled material collected.
- Small leak: sand or other non-combustible material, please let use absorption.
- Wipe off the solvent.
- Dike for later disposal.

6.3.3. Other information

- Slippery when spilt.

6.4. Reference to other sections

- See Section 7 for information on safe handling.
- See Section 8 for information on personal protection equipment.
- See Section 13 for information on disposal.

SECTION 7: HANDLING AND STORAGE**7.1. Precautions for safe handling**

- Avoid direct physical contact.
- Get the manual before use.
- Refer to Engineering controls and personal protective equipment.
- Do not handle until all safety precautions have been read and understood.
- Do not inhale the steam prolonged or repeated.

7.2. Conditions for safe storage, including any incompatibilities

- Save in cool, dry and well ventilated place.
- Check regularly for leaks.
- Please pay attention to incompatibilities materials and conditions to avoid.
- Keep sealed when not in use.
- No open fire.

7.3. Specific end use(s)

- See Section 1 for information on 1.2 Relevant identified uses.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION**8.1. Control parameters****8.1.1. Occupational exposure limits****European Union (EU) Commission Directive 2006/15/EC (IOELVs)**

- Not available

European Union (EU) Commission Directive 2006/15/EC (IOELVs) - Skin

- Not available

8.1.2. Recommended Monitoring Procedures

- Personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment.

8.1.3. DNEL/PNEC - Values

- Not available

8.2. Exposure controls**8.2.1. Appropriate engineering controls**

- A system of local and/or general exhaust is recommended to keep employee exposures above the Exposure Limits. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. The use of local exhaust ventilation is recommended to control emissions near the source.

8.2.2. Individual protection measures, such as personal protective equipment**Hand protection**

- Wear appropriate glove.

Eye protection

- Wear primary eye protection such as splash resistant safety goggles with a secondary protection face shield.
- Provide an emergency eye wash station and quick drench shower in the immediate work area.

Respiratory Protection

- Under conditions of frequent use or heavy exposure, Respiratory protection may be needed.
- Respiratory protection is ranked in order from minimum to maximum.
- Consider warning properties before use.
- Any chemical cartridge respirator with organic vapor cartridge(s).
- Any chemical cartridge respirator with a full face piece and organic vapor cartridge(s).
- Any air-purifying respirator with a full face piece and an organic vapor canister.
- For Unknown Concentration or Immediately Dangerous to Life or Health : Any supplied-air respirator with full face piece and operated in a pressure-demand or other positive-pressure mode in combination with a separate escape supply. Any self-contained breathing apparatus with a full face piece.

Skin protection

- Wear appropriate clothing.

8.2.3 Environmental exposure controls

- Do not let product enter drains. For ecological information refer to section 12.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES**9.1. Information on basic physical and chemical properties**

Appearance(State)	Liquid
Appearance(Color)	Y. GREEN
Odor	Odorless
Odor threshold	Not available
pH	8.0 ± 1.0
Melting point/Freezing point	Not available
Initial boiling point and boiling range	> 100 °C
Flash point	300 °C
Evaporation rate	Not available
Flammability(solid, gas)	Not applicable
Upper/Lower Flammability or explosive	Not available
Vapour pressure	Not available
Vapour density	Not available
Relative density	1.1 ± 0.05 g/cm3
Solubility	Fully miscible
Partition coefficient of n-octanol/water	Not available
Autoignition temperature	No self-igniting
Decomposition temperature	Not available
Viscosity	650 ± 150 Cps
Explosive properties	Not explosive
Oxidizing properties	Not available

9.2. Other information

- Not available

SECTION 10: STABILITY AND REACTIVITY**10.1. Reactivity**

- Not available

10.2. Chemical Stability

- This material is stable under recommended storage and handling conditions.

10.3. Possibility of hazardous reactions

- Hazardous Polymerization will not occur.

10.4. Conditions to avoid

- Avoid contact with incompatible materials and condition.
- Avoid : Accumulation of electrostatic charges, Heating, Flames and hot surfaces

10.5. Incompatible materials

- Not available

10.6. Hazardous decomposition products

- Not available

SECTION 11: TOXICOLOGICAL INFORMATION**11.1. Acute toxicity**

- Oral
 - Product (ATEmix) : >5000mg/kg
 - [GLYCERINE] : LD50 = 12600 mg/kg Rat (ChemIDplus)

- **Dermal**
 - Product (ATEmix) : >5000mg/kg
 - [GLYCERINE] : LD50 > 10000 mg/kg Rat (ChemIDplus)
- **Inhalation**
 - Product (ATEmix) : Not available
 - [GLYCERINE] : LC50 >2.75 mg/ℓ 4 hr Rat (ECHA)

11.2. Skin corrosion/irritation

- Not available

11.3. Serious eye damage/irritation

- Not available

11.4. Respiratory sensitization

- Not available

11.5. Skin sensitization

- Not available

11.6. Germ cell mutagenicity

- Not available

11.7. Carcinogenicity

- **IARC**
 - Not available
- **OSHA**
 - Not available
- **ACGIH**
 - [ALUMINIUM POWDER] : A4
- **NTP**
 - Not available
- **EU CLP**
 - Not available

11.8. Reproductive toxicity

- Not available

11.9. Specific target organ toxicity(single exposure):

- Not available

11.10. Specific target organ toxicity(repeated exposure):

- Not available

11.11. Aspiration hazard

- Not available

SECTION 12: ECOLOGICAL INFORMATION**12.1. Toxicity**

- 12.1.1. Fish**
 - [GLYCERINE] : LC50 >11 mg/ℓ 96 hr Cyprinodon variegatus (ECHA)
- 12.1.2. Invertebrate**
 - [GLYCERINE] : LC50 1955 mg/ℓ 48 hr Daphnia magna (ECHA)
- 12.1.3. Algae**
 - Not available

12.2. Persistence and degradability

- 12.2.1. Persistence**
 - Not available

12.2.2. Degradability

- Not available

12.3. Bioaccumulative potential**12.3.1. Bioaccumulation**

- Not available

12.3.2. Biodegradability

- [GLYCERINE] : Biodegradability = 63 (%) 14 day (OECD TG 301C, OECD SIDS, OECD TG 301D, IUCLIDE), 94 % 24hr (TOC removal)(ECHA)

12.4. Mobility in soil

- Not available

12.5. Results of PBT and vPvB assessment

- Not available

12.6. Other adverse effects

- Not available

SECTION 13: DISPOSAL CONSIDERATIONS**13.1. Waste treatment methods**

- Since more than two kinds of designated waste is mixed, it is difficult to treat separately, then can be reduction or stabilization by incineration or similar process.
- If water separation is possible, pre-process with Water separation process.
- Dispose by incineration.
- The user of this product must disposal by oneself or entrust to waste disposer or person who other's waste recycle and dispose, person who establish and operate waste disposal facilities.
- Dispose of waste in accordance with all applicable laws and regulations.

SECTION 14: TRANSPORT INFORMATION**14.1. UN No.****14.1.1. UN No. (ADR/RID/ADN)**

- Not applicable

14.1.2. UN No. (IMDG CODE/IATA DGR)

- Not applicable

14.1.3. UN No. (ICAO)

- Not applicable

14.2. UN proper shipping name

- Not applicable

14.3. Transport hazard class(es)**14.3.1. ADR/RID/ADN Class**

- Not applicable

14.3.2. ADR/RID/ADN Class

- Not applicable

14.3.3. ADR Label No.

- Not applicable

14.3.4. IMDG Class

- Not applicable

14.3.5. ICAO Class/Division

- Not applicable

14.3.6. Transport Labels

- Not applicable

14.4. Packing group**14.4.1. ADR/RID/ADN Packing group**

- Not applicable

14.4.2. IMDG Packing group

- Not applicable

14.4.3. ICAO Packing group

- Not applicable

14.5. Environmental hazards

- Not applicable

14.6. Special precautions for user

- Local transport follows in accordance with Dangerous goods Safety Management Law.
- Package and transport follow in accordance with Department of Transportation (DOT) and other regulatory agency
- EmS FIRE SCHEDULE : Not applicable
- EmS SPILLAGE SCHEDULE : Not applicable
- Air transport(IATA): Not subject to IATA regulations.

14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

- Not applicable

SECTION 15: REGULATORY INFORMATION**15.1. Safety, health and environmental regulation / legislation specific for the substance or mixture****15.1.1. Europe regulatory****15.1.1.1 REACH Restricted substance under REACH**

- Not applicable

15.1.1.2 REACH Substances subject to authorization under REACH

- Not applicable

15.1.1.3 REACH SVHC

- Not applicable

15.1.1.4 Europe PBT

- Not applicable

15.1.1.5 European Union (EU) Transport of Dangerous Goods by Road - Dangerous Goods List

- Not applicable

15.2. Chemical Safety Assessment

- Not conducted

SECTION 16: OTHER INFORMATION**16.1. Indication of changes**

- The Safety Data Sheet has been reviewed and the data therein were revised and laid out according to the requirements of the Commission Regulation (EC) No. 1907/2006

16.2. Abbreviations and acronyms

- 1272/2008 CLP : Classification, Labelling and Packaging regulation.
- REACH : Registration, Evaluation and authorization of chemical substances.
- DNEL : Derive no effects level
- PNEC : Predicted no effect concentration

16.3. Key literature references and sources for data

- This Safety Data Sheet was compiled with data and information from the following sources: RTECS, ECOSAR, HSDB, SIDS SIAP, ChemWATCH, CESAR, Chemical DB

16.4. Classification procedure

- The mixture classification has been derived based on the classification of the individual components in accordance with the rules set out in Regulation (EC) No 1272/2008 (CLP) as well as the translation tables in Annex VII to the same regulation.

16.5. Training advice

- Not applicable

16.6. Further information

- The (M)SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings. Risks may be determined by reference to Exposures Scenarios. Scale of use, frequency of use and current or available engineering controls must be considered.

- This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only.

- It should not therefore be construed as guaranteeing any specific property of the product.

- Contact a poison control centre, List of Telephone Numbers : AUSTRIA (Vienna Wien) +43 1 406 43 43; BELGIUM (Brussels Bruxelles) +32 70 245 245; BULGARIA (Sofia) +359 2 9154 409; CZECH REPUBLIC (Prague Praha) +420 224 919 293; DENMARK (Copenhagen) 82 12 12 12; ESTONIA (Tallinn) 112; FINLAND (Helsinki) +358 9 471 977; FRANCE (Paris) +33 1 40 0548 48; GERMANY (Berlin) +49 30 19240; GREECE (Athens Athinai) +30 10 779 3777; HUNGARY (Budapest) 06 80 20 11 99; ICELAND (Reykjavik) +354 525 111, +354 543 2222; IRELAND (Dublin) +353 1 8379964; ITALY (Rome) +39 06 305 4343; LATVIA (Riga) +371 704 2468; LITHUANIA (Vilnius) +370 5 236 20 52 or +370 687 53378; MALTA (Valletta) 2425 0000; NETHERLANDS (Bilthoven) +31 30 274 88 88; NORWAY (Oslo) 22 591300; POLAND (Gdansk) +48 58301 65 16 or +48 58 349 2831; PORTUGAL (Lisbon Lisboa) 808 250 143; ROMANIA (Bucharest) +40 21 3183606 SLOVAKIA (Bratislava) +421 2 54 77 4166; SLOVENIA (Ljubljana) + 386 41 650 500; SPAIN (Barcelona) +34 93 227 98 33 or +34 93 227 54 00 bleep 190; SWEDEN (Stockholm) 112 or +46 8 33 12 31 (mon-fri 9.00-17.00); UNITED KINGDOM (London) 112 or 0845 4647 (NHS Direct).

• Disclaimer of Liability

This information is based on our present state of knowledge.

It should not therefore be construed as guaranteeing specific properties of the products

Described or their suitability for a particular application. YOU&I Corporation assumes

no responsibility for personal injury or property damage caused by the material.

Users assume all risks associated with the use of the material.

***** End of Documents



SAFETY DATA SHEET

According to Regulation (EC) No 1272/2008 (REACH),
Annex II(COMMISSION REGULATION (EU) No 2015/830)

Date of issue: 2019-06-14
Revision date: 2022-01-24

SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1. Product identifier

Trade : SGI- S.BLUE

1.2. Relevant identified uses of the substance or mixture and uses advised against

1.2.1. Relevant identified uses

- Water-soluble stationary ink

1.2.2. Uses advised against

- Not available

1.3. Details of the supplier of the safety data sheet

Manufacturer/Supplier : YOU&I COPORATION
Address : 53, EMTIBEUI 26-RO, SIHEUNG-SI, GYEONGGI-DO, KOREA (ZIP CODE) 15118
Telephone : 82-31-494-2030
Email : tech@youicolor.com

1.4. Emergency telephone number

82-31-494-2030 (This number is serviced during office hours only.)
EU-wide emergency number : 112
See section 16.6 for the list of telephone number of poison centers in the European Economic Area.

SECTION 2: HAZARD IDENTIFICATION

2.1. Classification of the substance/mixture

2.1.1. Classification according to Regulation (EC) No 1272/2008 [CLP]

H228 - Flammable Solids 1
H261 - Substances and Mixtures which in contact with water emit flammable gases 2
H315 - Skin Corrosion / Irritation 2
H319 - Serious Eye Damage / Eye Irritation 2
H412 - Hazardous to the aquatic environment - chronic 3

2.2. Label elements

2.2.1. Labelling according to Regulation (EC) No 1272/2008 [CLP]

* Hazard Pictogram(s)



* Signal word : Danger

* Hazard statement(s)

H228 - Flammable solid
H261 - In contact with water releases flammable gases
H315 - Causes skin irritation
H319 - Causes serious eye irritation
H412 - Harmful to aquatic life with long lasting effects

* Precautionary statement(s)

- 1) Prevention
 - Not applicable
- 2) Response
 - Not applicable
- 3) Storage
 - Not applicable
- 4) Disposal

- Not applicable

2.3. Other hazards

- Not available

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1. Substances

- Not applicable

3.2. Mixtures

Name	CAS No.	EINECS NO.	% [weight]	Annex VI of Regulation (EC) No 1272/2008 (CLP Classification)
WATER	7732-18-5	231-791-2	40~60	Not classified
GLYCERINE	56-81-5	200-289-5	15~20	Not classified
ALUMINIUM POWDER	7429-90-5	231-072-3	3~7	 Flammable Solids 1 : H228 Substances and Mixtures which in contact with water emit flammable gases 2 : H261
C.I. PIGMENT BLUE 15:3	147-14-8	205-685-1	0~5	Not classified
POLY ETHYLENE GLYCOL	25322-68-3	500-038-2	10~15	Not classified
2-AMINO-2-METHYL-1-PROPANOL	124-68-5	204-709-8	0~1	 Skin Corrosion / Irritation 2 : H315 Serious Eye Damage / Eye Irritation 2 : H319 Hazardous to the aquatic environment - chronic 3 : H412

SECTION 4: FIRST AID MEASURES

4.1. Description of first aid measures

General

- No general information.

Inhalation

- When exposed to large amounts of steam and mist, move to fresh air.
- Take specific treatment if needed.

Skin contact

- Flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes.
- Laundering enough contaminated clothing before reuse.

Eye contact

- Do not rub your eyes.
- Immediately flush eyes with plenty of water for at least 15 minutes and call a doctor/physician.

Ingestion

- Please be advised by doctor whether induction of vomit is demanded or not.
- Rinse your mouth with water immediately.

4.2. Most important symptoms and effects, both acute and delayed

- Not available

4.3. Indication of any immediate medical attention and special treatment needed

- Notify medical personnel of contaminated situations and have them take appropriate protective measures.

SECTION 5: FIREFIGHTING MEASURES

5.1. Extinguishing media

Suitable extinguishing media

- Water, foam, CO₂, NaHCO₃

Unsuitable extinguishing media

- Avoid use of water jet for extinguishing

5.2. Special hazards arising from the substance or mixture

Hazardous combustion products

- Not available

5.3. Advice for firefighters

- Cool containers with water until well after fire is out.
- Keep unauthorized personnel out.
- Withdraw immediately in case of rising sound from venting safety devices or discoloration of tank.
- Wear appropriate protective equipment.
- Keep containers cool with water spray.
- Use fire fighting procedures suitable for surrounding area.
- Vapor or gas is burned at distant ignition sources can be spread quickly.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal Precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

- Protective equipment: Wear proper protective equipment.
- Emergency procedures: Not applicable
- If required, notify relevant authorities according to all applicable regulations.

6.1.2. For emergency responders

- Ventilate closed spaces before entering.
- Must work against the wind, let the upwind people to evacuate.
- Do not touch spilled material. Stop leak if you can do it without risk.
- Handling the damaged containers or spilled material after wearing protective equipment.
- Do not direct water at spill or source of leak.

6.2. Environmental precautions

- Prevent runoff and contact with waterways, drains or sewers.
- If large amounts have been spilled, inform the relevant authorities.
- Avoid dispersal of spilt material and runoff and contact with waterways, drains and sewers. If large spills, advise

6.3. Methods and material for containment and cleaning up

6.3.1. For containment

- Clear spills immediately
- Clean up all spills immediately.
- Prevent, by any means available, spillage from entering drains or water course.

