64503-0119

DYNAMIC
Color Co.

SAFETY DATA SHEET

Prepared to U.S. OSHA, CMA, ANSI, Canadian WHMIS 2015 GHS, European Union CLP EC 1272/2008 & the 8th ATP 2016/918, the Korean MoEL (Public Notice 2016-19), Singapore SS586 Standard – Parts 2 & 3, Chinese GB/T 16483-2008 & GB/T 17519-2013, New Zealand Hazardous Substances (Hazard Classification) Notice 2020, *Australian WorkSafe* GHS 7, 2022, *Japanese* JIS Z 7252: 2019 (Classification of chemicals) and JIS Z 7253: 2019 (Communication of information on danger of chemicals – labeling and safety data sheets), *and the Global Harmonization Standard*

1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY UNDERTAKING

PRODUCT IDENTIFIER USED ON LABEL:

Product Identifier: **TATTOO PAINT No. BD-1; TATTOO PAINT No. ELB; TATTOO PAINT No. SKB; TATTOO PAINT No. TEA**

Other Means of Identification: Not Applicable

RECOMMENDED USE of the PRODUCT and RESTRICTIONS on USE:

Recommended Use: Tissue Staining Paint

Restrictions on Use: Other than Recommended Use

SHIPPING CLASSIFICATION:

U.N. Number: None Allocated

U.N. Dangerous Goods Class/Subsidiary Risk: None Allocated

HAZCHEM Code (Australia): None Allocated

Poisons Schedule Number (Australia): None Allocated

NAME, ADDRESS and TELEPHONE NUMBER of CHEMICAL MANUFACTURER, IMPORTER or OTHER RESPONSIBLE PARTY:

U.S. Supplier/Manufacturer's Name: **DYNAMIC COLOR COMPANY**

Address: PO Box 21083
Fort Lauderdale, FL, 33335 USA

Information Phone: + 1-954-462-0261 9 a.m. to 4 p.m. (U.S. East Coast Time Zone)

Emergency Phone: 1-800-233-8332 9 a.m. to 4 p.m. (U.S. East Coast Time Zone)
(from U.S., Canada, Puerto Rico, U.S. Virgin Islands)

Email: sales@dynamiccolor.com

Date of Preparation: April 12, 2001

Date of Revision: April 13, 2022

2. HAZARD IDENTIFICATION

GLOBAL HARMONIZATION LABELING AND CLASSIFICATION: Classified in accordance with Global Harmonization Standard under U.S. OSHA Hazard Communication Standard, Canadian *WHMIS 2015 GHS*, European CLP Regulation (EC) 1272/2008, Japanese JIS Z 7252: 2019 (Classification of chemicals) and JIS Z 7253: 2019 (Communication of information on danger of chemicals – labeling and safety data sheets), New Zealand Hazardous Substances (Hazard Classification) Notice 2020, Australian WorkSafe GHS 7, 2022, Singapore SS586, Chinese GHS standard. Korean MoEL classification is given separately.

Classification: Eye Irritation Category 2A, Specific Target Organs Toxicity (Inhalation-Irritation) Single Exposure Category 3

Signal Word: Warning

Hazard Statements: H319: Causes serious eye irritation. H335: May cause respiratory irritation.

Precautionary Statements:

Prevention: P261: Avoid breathing mists or sprays. P264 + P265: Wash hands and other contamination areas thoroughly after handling. Do not touch eyes.P270: Do not eat, drink or smoke when using these products. P271: Use only outdoors or in a well-ventilated area. P280: Wear protective gloves, protective clothing, eye protection, face protection.

Response: P305 + P351 + P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. P337 + P317: If eye irritation persists: Get medical help. P304 + P340: If inhaled, remove victim to fresh air and keep at rest in a position comfortable for breathing. P319: Get medical help if you feel unwell. P321: Specific treatment (remove from exposure and treat symptoms). Refer to Safety Data Sheet for more information.

Storage: P403 + P233: Store in a well-ventilated place. Keep container tightly closed. P405: Store locked up.

Disposal: P501: Dispose of contents/containers in accordance with all local, regional, national and international regulations.

Hazard Symbols/Pictograms: GHS07

KOREAN MoEL (Notice 2016-19) LABELING AND CLASSIFICATION: Classified in accordance with MoEL Notice 2016-19. Under the MoEL regulation, no differences in classification are applicable.

PERCENT OF UNKNOWN ACUTE TOXICITY:

Unknown toxicity by inhalation: BD-1: 80%; ELB: 90%; SKB: 90%; TEA: 79%.
Unknown dermal toxicity : BD-1: 85%; ELB: 90%; SKB: 90%; TEA: 89%.
Unknown oral toxicity: BD-1: 80%; ELB: 75%; SKB: 75%; TEA: 80%

2. HAZARD IDENTIFICATION (Continued)

EMERGENCY OVERVIEW: Product Description: These products are blue liquids that have a mild odor. **Health Hazards:** The primary health hazard associated with these products is the potential for mild irritation of contaminated tissue. Eye contact may cause more serious irritation. The Titanium Dioxide component is a suspect carcinogen by inhalation of respirable particles. Due to the liquid form of these products, this hazard is not expected to be significant. **Flammability Hazards:** These products are not flammable. If involved in a fire, the product may decompose to produce carbon, copper, nitrogen and titanium oxides. **Reactivity Hazards:** These products are not reactive. **Environmental Hazards:** Not tested. These products may have adverse effects when released into the environment. **Emergency Recommendations:** Emergency responders must wear the personal protective equipment suitable for the situation to which they are responding.

3. COMPOSITION and INFORMATION ON INGREDIENTS

Chemical Name	CAS #	European EINECS # / Index #	Japanese MITI/ENC #	Korean ECL #	New Zealand NZIoC #	Chinese IECSC Inventory	Taiwan NESCI ECS Inventory	Australian AICS	% w/w	LABEL ELEMENTS GHS under U.S. OSHA, Canadian WHMIS HPR-GHS & EU Classification (1272/2008), Japanese, New Zealand, Taiwan, Chinese and Korean Regulations Korean ISHA Classification Hazard Statements
Isopropyl Alcohol	67-63-0	200-661-7 603-117-00-0	2-207	KE-29363	HSR001180	Listed	Listed	Listed	10%	GHS Under All Countries Harmonized Classification: Flammable Liquid Cat. 2, Eye Irritation Cat. 2A, Specific Target Organ Toxicity (Inhalation, Ingestion-Narcotic Effects) Single Exposure Cat. 3 Hazard Statements: H226: Flammable liquid and vapor. H319: Causes serious eye irritation. H336: May cause drowsiness or dizziness.
Titanium Dioxide (C.I. White 7)	13463-67-7	236-675-7 No Index #	1-558	KE-33900	May be used under an appropriate group standard	Listed	Listed	Listed	9-10%	GHS Under All Countries Classification: Not classified Self-Classification Classification: Carcinogenic Cat. 2 Hazard Statements: H351: Suspected of causing cancer. Under U.S. OSHA, Canadian WHMIS HPR-2015 only Classification: Combustible Dust Hazard
Proprietary Pigment Blue3					May be used under an appropriate group standard	Listed	Listed	Listed	0.5-5%	Classification: Not Classified Under U.S. OSHA, Canadian WHMIS HPR-2015 only Classification: Combustible Dust Hazard
Styrene Acrylic Polymer Resin (BD-1)					May be used under an appropriate group standard	Listed	Listed	Listed	0-5%	GHS Under All Countries Harmonized Classification: Skin Irritation Cat. 2, Eye Irritation Cat. 2A, Specific Target Organ Toxicity (Inhalation, Narcotic Effects/Respiratory Irritation) Single Exposure Cat. 3 Hazard Statements: H315: Causes skin irritation. H319: Causes serious eye irritation. H335: May cause respiratory irritation. H336: May cause drowsiness or dizziness.
Proprietary Pigment Green (TEA)					May be used under an appropriate group standard	Listed	Listed	Listed	0-1%	Classification: Not Classified Under U.S. OSHA, Canadian WHMIS HPR-2015 only Classification: Combustible Dust Hazard
Water	7732-18-5	231-791-2 No Index #	Not identified in the Listing	KE-35400	Excepted	Listed	Listed	Listed	Balance	Classification: Not Classified

See Section 15 for information on other country inventory listing of components, as applicable
The specific chemical identity and/or exact percentage (concentration) of composition has been withheld as a trade secret.

4. FIRST-AID MEASURES

PROTECTION OF FIRST AID RESPONDERS: Rescuers should be taken for medical attention, if necessary. Only trained personnel should administer supplemental oxygen and/or cardio-pulmonary resuscitation, if necessary.

DESCRIPTION OF FIRST AID MEASURES: Victim(s) must be taken for medical attention. Take copy of label and MSDS to physician or other health professional with victim(s). Remove victim(s) to fresh air, as quickly as possible.

Skin Exposure: If these products contaminates the skin and adverse effect occurs, begin decontamination with running water. Minimum flushing is for 20 minutes. The contaminated individual must seek medical attention if any adverse effects occur after flushing.

GHS Precautionary Statements for Skin Exposure: None applicable.

4. FIRST-AID MEASURES (Continued)

DESCRIPTION OF FIRST AID MEASURES (continued):

Eye Exposure: If these products enter the eyes, open contaminated individual's eyes while under gently running water. Use sufficient force to open eyelids. Have contaminated individual "roll" eyes. Minimum flushing is for 20 minutes. Contaminated individual must seek medical attention if adverse effect continues after flushing.

GHS Precautionary Statements for Eye Exposure: P305 + P351 + P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. P337 + P317: If eye irritation persists: Get medical attention.

Inhalation: If aerosols are inhaled and adverse effect occurs, remove victim to fresh air. The contaminated individual must seek medical attention if any adverse effects occur.

GHS Precautionary Statements for Inhalation Exposure: P304 + P340: If inhaled, remove victim to fresh air and keep at rest in a position comfortable for breathing. P319: Get medical help if you feel unwell.

Ingestion: If swallowed, CALL PHYSICIAN OR POISON CONTROL CENTER FOR MOST CURRENT INFORMATION. If professional advice is not available, do not induce vomiting. Never induce vomiting or give diluents (milk or water) to someone who is unconscious, having convulsions, or unable to swallow. If victim is convulsing, maintain an open airway and obtain immediate medical attention.

GHS Precautionary Statements for Ingestion Exposure: None applicable.

MOST IMPORTANT SYMPTOMS and EFFECTS, WHETHER ACUTE OR DELAYED: See Sections 2 (Hazard Information) and 11 (Toxicological Information) for information.

Acute:

Symptoms/Effects: May cause irritation by contact with the skin, eyes and respiratory system. All potential effects are dependent on concentration and duration of exposure.

Symptoms/Effects After Inhalation: EXPOSURE TO HIGH CONCENTRATIONS: Coughing, or respiratory irritation.

Symptoms/Effects After Skin Contact: Mild irritation.

Symptoms/Effects After Eye Contact: Moderate irritation of eye tissue.

Symptoms/Effects After Ingestion: Irritation of digestive system.

Chronic:

Symptoms/Effects After Skin Contact: Dermatitis (dry, red skin).

Symptoms/Effects After Eye Contact: None known.

Symptoms/Effects After Accidental Injection: None known.

Symptoms/Effects After Inhalation: None known.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: Skin or respiratory conditions may be aggravated by exposure to these products.

INDICATION OF IMMEDIATE MEDICAL ATTENTION AND SPECIAL TREATMENT IF NEEDED: Treat symptoms and eliminate exposure.

COMPLIANCE WITH SAFE WORK AUSTRALIA MODEL CODE FIRST AID IN THE WORKPLACE CODE OF PRACTICE: Compliance with all requirements should be in place under Section 3 (First Aid Equipment, Facilities and Training) should be in place.

5. FIRE-FIGHTING MEASURES

FLASH POINT: Not flammable. **AUTOIGNITION TEMPERATURE:** Not applicable.

FLAMMABLE LIMITS (In air by volume, %): Not applicable.

FIRE EXTINGUISHING MEDIA: Unless incompatibilities exist for surrounding materials, carbon dioxide, water spray, 'ABC' type chemical extinguishers, foam, dry chemical and halon extinguishers can be used to fight fires involving these products.

UNSUITABLE FIRE EXTINGUISHING MEDIA: None known.

SPECIAL HAZARDS ARISING FROM THE SUBSTANCE: When involved in a fire, this material may decompose and produce irritating vapors and toxic gases (e.g., carbon, copper, nitrogen and titanium oxides).

Explosion Sensitivity to Mechanical Impact or Static Discharge: Not sensitive.

SPECIAL PROTECTIVE ACTIONS FOR FIRE-FIGHTERS: Incipient fire responders should wear eye protection. Structural firefighters must wear Self-Contained Breathing Apparatus and full protective equipment. Due to the presence of pigment, the runoff water from these products can discolor contaminated objects. If possible, prevent runoff water from entering storm drains, bodies of water, or other environmentally sensitive areas. If necessary, rinse fire-response equipment with soapy water before returning it to service.

