

**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 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 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, CO<sub>2</sub>, NaHCO<sub>3</sub>

**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 <sup>3</sup>
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 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.

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\*\*\*\*\* 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: 2023-04-17

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

### 1.1. Product identifier

Trade : MGI- D.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 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

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

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- Water, form, CO<sub>2</sub>, NaHCO<sub>3</sub>

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- 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 <sup>3</sup>
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 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.

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\*\*\*\*\* 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, CO<sub>2</sub>, NaHCO<sub>3</sub>

#### 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 <sup>3</sup>
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.
- 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

# 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 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]

### 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, CO<sub>2</sub>, NaHCO<sub>3</sub>

**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**

- Store 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 <sup>3</sup>
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 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.

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\*\*\*\*\* 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 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]
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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
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- Take specific treatment if needed.

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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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- Water, foam, CO<sub>2</sub>, NaHCO<sub>3</sub>

**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.

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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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- 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.

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- Clear spills immediately
- Clean up all spills immediately.
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- 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**

- Store 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/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

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- 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

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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: 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 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 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, CO<sub>2</sub>, NaHCO<sub>3</sub>

**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/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)

**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

21739-5030

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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&amp;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 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, CO<sub>2</sub>, NaHCO<sub>3</sub>

**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**

- Store 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/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)

**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

21739-3010

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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- 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&amp;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 Aquatic Chronic 1: H410 (M-factor: 1) Aquatic Chronic 4, H413
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, CO<sub>2</sub>, NaHCO<sub>3</sub>

**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**

- Store 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/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)

**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**

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- 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

21739-3060

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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- 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 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 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, CO<sub>2</sub>, NaHCO<sub>3</sub>

**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**

- Store 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 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

21739-4510

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 : 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 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 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, CO<sub>2</sub>, NaHCO<sub>3</sub>

**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/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)

**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.

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- 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**

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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.

- 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

21739-7010

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- 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&amp;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 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, CO<sub>2</sub>, NaHCO<sub>3</sub>

**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**

- Store 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/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)

**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

21739-9010

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 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]
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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.

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

- Water, foam, CO<sub>2</sub>, NaHCO<sub>3</sub>

**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.

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- 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**

- Store 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/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)

**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

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- 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 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 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, CO<sub>2</sub>, NaHCO<sub>3</sub>

**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	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.
- 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



21739-5010

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- 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 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, form, CO<sub>2</sub>, NaHCO<sub>3</sub>

**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**

- Store 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/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 (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.
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- 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**

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- DNEL : Derive no effects level
- 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.

- 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 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 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, CO<sub>2</sub>, NaHCO<sub>3</sub>

**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 <sup>3</sup>
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 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]
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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
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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.

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

- Water, foam, CO<sub>2</sub>, NaHCO<sub>3</sub>

**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.

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- 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

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

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- 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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- Do not inhale the steam prolonged or repeated.

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- Store 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)**

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

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- Wear appropriate glove.

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- 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.

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- 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 <sup>3</sup>
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 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.

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\*\*\*\*\* 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 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 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, CO<sub>2</sub>, NaHCO<sub>3</sub>

**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 <sup>3</sup>
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 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.

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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 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 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 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, CO<sub>2</sub>, NaHCO<sub>3</sub>

**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**

- Store 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/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)

**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 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



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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

## 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 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 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, CO<sub>2</sub>, NaHCO<sub>3</sub>

**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**

- Store 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/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)

**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 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: 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 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 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, CO<sub>2</sub>, NaHCO<sub>3</sub>

**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/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)

**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 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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