6.3.2. For cleaning up

- Large spill : Stay upwind and keep out of low areas. Dike for later disposal.
- Notification to central government, local government. When emissions at least of the standard amount
- Dispose of waste in accordance with local regulation.
- Appropriate container for disposal of spilled material collected.
- Small leak: sand or other non-combustible material, please let use absorption.
- Wipe off the solvent.
- Dike for later disposal.

6.3.3. Other information

- Slippery when spilt.

6.4. Reference to other sections

- See Section 7 for information on safe handling.
- See Section 8 for information on personal protection equipment.
- See Section 13 for information on disposal.

SECTION 7: HANDLING AND STORAGE

7.1. Precautions for safe handling

- Avoid direct physical contact.
- Get the manual before use.
- Refer to Engineering controls and personal protective equipment.
- Do not handle until all safety precautions have been read and understood.
- Do not inhale the steam prolonged or repeated.

7.2. Conditions for safe storage, including any incompatibilities

- Save in cool, dry and well ventilated place.
- Check regularly for leaks.
- Please pay attention to incompatibilities materials and conditions to avoid.
- Keep sealed when not in use.
- No open fire.

7.3. Specific end use(s)

- See Section 1 for information on 1.2 Relevant identified uses.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION**8.1. Control parameters****8.1.1. Occupational exposure limits****European Union (EU) Commission Directive 2006/15/EC (IOELVs)**

- Not available

European Union (EU) Commission Directive 2006/15/EC (IOELVs) - Skin

- Not available

8.1.2. Recommended Monitoring Procedures

- Personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment.

8.1.3. DNEL/PNEC - Values

- Not available

8.2. Exposure controls**8.2.1. Appropriate engineering controls**

- A system of local and/or general exhaust is recommended to keep employee exposures above the Exposure Limits. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. The use of local exhaust ventilation is recommended to control emissions near the source.

8.2.2. Individual protection measures, such as personal protective equipment**Hand protection**

- Wear appropriate glove.

Eye protection

- Wear primary eye protection such as splash resistant safety goggles with a secondary protection face shield.
- Provide an emergency eye wash station and quick drench shower in the immediate work area.

Respiratory Protection

- Under conditions of frequent use or heavy exposure, Respiratory protection may be needed.
- Respiratory protection is ranked in order from minimum to maximum.
- Consider warning properties before use.
- Any chemical cartridge respirator with organic vapor cartridge(s).
- Any chemical cartridge respirator with a full face piece and organic vapor cartridge(s).
- Any air-purifying respirator with a full face piece and an organic vapor canister.
- For Unknown Concentration or Immediately Dangerous to Life or Health : Any supplied-air respirator with full face piece and operated in a pressure-demand or other positive-pressure mode in combination with a separate escape supply. Any self-contained breathing apparatus with a full face piece.

Skin protection

- Wear appropriate clothing.

8.2.3 Environmental exposure controls

- Do not let product enter drains. For ecological information refer to section 12.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES**9.1. Information on basic physical and chemical properties**

Appearance(State)	Liquid
Appearance(Color)	BLUE
Odor	Odorless
Odor threshold	Not available
pH	8.0 ± 1.0
Melting point/Freezing point	Not available
Initial boiling point and boiling range	> 100 °C
Flash point	300 °C
Evaporation rate	Not available
Flammability(solid, gas)	Not applicable
Upper/Lower Flammability or explosive	Not available
Vapour pressure	Not available
Vapour density	Not available
Relative density	1.1 ± 0.05 g/cm ³
Solubility	Fully miscible
Partition coefficient of n-octanol/water	Not available
Autoignition temperature	No self-igniting
Decomposition temperature	Not available
Viscosity	650 ± 150 Cps
Explosive properties	Not explosive
Oxidizing properties	Not available

9.2. Other information

- Not available

SECTION 10: STABILITY AND REACTIVITY**10.1. Reactivity**

- Not available

10.2. Chemical Stability

- This material is stable under recommended storage and handling conditions.

10.3. Possibility of hazardous reactions

- Hazardous Polymerization will not occur.

10.4. Conditions to avoid

- Avoid contact with incompatible materials and condition.
- Avoid : Accumulation of electrostatic charges, Heating, Flames and hot surfaces

10.5. Incompatible materials

- Not available

10.6. Hazardous decomposition products

- Not available

SECTION 11: TOXICOLOGICAL INFORMATION**11.1. Acute toxicity**

- **Oral**
 - Product (ATEmix) : >5000mg/kg
 - [GLYCERINE] : LD50 = 12600 mg/kg Rat (ChemIDplus)
- **Dermal**

- Product (ATEmix) : >5000mg/kg
- [GLYCERINE] : LD50 > 10000 mg/kg Rat (ChemIDplus)
- **Inhalation**
- Product (ATEmix) : Not available
- [GLYCERINE] : LC50 >2.75 mg/ℓ 4 hr Rat (ECHA)

11.2. Skin corrosion/irritation

- Not available

11.3. Serious eye damage/irritation

- Not available

11.4. Respiratory sensitization

- Not available

11.5. Skin sensitization

- Not available

11.6. Germ cell mutagenicity

- Not available

11.7. Carcinogenicity

- **IARC**
- Not available
- **OSHA**
- Not available
- **ACGIH**
- [ALUMINIUM POWDER] : A4
- **NTP**
- Not available
- **EU CLP**
- Not available

11.8. Reproductive toxicity

- Not available

11.9. Specific target organ toxicity(single exposure):

- Not available

11.10. Specific target organ toxicity(repeated exposure):

- Not available

11.11. Aspiration hazard

- Not available

SECTION 12: ECOLOGICAL INFORMATION**12.1. Toxicity****12.1.1. Fish**

- [GLYCERINE] : LC50 >11 mg/ℓ 96 hr Cyprinodon variegatus (ECHA)

12.1.2. Invertebrate

- [GLYCERINE] : LC50 1955 mg/ℓ 48 hr Daphnia magna (ECHA)

12.1.3. Algae

- Not available

12.2. Persistence and degradability**12.2.1. Persistence**

- Not available

12.2.2. Degradability

- Not available

12.3. Bioaccumulative potential**12.3.1. Bioaccumulation**

- Not available

12.3.2. Biodegradability

- [GLYCERINE] : Biodegradability = 63 (%) 14 day (OECD TG 301C, OECD SIDS, OECD TG 301D, IUCLIDE), 94 % 24hr (TOC removal)(ECHA)

12.4. Mobility in soil

- Not available

12.5. Results of PBT and vPvB assessment

- Not available

12.6. Other adverse effects

- Not available

SECTION 13: DISPOSAL CONSIDERATIONS**13.1. Waste treatment methods**

- Since more than two kinds of designated waste is mixed, it is difficult to treat separately, then can be reduction or stabilization by incineration or similar process.
- If water separation is possible, pre-process with Water separation process.
- Dispose by incineration.
- The user of this product must disposal by oneself or entrust to waste disposer or person who other's waste recycle and dispose, person who establish and operate waste disposal facilities.
- Dispose of waste in accordance with all applicable laws and regulations.

SECTION 14: TRANSPORT INFORMATION**14.1. UN No.****14.1.1. UN No. (ADR/RID/ADN)**

- Not applicable

14.1.2. UN No. (IMDG CODE/IATA DGR)

- Not applicable

14.1.3. UN No. (ICAO)

- Not applicable

14.2. UN proper shipping name

- Not applicable

14.3. Transport hazard class(es)**14.3.1. ADR/RID/ADN Class**

- Not applicable

14.3.2. ADR/RID/ADN Class

- Not applicable

14.3.3. ADR Label No.

- Not applicable

14.3.4. IMDG Class

- Not applicable

14.3.5. ICAO Class/Division

- Not applicable

14.3.6. Transport Labels

- Not applicable

14.4. Packing group**14.4.1. ADR/RID/ADN Packing group**

- Not applicable

14.4.2. IMDG Packing group

- Not applicable

14.4.3. ICAO Packing group

- Not applicable

14.5. Environmental hazards

- Not applicable

14.6. Special precautions for user

- Local transport follows in accordance with Dangerous goods Safety Management Law.
- Package and transport follow in accordance with Department of Transportation (DOT) and other regulatory agency
- EmS FIRE SCHEDULE : Not applicable
- EmS SPILLAGE SCHEDULE : Not applicable
- Air transport(IATA): Not subject to IATA regulations.

14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

- Not applicable

SECTION 15: REGULATORY INFORMATION**15.1. Safety, health and environmental regulation / legislation specific for the substance or mixture****15.1.1. Europe regulatory****15.1.1.1 REACH Restricted substance under REACH**

- Not applicable

15.1.1.2 REACH Substances subject to authorization under REACH

- Not applicable

15.1.1.3 REACH SVHC

- Not applicable

15.1.1.4 Europe PBT

- Not applicable

15.1.1.5 European Union (EU) Transport of Dangerous Goods by Road - Dangerous Goods List

- Not applicable

15.2. Chemical Safety Assessment

- Not conducted

SECTION 16: OTHER INFORMATION**16.1. Indication of changes**

- The Safety Data Sheet has been reviewed and the data therein were revised and laid out according to the requirements of the Commission Regulation (EC) No. 1907/2006

16.2. Abbreviations and acronyms

- 1272/2008 CLP : Classification, Labelling and Packaging regulation.
- REACH : Registration, Evaluation and authorization of chemical substances.
- DNEL : Derive no effects level
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16.3. Key literature references and sources for data

- This Safety Data Sheet was compiled with data and information from the following sources: RTECS, ECOSAR, HSDB, SIDS SIAP, ChemWATCH, CESAR, Chemical DB

16.4. Classification procedure

- The mixture classification has been derived based on the classification of the individual components in accordance with the rules set out in Regulation (EC) No 1272/2008 (CLP) as well as the translation tables in Annex VII to the same regulation.

16.5. Training advice

- Not applicable

16.6. Further information

- The (M)SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings. Risks may be determined by reference to Exposures Scenarios. Scale of use, frequency of use and current or available engineering controls must be considered.
- This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only.
- It should not therefore be construed as guaranteeing any specific property of the product.
- Contact a poison control centre, List of Telephone Numbers : AUSTRIA (Vienna Wien) +43 1 406 43 43; BELGIUM (Brussels Bruxelles) +32 70 245 245; BULGARIA (Sofia) +359 2 9154 409; CZECH REPUBLIC (Prague Praha) +420 224 919 293; DENMARK (Copenhagen) 82 12 12 12; ESTONIA (Tallinn) 112; FINLAND (Helsinki) +358 9 471 977; FRANCE (Paris) +33 1 40 0548 48; GERMANY (Berlin) +49 30 19240; GREECE (Athens Athinai) +30 10 779 3777; HUNGARY (Budapest) 06 80 20 11 99; ICELAND (Reykjavik) +354 525 111, +354 543 2222; IRELAND (Dublin) +353 1 8379964; ITALY (Rome) +39 06 305 4343; LATVIA (Riga) +371 704 2468; LITHUANIA (Vilnius) +370 5 236 20 52 or +370 687 53378; MALTA (Valletta) 2425 0000; NETHERLANDS (Bilthoven) +31 30 274 88 88; NORWAY (Oslo) 22 591300; POLAND (Gdansk) +48 58301 65 16 or +48 58 349 2831; PORTUGAL (Lisbon Lisboa) 808 250 143; ROMANIA (Bucharest) +40 21 3183606 SLOVAKIA (Bratislava) +421 2 54 77 4166; SLOVENIA (Ljubljana) + 386 41 650 500; SPAIN (Barcelona) +34 93 227 98 33 or +34 93 227 54 00 bleep 190; SWEDEN (Stockholm) 112 or +46 8 33 12 31 (mon-fri 9.00-17.00); UNITED KINGDOM (London) 112 or 0845 4647 (NHS Direct).

Disclaimer of Liability

This information is based on our present state of knowledge.
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Described or their suitability for a particular application. YOU&I Corporation assumes
no responsibility for personal injury or property damage caused by the material.
Users assume all risks associated with the use of the material.

***** End of Documents

SAFETY DATA SHEET

According to Regulation (EC) No 1907/2006 (REACH), Annex II (COMMISSION REGULATION (EU) No 2015/830)



Date of issue: 2019-06-14
Revision date: 2022-04-01

SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1. Product identifier

Trade : SGI- GRAY

1.2. Relevant identified uses of the substance or mixture and uses advised against

1.2.1. Relevant identified uses

- Water-soluble stationary ink

1.2.2. Uses advised against

- Not available

1.3. Details of the supplier of the safety data sheet

Manufacturer/Supplier : YOU&I COPORATION
Address : 53, EMTIBEUI 26-RO, SIHEUNG-SI, GYEONGGI-DO, KOREA (ZIP CODE) 15118
Telephone : 82-31-494-2030
Email : tech@youicolor.com

1.4. Emergency telephone number

82-31-494-2030 (This number is serviced during office hours only.)
EU-wide emergency number : 112
See section 16.6 for the list of telephone number of poison centers in the European Economic Area.

SECTION 2: HAZARD IDENTIFICATION

2.1. Classification of the substance/mixture

2.1.1. Classification according to Regulation (EC) No 1272/2008 [CLP]
H411-Aquatic Chronic 2

2.2. Label elements

2.2.1. Labelling according to Regulation (EC) No 1272/2008 [CLP]

* Hazard Pictogram(s)



* Signal word : Warning

* Hazard statement(s)

H411: Toxic to aquatic life with long-lasting effects

* Precautionary statement(s)

1) Prevention

P273: Avoid release to the environment.

2) Response

P391: Collect spillage.

3) Storage

- Not applicable

4) Disposal

P501: Disposal contents/ container to in accordance with local national regulation.

2.3. Other hazards

- Not available

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS**3.1. Substances**

- Not applicable

3.2. Mixtures

Name	CAS No.	EINECS NO.	% [weight]	Classification [1272/2008/EC]
WATER	7732-18-5	231-791-2	40~60	Not classified
GLYCERINE	56-81-5	200-289-5	15~20	Not classified
ALUMINIUM POWDER	7429-90-5	231-072-3	3~7	   Flam. Solid 1, H228 Pyr. Liq. 1, H250 Water-react 2, H261 Specific target organ toxicity (repeated) 2, H373 Aquatic Chronic 1: H410 (M-factor: 1)
POLY ETHYLENE GLYCOL	25322-68-3	500-038-2	10~15	 Acute toxicity (Oral) 4, H302 Not classified
C.I. PIGMENT BLACK 7	1333-86-4	215-609-9	0~5	Not classified
2-AMINO-2-METHYL-1-PROPANOL	124-68-5	204-709-8	0~1	 Aquatic Chronic 4, H413 Eye Irrit. 1, H318 Skin Irrit. 2, H315

SECTION 4: FIRST AID MEASURES**4.1. Description of first aid measures****General**

- No general information.

Inhalation

- When exposed to large amounts of steam and mist, move to fresh air.
- Take specific treatment if needed.

Skin contact

- Flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes.
- Laundering enough contaminated clothing before reuse.

Eye contact

- Do not rub your eyes.
- Immediately flush eyes with plenty of water for at least 15 minutes and call a doctor/physician.

Ingestion

- Please be advised by doctor whether induction of vomit is demanded or not.
- Rinse your mouth with water immediately.

4.2. Most important symptoms and effects, both acute and delayed

- Not available

4.3. Indication of any immediate medical attention and special treatment needed

- Notify medical personnel of contaminated situations and have them take appropriate protective measures.

SECTION 5: FIREFIGHTING MEASURES**5.1. Extinguishing media****Suitable extinguishing media**

- Water, foam, CO₂, NaHCO₃

Unsuitable extinguishing media

- Avoid use of water jet for extinguishing

5.2. Special hazards arising from the substance or mixture**Hazardous combustion products**

- Not available

5.3. Advice for firefighters

- Cool containers with water until well after fire is out.
- Keep unauthorized personnel out.
- Withdraw immediately in case of rising sound from venting safety devices or discoloration of tank.
- Wear appropriate protective equipment.
- Keep containers cool with water spray.
- Use fire fighting procedures suitable for surrounding area.
- Vapor or gas is burned at distant ignition sources can be spread quickly.

SECTION 6: ACCIDENTAL RELEASE MEASURES**6.1. Personal Precautions, protective equipment and emergency procedures****6.1.1. For non-emergency personnel**

- Protective equipment: Wear proper protective equipment.
- Emergency procedures: Not applicable
- If required, notify relevant authorities according to all applicable regulations.

6.1.2. For emergency responders

- Ventilate closed spaces before entering.
- Must work against the wind, let the upwind people to evacuate.
- Do not touch spilled material. Stop leak if you can do it without risk.
- Handling the damaged containers or spilled material after wearing protective equipment.
- Do not direct water at spill or source of leak.

6.2. Environmental precautions

- Prevent runoff and contact with waterways, drains or sewers.
- If large amounts have been spilled, inform the relevant authorities.
- Avoid dispersal of spilt material and runoff and contact with waterways, drains and sewers. If large spills, advise

6.3. Methods and material for containment and cleaning up**6.3.1. For containment**

- Clear spills immediately
- Clean up all spills immediately.
- Prevent, by any means available, spillage from entering drains or water course.