GHS Statements for Fire Response: None applicable.

Australian HazChem Code: Not applicable.

6. ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS AND EMERGENCY PROCEDURES: Uncontrolled releases should be responded to by trained personnel using pre-planned procedures. Proper protective equipment should be used. Call CHEMTREC (1-800-424-9300) for emergency assistance. Or if in Canada, call CANUTEC (613-996-6666). The atmosphere must at least 19.5 percent Oxygen before non-emergency personnel can be allowed in the area without Self-Contained Breathing Apparatus and fire protection.

PERSONAL PROTECTIVE EQUIPMENT: Proper protective equipment should be used.

Small Spills: Wear rubber gloves, splash goggles, and appropriate body protection.

Large Spills: Minimum Personal Protective Equipment should be rubber gloves, rubber boots, face shield, and Tyvek suit. Minimum level of personal protective equipment for releases in which the level of oxygen is less than 19.5% or is unknown must be **Level B: triple-gloves (rubber gloves and nitrile gloves over latex gloves), chemical resistant suit and boots, hard hat, and Self-Contained Breathing Apparatus.**

6. ACCIDENTAL RELEASE MEASURES (Continued)

METHODS FOR CLEAN-UP AND CONTAINMENT:

Small Spills: Carefully absorb spill using polypads or other non-reactive absorbent. Place spilled material in appropriate container for disposal, sealing tightly. Remove all residue before decontamination of spill area.

Large Spills: Access to the spill area should be restricted. For large spills, dike or otherwise contain spill and absorb spill with polypads or other non-reactive absorbent material.

All Spills: Place all spill residue in a double plastic bag or other containment and seal. Decontaminate the area thoroughly. Do not mix with wastes from other materials. Dispose of in accordance with applicable Federal, State, and local procedures (see Section 13, Disposal Considerations). For spills on water, contain, minimize dispersion and collect. Dispose of recovered material and report spill per regulatory requirements.

ENVIRONMENTAL PRECAUTIONS: Avoid release to the environment. Run-off water may be contaminated by other materials and should be contained to prevent possible environmental damage.

REFERENCE TO OTHER SECTIONS: See information in Section 8 (Exposure Controls – Personal Protection) and Section 13 (Disposal Considerations) for additional information.

7. HANDLING and STORAGE

PRECAUTIONS FOR SAFE HANDLING: As with all chemicals, avoid getting these products ON YOU or IN YOU. Wash thoroughly after handling these products. Do not eat, drink, smoke, or apply cosmetics while handling these products. Avoid breathing aerosols from the product. Keep away from incompatible materials (see Section 10, Stability and Reactivity). Containers of these products must be properly labeled. Use in a well-ventilated location. Remove contaminated clothing.

GHS Statements for Safe Handling: P261: Avoid breathing mists or sprays. P264 + P265: Wash hands and other contamination areas thoroughly after handling. Do not touch eyes.P270: Do not eat, drink or smoke when using these products. P271: Use only outdoors or in a well-ventilated area. P280: Wear protective gloves, protective clothing, eye protection, face protection.

CONDITIONS FOR SAFE STORAGE and INCOMPATIBILITIES: Keep container tightly closed when not in use. Store containers in a cool, dry location, away from direct sunlight, sources of intense heat, or where freezing is possible. Material should be stored in secondary containers or in a diked area, as appropriate. Inspect all incoming containers before storage, to ensure containers are properly labeled and not damaged. Have appropriate extinguishing equipment in the storage area (such as sprinkler systems or portable fire extinguishers). Empty containers may contain residual product; therefore, empty containers should be handled with care. May be incompatible with water reactive materials and strong oxidizers.

GHS Statements for Safe Storage: P403 + P233: Store in a well-ventilated place. Keep container tightly closed. P405: Store locked up.

SPECIFIC USE(S): These products are for use as a skin staining paint. Follow all industry standards for use of these products.

PROTECTIVE PRACTICES DURING MAINTENANCE OF CONTAMINATED EQUIPMENT: Follow practices indicated in Section 6 (Accidental Release Measures). Make certain that application equipment is locked and tagged-out safely. Always use these products in areas where adequate ventilation is provided. Decontaminate equipment thoroughly, before maintenance begins. Collect all rinsates and dispose of according to applicable Federal, State, or local procedures, or applicable standards.

8. EXPOSURE CONTROLS - PERSONAL PROTECTION

EXPOSURE LIMITS/CONTROL PARAMETERS:

Ventilation and Engineering Controls: Use with adequate ventilation to ensure exposure levels are maintained below the limits provided in this section. Use local exhaust ventilation. Normal office ventilation conforming to the American Society of Heating, Refrigerating, and Air Conditioning Engineers (ASHRAE) Standards is adequate under normal circumstances of use. Persons using this material should consult a qualified Ventilation Engineer and/or Industrial Hygienist if concerns about exposure arise. If necessary, refer to Australian National Code of Practice for the Control of Workplace Hazardous Substances [NOHSC: 2007 (1994)] for further information.

U.S. Workplace Exposure Limits/Control Parameters:

CHEMICAL NAME	CAS #	EXPOSURE LIMITS IN AIR							
		ACGIH-TLVs		OSHA-PELs		NIOSH-RELs		NIOSH	OTHER
		TWA mg/m³	STEL mg/m³	TWA mg/m³	STEL mg/m³	TWA mg/m³	STEL mg/m³	IDLH mg/m³	mg/m³
Proprietary Pigment Green (Copper Phthalo-cyanine Green) Exposure limits given are for Copper dusts, fumes & mists as Cu)	1328-53-6	1 (dusts, mists) 0.2 (fume)	NE	1 (dusts, mists) 0.1 (fume)	NE	1 (dusts, mists) 0.1 (fume)	NE	100 (as Cu)	NE
C.I. White 7 (Titanium Dioxide)	13463-67-7	0.2 (resp. fract.) finescale particles	NE	15 (total dust); 10 (vacated 1989 PEL)	NE	See Pocket Guide App. A		5000	DFG MAK Pregnancy Risk Classification: C
Isopropyl Alcohol	67-63-0	492	984	980	500 ppm (vacated 1989 PEL)	980	1225	2000 ppm (based on LEL)	DFG MAK: TWA = 500 ppm PEAK = 2•MAK, 15 min., average value, 1-hr interval, 4 per shift DFG MAK Pregnancy Risk Classification: C

NE = Not Established.

8. EXPOSURE CONTROLS - PERSONAL PROTECTION (Continued)

EXPOSURE LIMITS/CONTROL PARAMETERS (continued):

Australian Hazardous Chemical Information System (HMIS) Exposure Standards:

CHEMICAL NAME	CAS #	EXPOSURE STANDARDS				
		TWA ppm	TWA mg/m^3	STEL ppm	STEL mg/m^3	Notes
Proprietary Pigment Green (Copper Phthalo-cyanine Green) Exposure limits given are for Copper dusts, fumes & mists as Cu)	1328-53-6	NE	1 (dusts & mists) 0.2 (fume)	NE	NE	Not Applicable
C.I. White 7 (Titanium Dioxide)	13463-67-7	NE	10	NE	NE	(1) This value is for inhalable dust containing no asbestos and < 1% crystalline silica.
Isopropyl Alcohol	67-63-0	400	983	500	1230	Not Applicable

NE = Not Established.

UK Minimum Exposure Limits:

CHEMICAL NAME	CAS #	WORKPLACE EXPOSURE LIMIT				
		Long-Term Exposure Limit (8-Hrs TWA Reference Period)		Short-Term Exposure Limit (15-minute Reference Period)		Comments
		ppm	$mg.m^{-3}$	ppm	$mg.m^{-3}$	The Carcin, Sen and Skin notations are not exhaustive. Notations have been applied to substances identified in IOELV Directives
C.I. White 7 (Titanium Dioxide)	14363-67-7	NE	10 (total inhalable) 4 (respirable)	NE	7	NE
Isopropyl Alcohol	67-63-0	400	999	500	1250	NE

NE = Not Established.

UK Minimum Exposure Limits:

CHEMICAL NAME	CAS #	WORKPLACE EXPOSURE LIMIT				
		Long-Term Exposure Limit (8-Hrs TWA Reference Period)		Short-Term Exposure Limit (15-minute Reference Period)		Comments
		ppm	$mg.m^{-3}$	ppm	$mg.m^{-3}$	The Carcin, Sen and Skin notations are not exhaustive. Notations have been applied to substances identified in IOELV Directives
Proprietary Pigment Green (Copper Phthalo-cyanine Green) copper fumes, as Cu copper dusts & mists, as Cu	1328-53-8	NE	0.2 1	NE	NE 2	NE
C.I. Pigment White 7 (Titanium Dioxide)	14363-67-7	NE	10 (total inhalable) 4 (respirable)	NE	7	NE
Isopropyl Alcohol	67-63-0	400	999	500	1250	NE

NE = Not Established.

Workplace Exposure Standards (New Zealand): Refer to the Hazardous Substances (Classes 6, 8, and 9 Controls) Regulations 2001 (Regulations 29-30).

CHEMICAL NAME	CAS #	WORKPLACE EXPOSURE STANDARDS				
		TWA ppm	TWA mg/m^{-3}	STEL ppm	STEL mg/m^{-3}	Notes
Proprietary Pigment Green (Copper Phthalocyanine Green) copper dust & mists, as Cu copper fume, as Cu	1328-53-8	NE	0.01 0.01	NE	NE 2	NE
C.I. Pigment White 7 (Titanium Dioxide)	14363-67-7	NE	10	NE	NE	Not Applicable
Isopropyl Alcohol	67-63-0	400	983	500	1230	Not Applicable

Exposure Standards Outside the Workplace (New Zealand): Currently, there are no other exposure limits, such as TELS and EELS (See Section 12 [Ecological Information] for EEL information) established for components of this product.

Other International Occupational Exposure Limits: Currently, the following international limits established for components of these products.

Proprietary Pigment Green (Copper Phthalocyanine Green):

	Limit Value - Eight Hours	Limit Value - Short Term
Austria	1 mg/m^3 (inhalable aerosol) (dusts & mists); 0.1 mg/m^3 (fume, respirable fraction)	0.4 mg/m^3
Belgium	1 mg/m^3 (dusts & mists); 0.2 mg/m^3 (fume, respirable fraction)	
Canada (Ontario)	1 mg/m^3 (dusts & mists); 0.2 mg/m^3 (fume, respirable fraction)	
Canada (Quebec)	1 mg/m^3 (dusts & mists); 0.2 mg/m^3 (fume, respirable fraction)	
Denmark	1 mg/m^3 (dusts & mists); 0.1 mg/m^3 (fume, respirable fraction)	2 mg/m^3 (dusts & mists); 0.2 mg/m^3 (fume, respirable fraction)
Finland	0.02 mg/m^3 (dusts & mists) (1)(2)	
France	1 mg/m^3 (dusts & mists); 0.2 mg/m^3 (fume, respirable fraction)	2 mg/m^3 (dusts & mists)
Germany (DFG)	0.01 mg/m^3 (dusts & mists)(1); 0.01 mg/m^3 (fume, respirable fraction)	0.02 mg/m^3 (dusts & mists)(1)(2); 0.02 mg/m^3 (fume, respirable fraction)(1)
Hungary	1 mg/m^3 (dusts & mists); 0.1 mg/m^3 (fume, respirable fraction)	4 mg/m^3 (dusts & mists); 0.4 mg/m^3 (fume, respirable fraction)
Ireland	1 mg/m^3; 0.2 mg/m^3 (fume, respirable fraction)(1) 1 mg/m^3 (fume, respirable fraction)(2)	
Norway	0.1 mg/m^3 (fume, respirable fraction)(1) 1 mg/m^3 (fume, respirable fraction)(2)	

People's Republic of China	1 mg/m³ (dusts & mists); 0.2 mg/m³ (fume, respirable fraction)

8. EXPOSURE CONTROLS - PERSONAL PROTECTION (Continued)

EXPOSURE LIMITS/CONTROL PARAMETERS (continued):

Other International Occupational Exposure Limits (continued):

Proprietary Pigment Green (continued)):

	Limit Value - Eight Hours	Limit Value - Short Term
Poland	1 mg/m³ (dusts & mists); 0.1 mg/m³ (fume, respirable fraction)	2 mg/m³ (dusts & mists); 0.3 mg/m³ (fume, respirable fraction)
Romania	0.5 mg/m³ (dusts & mists); 0.1 mg/m³ (fume, respirable fraction)	1.5 mg/m³ (dusts & mists)(1); 0.3 mg/m³ (fume, respirable fraction)
Singapore	1 mg/m³ (dusts & mists); 0.2 mg/m³ (fume, respirable fraction)	
South Korea	1 mg/m³ (dusts & mists); 0.2 mg/m³ (fume, respirable fraction)	2 mg/m³ (dusts & mists)
Spain	1 mg/m³ (dusts & mists); 0.1 mg/m³ (fume, respirable fraction)	
Sweden	1 mg/m³ (dusts & mists); 0.2 mg/m³ (fume, respirable fraction)	
Switzerland	0.1 mg/m³ (dusts & mists)[inhalable aerosol)	0.2 mg/m³ (dusts & mists)[inhalable aerosol)
The Netherlands	0.1 mg/m³ (dusts & mists)[inhalable aerosol)	
	Remarks	
Finland	Dusts & Mists:(1) Calculated as Cu. (2) Respirable fraction.	
Germany (DFG)	Dusts & Mists: (1) 15 minutes average value. Fume: (1) Respirable fraction. (2) 15minutes average value.	
Ireland	Dusts & Mists: (1) Fume. (2) Inhalable fraction and vapor.	
Norway	Dusts & Mists: (1) Fume. (2) Dust	
Romania	Dusts & Mists: (1) 15 minutes average value. Fume: (1) 15 minutes average value.	