6.3.2. For cleaning up

- Large spill : Stay upwind and keep out of low areas. Dike for later disposal.
- Notification to central government, local government. When emissions at least of the standard amount
- Dispose of waste in accordance with local regulation.
- Appropriate container for disposal of spilled material collected.
- Small leak: sand or other non-combustible material, please let use absorption.
- Wipe off the solvent.
- Dike for later disposal.

6.3.3. Other information

- Slippery when spilt.

6.4. Reference to other sections

- See Section 7 for information on safe handling.
- See Section 8 for information on personal protection equipment.
- See Section 13 for information on disposal.

SECTION 7: HANDLING AND STORAGE**7.1. Precautions for safe handling**

- Avoid direct physical contact.
- Get the manual before use.
- Refer to Engineering controls and personal protective equipment.
- Do not handle until all safety precautions have been read and understood.
- Do not inhale the steam prolonged or repeated.

7.2. Conditions for safe storage, including any incompatibilities

- Save in cool, dry and well ventilated place.
- Check regularly for leaks.
- Please pay attention to incompatibilities materials and conditions to avoid.
- Keep sealed when not in use.
- No open fire.

7.3. Specific end use(s)

- See Section 1 for information on 1.2 Relevant identified uses.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION**8.1. Control parameters****8.1.1. Occupational exposure limits****European Union (EU) Commission Directive 2006/15/EC (IOELVs)**

- Not available

European Union (EU) Commission Directive 2006/15/EC (IOELVs) - Skin

- Not available

8.1.2. Recommended Monitoring Procedures

- Personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment.

8.1.3. DNEL/PNEC - Values

- Not available

8.2. Exposure controls**8.2.1. Appropriate engineering controls**

- A system of local and/or general exhaust is recommended to keep employee exposures above the Exposure Limits. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. The use of local exhaust ventilation is recommended to control emissions near the source.

8.2.2. Individual protection measures, such as personal protective equipment**Hand protection**

- Wear appropriate glove.

Eye protection

- Wear primary eye protection such as splash resistant safety goggles with a secondary protection face shield.
- Provide an emergency eye wash station and quick drench shower in the immediate work area.

Respiratory Protection

- Under conditions of frequent use or heavy exposure, Respiratory protection may be needed.
- Respiratory protection is ranked in order from minimum to maximum.
- Consider warning properties before use.
- Any chemical cartridge respirator with organic vapor cartridge(s).
- Any chemical cartridge respirator with a full face piece and organic vapor cartridge(s).
- Any air-purifying respirator with a full face piece and an organic vapor canister.

- For Unknown Concentration or Immediately Dangerous to Life or Health : Any supplied-air respirator with full face piece and operated in a pressure-demand or other positive-pressure mode in combination with a separate escape supply. Any self-contained breathing apparatus with a full face piece.

Skin protection

- Wear appropriate clothing.

8.2.3 Environmental exposure controls

- Do not let product enter drains. For ecological information refer to section 12.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES**9.1. Information on basic physical and chemical properties**

Appearance(State)	Liquid
Appearance(Color)	BLACK
Odor	Odorless
Odor threshold	Not available
pH	8.0 ± 1.0
Melting point/Freezing point	Not available
Initial boiling point and boiling range	> 100 °C
Flash point	300 °C
Evaporation rate	Not available
Flammability(solid, gas)	Not applicable
Upper/Lower Flammability or explosive	Not available
Vapour pressure	Not available
Vapour density	Not available
Relative density	1.1 ± 0.05 g/cm ³
Solubility	Fully miscible
Partition coefficient of n-octanol/water	Not available
Autoignition temperature	No self-igniting
Decomposition temperature	Not available
Viscosity	650 ± 150 Cps
Explosive properties	Not explosive
Oxidizing properties	Not available

9.2. Other information

- Not available

SECTION 10: STABILITY AND REACTIVITY**10.1. Reactivity**

- Not available

10.2. Chemical Stability

- This material is stable under recommended storage and handling conditions.

10.3. Possibility of hazardous reactions

- Hazardous Polymerization will not occur.

10.4. Conditions to avoid

- Avoid contact with incompatible materials and condition.
- Avoid : Accumulation of electrostatic charges, Heating, Flames and hot surfaces

10.5. Incompatible materials

- Not available

10.6. Hazardous decomposition products

- Not available

SECTION 11: TOXICOLOGICAL INFORMATION**11.1. Acute toxicity**

- **Oral**
 - Product (ATEmix) : >5000mg/kg
 - [GLYCERINE] : LD50 = 12600 mg/kg Rat (ChemIDplus)
- [POLY ETHYLENE GLYCOL] : LD50 = 600 mg/kg Rat (KOSHA)
- **Dermal**
 - Product (ATEmix) : >5000mg/kg
 - [GLYCERINE] : LD50 > 10000 mg/kg Rat (ChemIDplus)
- **Inhalation**
 - Product (ATEmix) : Not available
 - [GLYCERINE] : LC50 >2.75 mg/l 4 hr Rat (ECHA)

11.2. Skin corrosion/irritation

- [2-AMINO-2-METHYL-1-PROPANOL] : Classified as Category 2 (KOSHA)

11.3. Serious eye damage/irritation

- [2-AMINO-2-METHYL-1-PROPANOL] : Classified as Category 1 (KOSHA)

11.4. Respiratory sensitization

- Not available

11.5. Skin sensitization

- Not available

11.6. Germ cell mutagenicity

- Not available

11.7. Carcinogenicity

- **IARC**
 - Not available
- **OSHA**
 - Not available
- **ACGIH**
 - [ALUMINIUM POWDER] : A4 (KOSHA)
- **NTP**
 - Not available
- **EU CLP**
 - Not available

11.8. Reproductive toxicity

- Not available

11.9. Specific target organ toxicity(single exposure):

- Not available

11.10. Specific target organ toxicity(repeated exposure):

- [ALUMINIUM POWDER] : Classified as Category 2 (KOSHA)

11.11. Aspiration hazard

- Not available

SECTION 12: ECOLOGICAL INFORMATION**12.1. Toxicity****12.1.1. Fish**

- [GLYCERINE] : LC50 >11 mg/l 96 hr Cyprinodon variegatus (ECHA)

12.1.2. Invertebrate

- [GLYCERINE] : LC50 1955 mg/l 48 hr Daphnia magna (ECHA)
- [ALUMINIUM POWDER] : NOEC > 100 mg/l 48 hr Daphnia magna (IUCLID)

12.1.3. Algae

- [ALUMINIUM POWDER] : NOEC > 0.052 mg/l 48 hr Selenastrum capricornutum (M = 1) (OECD TG 201, GLP)

12.2. Persistence and degradability**12.2.1. Persistence**

- Not available

12.2.2. Degradability

- [2-AMINO-2-METHYL-1-PROPANOL] : BOD5/COD 0.005 (KOSHA)

12.3. Bioaccumulative potential**12.3.1. Bioaccumulation**

- [2-AMINO-2-METHYL-1-PROPANOL] : 1.3 BSAF (Leuciscus idus(Fish, fresh water), 50ug/) (KOSHA)

12.3.2. Biodegradability

- [2-AMINO-2-METHYL-1-PROPANOL] : 40 (%) 28 days (KOSHA)

12.4. Mobility in soil

- Not available

12.5. Results of PBT and vPvB assessment

- Not available

12.6. Other adverse effects

- Not available

SECTION 13: DISPOSAL CONSIDERATIONS**13.1. Waste treatment methods**

- Since more than two kinds of designated waste is mixed, it is difficult to treat separately, then can be reduction or stabilization by incineration or similar process.
- If water separation is possible, pre-process with Water separation process.
- Dispose by incineration.
- The user of this product must disposal by oneself or entrust to waste disposer or person who other's waste recycle and dispose, person who establish and operate waste disposal facilities.
- Dispose of waste in accordance with all applicable laws and regulations.

SECTION 14: TRANSPORT INFORMATION**14.1. UN No.****14.1.1. UN No. (ADR/RID/ADN)**

3082

14.1.2. UN No. (IMDG CODE/IATA DGR)

3082

14.1.3. UN No. (ICAO)

3082

14.2. UN proper shipping name

- Not applicable

14.3. Transport hazard class(es)

14.3.1. ADR/RID/ADN Class

- Not applicable

14.3.2. ADR/RID/ADN Class

- Not applicable

14.3.3. ADR Label No.

- Not applicable

14.3.4. IMDG Class

- Not applicable

14.3.5. ICAO Class/Division

- Not applicable

14.3.6. Transport Labels

- Not applicable

14.4. Packing group**14.4.1. ADR/RID/ADN Packing group**

- Not applicable

14.4.2. IMDG Packing group

- Not applicable

14.4.3. ICAO Packing group

- Not applicable

14.5. Environmental hazards

- Not applicable

14.6. Special precautions for user

- Local transport follows in accordance with Dangerous goods Safety Management Law.
- Package and transport follow in accordance with Department of Transportation (DOT) and other regulatory agency
- EmS FIRE SCHEDULE : Not applicable
- EmS SPILLAGE SCHEDULE : Not applicable
- Air transport(IATA): Not subject to IATA regulations.

14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

- Not applicable

SECTION 15: REGULATORY INFORMATION**15.1. Safety, health and environmental regulation / legislation specific for the substance or mixture****15.1.1. Europe regulatory****15.1.1.1 REACH Restricted substance under REACH**

- Not applicable

15.1.1.2 REACH Substances subject to authorization under REACH

- Not applicable

15.1.1.3 REACH SVHC

- Not applicable

15.1.1.4 Europe PBT

- Not applicable

15.1.1.5 European Union (EU) Transport of Dangerous Goods by Road - Dangerous Goods List

- Not applicable

15.2. Chemical Safety Assessment

- Not conducted

SECTION 16: OTHER INFORMATION**16.1. Indication of changes**

- The Safety Data Sheet has been reviewed and the data therein were revised and laid out according to the requirements of the Commission Regulation (EC) No. 1907/2006

16.2. Abbreviations and acronyms

- 1272/2008 CLP : Classification, Labelling and Packaging regulation.
- REACH : Registration, Evaluation and authorization of chemical substances.
- DNEL : Derive no effects level
- PNEC : Predicted no effect concentration

16.3. Key literature references and sources for data

- This Safety Data Sheet was compiled with data and information from the following sources: RTECS, ECOSAR, HSDB, SIDS SIAP, ChemWATCH, CESAR, Chemical DB

16.4. Classification procedure

- The mixture classification has been derived based on the classification of the individual components in accordance with the rules set out in Regulation (EC) No 1272/2008 (CLP) as well as the translation tables in Annex VII to the same regulation.

16.5. Training advice

- Not applicable

16.6. Further information

- The (M)SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings. Risks may be determined by reference to Exposures Scenarios. Scale of use, frequency of use and current or available engineering controls must be considered.
- This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only.
- It should not therefore be construed as guaranteeing any specific property of the product.
- Contact a poison control centre, List of Telephone Numbers : AUSTRIA (Vienna Wien) +43 1 406 43 43; BELGIUM (Brussels Bruxelles) +32 70 245 245; BULGARIA (Sofia) +359 2 9154 409; CZECH REPUBLIC (Prague Praha) +420 224 919 293; DENMARK (Copenhagen) 82 12 12 12; ESTONIA (Tallinn) 112; FINLAND (Helsinki) +358 9 471 977; FRANCE (Paris) +33 1 40 0548 48; GERMANY (Berlin) +49 30 19240; GREECE (Athens Athinai) +30 10 779 3777; HUNGARY (Budapest) 06 80 20 11 99; ICELAND (Reykjavik) +354 525 111, +354 543 2222; IRELAND (Dublin) +353 1 8379964; ITALY (Rome) +39 06 305 4343; LATVIA (Riga) +371 704 2468; LITHUANIA (Vilnius) +370 5 236 20 52 or +370 687 53378; MALTA (Valletta) 2425 0000; NETHERLANDS (Bilthoven) +31 30 274 88 88; NORWAY (Oslo) 22 591300; POLAND (Gdansk) +48 58301 65 16 or +48 58 349 2831; PORTUGAL (Lisbon Lisboa) 808 250 143; ROMANIA (Bucharest) +40 21 3183606 SLOVAKIA (Bratislava) +421 2 54 77 4166; SLOVENIA (Ljubljana) + 386 41 650 500; SPAIN (Barcelona) +34 93 227 98 33 or +34 93 227 54 00 bleep 190; SWEDEN (Stockholm) 112 or +46 8 33 12 31 (mon-fri 9.00-17.00); UNITED KINGDOM (London) 112 or 0845 4647 (NHS Direct).

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***** End of Documents

21741-4010

1/9

SAFETY DATA SHEET

According to Regulation (EC) No 1907/2006 (REACH), Annex II (COMMISSION REGULATION (EU) No 2015/830)



Date of issue: 2019-06-14

Revision date: 2022-06-21

SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING**1.1. Product identifier**

Trade name/designation : SGI- YELLOW

1.2. Relevant identified uses of the substance or mixture and uses advised against**1.2.1. Relevant identified uses**

- Water-soluble stationary ink

1.2.2. Uses advised against

- Not available

1.3. Details of the supplier of the safety data sheet

Manufacturer/Supplier : YOU&I COPORATION

Address : 53, EMTIBEUI 26-RO, SIHEUNG-SI, GYEONGGI-DO, KOREA (ZIP CODE) 15118

Telephone : 82-31-494-2030

Email : tech@youicolor.com

1.4. Emergency telephone number

82-31-494-2030 (This number is serviced during office hours only.)

EU-wide emergency number : 112

See section 16.6 for the list of telephone number of poison centers in the European Economic Area.

SECTION 2: HAZARD IDENTIFICATION**2.1. Classification of the substance/mixture****2.1.1. Classification according to Regulation (EC) No 1272/2008 [CLP]**

H411-Aquatic Chronic 2

2.2. Label elements**2.2.1. Labelling according to Regulation (EC) No 1272/2008 [CLP]***** Hazard Pictogram(s)***** Signal word** : Warning*** Hazard statement(s)**

H411: Toxic to aquatic life with long-lasting effects

*** Precautionary statement(s)****1) Prevention**

P273: Avoid release to the environment.

2) Response

P391: Collect spillage.

3) Storage

- Not applicable

4) Disposal

P501: Disposal contents/ container to in accordance with local national regulation.

2.3. Other hazards

- Not available

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS**3.1. Substances**

- Not applicable

3.2. Mixtures

Name	CAS No.	EINECS NO.	% [weight]	Classification [1272/2008/EC]
WATER	7732-18-5	231-791-2	40~60	Not classified
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C.I. PIGMENT YELLOW 83	5567-15-7	226-939-8	0~5	Aquatic Chronic 3, H412
POLY ETHYLENE GLYCOL	25322-68-3	500-038-2	10~15	 Acute toxicity (Oral) 4, H302
2-AMINO-2-METHYL-1-PROPANOL	124-68-5	204-709-8	0~1	 Aquatic Chronic 4, H413 Eye Irrit. 1, H318 Skin Irrit. 2, H315

SECTION 4: FIRST AID MEASURES**4.1. Description of first aid measures****General**

- No general information.

Inhalation

- When exposed to large amounts of steam and mist, move to fresh air.
- Take specific treatment if needed.

Skin contact

- Flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes.
- Laundering enough contaminated clothing before reuse.

Eye contact

- Do not rub your eyes.
- Immediately flush eyes with plenty of water for at least 15 minutes and call a doctor/physician.

Ingestion

- Please be advised by doctor whether induction of vomit is demanded or not.
- Rinse your mouth with water immediately.

4.2. Most important symptoms and effects, both acute and delayed

- Not available

4.3. Indication of any immediate medical attention and special treatment needed

- Notify medical personnel of contaminated situations and have them take appropriate protective measures.

SECTION 5: FIREFIGHTING MEASURES**5.1. Extinguishing media****Suitable extinguishing media**

- Water, foam, CO₂, NaHCO₃

Unsuitable extinguishing media

- Avoid use of water jet for extinguishing

5.2. Special hazards arising from the substance or mixture**Hazardous combustion products**

- Not available

5.3. Advice for firefighters

- Cool containers with water until well after fire is out.
- Keep unauthorized personnel out.
- Withdraw immediately in case of rising sound from venting safety devices or discoloration of tank.
- Wear appropriate protective equipment.
- Keep containers cool with water spray.
- Use fire fighting procedures suitable for surrounding area.
- Vapor or gas is burned at distant ignition sources can be spread quickly.

SECTION 6: ACCIDENTAL RELEASE MEASURES**6.1. Personal Precautions, protective equipment and emergency procedures****6.1.1. For non-emergency personnel**

- Protective equipment: Wear proper protective equipment.
- Emergency procedures: Not applicable
- If required, notify relevant authorities according to all applicable regulations.

6.1.2. For emergency responders

- Ventilate closed spaces before entering.
- Must work against the wind, let the upwind people to evacuate.
- Do not touch spilled material. Stop leak if you can do it without risk.
- Handling the damaged containers or spilled material after wearing protective equipment.
- Do not direct water at spill or source of leak.

6.2. Environmental precautions

- Prevent runoff and contact with waterways, drains or sewers.
- If large amounts have been spilled, inform the relevant authorities.
- Avoid dispersal of spilt material and runoff and contact with waterways, drains and sewers. If large spills, advise

6.3. Methods and material for containment and cleaning up**6.3.1. For containment**

- Clear spills immediately
- Clean up all spills immediately.
- Prevent, by any means available, spillage from entering drains or water course.

6.3.2. For cleaning up

- Large spill : Stay upwind and keep out of low areas. Dike for later disposal.
- Notification to central government, local government. When emissions at least of the standard amount
- Dispose of waste in accordance with local regulation.
- Appropriate container for disposal of spilled material collected.
- Small leak: sand or other non-combustible material, please let use absorption.
- Wipe off the solvent.
- Dike for later disposal.

6.3.3. Other information

- Slippery when spilt.

6.4. Reference to other sections

- See Section 7 for information on safe handling.
- See Section 8 for information on personal protection equipment.
- See Section 13 for information on disposal.

SECTION 7: HANDLING AND STORAGE**7.1. Precautions for safe handling**

- Avoid direct physical contact.
- Get the manual before use.
- Refer to Engineering controls and personal protective equipment.
- Do not handle until all safety precautions have been read and understood.

- Do not inhale the steam prolonged or repeated.

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- Save in cool, dry and well ventilated place.
- Check regularly for leaks.
- Please pay attention to incompatibilities materials and conditions to avoid.
- Keep sealed when not in use.
- No open fire.

7.3. Specific end use(s)

- See Section 1 for information on 1.2 Relevant identified uses.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control parameters

8.1.1. Occupational exposure limits

European Union (EU) Commission Directive 2006/15/EC (IOELVs)

- Not available

European Union (EU) Commission Directive 2006/15/EC (IOELVs) - Skin

- Not available

8.1.2. Recommended Monitoring Procedures

- Personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment.

8.1.3. DNEL/PNEC - Values

- Not available

8.2. Exposure controls

8.2.1. Appropriate engineering controls

- A system of local and/or general exhaust is recommended to keep employee exposures above the Exposure Limits. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. The use of local exhaust ventilation is recommended to control emissions near the source.

8.2.2. Individual protection measures, such as personal protective equipment

Hand protection

- Wear appropriate glove.

Eye protection

- Wear primary eye protection such as splash resistant safety goggles with a secondary protection face shield.
- Provide an emergency eye wash station and quick drench shower in the immediate work area.

Respiratory Protection

- Under conditions of frequent use or heavy exposure, Respiratory protection may be needed.
- Respiratory protection is ranked in order from minimum to maximum.
- Consider warning properties before use.
- Any chemical cartridge respirator with organic vapor cartridge(s).
- Any chemical cartridge respirator with a full face piece and organic vapor cartridge(s).
- Any air-purifying respirator with a full face piece and an organic vapor canister.
- For Unknown Concentration or Immediately Dangerous to Life or Health : Any supplied-air respirator with full face piece and operated in a pressure-demand or other positive-pressure mode in combination with a separate escape supply. Any self-contained breathing apparatus with a full face piece.

Skin protection

- Wear appropriate clothing.

8.2.3 Environmental exposure controls

- Do not let product enter drains. For ecological information refer to section 12.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Appearance(State)	Liquid
Appearance(Color)	YELLOW
Odor	Odorless
Odor threshold	Not available
pH	8.0 ± 1.0
Melting point/Freezing point	Not available
Initial boiling point and boiling range	> 100 °C
Flash point	300 °C
Evaporation rate	Not available
Flammability(solid, gas)	Not applicable
Upper/Lower Flammability or explosive	Not available
Vapour pressure	Not available
Vapour density	Not available
Relative density	1.1 ± 0.05 g/cm ³
Solubility	Fully miscible
Partition coefficient of n-octanol/water	Not available
Autoignition temperature	No self-igniting
Decomposition temperature	Not available
Viscosity	650 ± 150 Cps
Explosive properties	Not explosive
Oxidizing properties	Not available

9.2. Other information

- Not available

SECTION 10: STABILITY AND REACTIVITY**10.1. Reactivity**

- Not available

10.2. Chemical Stability

- This material is stable under recommended storage and handling conditions.

10.3. Possibility of hazardous reactions

- Hazardous Polymerization will not occur.

10.4. Conditions to avoid

- Avoid contact with incompatible materials and condition.
 - Avoid : Accumulation of electrostatic charges, Heating, Flames and hot surfaces

10.5. Incompatible materials

- Not available

10.6. Hazardous decomposition products

- Not available

SECTION 11: TOXICOLOGICAL INFORMATION**11.1. Acute toxicity****- Oral**

- Product (ATEmix) : >5000mg/kg
 - [GLYCERINE] : LD50 = 12600 mg/kg Rat (ChemIDplus)
 - [POLY ETHYLENE GLYCOL] : LD50 = 600 mg/kg Rat (KOSHA)

- Dermal

- Product (ATEmix) : >5000mg/kg
 - [GLYCERINE] : LD50 > 10000 mg/kg Rat (ChemIDplus)

- Inhalation

- Product (ATEmix) : Not available
 - [GLYCERINE] : LC50 >2.75 mg/ℓ 4 hr Rat (ECHA)

11.2. Skin corrosion/irritation

- [2-AMINO-2-METHYL-1-PROPANOL] : Classified as Category 2 (KOSHA)

11.3. Serious eye damage/irritation

- [2-AMINO-2-METHYL-1-PROPANOL] : Classified as Category 1 (KOSHA)

11.4. Respiratory sensitization

- Not available

11.5. Skin sensitization

- Not available

11.6. Germ cell mutagenicity

- Not available

11.7. Carcinogenicity**- IARC**

- Not available

- OSHA

- Not available

- ACGIH

- [ALUMINIUM POWDER] : A4

- NTP

- Not available

- EU CLP

- Not available

11.8. Reproductive toxicity

- Not available

11.9. Specific target organ toxicity(single exposure):

- Not available

11.10. Specific target organ toxicity(repeated exposure):

- [ALUMINIUM POWDER] : Classified as Category 2 (KOSHA)

11.11. Aspiration hazard

- Not available

SECTION 12: ECOLOGICAL INFORMATION**12.1. Toxicity****12.1.1. Fish**

- [GLYCERINE] : LC50 >11 mg/ℓ 96 hr Cyprinodon variegatus (ECHA)

- [C.I. PIGMENT YELLOW 83] : LC50 45 mg/ℓ 48 hr Oncorhynchus mykiss (ECOTOX)

12.1.2. Invertebrate

- [GLYCERINE] : LC50 1955 mg/ℓ 48 hr Daphnia magna (ECHA)

- [ALUMINIUM POWDER] : NOEC > 100 mg/ℓ 48 hr Daphnia magna (IUCLID)

12.1.3. Algae

- [ALUMINIUM POWDER] : NOEC > 0.052 mg/ℓ 48 hr Selenastrum capricornutum (M = 1) (OECD TG 201, GLP) (ECHA)

12.2. Persistence and degradability**12.2.1. Persistence**

- [C.I. PIGMENT YELLOW 83] : 7.54 log Kow (IUCLID)

12.2.2. Degradability

- [2-AMINO-2-METHYL-1-PROPANOL] : BOD5/COD 0.005 (KOSHA)

12.3. Bioaccumulative potential**12.3.1. Bioaccumulation**

- [2-AMINO-2-METHYL-1-PROPANOL] : 1.3 BSAF (Leuciscus idus(Fish, fresh water), 50ug/) (KOSHA)

- [C.I. PIGMENT YELLOW 83] : 10 (QSAR)

12.3.2. Biodegradability

- [2-AMINO-2-METHYL-1-PROPANOL] : 40 (%) 28 days (KOSHA)
- [C.I. PIGMENT YELLOW 83] : 6 (%) 28 days (NITE)

12.4. Mobility in soil

- Not available

12.5. Results of PBT and vPvB assessment

- Not available

12.6. Other adverse effects

- Not available

SECTION 13: DISPOSAL CONSIDERATIONS**13.1. Waste treatment methods**

- Since more than two kinds of designated waste is mixed, it is difficult to treat separately, then can be reduction or stabilization by incineration or similar process.
- If water separation is possible, pre-process with Water separation process.
- Dispose by incineration.
- The user of this product must disposal by oneself or entrust to waste disposer or person who other's waste recycle and dispose, person who establish and operate waste disposal facilities.
- Dispose of waste in accordance with all applicable laws and regulations.

SECTION 14: TRANSPORT INFORMATION**14.1. UN No.**

14.1.1. UN No. (ADR/RID/ADN)
3082

14.1.2. UN No. (IMDG CODE/IATA DGR)
3082

14.1.3. UN No. (ICAO)
3082

14.2. UN proper shipping name

- Not applicable

14.3. Transport hazard class(es)

14.3.1. ADR/RID/ADN Class
- Not applicable

14.3.2. ADR/RID/ADN Class
- Not applicable

14.3.3. ADR Label No.
- Not applicable

14.3.4. IMDG Class
- Not applicable

14.3.5. ICAO Class/Division
- Not applicable

14.3.6. Transport Labels
- Not applicable

14.4. Packing group

14.4.1. ADR/RID/ADN Packing group
- Not applicable

14.4.2. IMDG Packing group

- Not applicable

14.4.3. ICAO Packing group

- Not applicable

14.5. Environmental hazards

- Not applicable

14.6. Special precautions for user

- Local transport follows in accordance with Dangerous goods Safety Management Law.
- Package and transport follow in accordance with Department of Transportation (DOT) and other regulatory agency
- EmS FIRE SCHEDULE : Not applicable
- EmS SPILLAGE SCHEDULE : Not applicable
- Air transport(IATA): Not subject to IATA regulations.

14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

- Not applicable

SECTION 15: REGULATORY INFORMATION**15.1. Safety, health and environmental regulation / legislation specific for the substance or mixture****15.1.1. Europe regulatory****15.1.1.1 REACH Restricted substance under REACH**

- Not applicable

15.1.1.2 REACH Substances subject to authorization under REACH

- Not applicable

15.1.1.3 REACH SVHC

- Not applicable

15.1.1.4 Europe PBT

- Not applicable

15.1.1.5 European Union (EU) Transport of Dangerous Goods by Road - Dangerous Goods List

- Not applicable

15.2. Chemical Safety Assessment

- Not conducted

SECTION 16: OTHER INFORMATION**16.1. Indication of changes**

- The Safety Data Sheet has been reviewed and the data therein were revised and laid out according the requirements of the Commission Regulation (EC) No. 1907/2006

16.2. Abbreviations and acronyms

- 1272/2008 CLP : Classification, Labelling and Packaging regulation.
- REACH : Registration, Evaluation and authorization of chemical substances.
- DNEL : Derive no effects level
- PNEC : Predicted no effect concentration

16.3. Key literature references and sources for data

- This Safety Data Sheet was compiled with data and information from the following sources: RTECS, ECOSAR, HSDB, SIDS SIAP, ChemWATCH, CESAR, Chemical DB

16.4. Classification procedure

- The mixture classification has been derived based on the classification of the individual components in accordance with the rules set out in Regulation (EC) No 1272/2008 (CLP) as well as the translation tables in Annex VII to the same regulation.

16.5. Training advice

- Not applicable

16.6. Further information

- The (M)SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings. Risks may be determined by reference to Exposures Scenarios. Scale of use, frequency of use and current or available engineering controls must be considered.

- This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only.

- It should not therefore be construed as guaranteeing any specific property of the product.

- Contact a poison control centre, List of Telephone Numbers : AUSTRIA (Vienna Wien) +43 1 406 43 43; BELGIUM (Brussels Bruxelles) +32 70 245 245; BULGARIA (Sofia) +359 2 9154 409; CZECH REPUBLIC (Prague Praha) +420 224 919 293; DENMARK (Copenhagen) 82 12 12 12; ESTONIA (Tallinn) 112; FINLAND (Helsinki) +358 9 471 977; FRANCE (Paris) +33 1 40 0548 48; GERMANY (Berlin) +49 30 19240; GREECE (Athens Athina) +30 10 779 3777; HUNGARY (Budapest) 06 80 20 11 99; ICELAND (Reykjavik) +354 525 111, +354 543 2222; IRELAND (Dublin) +353 1 8379964; ITALY (Rome) +39 06 305 4343; LATVIA (Riga) +371 704 2468; LITHUANIA (Vilnius) +370 5 236 20 52 or +370 687 53378; MALTA (Valletta) 2425 0000; NETHERLANDS (Bilthoven) +31 30 274 88 88; NORWAY (Oslo) 22 591300; POLAND (Gdansk) +48 58301 65 16 or +48 58 349 2831; PORTUGAL (Lisbon Lisboa) 808 250 143; ROMANIA (Bucharest) +40 21 3183606 SLOVAKIA (Bratislava) +421 2 54 77 4166; SLOVENIA (Ljubljana) + 386 41 650 500; SPAIN (Barcelona) +34 93 227 98 33 or +34 93 227 54 00 bleep 190; SWEDEN (Stockholm) 112 or +46 8 33 12 31 (mon-fri 9.00-17.00); UNITED KINGDOM (London) 112 or 0845 4647 (NHS Direct).

• Disclaimer of Liability

This information is based on our present state of knowledge.

It should not therefore be construed as guaranteeing specific properties of the products Described or their suitability for a particular application. YOU&I Corporation assumes no responsibility for personal injury or property damage caused by the material. Users assume all risks associated with the use of the material.

***** End of Documents

21741-9330

1/9

SAFETY DATA SHEET

According to Regulation (EC) No 1907/2006 (REACH), Annex II (COMMISSION REGULATION (EU) No 2015/830)



Date of issue: 2019-06-14

Revision date: 2022-06-21

SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING**1.1. Product identifier**

Trade name/designation : SGI- SILVER

1.2. Relevant identified uses of the substance or mixture and uses advised against**1.2.1. Relevant identified uses**

- Water-soluble stationary ink

1.2.2. Uses advised against

- Not available

1.3. Details of the supplier of the safety data sheet

Manufacturer/Supplier : YOU&I COPORATION

Address : 53, EMTIBEUI 26-RO, SIHEUNG-SI, GYEONGGI-DO, KOREA (ZIP CODE) 15118

Telephone : 82-31-494-2030

Email : tech@youicolor.com

1.4. Emergency telephone number

82-31-494-2030 (This number is serviced during office hours only.)

EU-wide emergency number : 112

See section 16.6 for the list of telephone number of poison centers in the European Economic Area.

SECTION 2: HAZARD IDENTIFICATION**2.1. Classification of the substance/mixture****2.1.1. Classification according to Regulation (EC) No 1272/2008 [CLP]**

H411-Aquatic Chronic 2

2.2. Label elements**2.2.1. Labelling according to Regulation (EC) No 1272/2008 [CLP]***** Hazard Pictogram(s)***** Signal word** : Warning*** Hazard statement(s)**

H411: Toxic to aquatic life with long-lasting effects

*** Precautionary statement(s)****1) Prevention**

P273: Avoid release to the environment.

2) Response

P391: Collect spillage.

3) Storage

- Not applicable

4) Disposal

P501: Disposal contents/ container to in accordance with local national regulation.

2.3. Other hazards

- Not available

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS**3.1. Substances**

- Not applicable

3.2. Mixtures

Name	CAS No.	EINECS NO.	% [weight]	Classification [1272/2008/EC]
WATER	7732-18-5	231-791-2	40~60	Not classified
GLYCERINE	56-81-5	200-289-5	15~20	Not classified
ALUMINIUM POWDER	7429-90-5	231-072-3	3~7	   Flam. Solid 1, H228 Pyr. Liq. 1, H250 Water-react 2, H261 Specific target organ toxicity (repeated) 2, H373 Aquatic Chronic 1: H410 (M-factor: 1)
POLY ETHYLENE GLYCOL	25322-68-3	500-038-2	10~15	 Acute toxicity (Oral) 4, H302
2-AMINO-2-METHYL-1-PROPANOL	124-68-5	204-709-8	0~1	 Aquatic Chronic 4, H413 Eye Irrit. 1, H318 Skin Irrit. 2, H315

SECTION 4: FIRST AID MEASURES**4.1. Description of first aid measures****General**

- No general information.

Inhalation

- When exposed to large amounts of steam and mist, move to fresh air.
- Take specific treatment if needed.

Skin contact

- Flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes.
- Laundering enough contaminated clothing before reuse.

Eye contact

- Do not rub your eyes.
- Immediately flush eyes with plenty of water for at least 15 minutes and call a doctor/physician.

Ingestion

- Please be advised by doctor whether induction of vomit is demanded or not.
- Rinse your mouth with water immediately.

4.2. Most important symptoms and effects, both acute and delayed

- Not available

4.3. Indication of any immediate medical attention and special treatment needed

- Notify medical personnel of contaminated situations and have them take appropriate protective measures.

SECTION 5: FIREFIGHTING MEASURES**5.1. Extinguishing media****Suitable extinguishing media**

- Water, foam, CO₂, NaHCO₃

Unsuitable extinguishing media

- Avoid use of water jet for extinguishing

5.2. Special hazards arising from the substance or mixture**Hazardous combustion products**

- Not available

5.3. Advice for firefighters

- Cool containers with water until well after fire is out.
- Keep unauthorized personnel out.
- Withdraw immediately in case of rising sound from venting safety devices or discoloration of tank.
- Wear appropriate protective equipment.
- Keep containers cool with water spray.
- Use fire fighting procedures suitable for surrounding area.
- Vapor or gas is burned at distant ignition sources can be spread quickly.