C.I. Pigment White 7 (Titanium Dioxide):

	Limit Value - Eight Hours	Limit Value - Short Term
Belgium	10 mg/m³ (1)	
Canada (Ontario)	10 mg/m³	
Canada (Québec)	10 mg/m³ (1)	
Denmark	6 mg/m³ (total dust)	12 mg/m³ (total dust)
France	11 mg/m³ (inhalable aerosol)	
Germany (DFG)	0.3 mg/m³ (1)(2)	2.4mg/m³ (1)(2)(3)
Ireland	10 mg/m³ (1) 4 mg/m³ (2)	
Japan (JSOH)	0.3 mg/m³ (1)	
Latvia	10 mg/m³	
Norway	5 mg/m³	
People's Republic of China	8 mg/m³ (1)	
Poland	10 mg/m³ (1)	
Romania	10 mg/m³	15 mg/m³ (1)
Singapore	10 mg/m³	
South Korea	10 mg/m³	
Spain	10 mg/m³ (1)	
Sweden	5 mg/m³ (inhalable aerosol)	
Switzerland	3 mg/m³ (respirable aerosol)	
	Remarks	
Canada (Québec)	(1) Total dust.	
Germany (DFG)	(1) Respirable fraction, except ultrafine particles. (2) Multiplied by the material density. (3) 15 minutes average value.	
Ireland	(1) Inhalable fraction. (2) Respirable fraction.	
Japan - JSOH	(1) Nanoparticle, as Ti.	
Poland	(1) Inhalable fraction.	
People's Republic of China	(1) Inhalable fraction.	
Romania	(1) 15 minutes average value.	

Isopropyl Alcohol

	Limit Value - Eight Hours	Limit Value - Short Term
Austria	200 ppm; 500 mg/m³	800 ppm; 2000 mg/m³
Belgium	200 ppm; 500 mg/m³	400 ppm (1); 1000 mg/m³ (1)
Canada (Ontario)	200 ppm	400 ppm
Canada (Québec)	400 ppm; 983 mg/m³	500 ppm; 1230 mg/m³
Denmark	200 ppm; 490 mg/m³	400 ppm; 980 mg/m³
Finland	200 ppm; 500 mg/m³	250 ppm (1); 620 mg/m³ (1)
France		400 ppm; 980 mg/m³
Germany (AGS)	200 ppm; 500 mg/m³	400 ppm (1); 1000 mg/m³ (1)
Germany (DFG)	200 ppm; 500 mg/m³	400 ppm (1); 1000 mg/m³ (1)
Hungary	500 mg/m³	2000 mg/m³
Ireland	200 ppm	400 ppm (1)
Japan (MHLW)	200 ppm	
Japan JSOH	400 ppm (1); 980 mg/m³ (1)	
Latvia	350 mg/m³	600 mg/m³ (1)
Norway	100 ppm; 245 mg/m³	
People's Republic of China	350 mg/m³	700 mg/m³ (1)
Poland	900 mg/m³	1200 mg/m³
Romania	81 ppm; 200 mg/m³	203 ppm (1); 500 mg/m³ (1)
Singapore	400 ppm; 983 mg/m³	500 ppm; 1230 mg/m³
South Korea	200 ppm; 480 mg/m³	400 ppm; 980 mg/m³
Spain	200 ppm; 500 mg/m³	400 ppm; 1000 mg/m³
Sweden	150 ppm; 350 mg/m³	250 ppm (1); 600 mg/m³ (1)
Switzerland	200 ppm; 500 mg/m³	400 ppm; 1000 mg/m³
	Remarks	
Belgium	(1) 15 minutes average value.	
Finland	(1) 15 minutes average value.	
Germany (AGS)	(1) 15 minutes average value.	
Germany (DFG)	(1) 15 minutes average value.	

8. EXPOSURE CONTROLS - PERSONAL PROTECTION (Continued)

EXPOSURE LIMITS/CONTROL PARAMETERS (continued):

Other International Occupational Exposure Limits (continued):

Isopropyl Alcohol (continued)

	Remarks
Ireland	(1) 15 minutes average value.
Japan - JSOH	(1) Occupational exposure limit ceiling: Reference value to the maximal exposure concentration of the substance during a working day.
Latvia	(1) 15 minutes average value.
People's Republic of China	(1) 15 minutes average value.
Romania	(1) 15 minutes average value.
Sweden	(1) 15 minutes average value.

BIOLOGICAL MONITORING AND THE SOURCE OF THOSE VALUES:

U.S. ACGIH Biological Exposure Indices (BEIs): Currently, the following Biological Exposure Indices (BEIs) have been established for the Isopropyl Alcohol component of these products.

CHEMICAL: DETERMINANT	SAMPLING TIME	BEI
Isopropyl Alcohol (listed as 2-propanol) • Acetone in Urine	• End of Shift at End of Workweek	• 40 mg/L

UK Biological Monitoring Guidance Values (BMGVs): Currently, no BMGVs have been established for the components of these products.

Appendix E-Schedule 14 (Requirements for Health Monitoring) per Australia Safe Work Code of Practice Managing Risks and Hazardous Chemicals in the Workplace: Currently, no component of these products has an established monitoring requirement value.

PROTECTIVE EQUIPMENT: The following information on appropriate Personal Protective Equipment is provided to assist employers in complying with OSHA regulations found in 29 CFR Subpart I (beginning at 1910.132, including U.S. Federal OSHA Respiratory Protection (29 CFR 1910.134), OSHA Eye Protection 29 CFR 1910.133, OSHA Hard Protection 29 CFR 1910.138, OSHA Foot Protection 29 CFR 1910.136 and OSHA Body Protection 29 CFR1910.132), equivalent standards of Canada (including CSA Respiratory Standard Z94.4-02, Z94.3-M1982, *Industrial Eye and Face Protectors* and CSA Standard Z195-02, *Protective Footwear*), standards of EU member states (including EN 529:2005 for respiratory PPE, CEN/TR 15419:2006 for hand/body protection, and CR 13464:1999 for face/eye protection), standards of Australia (including AS/NZS 1715:1994 for respiratory PPE, AS/NZS 4501.2:2006 for protective clothing, AS/NZS 2161.1:2000 for glove selection, and AS/NZS 1336:1997 for eye protection), or standards of Japan (including JIS T 8116:2005 for glove selection, JIS T 8150:2006 for respiratory PPE, JIS T 8147:2003 for eye protectors, and JIS T 8030:2005 for protective clothing). Please reference applicable regulations and standards for relevant details.

Respiratory Protection: Maintain airborne contaminant concentrations below exposure limits listed in this section, if applicable. If respiratory protection is needed, use only protection authorized in applicable regulations. Oxygen levels below 19.5% are considered IDLH by U.S. OSHA. In such atmospheres, use of a full-facepiece pressure/demand SCBA or a full facepiece, supplied air respirator with auxiliary self-contained air supply is required under OSHA's Respiratory Protection Standard (1910.134-1998). The following are U.S. NIOSH Respiratory Equipment Guidelines for Isopropyl Alcohol and are provided to assist in selection of respiratory PPE in event of presence of aerosols.

Copper Dusts and Mists, as Cu

Concentration	Respiratory Protection
Up to 5 mg/m^3:	Any Quarter-Mask Respirator.
Up to 10 mg/m^3:	Any Particulate Respirator equipped with an N95, R95, or P95 filter (including N95, R95, and P95 filtering facepieces) except quarter-mask respirators. The following filters may also be used: N99, R99, P99, N100, R100, P100, or Any Supplied-Air Respirator (SAR).
Up to 25 mg/m^3:	Any SAR operated in a continuous-flow mode, or any powered air-purifying respirator with a high-efficiency particulate filter.
Up to 50 mg/m^3:	Any Air-Purifying, Full-Facepiece Respirator with an N100, R100, or P100 filter, or any Powered Air-Purifying Respirator (PAPR) with a tight-fitting facepiece and a high-efficiency particulate filter, or any Self-Contained Breathing Apparatus (SCBA) with a full facepiece, or any SAR with a full facepiece.
Up to 100 mg/m^3:	Any SAR that has a full facepiece and is operated in a pressure-demand or other positive pressure mode.
Emergency or Planned Entry into Unknown Concentrations or IDLH Conditions:	Any SCBA that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode, or any SAR that has a full-facepiece and is operated in a pressure-demand or other positive-pressure mode in combination with an auxiliary SCBA operated in pressure-demand or other positive-pressure mode.
Escape:	Any Air-Purifying, Full-Facepiece Respirator with an N100, R100, or P100 filter, or any appropriate escape-type, SCBA.

Isopropyl Alcohol

Concentration	Respiratory Protection
Up to 2000 ppm:	Any Supplied-Air Respirator (SAR) operated in a continuous-flow mode, or any Chemical Cartridge Respirator with a full facepiece and organic vapor cartridge(s), or any Air-Purifying, Full-Facepiece Respirator (gas mask) with a chin-style, front- or back-mounted organic vapor canister, or any Powered, Air-Purifying Respirator (PAPR) with organic vapor cartridge(s), or any Self-Contained Breathing Apparatus (SCBA) with a full facepiece, or any SAR with a full facepiece.
Emergency or Planned Entry into Unknown Concentrations or IDLH Conditions:	Any SCBA that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode, or any SAR that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode in combination with an auxiliary SCBA operated in pressure-demand or other positive-pressure mode.
Escape:	Any Air-Purifying, Full-Facepiece Respirator (gas mask) with a chin-style, front- or back-mounted organic vapor canister, or any appropriate escape-type, SCBA.

Eye Protection: Depending on the use of these products, splash goggles or safety glasses may be worn. Use goggles or safety glasses for spill response, as stated in Section 6 (Accidental Release Measures) of this SDS. If necessary, refer to appropriate regulations when selecting eye protection.

Hand Protection: Wear butyl rubber, neoprene, or nitrile rubber or latex gloves for routine use. If necessary, refer to appropriate regulations for further information.

Body Protection: Use body protection appropriate for task, such as a lab coat. If necessary, use body protection appropriate for task (e.g., Tyvek suit, rubber apron). If a hazard of injury to the feet exists due to falling objects, rolling objects, where objects may pierce the soles of the feet or where employee's feet may be exposed to electrical hazards, use foot protection, as described in appropriate regulations.

9. PHYSICAL and CHEMICAL PROPERTIES

FORM: Liquid.
COLOR: Blue.
MOLECULAR FORMULA: Mixture.
MOLECULAR WEIGHT: Mixture.
ODOR: Mild.
ODOR THRESHOLD: Not established.
VAPOR DENSITY (air = 1): Not established.
EVAPORATION RATE (*n*-BuAc = 1): < 1
SPECIFIC GRAVITY (water = 1): BD-1: 1.01; ELB, SKB:1.3; TEA: 1.2
MELTING/FREEZING POINT: Not established.
SOLUBILITY IN WATER: Soluble
BOILING POINT: Not established.
VAPOR PRESSURE: Not established.
pH: BD-1: 8.5; ELB, SKB: 8.46, TEA: 8.46
OXIDIZING PROPERTIES: Not applicable.
PERCENT SOLIDS: DB-1: 15%; ELB: 15%, SKB: 10%, TEA: 11%
FLAMMABILITY: Not flammable.
FLASH POINT: Not applicable.
AUTOIGNITION TEMPERATURE: Not applicable.
EXPLOSIVE PROPERTIES: Not applicable.
COEFFICIENT OF OIL/WATER DISTRIBUTION (PARTITION COEFFICIENT): Not established.
HOW TO DETECT THIS SUBSTANCE (identification properties): The odor and color of these products may be distinguishing characteristics to identify it event of a spill.

10. STABILITY and REACTIVITY

CHEMICAL STABILITY: Stable under conditions of normal temperature and pressure.
DECOMPOSITION PRODUCTS:
Combustion: If exposed to extremely high temperatures, these products can decompose to generate carbon, copper, nitrogen and titanium oxides. **Hydrolysis:** None known.
MATERIALS WITH WHICH SUBSTANCE IS INCOMPATIBLE: Strong oxidizers, water-reactive materials.
POSSIBILITY OF HAZARDOUS REACTION OR POLYMERIZATION: Will not occur.
CONDITIONS TO AVOID: Exposure to or contact with extreme temperatures and incompatible chemicals.

11. TOXICOLOGICAL INFORMATION

SYMPTOMS OF EXPOSURE BY ROUTE OF EXPOSURE: The most significant routes of occupational exposure are inhalation and contact with skin and eyes. The symptoms of exposure to this material, via route of entry, are as described below.

Inhalation: These products do not normally present a significant inhalation hazard under anticipated circumstances of use. Inhalation of vapors, mists, or sprays of this material may mildly irritate the nose, throat, and other tissues of the respiratory system.

Contact with Eyes: Eye contact with this material can moderately irritate the eyes, causing discomfort, tearing, and redness. Because the eye tissue may be stained, vision may be temporarily blurred.

Contact with Skin: Skin contact may cause mild irritation in sensitive individuals. Repeated or prolonged skin exposure may cause dermatitis (dry, red skin).

Skin Absorption: No component is known to be absorbed via intact skin.

Ingestion: Though not anticipated to be a significant route of occupational exposure, ingestion of large quantities of this material may cause nausea, vomiting, diarrhea, and discoloration of the mouth, teeth, and tissues of the throat.

Injection: Accidental injection of this liquid (as may occur by a puncture with a contaminated object) will cause local pain, irritation, and redness.

HEALTH EFFECTS OR RISKS FROM EXPOSURE: In the event of exposure, the following symptoms may be observed:

Short Term: Eye contact will cause moderate irritation. Ingestion of large amounts may cause nausea, vomiting, diarrhea. Inhalation of vapors may cause adverse symptoms to the central nervous system due to the Isopropyl Alcohol component.

Long Term: Repeated or prolonged skin exposure may cause dermatitis (dry, red skin).

TARGET ORGANS:

Short Term: Skin, central nervous system, eyes.

Long Term: Skin.

Hazard Scale: 0 = Minimal 1 = Slight 2 = Moderate 3 = Serious 4 = Severe * = Chronic hazard

OVERALL ACUTE TOXICITY ESTIMATES (ATE) FOR PRODUCT:

Oral Route: BD-1: 30,535 mg/kg; ELB: 12,800mg/kg; SKB: 15,493 mg/kg; TEA: > 15,223 mg/kg;
Dermal Route: BD-1: 163,998 mg/kg; ELB: > 16,399 mg/kg; SKB: > 16,399 mg/kg; TEA: > 123,517 mg/kg;
Inhalation Route: BD-1: 3,024 mg/L; ELB: > 5673 mg/kg; SKB: > 53 mg/L; TEA: > 58 mg/L

TOXICITY DATA FOR COMPONENTS: Specific toxicology data currently available for components of these products in greater than 1% concentration are as follows. Due to the large amount of data available, only human data, irritation data, LD50 oral, rat and mouse, skin, rabbit and rat, LC50 inhalation rat and mouse data are included in this SDS. Contact Dynamic Color for information on additional data availalble.

Proprietary Pigment Blue:
LD_{50} (Oral-Rat) > 6400 mg/kg (OECD 401)
LC_{50} (Inhalation-Rat) > 6400 mg/L (No Guideline info)

Proprietary Pigment Green:
LD_{50} (Oral-Rat) > 5000 mg/kg (OECD 401)
LD_{50} (Skin-Rat) > 5000 mg/kg (OECD 402)

11. TOXICOLOGICAL INFORMATION (Continued)

TOXICITY DATA FOR COMPONENTS (continued):

C.I. Pigment White 7 (Titanium Dioxide):
LD_{50} (Oral-Rat) > 2000 mg/kg (CLP Guideline Study)
LC_{50} (Inhalation-Rabbit) 4 hr: > 5.09 mg/L (OECD 403)

Isopropyl Alcohol:
LDLo (Oral-Man): 5272 mg/kg; Behavioral: coma; Vascular: BP lowering not characterized in autonomic section; Lungs, Thorax, or Respiration: chronic pulmonary edema
LDLo (Oral-Human): 3570 mg/kg; Behavioral: coma; Lungs, Thorax, or Respiration: respiratory depression; Gastrointestinal: nausea or vomiting
LDLo (Unreported-Man) = 2770 mg/kg
TDLo (Oral-Man): 14,432 mg/kg; Behavioral: coma; Vascular: BP lowering not characterized in autonomic section; Lungs, Thorax, or Respiration: dyspnea

Isopropyl Alcohol (continued_:
TDLo (Oral-Human): 223 mg/kg; Behavioral: hallucinations, distorted perceptions; Cardiac: pulse rate; Vascular: BP lowering not characterized in autonomic section
TDLo (oral, infant) = 13 gm/kg; Behavioral: somnolence (general depressed activity), irritability; Gastrointestinal: nausea or vomiting
Skin Irritancy (Rabbit): 500 mg; mild
Eye Irritancy (Rabbit): 100 mg; severe
LD_{50} (Oral-Rat) 5840 mg/kg (OECD 401)
LD_{50} (Skin-Rabbit) 16,400 mg/kg (OECD 402)
LD_{50} (Inhalation-Rat) 4 hr: > 10,000 mg/L (OECD 403)

REPEATED DOSE TOXICITY: No component has demonstrated repeated dose toxicity in either animal testing or though workplace data.

CARCINOGENIC POTENTIAL OF COMPONENTS: Components of these products are listed by agencies tracking the carcinogenic potential of chemical compounds, as follows;

Proprietary Pigment Green (Copper Phthalocyanine Green): For Copper Dusts, Fumes and Mists: EPA-D (Not Classifiable as to Human Carcinogenicity)

C.I. Pigment White 7 (Titanium Dioxide): ACGIH TLV-A3 (Confirmed Animal Carcinogen with Unknown Relevance to Humans); IARC-2B (Possibly Carcinogenic to Humans); MAK-4 (Substances with carcinogenic potential for which genotoxicity plays no or at most a minor role. No significant contribution to human cancer risk is expected, provided the MAK value is observed.); NIOSH-Ca (Potential Occupational Carcinogen, with No Further Categorization)

Isopropyl Alcohol: ACGIH TLV-A4 (Not Classifiable as a Human Carcinogen); IARC-3 (Not Classifiable as to Carcinogenicity to Humans)

The remaining components of these products are not found on the following lists: U.S. EPA, U.S. NTP, U.S. OSHA, U.S. NIOSH, GERMAN MAK, IARC, and ACGIH, and therefore are neither considered to be nor suspected to be cancer-causing agents by these agencies.

IRRITANCY OF PRODUCT: Acute exposure to these products via eye contact may irritate contaminated eyes. Acute exposure to these products via skin contact and inhalation may mildly irritate contaminated tissue, especially if exposure is prolonged.

ENDOCRINE TOXICITY: No component is known or suspected to be an endocrine disruptor.

SENSITIZATION TO THE PRODUCT: The components of these products are not known to be human skin or respiratory sensitizers.

REPRODUCTIVE TOXICITY INFORMATION: No components of these products are known to have mutagenic, embryotoxic, teratogenic or reproductive toxicity effects in humans.

12. ECOLOGICAL INFORMATION

ALL WORK PRACTICES MUST BE AIMED AT ELIMINATING ENVIRONMENTAL CONTAMINATION.

MOBILITY: These products have not been tested for mobility in soil. It is expected to be somewhat mobile in soil.

PERSISTENCE AND BIODEGRADABILITY: These products have not been tested for persistence or biodegradability. It is expected that some biodegradation will occur to these products; however, no specific information is known.

BIO-ACCUMULATION POTENTIAL: No component of these products presents a bio-accumulation potential.

EFFECT OF MATERIAL ON PLANTS or ANIMALS: These products may be harmful to plant or animal life, especially if large volumes of these products are released.

EFFECT OF CHEMICAL ON AQUATIC LIFE: These products have not been tested for aquatic toxicity. The following are aquatic toxicity data for some components of these products:

Proprietary Pigment Blue3:
LC_{50} (*Cyprinus carpio* Common carp) 96 hrs: > 100 mg/L (OECD 203)
EC_{50} (*Daphnia magna* Giant Water flea) 48 hrs: > 100 mg/L (OECD 202)
EC_{50} (*Desmodesmus subspicatus* green algae) 72hrs: > 100 mg/L (Read across data from similar material)

C.I. Pigment Green7:
LC_{50} ((*Danio rerio* Zebra fish) 96 hrs: > 100 mg/L (OECD 203)
EC_{50} (*Daphnia magna* Giant Water flea) 48 hrs: > 500 mg/L (OECD 202)
EC_{50} (*Selenastrum capricornutum* green algae) 72hrs: ≥ 100 mg/L (OECD 201)

C.I. Pigment White 7 (Titanium Dioxide):
LC_{50} (*Pimephales promelas* fathead minnow) 96 hrs: > 100 mg/L (No Guideline info)
EC_{50} (*Daphnia Magna* Giant Water flea) 24 hrs: > 100 mg/L (No Guideline info)
EC_{50} (Skeletonema costatum freshwater algae) 72 hours: > 00 mg/L (No Guideline info)

Isopropyl Alcohol:
LC_{50} (*Carassius auratus* Goldfish) 96 hrs: 9640 mg/L (US EPA Committee on Methods for Toxicity Tests with Aquatic Organisms)
EC_{50} (*Daphnia Magna* Giant Water flea) 24 hrs: 10,00 mg/L (OECD 202)
EC_{10} (*Scenedesmus quadricauda* freshwater algae) 8 days: 1800 mg/L (No Guideline info)

OTHER ADVERSE EFFECTS: These products do not contain any component with known ozone depletion potential.

RESULTS OF PBT AND vPvB ASSESSMENT: No Data Available. PBT and vPvB assessments are part of the chemical safety report required for some substances in European Union Regulation (EC) 1907/2006, Article 14.

ENDOCRINE DISRUPTORS: No component has been shown to be or is suspected to cause endocrine disruption to terrestrial or aquatic animals.

ENVIRONMENTAL EXPOSURE CONTROLS: Controls should be engineered to prevent release to the environment, including procedures to prevent spills, atmospheric release and release to waterways.

GHS Statements for Environmental Exposure Controls: Not applicable.

13. DISPOSAL CONSIDERATIONS

PRECAUTIONS TO BE FOLLOWED DURING WASTE HANDLING: Wear proper protective equipment when handling waste materials.

GHS Statements for Waste Handling: P501: Dispose of contents/containers in accordance with all local, regional, national and international regulations.

DISPOSAL CONTAINERS: Waste materials must be placed in and shipped in appropriate 5-gallon or 55-gallon poly or metal waste pails or drums. Permeable cardboard containers are not appropriate and should not be used. Ensure that any required marking or labeling

of the containers be done to all applicable regulations.

13. DISPOSAL CONSIDERATIONS (Continued)

DISPOSAL METHODS: It is the responsibility of the generator to determine at the time of disposal whether the product meets the criteria of a hazardous waste per regulations of the jurisdiction in which the waste is generated and/or disposed of. Waste disposal must be in accordance with appropriate Federal, State, Provincial and local regulations. These products, if unaltered by use, may be disposed of by treatment at a permitted facility or as advised by your local hazardous waste regulatory authority. Shipment of wastes must be done with appropriately permitted and registered transporters.

U.S. EPA WASTE NUMBER: Not applicable to wastes consisting only of these products.

CANADIAN HAZARDOUS WASTE REGULATIONS: As supplied, these products should be tested to see if it meets the criteria of hazardous wastes per Canadian Environmental Protection Agency) regulations and the Canadian Environmental Protection Act, 1999 (CEPA).

Canadian Environmental Protection Act (CEPA) Priority Substances Lists: The Isopropyl Alcohol component is listed as a Substance With Greatest Potential For Human Exposure Substance on Environment Canada/Health Canada Pilot Project List (CEPA 1999, Section 73). Meets categorization criteria: *may present, to individuals in Canada, the greatest potential for exposure; or *are persistent or bioaccumulative in accordance with the regulations, and inherently toxic to human beings or to non-human organisms, as determined by laboratory or other studies.

EUROPEAN WASTE CODES FOR PRODUCT: Wastes from MFSU and Removal of Printing Inks: 08 03 99: Wastes Not Otherwise Specified

EU WASTE FRAMEWORK DIRECTIVE, ANNEX III - WASTE - HAZARDOUS PROPERTIES: These products do not meet the criteria of any hazardous waste property. The components of these products have designated waste codes as listed below.