SECTION 6: ACCIDENTAL RELEASE MEASURES**6.1. Personal Precautions, protective equipment and emergency procedures****6.1.1. For non-emergency personnel**

- Protective equipment: Wear proper protective equipment.
- Emergency procedures: Not applicable
- If required, notify relevant authorities according to all applicable regulations.

6.1.2. For emergency responders

- Ventilate closed spaces before entering.
- Must work against the wind, let the upwind people to evacuate.
- Do not touch spilled material. Stop leak if you can do it without risk.
- Handling the damaged containers or spilled material after wearing protective equipment.
- Do not direct water at spill or source of leak.

6.2. Environmental precautions

- Prevent runoff and contact with waterways, drains or sewers.
- If large amounts have been spilled, inform the relevant authorities.
- Avoid dispersal of spilt material and runoff and contact with waterways, drains and sewers. If large spills, advise

6.3. Methods and material for containment and cleaning up**6.3.1. For containment**

- Clear spills immediately
- Clean up all spills immediately.
- Prevent, by any means available, spillage from entering drains or water course.

6.3.2. For cleaning up

- Large spill : Stay upwind and keep out of low areas. Dike for later disposal.
- Notification to central government, local government. When emissions at least of the standard amount
- Dispose of waste in accordance with local regulation.
- Appropriate container for disposal of spilled material collected.
- Small leak: sand or other non-combustible material, please let use absorption.
- Wipe off the solvent.
- Dike for later disposal.

6.3.3. Other information

- Slippery when spilt.

6.4. Reference to other sections

- See Section 7 for information on safe handling.
- See Section 8 for information on personal protection equipment.
- See Section 13 for information on disposal.

SECTION 7: HANDLING AND STORAGE**7.1. Precautions for safe handling**

- Avoid direct physical contact.
- Get the manual before use.
- Refer to Engineering controls and personal protective equipment.
- Do not handle until all safety precautions have been read and understood.

- Do not inhale the steam prolonged or repeated.

7.2. Conditions for safe storage, including any incompatibilities

- Save in cool, dry and well ventilated place.
- Check regularly for leaks.
- Please pay attention to incompatibilities materials and conditions to avoid.
- Keep sealed when not in use.
- No open fire.

7.3. Specific end use(s)

- See Section 1 for information on 1.2 Relevant identified uses.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control parameters

8.1.1. Occupational exposure limits

European Union (EU) Commission Directive 2006/15/EC (IOELVs)

- Not available

European Union (EU) Commission Directive 2006/15/EC (IOELVs) - Skin

- Not available

8.1.2. Recommended Monitoring Procedures

- Personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment.

8.1.3. DNEL/PNEC - Values

- Not available

8.2. Exposure controls

8.2.1. Appropriate engineering controls

- A system of local and/or general exhaust is recommended to keep employee exposures above the Exposure Limits. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. The use of local exhaust ventilation is recommended to control emissions near the source.

8.2.2. Individual protection measures, such as personal protective equipment

Hand protection

- Wear appropriate glove.

Eye protection

- Wear primary eye protection such as splash resistant safety goggles with a secondary protection face shield.
- Provide an emergency eye wash station and quick drench shower in the immediate work area.

Respiratory Protection

- Under conditions of frequent use or heavy exposure, Respiratory protection may be needed.
- Respiratory protection is ranked in order from minimum to maximum.
- Consider warning properties before use.
- Any chemical cartridge respirator with organic vapor cartridge(s).
- Any chemical cartridge respirator with a full face piece and organic vapor cartridge(s).
- Any air-purifying respirator with a full face piece and an organic vapor canister.
- For Unknown Concentration or Immediately Dangerous to Life or Health : Any supplied-air respirator with full face piece and operated in a pressure-demand or other positive-pressure mode in combination with a separate escape supply. Any self-contained breathing apparatus with a full face piece.

Skin protection

- Wear appropriate clothing.

8.2.3 Environmental exposure controls

- Do not let product enter drains. For ecological information refer to section 12.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Appearance(State)	Liquid
Appearance(Color)	SILVER
Odor	Odorless
Odor threshold	Not available
pH	8.0 ± 1.0
Melting point/Freezing point	Not available
Initial boiling point and boiling range	> 100 °C
Flash point	300 °C
Evaporation rate	Not available
Flammability(solid, gas)	Not applicable
Upper/Lower Flammability or explosive	Not available
Vapour pressure	Not available
Vapour density	Not available
Relative density	1.1 ± 0.05 g/cm ³
Solubility	Fully miscible
Partition coefficient of n-octanol/water	Not available
Autoignition temperature	No self-igniting
Decomposition temperature	Not available
Viscosity	650 ± 150 Cps
Explosive properties	Not explosive
Oxidizing properties	Not available

9.2. Other information

- Not available

SECTION 10: STABILITY AND REACTIVITY**10.1. Reactivity**

- Not available

10.2. Chemical Stability

- This material is stable under recommended storage and handling conditions.

10.3. Possibility of hazardous reactions

- Hazardous Polymerization will not occur.

10.4. Conditions to avoid

- Avoid contact with incompatible materials and condition.
- Avoid : Accumulation of electrostatic charges, Heating, Flames and hot surfaces

10.5. Incompatible materials

- Not available

10.6. Hazardous decomposition products

- Not available

SECTION 11: TOXICOLOGICAL INFORMATION**11.1. Acute toxicity****- Oral**

- Product (ATEmix) : >5000mg/kg
- [GLYCERINE] : LD50 = 12600 mg/kg Rat (ChemIDplus)
- [POLY ETHYLENE GLYCOL] : LD50 = 600 mg/kg Rat (KOSHA)

- Dermal

- Product (ATEmix) : >5000mg/kg
- [GLYCERINE] : LD50 > 10000 mg/kg Rat (ChemIDplus)

- Inhalation

- Product (ATEmix) : Not available
- [GLYCERINE] : LC50 >2.75 mg/ℓ 4 hr Rat (ECHA)

11.2. Skin corrosion/irritation

- [2-AMINO-2-METHYL-1-PROPANOL] : Classified as Category 2 (KOSHA)

11.3. Serious eye damage/irritation

- [2-AMINO-2-METHYL-1-PROPANOL] : Classified as Category 1 (KOSHA)

11.4. Respiratory sensitization

- Not available

11.5. Skin sensitization

- Not available

11.6. Germ cell mutagenicity

- Not available

11.7. Carcinogenicity**- IARC**

- Not available

- OSHA

- Not available

- ACGIH

- [ALUMINIUM POWDER] : A4

- NTP

- Not available

- EU CLP

- Not available

11.8. Reproductive toxicity

- Not available

11.9. Specific target organ toxicity(single exposure):

- Not available

11.10. Specific target organ toxicity(repeated exposure):

- [ALUMINIUM POWDER] : Classified as Category 2 (KOSHA)

11.11. Aspiration hazard

- Not available

SECTION 12: ECOLOGICAL INFORMATION**12.1. Toxicity****12.1.1. Fish**

- [GLYCERINE] : LC50 >11 mg/ℓ 96 hr Cyprinodon variegatus (ECHA)

12.1.2. Invertebrate

- [GLYCERINE] : LC50 1955 mg/ℓ 48 hr Daphnia magna (ECHA)

- [ALUMINIUM POWDER] : NOEC > 100 mg/ℓ 48 hr Daphnia magna (IUCLID)

12.1.3. Algae

- [ALUMINIUM POWDER] : NOEC > 0.052 mg/ℓ 48 hr Selenastrum capricornutum (M = 1) (OECD TG 201, GLP) (ECHA)

12.2. Persistence and degradability**12.2.1. Persistence**

- Not available

12.2.2. Degradability

- [2-AMINO-2-METHYL-1-PROPANOL] : BOD5/COD 0.005 (KOSHA)

12.3. Bioaccumulative potential**12.3.1. Bioaccumulation**

- [2-AMINO-2-METHYL-1-PROPANOL] : 1.3 BSAF (Leuciscus idus(Fish, fresh water), 50ug/) (KOSHA)

12.3.2. Biodegradability

- [2-AMINO-2-METHYL-1-PROPANOL] : 40 (%) 28 days (KOSHA)

12.4. Mobility in soil

- Not available

12.5. Results of PBT and vPvB assessment

- Not available

12.6. Other adverse effects

- Not available

SECTION 13: DISPOSAL CONSIDERATIONS

13.1. Waste treatment methods

- Since more than two kinds of designated waste is mixed, it is difficult to treat separately, then can be reduction or stabilization by incineration or similar process.
- If water separation is possible, pre-process with Water separation process.
- Dispose by incineration.
- The user of this product must disposal by oneself or entrust to waste disposer or person who other's waste recycle and dispose, person who establish and operate waste disposal facilities.
- Dispose of waste in accordance with all applicable laws and regulations.

SECTION 14: TRANSPORT INFORMATION

14.1. UN No.

14.1.1. UN No. (ADR/RID/ADN)
3082

14.1.2. UN No. (IMDG CODE/IATA DGR)
3082

14.1.3. UN No. (ICAO)
3082

14.2. UN proper shipping name

- Not applicable

14.3. Transport hazard class(es)

14.3.1. ADR/RID/ADN Class

- Not applicable

14.3.2. ADR/RID/ADN Class

- Not applicable

14.3.3. ADR Label No.

- Not applicable

14.3.4. IMDG Class

- Not applicable

14.3.5. ICAO Class/Division

- Not applicable

14.3.6. Transport Labels

- Not applicable

14.4. Packing group

14.4.1. ADR/RID/ADN Packing group

- Not applicable

14.4.2. IMDG Packing group

- Not applicable

14.4.3. ICAO Packing group

- Not applicable

14.5. Environmental hazards

- Not applicable

14.6. Special precautions for user

- Local transport follows in accordance with Dangerous goods Safety Management Law.
- Package and transport follow in accordance with Department of Transportation (DOT) and other regulatory agency
- EmS FIRE SCHEDULE : Not applicable
- EmS SPILLAGE SCHEDULE : Not applicable
- Air transport(IATA): Not subject to IATA regulations.

14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

- Not applicable

SECTION 15: REGULATORY INFORMATION**15.1. Safety, health and environmental regulation / legislation specific for the substance or mixture****15.1.1. Europe regulatory****15.1.1.1 REACH Restricted substance under REACH**

- Not applicable

15.1.1.2 REACH Substances subject to authorization under REACH

- Not applicable

15.1.1.3 REACH SVHC

- Not applicable

15.1.1.4 Europe PBT

- Not applicable

15.1.1.5 European Union (EU) Transport of Dangerous Goods by Road - Dangerous Goods List

- Not applicable

15.2. Chemical Safety Assessment

- Not conducted

SECTION 16: OTHER INFORMATION**16.1. Indication of changes**

- The Safety Data Sheet has been reviewed and the data therein were revised and laid out according the requirements of the Commission Regulation (EC) No. 1907/2006

16.2. Abbreviations and acronyms

- 1272/2008 CLP : Classification, Labelling and Packaging regulation.
- REACH : Registration, Evaluation and authorization of chemical substances.
- DNEL : Derive no effects level
- PNEC : Predicted no effect concentration

16.3. Key literature references and sources for data

- This Safety Data Sheet was compiled with data and information from the following sources: RTECS, ECOSAR, HSDB, SIDS SIAP, ChemWATCH, CESAR, Chemical DB

16.4. Classification procedure

- The mixture classification has been derived based on the classification of the individual components in accordance with the rules set out in Regulation (EC) No 1272/2008 (CLP) as well as the translation tables in Annex VII to the same regulation.

16.5. Training advice

- Not applicable

16.6. Further information

- The (M)SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings. Risks may be determined by reference to Exposures Scenarios. Scale of use, frequency of use and current or available engineering controls must be considered.

- This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only.

- It should not therefore be construed as guaranteeing any specific property of the product.

- Contact a poison control centre, List of Telephone Numbers : AUSTRIA (Vienna Wien) +43 1 406 43 43; BELGIUM (Brussels Bruxelles) +32 70 245 245; BULGARIA (Sofia) +359 2 9154 409; CZECH REPUBLIC (Prague Praha) +420 224 919 293; DENMARK (Copenhagen) 82 12 12 12; ESTONIA (Tallinn) 112; FINLAND (Helsinki) +358 9 471 977; FRANCE (Paris) +33 1 40 0548 48; GERMANY (Berlin) +49 30 19240; GREECE (Athens Athina) +30 10 779 3777; HUNGARY (Budapest) 06 80 20 11 99; ICELAND (Reykjavik) +354 525 111, +354 543 2222; IRELAND (Dublin) +353 1 8379964; ITALY (Rome) +39 06 305 4343; LATVIA (Riga) +371 704 2468; LITHUANIA (Vilnius) +370 5 236 20 52 or +370 687 53378; MALTA (Valletta) 2425 0000; NETHERLANDS (Bilthoven) +31 30 274 88 88; NORWAY (Oslo) 22 591300; POLAND (Gdansk) +48 58301 65 16 or +48 58 349 2831; PORTUGAL (Lisbon Lisboa) 808 250 143; ROMANIA (Bucharest) +40 21 3183606 SLOVAKIA (Bratislava) +421 2 54 77 4166; SLOVENIA (Ljubljana) + 386 41 650 500; SPAIN (Barcelona) +34 93 227 98 33 or +34 93 227 54 00 bleep 190; SWEDEN (Stockholm) 112 or +46 8 33 12 31 (mon-fri 9.00-17.00); UNITED KINGDOM (London) 112 or 0845 4647 (NHS Direct).

Disclaimer of Liability

This information is based on our present state of knowledge.

It should not therefore be construed as guaranteeing specific properties of the products

Described or their suitability for a particular application. YOU&I Corporation assumes

no responsibility for personal injury or property damage caused by the material.

Users assume all risks associated with the use of the material.

***** End of Documents

21741-3010

1/9

SAFETY DATA SHEET

According to Regulation (EC) No 1907/2006 (REACH), Annex II (COMMISSION REGULATION (EU) No 2015/830)



Date of issue: 2018-06-20

Revision date: 2022-06-21

SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING**1.1. Product identifier**

Trade name/designation : SGI- RED

1.2. Relevant identified uses of the substance or mixture and uses advised against**1.2.1. Relevant identified uses**

- Water-soluble stationary ink

1.2.2. Uses advised against

- Not available

1.3. Details of the supplier of the safety data sheet

Manufacturer/Supplier : YOU&I COPORATION
 Address : 53, EMTIBEUI 26-RO, SIHEUNG-SI, GYEONGGI-DO, KOREA (ZIP CODE) 15118
 Telephone : 82-31-494-2030
 Email : tech@youicolor.com

1.4. Emergency telephone number

82-31-494-2030 (This number is serviced during office hours only.)
 EU-wide emergency number : 112
 See section 16.6 for the list of telephone number of poison centers in the European Economic Area.

SECTION 2: HAZARD IDENTIFICATION**2.1. Classification of the substance/mixture****2.1.1. Classification according to Regulation (EC) No 1272/2008 [CLP]**

H411-Aquatic Chronic 2

2.2. Label elements**2.2.1. Labelling according to Regulation (EC) No 1272/2008 [CLP]***** Hazard Pictogram(s)**

* Signal word : Warning

*** Hazard statement(s)**

H411: Toxic to aquatic life with long-lasting effects

*** Precautionary statement(s)****1) Prevention**

P273: Avoid release to the environment.

2) Response

P391: Collect spillage.

3) Storage

- Not applicable

4) Disposal

P501: Disposal contents/ container to in accordance with local national regulation.

2.3. Other hazards

- Not available

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS**3.1. Substances**

- Not applicable

3.2. Mixtures

Name	CAS No.	EINECS NO.	% [weight]	Classification [1272/2008/EC]
WATER	7732-18-5	231-791-2	40~60	Not classified
GLYCERINE	56-81-5	200-289-5	15~20	Not classified
ALUMINIUM POWDER	7429-90-5	231-072-3	3~7	   Flam. Solid 1, H228 Pyr. Liq. 1, H250 Water-react 2, H261 Specific target organ toxicity (repeated) 2, H373 Aquatic Chronic 1: H410 (M-factor: 1)
C.I. PIGMENT RED 170	2786-76-7	220-509-3	0~5	Aquatic Chronic 4, H413
POLY ETHYLENE GLYCOL	25322-68-3	500-038-2	10~15	 Acute toxicity (Oral) 4, H302
2-AMINO-2-METHYL-1-PROPANOL	124-68-5	204-709-8	0~1	 Aquatic Chronic 4, H413 Eye Irrit. 1, H318 Skin Irrit. 2, H315

SECTION 4: FIRST AID MEASURES**4.1. Description of first aid measures****General**

- No general information.

Inhalation

- When exposed to large amounts of steam and mist, move to fresh air.
- Take specific treatment if needed.

Skin contact

- Flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes.
- Laundering enough contaminated clothing before reuse.

Eye contact

- Do not rub your eyes.
- Immediately flush eyes with plenty of water for at least 15 minutes and call a doctor/physician.

Ingestion

- Please be advised by doctor whether induction of vomit is demanded or not.
- Rinse your mouth with water immediately.

4.2. Most important symptoms and effects, both acute and delayed

- Not available

4.3. Indication of any immediate medical attention and special treatment needed

- Notify medical personnel of contaminated situations and have them take appropriate protective measures.

SECTION 5: FIREFIGHTING MEASURES**5.1. Extinguishing media****Suitable extinguishing media**

- Water, foam, CO₂, NaHCO₃

Unsuitable extinguishing media

- Avoid use of water jet for extinguishing

5.2. Special hazards arising from the substance or mixture**Hazardous combustion products**

- Not available

5.3. Advice for firefighters

- Cool containers with water until well after fire is out.
- Keep unauthorized personnel out.
- Withdraw immediately in case of rising sound from venting safety devices or discoloration of tank.
- Wear appropriate protective equipment.
- Keep containers cool with water spray.
- Use fire fighting procedures suitable for surrounding area.
- Vapor or gas is burned at distant ignition sources can be spread quickly.

SECTION 6: ACCIDENTAL RELEASE MEASURES**6.1. Personal Precautions, protective equipment and emergency procedures****6.1.1. For non-emergency personnel**

- Protective equipment: Wear proper protective equipment.
- Emergency procedures: Not applicable
- If required, notify relevant authorities according to all applicable regulations.

6.1.2. For emergency responders

- Ventilate closed spaces before entering.
- Must work against the wind, let the upwind people to evacuate.
- Do not touch spilled material. Stop leak if you can do it without risk.
- Handling the damaged containers or spilled material after wearing protective equipment.
- Do not direct water at spill or source of leak.

6.2. Environmental precautions

- Prevent runoff and contact with waterways, drains or sewers.
- If large amounts have been spilled, inform the relevant authorities.
- Avoid dispersal of spilt material and runoff and contact with waterways, drains and sewers. If large spills, advise

6.3. Methods and material for containment and cleaning up**6.3.1. For containment**

- Clear spills immediately
- Clean up all spills immediately.
- Prevent, by any means available, spillage from entering drains or water course.

6.3.2. For cleaning up

- Large spill : Stay upwind and keep out of low areas. Dike for later disposal.
- Notification to central government, local government. When emissions at least of the standard amount
- Dispose of waste in accordance with local regulation.
- Appropriate container for disposal of spilled material collected.
- Small leak: sand or other non-combustible material, please let use absorption.
- Wipe off the solvent.
- Dike for later disposal.

6.3.3. Other information

- Slippery when spilt.

6.4. Reference to other sections

- See Section 7 for information on safe handling.
- See Section 8 for information on personal protection equipment.
- See Section 13 for information on disposal.

SECTION 7: HANDLING AND STORAGE**7.1. Precautions for safe handling**

- Avoid direct physical contact.
- Get the manual before use.
- Refer to Engineering controls and personal protective equipment.
- Do not handle until all safety precautions have been read and understood.

- Do not inhale the steam prolonged or repeated.

7.2. Conditions for safe storage, including any incompatibilities

- Save in cool, dry and well ventilated place.
- Check regularly for leaks.
- Please pay attention to incompatibilities materials and conditions to avoid.
- Keep sealed when not in use.
- No open fire.

7.3. Specific end use(s)

- See Section 1 for information on 1.2 Relevant identified uses.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control parameters

8.1.1. Occupational exposure limits

European Union (EU) Commission Directive 2006/15/EC (IOELVs)

- Not available

European Union (EU) Commission Directive 2006/15/EC (IOELVs) - Skin

- Not available

8.1.2. Recommended Monitoring Procedures

- Personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment.

8.1.3. DNEL/PNEC - Values

- Not available

8.2. Exposure controls

8.2.1. Appropriate engineering controls

- A system of local and/or general exhaust is recommended to keep employee exposures above the Exposure Limits. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. The use of local exhaust ventilation is recommended to control emissions near the source.

8.2.2. Individual protection measures, such as personal protective equipment

Hand protection

- Wear appropriate glove.

Eye protection

- Wear primary eye protection such as splash resistant safety goggles with a secondary protection face shield.
- Provide an emergency eye wash station and quick drench shower in the immediate work area.

Respiratory Protection

- Under conditions of frequent use or heavy exposure, Respiratory protection may be needed.
- Respiratory protection is ranked in order from minimum to maximum.
- Consider warning properties before use.
- Any chemical cartridge respirator with organic vapor cartridge(s).
- Any chemical cartridge respirator with a full face piece and organic vapor cartridge(s).
- Any air-purifying respirator with a full face piece and an organic vapor canister.
- For Unknown Concentration or Immediately Dangerous to Life or Health : Any supplied-air respirator with full face piece and operated in a pressure-demand or other positive-pressure mode in combination with a separate escape supply. Any self-contained breathing apparatus with a full face piece.

Skin protection

- Wear appropriate clothing.

8.2.3 Environmental exposure controls

- Do not let product enter drains. For ecological information refer to section 12.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Appearance(State)	Liquid
Appearance(Color)	RED
Odor	Odorless
Odor threshold	Not available
pH	8.0 ± 1.0
Melting point/Freezing point	Not available
Initial boiling point and boiling range	> 100 °C
Flash point	300 °C
Evaporation rate	Not available
Flammability(solid, gas)	Not applicable
Upper/Lower Flammability or explosive	Not available
Vapour pressure	Not available
Vapour density	Not available
Relative density	1.1 ± 0.05 g/cm ³
Solubility	Fully miscible
Partition coefficient of n-octanol/water	Not available
Autoignition temperature	No self-igniting
Decomposition temperature	Not available
Viscosity	650 ± 150 Cps
Explosive properties	Not explosive
Oxidizing properties	Not available

9.2. Other information

- Not available

SECTION 10: STABILITY AND REACTIVITY**10.1. Reactivity**

- Not available

10.2. Chemical Stability

- This material is stable under recommended storage and handling conditions.

10.3. Possibility of hazardous reactions

- Hazardous Polymerization will not occur.

10.4. Conditions to avoid

- Avoid contact with incompatible materials and condition.
 - Avoid : Accumulation of electrostatic charges, Heating, Flames and hot surfaces

10.5. Incompatible materials

- Not available

10.6. Hazardous decomposition products

- Not available

SECTION 11: TOXICOLOGICAL INFORMATION**11.1. Acute toxicity****- Oral**

- Product (ATEmix) : >5000mg/kg
- [GLYCERINE] : LD50 = 12600 mg/kg Rat (ChemIDplus)
- [POLY ETHYLENE GLYCOL] : LD50 = 600 mg/kg Rat (KOSHA)

- Dermal

- Product (ATEmix) : >5000mg/kg
- [GLYCERINE] : LD50 > 10000 mg/kg Rat (ChemIDplus)

- Inhalation

- Product (ATEmix) : Not available
- [GLYCERINE] : LC50 >2.75 mg/ℓ 4 hr Rat (ECHA)

11.2. Skin corrosion/irritation

- [2-AMINO-2-METHYL-1-PROPANOL] : Classified as Category 2 (KOSHA)

11.3. Serious eye damage/irritation

- [2-AMINO-2-METHYL-1-PROPANOL] : Classified as Category 1 (KOSHA)

11.4. Respiratory sensitization

- Not available

11.5. Skin sensitization

- Not available

11.6. Germ cell mutagenicity

- Not available

11.7. Carcinogenicity**- IARC**

- Not available

- OSHA

- Not available

- ACGIH

- [ALUMINIUM POWDER] : A4

- NTP

- Not available

- EU CLP

- Not available

11.8. Reproductive toxicity

- Not available

11.9. Specific target organ toxicity(single exposure):

- Not available

11.10. Specific target organ toxicity(repeated exposure):

- [ALUMINIUM POWDER] : Classified as Category 2 (KOSHA)

11.11. Aspiration hazard

- Not available

SECTION 12: ECOLOGICAL INFORMATION**12.1. Toxicity****12.1.1. Fish**

- [GLYCERINE] : LC50 >11 mg/ℓ 96 hr Cyprinodon variegatus (ECHA)

- [C.I. PIGMENT RED 170] : LC50 >0.217 mg/ℓ 96 hr (ECOSAR)

12.1.2. Invertebrate

- [GLYCERINE] : LC50 1955 mg/ℓ 48 hr Daphnia magna (ECHA)

- [ALUMINIUM POWDER] : NOEC > 100 mg/ℓ 48 hr Daphnia magna (IUCLID)

- [C.I. PIGMENT RED 170] : LC50 0.545 mg/ℓ 48 hr (ECOSHA)

12.1.3. Algae

- [ALUMINIUM POWDER] : NOEC > 0.052 mg/ℓ 48 hr Selenastrum capricornutum (M = 1) (OECD TG 201, GLP) (ECHA)

- [C.I. PIGMENT RED 170] : EC50 0.06 mg/ℓ 96 hr (ECOSHA)

12.2. Persistence and degradability**12.2.1. Persistence**

- [C.I. PIGMENT RED 170] : 6.04 log Kow (ECOSAR)

12.2.2. Degradability

- [2-AMINO-2-METHYL-1-PROPANOL] : BOD5/COD 0.005 (KOSHA)

12.3. Bioaccumulative potential

12.3.1. Bioaccumulation

- [2-AMINO-2-METHYL-1-PROPANOL] : 1.3 BSAF (Leuciscus idus(Fish, fresh water), 50ug/) (KOSHA)
- [C.I. PIGMENT RED 170] : 10 (QSAR)

12.3.2. Biodegradability

- [2-AMINO-2-METHYL-1-PROPANOL] : 40 (%) 28 days (KOSHA)

12.4. Mobility in soil

- Not available

12.5. Results of PBT and vPvB assessment

- Not available

12.6. Other adverse effects

- Not available

SECTION 13: DISPOSAL CONSIDERATIONS**13.1. Waste treatment methods**

- Since more than two kinds of designated waste is mixed, it is difficult to treat separately, then can be reduction or stabilization by incineration or similar process.
- If water separation is possible, pre-process with Water separation process.
- Dispose by incineration.
- The user of this product must disposal by oneself or entrust to waste disposer or person who other's waste recycle and dispose, person who establish and operate waste disposal facilities.
- Dispose of waste in accordance with all applicable laws and regulations.

SECTION 14: TRANSPORT INFORMATION**14.1. UN No.****14.1.1. UN No. (ADR/RID/ADN)**

3082

14.1.2. UN No. (IMDG CODE/IATA DGR)

3082

14.1.3. UN No. (ICAO)

3082

14.2. UN proper shipping name

- Not applicable

14.3. Transport hazard class(es)**14.3.1. ADR/RID/ADN Class**

- Not applicable

14.3.2. ADR/RID/ADN Class

- Not applicable

14.3.3. ADR Label No.

- Not applicable

14.3.4. IMDG Class

- Not applicable

14.3.5. ICAO Class/Division

- Not applicable

14.3.6. Transport Labels

- Not applicable

14.4. Packing group

14.4.1. ADR/RID/ADN Packing group

- Not applicable

14.4.2. IMDG Packing group

- Not applicable

14.4.3. ICAO Packing group

- Not applicable

14.5. Environmental hazards

- Not applicable

14.6. Special precautions for user

- Local transport follows in accordance with Dangerous goods Safety Management Law.
- Package and transport follow in accordance with Department of Transportation (DOT) and other regulatory agency
- EmS FIRE SCHEDULE : Not applicable
- EmS SPILLAGE SCHEDULE : Not applicable
- Air transport(IATA): Not subject to IATA regulations.

14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

- Not applicable

SECTION 15: REGULATORY INFORMATION**15.1. Safety, health and environmental regulation / legislation specific for the substance or mixture****15.1.1. Europe regulatory****15.1.1.1 REACH Restricted substance under REACH**

- Not applicable

15.1.1.2 REACH Substances subject to authorization under REACH

- Not applicable

15.1.1.3 REACH SVHC

- Not applicable

15.1.1.4 Europe PBT

- Not applicable

15.1.1.5 European Union (EU) Transport of Dangerous Goods by Road - Dangerous Goods List

- Not applicable

15.2. Chemical Safety Assessment

- Not conducted

SECTION 16: OTHER INFORMATION**16.1. Indication of changes**

- The Safety Data Sheet has been reviewed and the data therein were revised and laid out according the requirements of the Commission Regulation (EC) No. 1907/2006

16.2. Abbreviations and acronyms

- 1272/2008 CLP : Classification, Labelling and Packaging regulation.
- REACH : Registration, Evaluation and authorization of chemical substances.
- DNEL : Derive no effects level
- PNEC : Predicted no effect concentration

16.3. Key literature references and sources for data

- This Safety Data Sheet was compiled with data and information from the following sources: RTECS, ECOSAR, HSDB, SIDS SIAP, ChemWATCH, CESAR, Chemical DB

16.4. Classification procedure

- The mixture classification has been derived based on the classification of the individual components in accordance with the rules set out in Regulation (EC) No 1272/2008 (CLP) as well as the translation tables in Annex VII to the same regulation.

16.5. Training advice

- Not applicable

16.6. Further information

- The (M)SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings. Risks may be determined by reference to Exposures Scenarios. Scale of use, frequency of use and current or available engineering controls must be considered.

- This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only.

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- Contact a poison control centre, List of Telephone Numbers : AUSTRIA (Vienna Wien) +43 1 406 43 43; BELGIUM (Brussels Bruxelles) +32 70 245 245; BULGARIA (Sofia) +359 2 9154 409; CZECH REPUBLIC (Prague Praha) +420 224 919 293; DENMARK (Copenhagen) 82 12 12 12; ESTONIA (Tallinn) 112; FINLAND (Helsinki) +358 9 471 977; FRANCE (Paris) +33 1 40 0548 48; GERMANY (Berlin) +49 30 19240; GREECE (Athens Athina) +30 10 779 3777; HUNGARY (Budapest) 06 80 20 11 99; ICELAND (Reykjavik) +354 525 111, +354 543 2222; IRELAND (Dublin) +353 1 8379964; ITALY (Rome) +39 06 305 4343; LATVIA (Riga) +371 704 2468; LITHUANIA (Vilnius) +370 5 236 20 52 or +370 687 53378; MALTA (Valletta) 2425 0000; NETHERLANDS (Bilthoven) +31 30 274 88 88; NORWAY (Oslo) 22 591300; POLAND (Gdansk) +48 58301 65 16 or +48 58 349 2831; PORTUGAL (Lisbon Lisboa) 808 250 143; ROMANIA (Bucharest) +40 21 3183606 SLOVAKIA (Bratislava) +421 2 54 77 4166; SLOVENIA (Ljubljana) + 386 41 650 500; SPAIN (Barcelona) +34 93 227 98 33 or +34 93 227 54 00 bleep 190; SWEDEN (Stockholm) 112 or +46 8 33 12 31 (mon-fri 9.00-17.00); UNITED KINGDOM (London) 112 or 0845 4647 (NHS Direct).

• Disclaimer of Liability

This information is based on our present state of knowledge.

It should not therefore be construed as guaranteeing specific properties of the products Described or their suitability for a particular application. YOU&I Corporation assumes no responsibility for personal injury or property damage caused by the material. Users assume all risks associated with the use of the material.

***** End of Documents

21741-3060

1/9

SAFETY DATA SHEET

According to Regulation (EC) No 1907/2006 (REACH), Annex II (COMMISSION REGULATION (EU) No 2015/830)



Date of issue: 2018-06-20

Revision date: 2022-06-21

SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING**1.1. Product identifier**

Trade name/designation : SGI- PINK

1.2. Relevant identified uses of the substance or mixture and uses advised against**1.2.1. Relevant identified uses**

- Water-soluble stationary ink

1.2.2. Uses advised against

- Not available

1.3. Details of the supplier of the safety data sheet

Manufacturer/Supplier : YOU&I COPORATION

Address : 53, EMTIBEUI 26-RO, SIHEUNG-SI, GYEONGGI-DO, KOREA (ZIP CODE) 15118

Telephone : 82-31-494-2030

Email : tech@youicolor.com

1.4. Emergency telephone number

82-31-494-2030 (This number is serviced during office hours only.)

EU-wide emergency number : 112

See section 16.6 for the list of telephone number of poison centers in the European Economic Area.

SECTION 2: HAZARD IDENTIFICATION**2.1. Classification of the substance/mixture****2.1.1. Classification according to Regulation (EC) No 1272/2008 [CLP]**

H411-Aquatic Chronic 2

2.2. Label elements**2.2.1. Labelling according to Regulation (EC) No 1272/2008 [CLP]***** Hazard Pictogram(s)***** Signal word** : Warning*** Hazard statement(s)**

H411: Toxic to aquatic life with long-lasting effects

*** Precautionary statement(s)****1) Prevention**

P273: Avoid release to the environment.

2) Response

P391: Collect spillage.

3) Storage

- Not applicable

4) Disposal

P501: Disposal contents/ container to in accordance with local national regulation.

2.3. Other hazards

- Not available

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS**3.1. Substances**

- Not applicable

3.2. Mixtures

Name	CAS No.	EINECS NO.	% [weight]	Classification [1272/2008/EC]
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ALUMINIUM POWDER	7429-90-5	231-072-3	3~7	   Flam. Solid 1, H228 Pyr. Liq. 1, H250 Water-react 2, H261 Specific target organ toxicity (repeated) 2, H373 Aquatic Chronic 1: H410 (M-factor: 1)
C.I. PIGMENT RED 122	980-26-7	213-561-3	0~5	 Acute toxicity (Inhalation) 4, H332
POLY ETHYLENE GLYCOL	25322-68-3	500-038-2	10~15	 Acute toxicity (Oral) 4, H302
2-AMINO-2-METHYL-1-PROPANOL	124-68-5	204-709-8	0~1	 Aquatic Chronic 4, H413 Eye Irrit. 1, H318 Skin Irrit. 2, H315

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- No general information.