Isopropyl Alcohol: HP3 Flammable Waste (FW); HP5 Specific Target Organ Toxicity (STOT)/Aspiration Toxicity

C.I. Pigment White 7 (Titanium Dioxide): HP7 Carcinogenic: Waste which induces cancer or increases it incidence; in powder form containing 1% or more of particles with aerodynamic diameter ≤ 10 µm.

AUSTRALIAN HAZARDOUS WASTE REGULATIONS: As supplied, these products should be tested to see if it meets the criteria of hazardous wastes per Australian Department of Agriculture, Water and the Environment regulations. If wastes are to be exported, they should be tested to see if they have requirements under the Australian Hazardous Waste (Regulation of Exports and Imports) Act 1989 and further of the Basel Convention where the waste has any of the characteristics mentioned in Annex III to the Basel Convention.

14. TRANSPORTATION INFORMATION

U.S. DEPARTMENT OF TRANSPORTATION: These products are not classified as dangerous goods, per U.S. DOT regulations, under 49 CFR 172.101.

TRANSPORT CANADA, TRANSPORTATION OF DANGEROUS GOODS REGULATIONS: These products are NOT classified as dangerous goods, per regulations of Transport Canada.

INTERNATIONAL AIR TRANSPORT ASSOCIATION SHIPPING INFORMATION (IATA): These products are NOT classified as dangerous goods.

INTERNATIONAL MARITIME ORGANIZATION SHIPPING INFORMATION (IMO): These products are NOT classified as dangerous goods.

EUROPEAN AGREEMENT CONCERNING THE INTERNATIONAL CARRIAGE OF DANGEROUS GOODS BY ROAD (ADR): These products are NOT classified by the United Nations Economic Commission for Europe to be dangerous goods.

AUSTRALIAN FEDERAL OFFICE OF ROAD SAFETY CODE FOR THE TRANSPORTATION OF DANGEROUS GOODS BY ROAD OR RAIL: These products are NOT classified as dangerous goods, per regulations of the Australian Federal Office of Road Safety.

TRANSPORT IN BULK ACCORDING TO ANNEX II OF MARPOL 73/78 AND THE IBC CODE: Not applicable.

ENVIRONMENTAL HAZARDS: These products are neither environmentally hazardous according to the criteria of the UN Model Regulations (as reflected in the IMDG Code, ADR, RID, and ADN); no component meets the criteria of environmentally hazardous.

15. REGULATORY INFORMATION

UNITED STATES REGULATIONS:

U.S. SARA Reporting Requirements: The components of this product are subject to the reporting requirements of Sections 302, 304, and 313 of Title III of the Superfund Amendments and Reauthorization Act and are listed as follows:

CHEMICAL NAME	SARA 302 (40 CFR 355, Appendix A)	SARA 304 (40 CFR Table 302.4)	SARA 313 (40 CFR 372.65)
Copper Compounds	No	No	N100
Isopropyl Alcohol (mfg-strong acid process)	No	No	Yes

U.S. SARA Threshold Planning Quantity (TPQ): There are no specific Threshold Planning Quantities for this material. The default Federal SDS submission and inventory requirement filing threshold of 10,000 lb (4,540 kg) may apply, per 40 CFR 370.20.

U.S. CERCLA Reportable Quantity (RQ): Not applicable. Copper compounds do not have a specific assigned CERCLA RQ, but compounds in the broad class are CERCLA hazardous substances. For metals listed under CERCLA (including copper compounds), no reporting of releases of the solid form is required if the mean diameter of the pieces of the solid metal released is greater than 100 micrometers (0.004 inches) (Ref: Footnote after Table 302.4 in 40 CFR 302.4).

U.S. TSCA Inventory Status: The components of these products are listed on the TSCA Inventory.

U.S. Hazardous Air Pollutant (HAPs): The components of these products are not listed by the EPA under section 112(b) of the Clean Air Act as a 'HAP'.

U.S. Clean Air Act (CA 112r) Threshold Quantity (TQ): Not applicable.

15. REGULATORY INFORMATION (Continued)

UNITED STATES REGULATIONS (continued):

California Safe Drinking Water And Toxic Enforcement Act (Proposition 65): The Titanium Dioxide component, (airborne, unbound particles of respirable size) is on the California Proposition 65 Lists. If airborne particles of these products are generated, the following warning must be on packaging and labeling of these products: WARNING! These products contain a component known to the State of California to cause cancer. As a liquid, this warning is not expected to be required.

CANADIAN REGULATIONS:

Canadian DSL/NDSL Inventory Status: Components listed by CAS# in Section 3 (Composition and Information on Ingredients) are listed on the DSL Inventory.

Canadian WHMIS HPR 2015 Classification and Symbols: See Section 2 for classification and symbols under WHMIS GHS 2015.

EUROPEAN UNION REGULATIONS:

Safety, Health, and Environmental Regulations/Legislation Specific for the Product: Currently, there is no specific legislation pertaining to these products.

Chemical Safety Assessment: No data available. The chemical safety assessment is required for some substances according to European Union Regulation (EC) 1907/2006, Article 14.

AUSTRALIAN REGULATIONS:

Australian Inventory Of Chemical Substances (AICS) Status: Components listed by CAS# in Section 3 (Composition and Information on Ingredients) are listed on the AICS.

Hazardous Substances Information System (HSIS): Components listed by CAS# in Section 3 (Composition and Information on Ingredients) are not listed in the HSIS.

Standard for the Uniform Scheduling of Drugs and Poisons: Not applicable.

CHINESE REGULATIONS:

Chinese Inventory of Existing Chemical Substances Status: Components listed by CAS# in Section 3 (Composition and Information on Ingredients) are on the Chinese Inventory of Existing Chemical Substances (IECSC).

JAPANESE REGULATIONS:

Japanese ENCS Inventory: Components listed by CAS# in Section 3 (Composition and Information on Ingredients) are on the ENCS Inventory or are excepted.

Japanese Ministry of Economy, Trade, and Industry (METI) Status: Components listed by CAS# in Section 3 (Composition and Information on Ingredients) are not listed as Class I Specified Chemical Substances, Class II Specified Chemical Substances, or Designated Chemical Substances by the Japanese METI.

Poisonous and Deleterious Substances Control Law: Components listed by CAS# in Section 3 (Composition and Information on Ingredients) are not listed as a Specified Poisonous Substance under the Poisonous and Deleterious Substances Control Law.

KOREAN REGULATIONS:

Korean Existing Chemical Substances Inventory Status: Components are listed on the Korean Existing Chemicals List, as indicated in composition tables in Section 3 (Composition and Information on Ingredients).

NEW ZEALAND REGULATIONS:

New Zealand Inventory of Chemicals (NZIoC): Components listed by CAS# in Section 3 (Composition and Information on Ingredients) are on the NZIoC.

MEXICAN REGULATIONS:

Mexican Workplace Regulations (NOM-018-STPS-2000): These products are classified as hazardous.

TAIWANESE REGULATIONS:

Taiwan Existing Chemical Substances Inventory Status: Components listed by CAS# in Section 3 (Composition and Information on Ingredients) are listed on the Taiwan Existing Chemicals List.

16. OTHER INFORMATION

REVISION DETAILS: May 2017: Conversion of old MSDS to GHS compliant SDS. June 2018: Review and up-date entire SDS for most current regulations. April 2022: Review and revise entire SDS for current compliance of all jurisdictions of the SDS.

REFERENCES AND DATA SOURCES: Contact the supplier for information.

METHODS OF EVALUATING INFORMATION FOR THE PURPOSE OF CLASSIFICATION: Bridging principles were used to classify these products.

PREPARED BY: CHEMICAL SAFETY ASSOCIATES, Inc., PO Box 1961, Hilo, HI 96721, 808/969-4846

DYNAMIC

16. OTHER INFORMATION (Continued)

DEFINITIONS OF TERMS

A large number of abbreviations and acronyms appear on an SDS. Some of these, which are commonly used, include the following:

CAS #: This is the Chemical Abstract Service Number that uniquely identifies each constituent.

EXPOSURE LIMITS IN AIR:

CEILING LEVEL: The concentration that shall not be exceeded during any part of the working exposure.

DFG MAK Germ Cell Mutagen Categories: 1: Germ cell mutagens which have been shown to increase the mutant frequency in the progeny of exposed humans. 2: Germ cell mutagens which have been shown to increase the mutant frequency in the progeny of exposed mammals. 3A: Substances which have been shown to induce genetic damage in germ cells of human of animals, or which produce mutagenic effects in somatic cells of mammals *in vivo* and have been shown to reach the germ cells in an active form. 3B: Substances which are suspected of being germ cell mutagens because of their genotoxic effects in mammalian somatic cell *in vivo*; in exceptional cases, substances for which there are no *in vivo* data, but which are clearly mutagenic *in vitro* and structurally related to known *in vivo* mutagens. 4: Not applicable [Category 4 carcinogenic substances are those with non-genotoxic mechanisms of action. By definition, germ cell mutagens are genotoxic. Therefore, a Category 4 for germ cell mutagens cannot apply. At some time in the future, it is conceivable that a Category 4 could be established for genotoxic substances with primary targets other than DNA [e.g., purely aneugenic substances] if research results make this seem sensible.) 5: Germ cell mutagens, the potency of which is considered to be so low that, provided the MAK value is observed, their contribution to genetic risk for humans is expected not to be significant.

DFG MAK Pregnancy Risk Group Classification: **Group A:** A risk of damage to the developing embryo or fetus has been unequivocally demonstrated. Exposure of pregnant women can cause damage of the developing organism, even when MAK and BAT (Biological Tolerance Value for Working Materials) values are observed. **Group B:** Currently available information indicates a risk of damage to the developing embryo or fetus must be considered to be probable. Damage to the developing organism cannot be excluded when pregnant women are exposed, even when MAK and BAT values are observed. **Group C:** There is no reason to fear a risk of damage to the developing embryo or fetus when MAK and BAT values are observed. **Group D:** Classification in one of the groups A-C is not yet possible because, although the data available may indicate a trend, they are not sufficient for final evaluation.

IDLH-Immediately Dangerous to Life and Health: This level represents a concentration from which one can escape within 30-minutes without suffering escape-preventing or permanent injury.

LOQ: Limit of Quantitation.

MAK: Federal Republic of Germany Maximum Concentration Values in the workplace.

NE: Not Established. When no exposure guidelines are established, an entry of NE is made for reference.

NIC: Notice of Intended Change.

NIOSH CEILING: The exposure that shall not be exceeded during any part of the workday. If instantaneous monitoring is not feasible, the ceiling shall be assumed as a 15-minute TWA exposure (unless otherwise specified) that shall not be exceeded at any time during a workday.

NIOSH RELs: NIOSH's Recommended Exposure Limits.

PEL-Permissible Exposure Limit: OSHA's Permissible Exposure Limits. This exposure value means exactly the same as a TLV, except that it is enforceable by OSHA. The OSHA Permissible Exposure Limits are based in the 1989 PELs and the June, 1993 Air Contaminants Rule (Federal Register: 58: 35338-35351 and 58: 40191). Both the current PELs and the vacated PELs are indicated. The phrase, "Vacated 1989 PEL," is placed next to the PEL that was vacated by Court Order.

SKIN: Used when a there is a danger of cutaneous absorption.

STEL-Short Term Exposure Limit: Short Term Exposure Limit, usually a 15-minute time-weighted average (TWA) exposure that should not be exceeded at any time during a workday, even if the 8-hr TWA is within the TLV-TWA, PEL-TWA or REL-TWA.

TLV-Threshold Limit Value: An airborne concentration of a substance that represents conditions under which it is generally believed that nearly all workers may be repeatedly exposed without adverse effect. The duration must be considered, including the 8-hour.

TWA-Time Weighted Average: Time Weighted Average exposure concentration for a conventional 8-hr (TLV, PEL) or up to a 10-hr (REL) workday and a 40-hr workweek.

HAZARDOUS MATERIALS IDENTIFICATION SYSTEM HAZARD RATINGS: This rating system was developed by the National Paint and Coating Association and has been adopted by industry to identify the degree of chemical hazards.