Inhalation

- When exposed to large amounts of steam and mist, move to fresh air.
- Take specific treatment if needed.

Skin contact

- Flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes.
- Laundering enough contaminated clothing before reuse.

Eye contact

- Do not rub your eyes.
- Immediately flush eyes with plenty of water for at least 15 minutes and call a doctor/physician.

Ingestion

- Please be advised by doctor whether induction of vomit is demanded or not.
- Rinse your mouth with water immediately.

4.2. Most important symptoms and effects, both acute and delayed

- Not available

4.3. Indication of any immediate medical attention and special treatment needed

- Notify medical personnel of contaminated situations and have them take appropriate protective measures.

SECTION 5: FIREFIGHTING MEASURES**5.1. Extinguishing media****Suitable extinguishing media**

- Water, foam, CO₂, NaHCO₃

Unsuitable extinguishing media

- Avoid use of water jet for extinguishing

5.2. Special hazards arising from the substance or mixture**Hazardous combustion products**

- Not available

5.3. Advice for firefighters

- Cool containers with water until well after fire is out.
- Keep unauthorized personnel out.
- Withdraw immediately in case of rising sound from venting safety devices or discoloration of tank.
- Wear appropriate protective equipment.
- Keep containers cool with water spray.
- Use fire fighting procedures suitable for surrounding area.
- Vapor or gas is burned at distant ignition sources can be spread quickly.

SECTION 6: ACCIDENTAL RELEASE MEASURES**6.1. Personal Precautions, protective equipment and emergency procedures****6.1.1. For non-emergency personnel**

- Protective equipment: Wear proper protective equipment.
- Emergency procedures: Not applicable
- If required, notify relevant authorities according to all applicable regulations.

6.1.2. For emergency responders

- Ventilate closed spaces before entering.
- Must work against the wind, let the upwind people to evacuate.
- Do not touch spilled material. Stop leak if you can do it without risk.
- Handling the damaged containers or spilled material after wearing protective equipment.
- Do not direct water at spill or source of leak.

6.2. Environmental precautions

- Prevent runoff and contact with waterways, drains or sewers.
- If large amounts have been spilled, inform the relevant authorities.
- Avoid dispersal of spilt material and runoff and contact with waterways, drains and sewers. If large spills, advise

6.3. Methods and material for containment and cleaning up**6.3.1. For containment**

- Clear spills immediately
- Clean up all spills immediately.
- Prevent, by any means available, spillage from entering drains or water course.

6.3.2. For cleaning up

- Large spill : Stay upwind and keep out of low areas. Dike for later disposal.
- Notification to central government, local government. When emissions at least of the standard amount
- Dispose of waste in accordance with local regulation.
- Appropriate container for disposal of spilled material collected.
- Small leak: sand or other non-combustible material, please let use absorption.
- Wipe off the solvent.
- Dike for later disposal.

6.3.3. Other information

- Slippery when spilt.

6.4. Reference to other sections

- See Section 7 for information on safe handling.
- See Section 8 for information on personal protection equipment.
- See Section 13 for information on disposal.

SECTION 7: HANDLING AND STORAGE**7.1. Precautions for safe handling**

- Avoid direct physical contact.

- Get the manual before use.
- Refer to Engineering controls and personal protective equipment.
- Do not handle until all safety precautions have been read and understood.
- Do not inhale the steam prolonged or repeated.

7.2. Conditions for safe storage, including any incompatibilities

- Save in cool, dry and well ventilated place.
- Check regularly for leaks.
- Please pay attention to incompatibilities materials and conditions to avoid.
- Keep sealed when not in use.
- No open fire.

7.3. Specific end use(s)

- See Section 1 for information on 1.2 Relevant identified uses.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION**8.1. Control parameters****8.1.1. Occupational exposure limits****European Union (EU) Commission Directive 2006/15/EC (IOELVs)**

- Not available

European Union (EU) Commission Directive 2006/15/EC (IOELVs) - Skin

- Not available

8.1.2. Recommended Monitoring Procedures

- Personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment.

8.1.3. DNEL/PNEC - Values

- Not available

8.2. Exposure controls**8.2.1. Appropriate engineering controls**

- A system of local and/or general exhaust is recommended to keep employee exposures above the Exposure Limits. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. The use of local exhaust ventilation is recommended to control emissions near the source.

8.2.2. Individual protection measures, such as personal protective equipment**Hand protection**

- Wear appropriate glove.

Eye protection

- Wear primary eye protection such as splash resistant safety goggles with a secondary protection face shield.
- Provide an emergency eye wash station and quick drench shower in the immediate work area.

Respiratory Protection

- Under conditions of frequent use or heavy exposure, Respiratory protection may be needed.
- Respiratory protection is ranked in order from minimum to maximum.
- Consider warning properties before use.
- Any chemical cartridge respirator with organic vapor cartridge(s).
- Any chemical cartridge respirator with a full face piece and organic vapor cartridge(s).
- Any air-purifying respirator with a full face piece and an organic vapor canister.
- For Unknown Concentration or Immediately Dangerous to Life or Health : Any supplied-air respirator with full face piece and operated in a pressure-demand or other positive-pressure mode in combination with a separate escape supply. Any self-contained breathing apparatus with a full face piece.

Skin protection

- Wear appropriate clothing.

8.2.3 Environmental exposure controls

- Do not let product enter drains. For ecological information refer to section 12.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES**9.1. Information on basic physical and chemical properties**

Appearance(State)	Liquid
Appearance(Color)	PINK
Odor	Odorless
Odor threshold	Not available
pH	8.0 ± 1.0
Melting point/Freezing point	Not available
Initial boiling point and boiling range	> 100 °C
Flash point	300 °C
Evaporation rate	Not available
Flammability(solid, gas)	Not applicable
Upper/Lower Flammability or explosive	Not available
Vapour pressure	Not available
Vapour density	Not available
Relative density	1.1 ± 0.05 g/cm3
Solubility	Fully miscible
Partition coefficient of n-octanol/water	Not available
Autoignition temperature	No self-igniting
Decomposition temperature	Not available
Viscosity	650 ± 150 Cps
Explosive properties	Not explosive
Oxidizing properties	Not available

9.2. Other information

- Not available

SECTION 10: STABILITY AND REACTIVITY**10.1. Reactivity**

- Not available

10.2. Chemical Stability

- This material is stable under recommended storage and handling conditions.

10.3. Possibility of hazardous reactions

- Hazardous Polymerization will not occur.

10.4. Conditions to avoid

- Avoid contact with incompatible materials and condition.
- Avoid : Accumulation of electrostatic charges, Heating, Flames and hot surfaces

10.5. Incompatible materials

- Not available

10.6. Hazardous decomposition products

- Not available

SECTION 11: TOXICOLOGICAL INFORMATION**11.1. Acute toxicity****- Oral**

- Product (ATEmix) : >5000mg/kg
- [GLYCERINE] : LD50 = 12600 mg/kg Rat (ChemIDplus)
- [POLY ETHYLENE GLYCOL] : LD50 = 600 mg/kg Rat (KOSHA)

- Dermal

- Product (ATEmix) : >5000mg/kg

- [GLYCERINE] : LD50 > 10000 mg/kg Rat (ChemIDplus)

- Inhalation

- Product (ATEmix) : Not available

- [GLYCERINE] : LC50 >2.75 mg/ℓ 4 hr Rat (ECHA)

- [C.I. PIGMENT RED 122] : LC0 = 3.055 mg/ℓ 4hr Rat (OECD TG 403, GLP) (ECHA)

11.2. Skin corrosion/irritation

- [2-AMINO-2-METHYL-1-PROPANOL] : Classified as Category 2 (KOSHA)

11.3. Serious eye damage/irritation

- [2-AMINO-2-METHYL-1-PROPANOL] : Classified as Category 1 (KOSHA)

11.4. Respiratory sensitization

- Not available

11.5. Skin sensitization

- Not available

11.6. Germ cell mutagenicity

- Not available

11.7. Carcinogenicity

- IARC

- Not available

- OSHA

- Not available

- ACGIH

- [ALUMINIUM POWDER] : A4

- NTP

- Not available

- EU CLP

- Not available

11.8. Reproductive toxicity

- Not available

11.9. Specific target organ toxicity(single exposure):

- Not available

11.10. Specific target organ toxicity(repeated exposure):

- [ALUMINIUM POWDER] : Classified as Category 2 (KOSHA)

11.11. Aspiration hazard

- Not available

SECTION 12: ECOLOGICAL INFORMATION

12.1. Toxicity

12.1.1. Fish

- [GLYCERINE] : LC50 >11 mg/ℓ 96 hr Cyprinodon variegatus (ECHA)

12.1.2. Invertebrate

- [GLYCERINE] : LC50 1955 mg/ℓ 48 hr Daphnia magna (ECHA)

- [ALUMINIUM POWDER] : NOEC > 100 mg/ℓ 48 hr Daphnia magna (IUCLID)

12.1.3. Algae

- [ALUMINIUM POWDER] : NOEC > 0.052 mg/ℓ 48 hr Selenastrum capricornutum (M = 1) (OECD TG 201, GLP) (ECHA)

12.2. Persistence and degradability

12.2.1. Persistence

- Not available

12.2.2. Degradability

- [2-AMINO-2-METHYL-1-PROPANOL] : BOD5/COD 0.005 (KOSHA)

12.3. Bioaccumulative potential

12.3.1. Bioaccumulation

- [2-AMINO-2-METHYL-1-PROPANOL] : 1.3 BSAF (Leuciscus idus(Fish, fresh water), 50ug/) (KOSHA)

12.3.2. Biodegradability

- [2-AMINO-2-METHYL-1-PROPANOL] : 40 (%) 28 days (KOSHA)

12.4. Mobility in soil

- Not available

12.5. Results of PBT and vPvB assessment

- Not available

12.6. Other adverse effects

- Not available

SECTION 13: DISPOSAL CONSIDERATIONS

13.1. Waste treatment methods

- Since more than two kinds of designated waste is mixed, it is difficult to treat separately, then can be reduction or stabilization by incineration or similar process.
- If water separation is possible, pre-process with Water separation process.
- Dispose by incineration.
- The user of this product must disposal by oneself or entrust to waste disposer or person who other's waste recycle and dispose, person who establish and operate waste disposal facilities.
- Dispose of waste in accordance with all applicable laws and regulations.

SECTION 14: TRANSPORT INFORMATION

14.1. UN No.

14.1.1. UN No. (ADR/RID/ADN)

3082

14.1.2. UN No. (IMDG CODE/IATA DGR)

3082

14.1.3. UN No. (ICAO)

3082

14.2. UN proper shipping name

- Not applicable

14.3. Transport hazard class(es)

14.3.1. ADR/RID/ADN Class

- Not applicable

14.3.2. ADR/RID/ADN Class

- Not applicable

14.3.3. ADR Label No.

- Not applicable

14.3.4. IMDG Class

- Not applicable

14.3.5. ICAO Class/Division

- Not applicable

14.3.6. Transport Labels

- Not applicable

14.4. Packing group

14.4.1. ADR/RID/ADN Packing group

- Not applicable

14.4.2. IMDG Packing group

- Not applicable

14.4.3. ICAO Packing group

- Not applicable

14.5. Environmental hazards

- Not applicable

14.6. Special precautions for user

- Local transport follows in accordance with Dangerous goods Safety Management Law.
- Package and transport follow in accordance with Department of Transportation (DOT) and other regulatory agency
- EmS FIRE SCHEDULE : Not applicable
- EmS SPILLAGE SCHEDULE : Not applicable
- Air transport(IATA): Not subject to IATA regulations.

14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

- Not applicable

SECTION 15: REGULATORY INFORMATION

15.1. Safety, health and environmental regulation / legislation specific for the substance or mixture

15.1.1. Europe regulatory

15.1.1.1 REACH Restricted substance under REACH

- Not applicable

15.1.1.2 REACH Substances subject to authorization under REACH

- Not applicable

15.1.1.3 REACH SVHC

- Not applicable

15.1.1.4 Europe PBT

- Not applicable

15.1.1.5 European Union (EU) Transport of Dangerous Goods by Road - Dangerous Goods List

- Not applicable

15.2. Chemical Safety Assessment

- Not conducted

SECTION 16: OTHER INFORMATION

16.1. Indication of changes

- The Safety Data Sheet has been reviewed and the data therein were revised and laid out according to the requirements of the Commission Regulation (EC) No. 1907/2006

16.2. Abbreviations and acronyms

- 1272/2008 CLP : Classification, Labelling and Packaging regulation.
- REACH : Registration, Evaluation and authorization of chemical substances.
- DNEL : Derive no effects level
- PNEC : Predicted no effect concentration

16.3. Key literature references and sources for data

- This Safety Data Sheet was compiled with data and information from the following sources: RTECS, ECOSAR, HSDB, SIDS SIAP, ChemWATCH, CESAR, Chemical DB

16.4. Classification procedure

- The mixture classification has been derived based on the classification of the individual components in accordance with the rules set out in Regulation (EC) No 1272/2008 (CLP) as well as the translation tables in Annex VII to the same regulation.

16.5. Training advice

- Not applicable

16.6. Further information

- The (M)SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings. Risks may be determined by reference to Exposures Scenarios. Scale of use, frequency of use and current or available engineering controls must be considered.

- This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only.

- It should not therefore be construed as guaranteeing any specific property of the product.

- Contact a poison control centre, List of Telephone Numbers : AUSTRIA (Vienna Wien) +43 1 406 43 43; BELGIUM (Brussels Bruxelles) +32 70 245 245; BULGARIA (Sofia) +359 2 9154 409; CZECH REPUBLIC (Prague Praha) +420 224 919 293; DENMARK (Copenhagen) 82 12 12 12; ESTONIA (Tallinn) 112; FINLAND (Helsinki) +358 9 471 977; FRANCE (Paris) +33 1 40 0548 48; GERMANY (Berlin) +49 30 19240; GREECE (Athens Athina) +30 10 779 3777; HUNGARY (Budapest) 06 80 20 11 99; ICELAND (Reykjavik) +354 525 111, +354 543 2222; IRELAND (Dublin) +353 1 8379964; ITALY (Rome) +39 06 305 4343; LATVIA (Riga) +371 704 2468; LITHUANIA (Vilnius) +370 5 236 20 52 or +370 687 53378; MALTA (Valletta) 2425 0000; NETHERLANDS (Bilthoven) +31 30 274 88 88; NORWAY (Oslo) 22 591300; POLAND (Gdansk) +48 58301 65 16 or +48 58 349 2831; PORTUGAL (Lisbon Lisboa) 808 250 143; ROMANIA (Bucharest) +40 21 3183606 SLOVAKIA (Bratislava) +421 2 54 77 4166; SLOVENIA (Ljubljana) + 386 41 650 500; SPAIN (Barcelona) +34 93 227 98 33 or +34 93 227 54 00 bleep 190; SWEDEN (Stockholm) 112 or +46 8 33 12 31 (mon-fri 9.00-17.00); UNITED KINGDOM (London) 112 or 0845 4647 (NHS Direct).

Disclaimer of Liability

This information is based on our present state of knowledge.

It should not therefore be construed as guaranteeing specific properties of the products Described or their suitability for a particular application. YOU&I Corporation assumes no responsibility for personal injury or property damage caused by the material. Users assume all risks associated with the use of the material.

***** End of Documents

21741-4510

1/9

SAFETY DATA SHEET

According to Regulation (EC) No 1907/2006 (REACH), Annex II (COMMISSION REGULATION (EU) No 2015/830)



Date of issue: 2018-06-20

Revision date: 2022-06-21

SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING**1.1. Product identifier**

Trade name/designation : SGI- ORANGE

1.2. Relevant identified uses of the substance or mixture and uses advised against**1.2.1. Relevant identified uses**

- Water-soluble stationary ink

1.2.2. Uses advised against

- Not available

1.3. Details of the supplier of the safety data sheet

Manufacturer/Supplier : YOU&I COPORATION
 Address : 53, EMTIBEUI 26-RO, SIHEUNG-SI, GYEONGGI-DO, KOREA (ZIP CODE) 15118
 Telephone : 82-31-494-2030
 Email : tech@youicolor.com

1.4. Emergency telephone number

82-31-494-2030 (This number is serviced during office hours only.)
 EU-wide emergency number : 112
 See section 16.6 for the list of telephone number of poison centers in the European Economic Area.

SECTION 2: HAZARD IDENTIFICATION**2.1. Classification of the substance/mixture****2.1.1. Classification according to Regulation (EC) No 1272/2008 [CLP]**

H411-Aquatic Chronic 2

2.2. Label elements**2.2.1. Labelling according to Regulation (EC) No 1272/2008 [CLP]***** Hazard Pictogram(s)***** Signal word** : Warning*** Hazard statement(s)**

H411: Toxic to aquatic life with long-lasting effects

*** Precautionary statement(s)****1) Prevention**

P273: Avoid release to the environment.