HEALTH HAZARDS: 0 (Minimal Hazard): No significant health risk, irritation of skin or eyes not anticipated. *Skin Irritation:* Essentially non-irritating. PII or Draize = "0". *Eye Irritation:* Essentially non-irritating, or minimal effects which clear in < 24 hours [e.g., mechanical irritation]. Draize = "0". *Oral Toxicity LD_{50} Rat:* < 5000 mg/kg. *Dermal Toxicity LD_{50} Rat or Rabbit:* < 2000 mg/kg. *Inhalation Toxicity 4-hrs LC_{50} Rat:* < 20 mg/L); **1** (Slight Hazard): Minor reversible injury may occur; slightly or mildly irritating. *Skin Irritation:* Slightly or mildly irritating. *Eye Irritation:* Slightly or mildly irritating. *Oral Toxicity LD_{50} Rat:* > 500-5000 mg/kg. *Dermal Toxicity LD_{50} Rat or Rabbit:* > 1000-2000 mg/kg. *Inhalation Toxicity LC_{50} 4-hrs Rat:* > 2-20 mg/L);

HAZARDOUS MATERIALS IDENTIFICATION SYSTEM HAZARD RATINGS (continued):

HEALTH HAZARDS: (continued): 2 (Moderate Hazard): Temporary or transitory injury may occur. *Skin Irritation:* Moderately irritating; primary irritant; sensitizer. PII or Draize > 0, < 5. *Eye Irritation:* Moderately to severely irritating and/or corrosive; reversible corneal opacity; corneal involvement or irritation clearing in 8-21 days. Draize > 0, ≤ 25. *Oral Toxicity LD_{50} Rat:* > 50-500 mg/kg. *Dermal Toxicity LD_{50} Rat or Rabbit:* > 200-1000 mg/kg. **3** (Serious Hazard) [continued]: **3** (Serious Hazard): Major injury likely unless prompt action is taken and medical treatment is given; high level of toxicity; corrosive. *Skin Irritation:* Severely irritating and/or corrosive; may destroy dermal tissue, cause skin burns, dermal necrosis. PII or Draize > 5-8 with destruction of tissue. *Eye Irritation:* Corrosive, irreversible destruction of ocular tissue; corneal involvement or irritation persisting for more than 21 days. Draize > 80 with effects irreversible in 21 days. *Oral Toxicity LD_{50} Rat:* > 1-50 mg/kg. *Dermal Toxicity LD_{50} Rat or Rabbit:* > 20-200 mg/kg. *Inhalation Toxicity LC_{50} 4-hrs Rat:* > 0.05-0.5 mg/L); **4** (Severe Hazard: Life-threatening; major or permanent damage may result from single or repeated exposure. *Skin Irritation:* Not appropriate. Do not rate as a "4", based on skin irritation alone. *Eye Irritation:* Not appropriate. Do not rate as a "4", based on eye irritation alone. *Oral Toxicity LD_{50} Rat:* ≤ 1 mg/kg. *Dermal Toxicity LD_{50} Rat or Rabbit:* ≤ 20 mg/kg. *Inhalation Toxicity LC_{50} 4-hrs Rat:* ≤ 0.05 mg/L).

FLAMMABILITY HAZARD: 0 (Minimal Hazard-Materials that will not burn in air when exposure to a temperature of 815.5°C [1500°F] for a period of 5 minutes.); **1** (Slight Hazard-Materials that must be pre-heated before ignition can occur. Material require considerable pre-heating, under all ambient temperature conditions before ignition and combustion can occur, including: Materials that will burn in air when exposed to a temperature of 815.5°C (1500°F) for a period of 5 minutes or less; Liquids, solids and semisolids having a flash point at or above 93.3°C [200°F] [e.g. OSHA Class IIIB, or; Most ordinary combustible materials [e.g. wood, paper, etc.]); **2** (Moderate Hazard-Materials that must be moderately heated or exposed to relatively high ambient temperatures before ignition can occur. Materials in this degree would not, under normal conditions, form hazardous atmospheres in air, but under high ambient temperatures or moderate heating may release vapor in sufficient quantities to produce hazardous atmospheres in air, including: Liquids having a flash-point at or above 37.8°C [100°F]; Solid materials in the form of course dusts that may burn rapidly but that generally do not form explosive atmospheres; Solid materials in a fibrous or shredded form that may burn rapidly and create flash fire hazards (e.g. cotton, sisal, hemp; Solids and semisolids that readily give off flammable vapors.); **3** (Serious Hazard- Liquids and solids that can be ignited under almost all ambient temperature conditions. Materials in this degree produce hazardous atmospheres with air under almost all ambient temperatures, or, unaffected by ambient temperature, are readily ignited under almost all conditions, including: Liquids having a flash point below 22.8°C [73°F] and having a boiling point at or above 38°C [100°F] and below 37.8°C [100°F] [e.g. OSHA Class IB and IC]; Materials that on account of their physical form or environmental conditions can form explosive mixtures with air and are readily dispersed in air [e.g., dusts of combustible solids, mists or droplets of flammable liquids]; Materials that burn extremely rapidly, usually by reason of self-contained oxygen [e.g. dry nitrocellulose and many organic peroxides]); **4** (Severe Hazard-Materials that will rapidly or completely vaporize at atmospheric pressure and normal ambient temperature or that are readily dispersed in air, and which will burn readily, including: Flammable gases; Flammable cryogenic materials; Any liquid or gaseous material that is liquid while under pressure and has a flash point below 22.8°C [73°F] and a boiling point below 37.8°C [100°F] [e.g. OSHA Class IA; Material that ignite spontaneously when exposed to air at a temperature of 54.4°C [130°F] or below [e.g. pyrophoric]).

PHYSICAL HAZARD: 0 (*Water Reactivity:* Materials that do not react with water. *Organic Peroxides:* Materials that are normally stable, even under fire conditions and will not react with water. *Explosives:* Substances that are Non-Explosive. *Unstable Compressed Gases:* No Rating. *Pyrophorics:* No Rating. *Oxidizers:* No "0" rating allowed. *Unstable Reactives:* Substances that will not polymerize, decompose, condense or self-react.); **1** (*Water Reactivity:* Materials that change or decompose upon exposure to moisture. *Organic Peroxides:* Materials that are normally stable, but can become unstable at high temperatures and pressures. These materials may react with water, but will not release energy. *Explosives:* Division 1.5 & 1.6 substances that are very insensitive explosives or that do not have a mass explosion hazard. *Compressed Gases:* Pressure below OSHA definition. *Pyrophorics:* No Rating. *Oxidizers:* Packaging Group III; Solids: any material that in either concentration tested, exhibits a mean burning time less than or equal to the mean burning time of a 1:7 potassium bromate/cellulose mixture and the criteria for Packing Group I and II are not met. Liquids: any material that exhibits a mean pressure rise time less than or equal to the pressure rise time of a 1:1 nitric acid (65%)/cellulose mixture and the criteria for Packing Group I and II are not met. *Unstable Reactives:* Substances that may decompose, condense or self-react, but only under conditions of high temperature and/or pressure and have little or no potential to cause significant heat generation or explosive hazard. Substances that readily undergo hazardous polymerization in the absence of inhibitors.); **2** (*Water Reactivity:* Materials that may react violently with water. *Organic Peroxides:* Materials that, in themselves, are normally unstable and will readily undergo violent chemical change, but will not detonate. These materials may also react violently with water.

16. OTHER INFORMATION (Continued)

DEFINITIONS OF TERMS (Continued)

HAZARDOUS MATERIALS IDENTIFICATION SYSTEM HAZARD RATINGS (continued):

PHYSICAL HAZARD (continued): 2 (continued): *Explosives:* Division 1.4 – Explosive substances where the explosive effect are largely confined to the package and no projection of fragments of appreciable size or range are expected. An external fire must not cause virtually instantaneous explosion of almost the entire contents of the package. *Compressed Gases:* Pressurized and meet OSHA definition but < 514.7 psi absolute at 21.1°C (70°F) [500 psig]. *Pyrophorics:* No Rating. *Oxidizers:* Packing Group II Solids: any material that, either in concentration tested, exhibits a mean burning time of less than or equal to the mean burning time of a 2:3 potassium bromate/cellulose mixture and the criteria for Packing Group I are not met. Liquids: any material that exhibits a mean pressure rise time less than or equal to the pressure rise of a 1:1 aqueous sodium chlorate solution (40%)/cellulose mixture and the criteria for Packing Group I are not met. *Unstable Reactives:* Substances that may polymerize, decompose, condense, or self-react at ambient temperature and/or pressure, but have a low potential for significant heat generation or explosion. Substances that readily form peroxides upon exposure to air or oxygen at room temperature]; 3 (*Water Reactivity:* Materials that may form explosive reactions with water. *Organic Peroxides:* Materials that are capable of detonation or explosive reaction, but require a strong initiating source, or must be heated under confinement before initiation; or materials that react explosively with water. *Explosives:* Division 1.2 – Explosive substances that have a fire hazard and either a minor blast hazard or a minor projection hazard or both, but do not have a mass explosion hazard. *Compressed Gases:* Pressure ≥ 514.7 psi absolute at 21.1°C (70°F) [500 psig]. *Pyrophorics:* No Rating. *Oxidizers:* Packing Group I Solids: any material that, in either concentration tested, exhibits a mean burning time less than the mean burning time of a 3:2 potassium bromate/cellulose mixture. Liquids: Any material that spontaneously ignites when mixed with cellulose in a 1:1 ratio, or which exhibits a mean pressure rise time less than the pressure rise time of a 1:1 perchloric acid (50%)/cellulose mixture. *Unstable Reactives:* Substances that may polymerize, decompose, condense or self-react at ambient temperature and/or pressure and have a moderate potential to cause significant heat generation or explosion.); 4 (*Water Reactivity:* Materials that react explosively with water without requiring heat or confinement. *Organic Peroxides:* Materials that are readily capable of detonation or explosive decomposition at normal temperature and pressures. *Explosives:* Division 1.1 & 1.2-explosive substances that have a mass explosion hazard or have a projection hazard. A mass explosion is one that affects almost the entire load instantaneously. *Compressed Gases:* No Rating. *Pyrophorics:* Add to the definition of Flammability "4". *Oxidizers:* No "4" rating. *Unstable Reactives:* Substances that may polymerize, decompose, condense or self-react at ambient temperature and/or pressure and have a high potential to cause significant heat generation or explosion.).

NATIONAL FIRE PROTECTION ASSOCIATION HAZARD RATINGS:

HEALTH HAZARD: 0 (materials that, under emergency conditions, would offer no hazard beyond that of ordinary combustible materials): Gases and vapors whose LC_{50} for acute inhalation toxicity is greater than 10,000 ppm. Dusts and mists whose LC_{50} for acute inhalation toxicity is greater than 200 mg/L. Materials whose LD_{50} for acute dermal toxicity is greater than 2000 mg/kg. Materials whose LD_{50} for acute oral toxicity is greater than 2000 mg/kg. Materials that are essentially non-irritating to the respiratory tract, eyes and skin. **1** (materials that, under emergency conditions, can cause significant irritation): Gases and vapors whose LC_{50} for acute inhalation toxicity is greater than 5,000 ppm but less than or equal to 10,000 ppm. Dusts and mists whose LC_{50} for acute inhalation toxicity is greater than 10 mg/L but less than or equal to 200 mg/L. Materials whose LD_{50} for acute dermal toxicity is greater than 1000 mg/kg but less than or equal to 2000 mg/kg. Materials whose LD_{50} for acute oral toxicity is greater than 500 mg/kg but less than or equal to 2000 mg/kg. Materials that cause slight to moderate irritation to the respiratory tract, eyes and skin. **3** (materials that, under emergency conditions, can cause serious or permanent injury): Gases and vapors whose LC_{50} for acute inhalation toxicity is greater than 1,000 ppm but less than or equal to 3,000 ppm. Dusts and mists whose LC_{50} for acute inhalation toxicity is greater than 0.5 mg/L but less than or equal to 2 mg/L. Materials whose LD_{50} for acute dermal toxicity is greater than 40 mg/kg but less than or equal to 200 mg/kg. Materials whose LD_{50} for acute oral toxicity is greater than 5 mg/kg but less than or equal to 50 mg/kg. Any liquid whose saturated vapor concentration at 20°C (68°F) is equal to or greater than one-fifth its LC_{50} for acute inhalation toxicity, if its LC_{50} is less than or equal to 3000 ppm and that does not meet the criteria for degree of hazard 4. Compressed liquefied gases with boiling points between -30°C (-22°F) and -55°C (-66.5°F) that cause frostbite and irreversible tissue damage. Materials that are respiratory irritants. Cryogenic gases that cause frostbite and irreversible tissue damage. Materials that are corrosive to the respiratory tract. Materials that are corrosive to the eyes or cause irreversible corneal opacity. Materials that are corrosive to the skin. **4** (materials that, under emergency conditions, can be lethal): Gases and vapors whose LC_{50} for acute inhalation toxicity less than or equal to 1,000 ppm. Dusts and mists whose LC_{50} for acute inhalation toxicity is less than or equal to 0.5 mg/L. Materials whose LD_{50} for acute dermal toxicity is less than or equal to 40 mg/kg. Materials whose LD_{50} for acute oral toxicity is less than or equal to 5 mg/kg. Any liquid whose saturated vapor concentration at 20°C (68°F) is equal to or greater than one-fifth its LC_{50} for acute inhalation toxicity, if its LC_{50} is less than or equal to 1000 ppm.

FLAMMABILITY HAZARD: 0 Materials that will not burn under typical fire conditions, including intrinsically noncombustible materials such as concrete, stone, and sand: Materials that will not burn in air when exposed to a temperature of 816°C (1500°F) for a period of 5 minutes in according with Annex D. **1** Materials that must be preheated before ignition can occur. Materials in this degree require considerable preheating, under all ambient temperature conditions, before ignition and combustion can occur: Materials that will burn in air when exposed to a temperature of 816°C (1500°F) for a period of 5 minutes in accordance with Annex D. Liquids, solids and semisolids having a flash point at or above 93.4°C (200°F) (e.g., Class IIIB liquids). Liquids with a flash point greater than 35°C (95°F) that do not sustain combustion when tested using the Method of Testing for Sustained Combustibility, per 49 CFR 173, Appendix H or the UN Recommendation on the Transport of Dangerous Goods, Model Regulations (current edition) and the related Manual of Tests and Criteria (current edition). Liquids with a flash point greater than 35°C (95°F) in a water-miscible solution or dispersion with a water non-combustible liquid/solid content of more than 85 percent by weight. Liquids that have no fire point when tested by ASTM D 92 Standard Test Method for Flash and Fire Points by Cleveland Open Cup, up to a boiling point of the liquid or up to a temperature at which the sample being tested shows an obvious physical change. Combustible pellets with a representative diameter of greater than 2 mm (10 mesh). Solids containing greater than 0.5 percent by weight of a flammable or combustible solvent are rated by the closed-up flash point of the solvent. Most ordinary combustible materials. **2** Materials that must be moderately heated or exposed to relatively high ambient temperatures before ignition can occur. Materials in this degree would not under normal conditions form hazardous atmospheres with air, but under high ambient temperatures or under moderate heating could release vapor in sufficient quantities to produce hazardous atmospheres with air: Liquids having a flash point at or above 37.8°C (100°F) and below 93.4°C (200°F) (e.g., Class II and Class IIIA liquids.) Solid materials in the form of powders or coarse dusts of representative diameter between 420 microns (40 mesh) and 2 mm (10 mesh) that burn rapidly but that generally do not form explosive mixtures in air. Solid materials in fibrous or shredded form that burn rapidly and create flash fire hazards, such as cotton, sisal and hemp. Solids and semisolids that readily give off flammable vapors. Solids containing greater than 0.5 percent by weight of a flammable or combustible solvent are rated by the closed cup flash point of the solvent. **3** Liquids and solids that can be ignited under almost all ambient temperature conditions. Materials in this degree produce hazardous atmospheres with air under almost all ambient temperatures or, though unaffected by ambient temperatures, are readily ignited under almost all conditions: Liquids having a flash point below 22.8°C (73°F) and having a boiling point at or above 37.8°C (100°F) and those liquids having a flash point at or above 22.8°C (73°F) and below 37.8°C (100°F) and below 37.8°C (100°F) (e.g., Class IB and IC liquids). Materials that, on account of their physical form or environmental conditions, can form explosive mixtures with air and are readily dispersed in air. Flammable or combustible dusts with a representative diameter less than 420 microns (40 mesh). Materials that burn with extreme rapidity, usually by reason of self-contained oxygen (e.g., dry nitrocellulose and many organic peroxides). Solids containing greater than 0.5 percent by weight of a flammable or combustible solvent are rated by the closed cup flash point of the solvent. **4** Materials that will rapidly or completely vaporize at atmospheric pressure and normal ambient temperature or that are readily dispersed in air and will burn readily: Flammable gases. Flammable cryogenic materials. Any liquid or gaseous materials that is liquid while under pressure and has a flash point below 22.8°C (73°F) and a boiling point below 37.8°C (100°F) (e.g., Class IA liquids). Materials that ignite when exposed to air, Solids containing greater than 0.5 percent by weight of a flammable or combustible solvent are rated by the closed cup flash point of the solvent.

NATIONAL FIRE PROTECTION ASSOCIATION HAZARD RATINGS (continued):

INSTABILITY HAZARD: 0 Materials that in themselves are normally stable, even under fire conditions: Materials that have an estimated instantaneous power density (product of heat of reaction and reaction rate) at 250°C (482°F) below 0.01 W/mL. Materials that do not exhibit an exotherm at temperatures less than or equal to 500°C (932°F) when tested by differential scanning calorimetry. **1** Materials that in themselves are normally stable, but that can become unstable at elevated temperatures and pressures: Materials that have an estimated instantaneous power density (product of heat of reaction and reaction rate) at 250°C (482°F) at or above 0.01 W/mL and below 10 W/mL. **2** Materials that readily undergo violent chemical change at elevated temperatures and pressures: Materials that have an estimated instantaneous power density (product of heat of reaction and reaction rate) at 250°C (482°F) at or above 10 W/mL and below 100W/mL. **3** Materials that in themselves are capable of detonation or explosive decomposition or explosive reaction, but that require a strong initiating source or that must be heated under confinement before initiation: Materials that have an estimated instantaneous power density (product of heat of reaction and reaction rate) at 250°C (482°F) at or above 100 W/mL and below 1000 W/mL. Materials that are sensitive to thermal or mechanical shock at elevated temperatures and pressures. **4** Materials that in themselves are readily capable of detonation or explosive decomposition or explosive reaction at normal temperatures and pressures: Materials that have an estimated instantaneous power density (product of heat of reaction and reaction rate) at 250°C (482°F) of 1000 W/mL or greater. Materials that are sensitive to localized thermal or mechanical shock at normal temperatures and pressures.

FLAMMABILITY LIMITS IN AIR:

Much of the information related to fire and explosion is derived from the **National Fire Protection Association (NFPA).** Flash Point - Minimum temperature at which a liquid gives off sufficient vapors to form an ignitable mixture with air. Autoignition Temperature: The minimum temperature required to initiate combustion in air with no other source of ignition. LEL - the lowest percent of vapor in air, by volume, that will explode or ignite in the presence of an ignition source. UEL - the highest percent of vapor in air, by volume, that will explode or ignite in the presence of an ignition source.

TOXICOLOGICAL INFORMATION:

Human and Animal Toxicology: Possible health hazards as derived from human data, animal studies, or from the results of studies with similar compounds are presented. Definitions of some terms used in this section are: LD_{50} - Lethal Dose (solids & liquids) which kills 50% of the exposed animals; LC_{50} - Lethal Concentration (gases) which kills 50% of the exposed animals; **ppm:** concentration expressed in parts of material per million parts of air or water; **mg/m³** concentration expressed in weight of substance per volume of air; **mg/kg** quantity of material, by weight, administered to a test subject, based on their body weight in kg. Other measures of toxicity include **TDLo**, the lowest dose to cause a symptom and **TCLo** the lowest concentration to cause a symptom; TDo, LDLo, and LDo, or TC, TCo, LCLo, and LCo, the lowest dose (or concentration) to cause lethal or toxic effects.

Cancer Information: The sources are: **IARC** - the International Agency for Research on Cancer; **NTP** - the National Toxicology Program; **RTECS** - the Registry of Toxic Effects of Chemical Substances, **OSHA** and **CAL/OSHA**. IARC and NTP rate chemicals on a scale of decreasing potential to cause human cancer with rankings from 1 to 4. Subrankings (2A, 2B, etc.) are also used. **Other Information: BEI** - ACGIH Biological Exposure Indices, represent the levels of determinants which are most likely to be observed in specimens collected from a healthy worker who has been exposed to chemicals to the same extent as a worker with inhalation exposure to the TLV.

REPRODUCTIVE TOXICITY INFORMATION:

A mutagen is a chemical that causes permanent changes to genetic material (DNA) such that the changes will propagate through generational lines. An embryotoxin is a chemical that causes damage to a developing embryo (e.g., within the first eight weeks of pregnancy in humans), but the damage does not propagate across generational lines. A teratogen is a chemical that causes damage to a developing fetus, but the damage does not propagate across generational lines. A reproductive toxin is any substance that interferes in any way with the reproductive process.

ECOLOGICAL INFORMATION:

EC is the effect concentration in water. **BCF** = Bioconcentration Factor, which is used to determine if a substance will concentrate in lifeforms which consume contaminated plant or animal matter. TL_m = median threshold limit; Coefficient of Oil/Water Distribution is represented by log K_{ow} or log K_{oc} and is used to assess a substance's behavior in the environment.

REGULATORY INFORMATION:

U.S. and CANADA:

ACGIH: American Conference of Governmental Industrial Hygienists, a professional association which establishes exposure limits.

This section explains the impact of various laws and regulations on the material. **EPA** is the U.S. Environmental Protection Agency. **NIOSH** is the National Institute of Occupational Safety and Health, which is the research arm of the U.S. Occupational Safety and Health Administration (**OSHA**). **WHMIS** is the Canadian Workplace Hazardous Materials Information System. **DOT** and **TC** are the U.S. Department of Transportation and the Transport Canada, respectively. Superfund Amendments and Reauthorization Act (**SARA**); the Canadian Domestic/Non-Domestic Substances List (**DSL/NDSL**); the U.S. Toxic Substance Control Act (**TSCA**); Marine Pollutant status according to the **DOT**; the Comprehensive Environmental Response, Compensation, and Liability Act (**CERCLA** or **Superfund**); and various state regulations. This section also includes information on the precautionary warnings which appear on the material's package label. **OSHA** - U.S. Occupational Safety and Health Administration.

EUROPEAN and INTERNATIONAL:

The DFG: This is the Federal Republic of Germany's Occupation Health Agency, similar to the U.S. OSHA. **EU** is the European Union (formerly known as the **EEC**, European Economic Community). **EINECS:** This is the European Inventory of Now-Existing Chemical Substances. The **ARD** is the European Agreement Concerning the International Carriage of Dangerous Goods by Road and the **RID** are the International Regulations Concerning the Carriage of Dangerous Goods by Rail. **AICS** is the Australian Inventory of Chemical Substances. **METI** is the Japanese Ministry of Economy, Trade, and Industry.

64503-5301

DYNAMIC
Color Co.

SAFETY DATA SHEET

Prepared to U.S. OSHA, CMA, ANSI, Canadian WHMIS 2015 GHS, European Union CLP EC 1272/2008 & the 8th ATP 2016/918, the Korean MoEL (Public Notice 2016-19), Singapore SS586 Standard – Parts 2 & 3, Chinese GB/T 16483-2008 & GB/T 17519-2013, New Zealand Hazardous Substances (Hazard Classification) Notice 2020, *Australian WorkSafe* GHS 7, 2022, *Japanese* JIS Z 7252: 2019 (Classification of chemicals) and JIS Z 7253: 2019 (Communication of information on danger of chemicals – labeling and safety data sheets), *and the Global Harmonization Standard*

1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY UNDERTAKING

PRODUCT IDENTIFIER USED ON LABEL:

Product Identifier: **TATTOO PAINT No. BD-1; TATTOO PAINT No. ELB; TATTOO PAINT No. SKB; TATTOO PAINT No. TEA**

Other Means of Identification: Not Applicable

RECOMMENDED USE of the PRODUCT and RESTRICTIONS on USE:

Recommended Use: Tissue Staining Paint

Restrictions on Use: Other than Recommended Use

SHIPPING CLASSIFICATION:

U.N. Number: None Allocated

U.N. Dangerous Goods Class/Subsidiary Risk: None Allocated

HAZCHEM Code (Australia): None Allocated

Poisons Schedule Number (Australia): None Allocated

NAME, ADDRESS and TELEPHONE NUMBER of CHEMICAL MANUFACTURER, IMPORTER or OTHER RESPONSIBLE PARTY:

U.S. Supplier/Manufacturer's Name: **DYNAMIC COLOR COMPANY**

Address: PO Box 21083
Fort Lauderdale, FL, 33335 USA

Information Phone: + 1-954-462-0261 9 a.m. to 4 p.m. (U.S. East Coast Time Zone)

Emergency Phone: 1-800-233-8332 9 a.m. to 4 p.m. (U.S. East Coast Time Zone)
(from U.S., Canada, Puerto Rico, U.S. Virgin Islands)

Email: sales@dynamiccolor.com

Date of Preparation: April 12, 2001

Date of Revision: April 13, 2022

2. HAZARD IDENTIFICATION

GLOBAL HARMONIZATION LABELING AND CLASSIFICATION: Classified in accordance with Global Harmonization Standard under U.S. OSHA Hazard Communication Standard, Canadian *WHMIS 2015 GHS*, European CLP Regulation (EC) 1272/2008, Japanese JIS Z 7252: 2019 (Classification of chemicals) and JIS Z 7253: 2019 (Communication of information on danger of chemicals – labeling and safety data sheets), New Zealand Hazardous Substances (Hazard Classification) Notice 2020, Australian WorkSafe GHS 7, 2022, Singapore SS586, Chinese GHS standard. Korean MoEL classification is given separately.

Classification: Eye Irritation Category 2A, Specific Target Organs Toxicity (Inhalation-Irritation) Single Exposure Category 3

Signal Word: Warning

Hazard Statements: H319: Causes serious eye irritation. H335: May cause respiratory irritation.