2) Response

P391: Collect spillage.

3) Storage

- Not applicable

4) Disposal

P501: Disposal contents/ container to in accordance with local national regulation.

2.3. Other hazards

- Not available

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS**3.1. Substances**

- Not applicable

3.2. Mixtures

Name	CAS No.	EINECS NO.	% [weight]	Classification [1272/2008/EC]
WATER	7732-18-5	231-791-2	40~60	Not classified
GLYCERINE	56-81-5	200-289-5	15~20	Not classified
ALUMINIUM POWDER	7429-90-5	231-072-3	3~7	   Flam. Solid 1, H228 Pyr. Liq. 1, H250 Water-react 2, H261 Specific target organ toxicity (repeated) 2, H373 Aquatic Chronic 1: H410 (M-factor: 1)
C.I. PIGMENT RED 170	2786-76-7	220-509-3	0~5	Aquatic Chronic 4, H413
C.I. PIGMENT YELLOW 83	5567-15-7	226-939-8	0~5	Aquatic Chronic 3, H412
POLY ETHYLENE GLYCOL	25322-68-3	500-038-2	10~15	 Acute toxicity (Oral) 4, H302
2-AMINO-2-METHYL-1-PROPANOL	124-68-5	204-709-8	0~1	 Aquatic Chronic 4, H413 Eye Irrit. 1, H318 Skin Irrit. 2, H315

SECTION 4: FIRST AID MEASURES**4.1. Description of first aid measures****General**

- No general information.

Inhalation

- When exposed to large amounts of steam and mist, move to fresh air.
- Take specific treatment if needed.

Skin contact

- Flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes.
- Laundering enough contaminated clothing before reuse.

Eye contact

- Do not rub your eyes.
- Immediately flush eyes with plenty of water for at least 15 minutes and call a doctor/physician.

Ingestion

- Please be advised by doctor whether induction of vomit is demanded or not.
- Rinse your mouth with water immediately.

4.2. Most important symptoms and effects, both acute and delayed

- Not available

4.3. Indication of any immediate medical attention and special treatment needed

- Notify medical personnel of contaminated situations and have them take appropriate protective measures.

SECTION 5: FIREFIGHTING MEASURES**5.1. Extinguishing media****Suitable extinguishing media**

- Water, foam, CO₂, NaHCO₃

Unsuitable extinguishing media

- Avoid use of water jet for extinguishing

5.2. Special hazards arising from the substance or mixture**Hazardous combustion products**

- Not available

5.3. Advice for firefighters

- Cool containers with water until well after fire is out.
- Keep unauthorized personnel out.
- Withdraw immediately in case of rising sound from venting safety devices or discoloration of tank.
- Wear appropriate protective equipment.
- Keep containers cool with water spray.
- Use fire fighting procedures suitable for surrounding area.
- Vapor or gas is burned at distant ignition sources can be spread quickly.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal Precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

- Protective equipment: Wear proper protective equipment.
- Emergency procedures: Not applicable
- If required, notify relevant authorities according to all applicable regulations.

6.1.2. For emergency responders

- Ventilate closed spaces before entering.
- Must work against the wind, let the upwind people to evacuate.
- Do not touch spilled material. Stop leak if you can do it without risk.
- Handling the damaged containers or spilled material after wearing protective equipment.
- Do not direct water at spill or source of leak.

6.2. Environmental precautions

- Prevent runoff and contact with waterways, drains or sewers.
- If large amounts have been spilled, inform the relevant authorities.
- Avoid dispersal of spilt material and runoff and contact with waterways, drains and sewers. If large spills, advise

6.3. Methods and material for containment and cleaning up

6.3.1. For containment

- Clear spills immediately
- Clean up all spills immediately.
- Prevent, by any means available, spillage from entering drains or water course.

6.3.2. For cleaning up

- Large spill : Stay upwind and keep out of low areas. Dike for later disposal.
- Notification to central government, local government. When emissions at least of the standard amount
- Dispose of waste in accordance with local regulation.
- Appropriate container for disposal of spilled material collected.
- Small leak: sand or other non-combustible material, please let use absorption.
- Wipe off the solvent.
- Dike for later disposal.

6.3.3. Other information

- Slippery when spilt.

6.4. Reference to other sections

- See Section 7 for information on safe handling.
- See Section 8 for information on personal protection equipment.
- See Section 13 for information on disposal.

SECTION 7: HANDLING AND STORAGE

7.1. Precautions for safe handling

- Avoid direct physical contact.
- Get the manual before use.
- Refer to Engineering controls and personal protective equipment.

- Do not handle until all safety precautions have been read and understood.
- Do not inhale the steam prolonged or repeated.

7.2. Conditions for safe storage, including any incompatibilities

- Save in cool, dry and well ventilated place.
- Check regularly for leaks.
- Please pay attention to incompatibilities materials and conditions to avoid.
- Keep sealed when not in use.
- No open fire.

7.3. Specific end use(s)

- See Section 1 for information on 1.2 Relevant identified uses.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION**8.1. Control parameters****8.1.1. Occupational exposure limits****European Union (EU) Commission Directive 2006/15/EC (IOELVs)**

- Not available

European Union (EU) Commission Directive 2006/15/EC (IOELVs) - Skin

- Not available

8.1.2. Recommended Monitoring Procedures

- Personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment.

8.1.3. DNEL/PNEC - Values

- Not available

8.2. Exposure controls**8.2.1. Appropriate engineering controls**

- A system of local and/or general exhaust is recommended to keep employee exposures above the Exposure Limits. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. The use of local exhaust ventilation is recommended to control emissions near the source.

8.2.2. Individual protection measures, such as personal protective equipment**Hand protection**

- Wear appropriate glove.

Eye protection

- Wear primary eye protection such as splash resistant safety goggles with a secondary protection face shield.
- Provide an emergency eye wash station and quick drench shower in the immediate work area.

Respiratory Protection

- Under conditions of frequent use or heavy exposure, Respiratory protection may be needed.
- Respiratory protection is ranked in order from minimum to maximum.
- Consider warning properties before use.
- Any chemical cartridge respirator with organic vapor cartridge(s).
- Any chemical cartridge respirator with a full face piece and organic vapor cartridge(s).
- Any air-purifying respirator with a full face piece and an organic vapor canister.
- For Unknown Concentration or Immediately Dangerous to Life or Health : Any supplied-air respirator with full face piece and operated in a pressure-demand or other positive-pressure mode in combination with a separate escape supply. Any self-contained breathing apparatus with a full face piece.

Skin protection

- Wear appropriate clothing.

8.2.3 Environmental exposure controls

- Do not let product enter drains. For ecological information refer to section 12.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES**9.1. Information on basic physical and chemical properties**

Appearance(State)	Liquid
Appearance(Color)	ORANGE
Odor	Odorless
Odor threshold	Not available
pH	8.0 ± 1.0
Melting point/Freezing point	Not available
Initial boiling point and boiling range	> 100 °C
Flash point	300 °C
Evaporation rate	Not available
Flammability(solid, gas)	Not applicable
Upper/Lower Flammability or explosive	Not available
Vapour pressure	Not available
Vapour density	Not available
Relative density	1.1 ± 0.05 g/cm ³
Solubility	Fully miscible
Partition coefficient of n-octanol/water	Not available
Autoignition temperature	No self-igniting
Decomposition temperature	Not available
Viscosity	650 ± 150 Cps
Explosive properties	Not explosive
Oxidizing properties	Not available

9.2. Other information

- Not available

SECTION 10: STABILITY AND REACTIVITY**10.1. Reactivity**

- Not available

10.2. Chemical Stability

- This material is stable under recommended storage and handling conditions.

10.3. Possibility of hazardous reactions

- Hazardous Polymerization will not occur.

10.4. Conditions to avoid

- Avoid contact with incompatible materials and condition.
 - Avoid : Accumulation of electrostatic charges, Heating, Flames and hot surfaces

10.5. Incompatible materials

- Not available

10.6. Hazardous decomposition products

- Not available

SECTION 11: TOXICOLOGICAL INFORMATION**11.1. Acute toxicity****- Oral**

- Product (ATEmix) : >5000mg/kg
- [GLYCERINE] : LD50 = 12600 mg/kg Rat (ChemIDplus)
- [POLY ETHYLENE GLYCOL] : LD50 = 600 mg/kg Rat (KOSHA)

- Dermal

- Product (ATEmix) : >5000mg/kg
- [GLYCERINE] : LD50 > 10000 mg/kg Rat (ChemIDplus)

- Inhalation

- Product (ATEmix) : Not available
- [GLYCERINE] : LC50 >2.75 mg/ℓ 4 hr Rat (ECHA)

11.2. Skin corrosion/irritation

- [2-AMINO-2-METHYL-1-PROPANOL] : Classified as Category 2 (KOSHA)

11.3. Serious eye damage/irritation

- [2-AMINO-2-METHYL-1-PROPANOL] : Classified as Category 1 (KOSHA)

11.4. Respiratory sensitization

- Not available

11.5. Skin sensitization

- Not available

11.6. Germ cell mutagenicity

- Not available

11.7. Carcinogenicity

- **IARC**
 - Not available
- **OSHA**
 - Not available
- **ACGIH**
 - [ALUMINIUM POWDER] : A4
- **NTP**
 - Not available
- **EU CLP**
 - Not available

11.8. Reproductive toxicity

- Not available

11.9. Specific target organ toxicity(single exposure):

- Not available

11.10. Specific target organ toxicity(repeated exposure):

- [ALUMINIUM POWDER] : Classified as Category 2 (KOSHA)

11.11. Aspiration hazard

- Not available

SECTION 12: ECOLOGICAL INFORMATION**12.1. Toxicity****12.1.1. Fish**

- [GLYCERINE] : LC50 >11 mg/ℓ 96 hr Cyprinodon variegatus (ECHA)
- [C.I. PIGMENT RED 170] : LC50 >0.217 mg/ℓ 96 hr (ECOSAR)
- [C.I. PIGMENT YELLOW 83] : LC50 45 mg/ℓ 48 hr Oncorhynchus mykiss (ECOTOX)

12.1.2. Invertebrate

- [GLYCERINE] : LC50 1955 mg/ℓ 48 hr Daphnia magna (ECHA)
- [ALUMINIUM POWDER] : NOEC > 100 mg/ℓ 48 hr Daphnia magna (IUCLID)
- [C.I. PIGMENT RED 170] : LC50 0.545 mg/ℓ 48 hr (ECOSHA)

12.1.3. Algae

- [ALUMINIUM POWDER] : NOEC > 0.052 mg/ℓ 48 hr Selenastrum capricornutum (M = 1) (OECD TG 201, GLP) (ECHA)
- [C.I. PIGMENT RED 170] : EC50 0.06 mg/ℓ 96 hr (ECOSHA)

12.2. Persistence and degradability**12.2.1. Persistence**

- [C.I. PIGMENT RED 170] : 6.04 log Kow (ECOSAR)
- [C.I. PIGMENT YELLOW 83] : 7.54 log Kow (IUCLID)

12.2.2. Degradability

- [2-AMINO-2-METHYL-1-PROPANOL] : BOD5/COD 0.005 (KOSHA)

12.3. Bioaccumulative potential

12.3.1. Bioaccumulation

- [2-AMINO-2-METHYL-1-PROPANOL] : 1.3 BSAF (Leuciscus idus(Fish, fresh water), 50ug/) (KOSHA)
- [C.I. PIGMENT RED 170] : 10 (QSAR)
- [C.I. PIGMENT YELLOW 83] : 10 (QSAR)

12.3.2. Biodegradability

- [2-AMINO-2-METHYL-1-PROPANOL] : 40 (%) 28 days (KOSHA)
- [C.I. PIGMENT YELLOW 83] : 6 (%) 28 days (NITE)

12.4. Mobility in soil

- Not available

12.5. Results of PBT and vPvB assessment

- Not available

12.6. Other adverse effects

- Not available

SECTION 13: DISPOSAL CONSIDERATIONS

13.1. Waste treatment methods

- Since more than two kinds of designated waste is mixed, it is difficult to treat separately, then can be reduction or stabilization by incineration or similar process.
- If water separation is possible, pre-process with Water separation process.
- Dispose by incineration.
- The user of this product must disposal by oneself or entrust to waste disposer or person who other's waste recycle and dispose, person who establish and operate waste disposal facilities.
- Dispose of waste in accordance with all applicable laws and regulations.

SECTION 14: TRANSPORT INFORMATION

14.1. UN No.

14.1.1. UN No. (ADR/RID/ADN)

3082

14.1.2. UN No. (IMDG CODE/IATA DGR)

3082

14.1.3. UN No. (ICAO)

3082

14.2. UN proper shipping name

- Not applicable

14.3. Transport hazard class(es)

14.3.1. ADR/RID/ADN Class

- Not applicable

14.3.2. ADR/RID/ADN Class

- Not applicable

14.3.3. ADR Label No.

- Not applicable

14.3.4. IMDG Class

- Not applicable

14.3.5. ICAO Class/Division

- Not applicable

14.3.6. Transport Labels

- Not applicable

14.4. Packing group**14.4.1. ADR/RID/ADN Packing group**

- Not applicable

14.4.2. IMDG Packing group

- Not applicable

14.4.3. ICAO Packing group

- Not applicable

14.5. Environmental hazards

- Not applicable

14.6. Special precautions for user

- Local transport follows in accordance with Dangerous goods Safety Management Law.
- Package and transport follow in accordance with Department of Transportation (DOT) and other regulatory agency
- EmS FIRE SCHEDULE : Not applicable
- EmS SPILLAGE SCHEDULE : Not applicable
- Air transport(IATA): Not subject to IATA regulations.

14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

- Not applicable

SECTION 15: REGULATORY INFORMATION**15.1. Safety, health and environmental regulation / legislation specific for the substance or mixture****15.1.1. Europe regulatory****15.1.1.1 REACH Restricted substance under REACH**

- Not applicable

15.1.1.2 REACH Substances subject to authorization under REACH

- Not applicable

15.1.1.3 REACH SVHC

- Not applicable

15.1.1.4 Europe PBT

- Not applicable

15.1.1.5 European Union (EU) Transport of Dangerous Goods by Road - Dangerous Goods List

- Not applicable

15.2. Chemical Safety Assessment

- Not conducted

SECTION 16: OTHER INFORMATION**16.1. Indication of changes**

- The Safety Data Sheet has been reviewed and the data therein were revised and laid out according the requirements of the Commission Regulation (EC) No. 1907/2006

16.2. Abbreviations and acronyms

- 1272/2008 CLP : Classification, Labelling and Packaging regulation.
- REACH : Registration, Evaluation and authorization of chemical substances.
- DNEL : Derive no effects level
- PNEC : Predicted no effect concentration

16.3. Key literature references and sources for data

- This Safety Data Sheet was compiled with data and information from the following sources: RTECS, ECOSAR, HSDB, SIDS SIAP, ChemWATCH, CESAR, Chemical DB

16.4. Classification procedure

- The mixture classification has been derived based on the classification of the individual components in accordance with the rules set out in Regulation (EC) No 1272/2008 (CLP) as well as the translation tables in Annex VII to the same regulation.

16.5. Training advice

- Not applicable

16.6. Further information

- The (M)SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings. Risks may be determined by reference to Exposures Scenarios. Scale of use, frequency of use and current or available engineering controls must be considered.

- This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only.

- It should not therefore be construed as guaranteeing any specific property of the product.

- Contact a poison control centre, List of Telephone Numbers : AUSTRIA (Vienna Wien) +43 1 406 43 43; BELGIUM (Brussels Bruxelles) +32 70 245 245; BULGARIA (Sofia) +359 2 9154 409; CZECH REPUBLIC (Prague Praha) +420 224 919 293; DENMARK (Copenhagen) 82 12 12 12; ESTONIA (Tallinn) 112; FINLAND (Helsinki) +358 9 471 977; FRANCE (Paris) +33 1 40 0548 48; GERMANY (Berlin) +49 30 19240; GREECE (Athens Athina) +30 10 779 3777; HUNGARY (Budapest) 06 80 20 11 99; ICELAND (Reykjavik) +354 525 111, +354 543 2222; IRELAND (Dublin) +353 1 8379964; ITALY (Rome) +39 06 305 4343; LATVIA (Riga) +371 704 2468; LITHUANIA (Vilnius) +370 5 236 20 52 or +370 687 53378; MALTA (Valletta) 2425 0000; NETHERLANDS (Bilthoven) +31 30 274 88 88; NORWAY (Oslo) 22 591300; POLAND (Gdansk) +48 58301 65 16 or +48 58 349 2831; PORTUGAL (Lisbon Lisboa) 808 250 143; ROMANIA (Bucharest) +40 21 3183606 SLOVAKIA (Bratislava) +421 2 54 77 4166; SLOVENIA (Ljubljana) + 386 41 650 500; SPAIN (Barcelona) +34 93 227 98 33 or +34 93 227 54 00 bleep 190; SWEDEN (Stockholm) 112 or +46 8 33 12 31 (mon-fri 9.00-17.00); UNITED KINGDOM (London) 112 or 0845 4647 (NHS Direct).

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This information is based on our present state of knowledge.

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