Precautionary Statements:

Prevention: P261: Avoid breathing mists or sprays. P264 + P265: Wash hands and other contamination areas thoroughly after handling. Do not touch eyes.P270: Do not eat, drink or smoke when using these products. P271: Use only outdoors or in a well-ventilated area. P280: Wear protective gloves, protective clothing, eye protection, face protection.

Response: P305 + P351 + P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. P337 + P317: If eye irritation persists: Get medical help. P304 + P340: If inhaled, remove victim to fresh air and keep at rest in a position comfortable for breathing. P319: Get medical help if you feel unwell. P321: Specific treatment (remove from exposure and treat symptoms). Refer to Safety Data Sheet for more information.

Storage: P403 + P233: Store in a well-ventilated place. Keep container tightly closed. P405: Store locked up.

Disposal: P501: Dispose of contents/containers in accordance with all local, regional, national and international regulations.

Hazard Symbols/Pictograms: GHS07

KOREAN MoEL (Notice 2016-19) LABELING AND CLASSIFICATION: Classified in accordance with MoEL Notice 2016-19. Under the MoEL regulation, no differences in classification are applicable.

PERCENT OF UNKNOWN ACUTE TOXICITY:

Unknown toxicity by inhalation: BD-1: 80%; ELB: 90%; SKB: 90%; TEA: 79%.
Unknown dermal toxicity : BD-1: 85%; ELB: 90%; SKB: 90%; TEA: 89%.
Unknown oral toxicity: BD-1: 80%; ELB: 75%; SKB: 75%; TEA: 80%

2. HAZARD IDENTIFICATION (Continued)

EMERGENCY OVERVIEW: Product Description: These products are blue liquids that have a mild odor. **Health Hazards:** The primary health hazard associated with these products is the potential for mild irritation of contaminated tissue. Eye contact may cause more serious irritation. The Titanium Dioxide component is a suspect carcinogen by inhalation of respirable particles. Due to the liquid form of these products, this hazard is not expected to be significant. **Flammability Hazards:** These products are not flammable. If involved in a fire, the product may decompose to produce carbon, copper, nitrogen and titanium oxides. **Reactivity Hazards:** These products are not reactive. **Environmental Hazards:** Not tested. These products may have adverse effects when released into the environment. **Emergency Recommendations:** Emergency responders must wear the personal protective equipment suitable for the situation to which they are responding.

3. COMPOSITION and INFORMATION ON INGREDIENTS

Chemical Name	CAS #	European EINECS # / Index #	Japanese MITI/ENC #	Korean ECL #	New Zealand NZIoC #	Chinese IECSC Inventory	Taiwan NESCI ECS Inventory	Australian AICS	% w/w	LABEL ELEMENTS GHS under U.S. OSHA, Canadian WHMIS HPR-GHS & EU Classification (1272/2008), Japanese, New Zealand, Taiwan, Chinese and Korean Regulations Korean ISHA Classification Hazard Statements
Isopropyl Alcohol	67-63-0	200-661-7 603-117-00-0	2-207	KE-29363	HSR001180	Listed	Listed	Listed	10%	GHS Under All Countries Harmonized Classification: Flammable Liquid Cat. 2, Eye Irritation Cat. 2A, Specific Target Organ Toxicity (Inhalation, Ingestion-Narcotic Effects) Single Exposure Cat. 3 Hazard Statements: H226: Flammable liquid and vapor. H319: Causes serious eye irritation. H336: May cause drowsiness or dizziness.
Titanium Dioxide (C.I. White 7)	13463-67-7	236-675-7 No Index #	1-558	KE-33900	May be used under an appropriate group standard	Listed	Listed	Listed	9-10%	GHS Under All Countries Classification: Not classified Self-Classification Classification: Carcinogenic Cat. 2 Hazard Statements: H351: Suspected of causing cancer. Under U.S. OSHA, Canadian WHMIS HPR-2015 only Classification: Combustible Dust Hazard
Proprietary Pigment Blue3					May be used under an appropriate group standard	Listed	Listed	Listed	0.5-5%	Classification: Not Classified Under U.S. OSHA, Canadian WHMIS HPR-2015 only Classification: Combustible Dust Hazard
Styrene Acrylic Polymer Resin (BD-1)					May be used under an appropriate group standard	Listed	Listed	Listed	0-5%	GHS Under All Countries Harmonized Classification: Skin Irritation Cat. 2, Eye Irritation Cat. 2A, Specific Target Organ Toxicity (Inhalation, Narcotic Effects/Respiratory Irritation) Single Exposure Cat. 3 Hazard Statements: H315: Causes skin irritation. H319: Causes serious eye irritation. H335: May cause respiratory irritation. H336: May cause drowsiness or dizziness.
Proprietary Pigment Green (TEA)					May be used under an appropriate group standard	Listed	Listed	Listed	0-1%	Classification: Not Classified Under U.S. OSHA, Canadian WHMIS HPR-2015 only Classification: Combustible Dust Hazard
Water	7732-18-5	231-791-2 No Index #	Not identified in the Listing	KE-35400	Excepted	Listed	Listed	Listed	Balance	Classification: Not Classified

See Section 15 for information on other country inventory listing of components, as applicable
The specific chemical identity and/or exact percentage (concentration) of composition has been withheld as a trade secret.

4. FIRST-AID MEASURES

PROTECTION OF FIRST AID RESPONDERS: Rescuers should be taken for medical attention, if necessary. Only trained personnel should administer supplemental oxygen and/or cardio-pulmonary resuscitation, if necessary.

DESCRIPTION OF FIRST AID MEASURES: Victim(s) must be taken for medical attention. Take copy of label and MSDS to physician or other health professional with victim(s). Remove victim(s) to fresh air, as quickly as possible.

Skin Exposure: If these products contaminates the skin and adverse effect occurs, begin decontamination with running water. Minimum flushing is for 20 minutes. The contaminated individual must seek medical attention if any adverse effects occur after flushing.

GHS Precautionary Statements for Skin Exposure: None applicable.

4. FIRST-AID MEASURES (Continued)

DESCRIPTION OF FIRST AID MEASURES (continued):

Eye Exposure: If these products enter the eyes, open contaminated individual's eyes while under gently running water. Use sufficient force to open eyelids. Have contaminated individual "roll" eyes. Minimum flushing is for 20 minutes. Contaminated individual must seek medical attention if adverse effect continues after flushing.

GHS Precautionary Statements for Eye Exposure: P305 + P351 + P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. P337 + P317: If eye irritation persists: Get medical attention.

Inhalation: If aerosols are inhaled and adverse effect occurs, remove victim to fresh air. The contaminated individual must seek medical attention if any adverse effects occur.

GHS Precautionary Statements for Inhalation Exposure: P304 + P340: If inhaled, remove victim to fresh air and keep at rest in a position comfortable for breathing. P319: Get medical help if you feel unwell.

Ingestion: If swallowed, CALL PHYSICIAN OR POISON CONTROL CENTER FOR MOST CURRENT INFORMATION. If professional advice is not available, do not induce vomiting. Never induce vomiting or give diluents (milk or water) to someone who is unconscious, having convulsions, or unable to swallow. If victim is convulsing, maintain an open airway and obtain immediate medical attention.

GHS Precautionary Statements for Ingestion Exposure: None applicable.

MOST IMPORTANT SYMPTOMS and EFFECTS, WHETHER ACUTE OR DELAYED: See Sections 2 (Hazard Information) and 11 (Toxicological Information) for information.

Acute:

Symptoms/Effects: May cause irritation by contact with the skin, eyes and respiratory system. All potential effects are dependent on concentration and duration of exposure.

Symptoms/Effects After Inhalation: EXPOSURE TO HIGH CONCENTRATIONS: Coughing, or respiratory irritation.

Symptoms/Effects After Skin Contact: Mild irritation.

Symptoms/Effects After Eye Contact: Moderate irritation of eye tissue.

Symptoms/Effects After Ingestion: Irritation of digestive system.

Chronic:

Symptoms/Effects After Skin Contact: Dermatitis (dry, red skin).

Symptoms/Effects After Eye Contact: None known.

Symptoms/Effects After Accidental Injection: None known.

Symptoms/Effects After Inhalation: None known.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: Skin or respiratory conditions may be aggravated by exposure to these products.

INDICATION OF IMMEDIATE MEDICAL ATTENTION AND SPECIAL TREATMENT IF NEEDED: Treat symptoms and eliminate exposure.

COMPLIANCE WITH SAFE WORK AUSTRALIA MODEL CODE FIRST AID IN THE WORKPLACE CODE OF PRACTICE: Compliance with all requirements should be in place under Section 3 (First Aid Equipment, Facilities and Training) should be in place.

5. FIRE-FIGHTING MEASURES

FLASH POINT: Not flammable. **AUTOIGNITION TEMPERATURE:** Not applicable.

FLAMMABLE LIMITS (In air by volume, %): Not applicable.

FIRE EXTINGUISHING MEDIA: Unless incompatibilities exist for surrounding materials, carbon dioxide, water spray, 'ABC' type chemical extinguishers, foam, dry chemical and halon extinguishers can be used to fight fires involving these products.

UNSUITABLE FIRE EXTINGUISHING MEDIA: None known.

SPECIAL HAZARDS ARISING FROM THE SUBSTANCE: When involved in a fire, this material may decompose and produce irritating vapors and toxic gases (e.g., carbon, copper, nitrogen and titanium oxides).

Explosion Sensitivity to Mechanical Impact or Static Discharge: Not sensitive.

SPECIAL PROTECTIVE ACTIONS FOR FIRE-FIGHTERS: Incipient fire responders should wear eye protection. Structural firefighters must wear Self-Contained Breathing Apparatus and full protective equipment. Due to the presence of pigment, the runoff water from these products can discolor contaminated objects. If possible, prevent runoff water from entering storm drains, bodies of water, or other environmentally sensitive areas. If necessary, rinse fire-response equipment with soapy water before returning it to service.

GHS Statements for Fire Response: None applicable.

Australian HazChem Code: Not applicable.

6. ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS AND EMERGENCY PROCEDURES: Uncontrolled releases should be responded to by trained personnel using pre-planned procedures. Proper protective equipment should be used. Call CHEMTREC (1-800-424-9300) for emergency assistance. Or if in Canada, call CANUTEC (613-996-6666). The atmosphere must at least 19.5 percent Oxygen before non-emergency personnel can be allowed in the area without Self-Contained Breathing Apparatus and fire protection.

PERSONAL PROTECTIVE EQUIPMENT: Proper protective equipment should be used.

Small Spills: Wear rubber gloves, splash goggles, and appropriate body protection.

Large Spills: Minimum Personal Protective Equipment should be rubber gloves, rubber boots, face shield, and Tyvek suit. Minimum level of personal protective equipment for releases in which the level of oxygen is less than 19.5% or is unknown must be **Level B: triple-gloves (rubber gloves and nitrile gloves over latex gloves), chemical resistant suit and boots, hard hat, and Self-Contained Breathing Apparatus.**

6. ACCIDENTAL RELEASE MEASURES (Continued)

METHODS FOR CLEAN-UP AND CONTAINMENT:

Small Spills: Carefully absorb spill using polypads or other non-reactive absorbent. Place spilled material in appropriate container for disposal, sealing tightly. Remove all residue before decontamination of spill area.

Large Spills: Access to the spill area should be restricted. For large spills, dike or otherwise contain spill and absorb spill with polypads or other non-reactive absorbent material.

All Spills: Place all spill residue in a double plastic bag or other containment and seal. Decontaminate the area thoroughly. Do not mix with wastes from other materials. Dispose of in accordance with applicable Federal, State, and local procedures (see Section 13, Disposal Considerations). For spills on water, contain, minimize dispersion and collect. Dispose of recovered material and report spill per regulatory requirements.

ENVIRONMENTAL PRECAUTIONS: Avoid release to the environment. Run-off water may be contaminated by other materials and should be contained to prevent possible environmental damage.

REFERENCE TO OTHER SECTIONS: See information in Section 8 (Exposure Controls – Personal Protection) and Section 13 (Disposal Considerations) for additional information.

7. HANDLING and STORAGE

PRECAUTIONS FOR SAFE HANDLING: As with all chemicals, avoid getting these products ON YOU or IN YOU. Wash thoroughly after handling these products. Do not eat, drink, smoke, or apply cosmetics while handling these products. Avoid breathing aerosols from the product. Keep away from incompatible materials (see Section 10, Stability and Reactivity). Containers of these products must be properly labeled. Use in a well-ventilated location. Remove contaminated clothing.

GHS Statements for Safe Handling: P261: Avoid breathing mists or sprays. P264 + P265: Wash hands and other contamination areas thoroughly after handling. Do not touch eyes.P270: Do not eat, drink or smoke when using these products. P271: Use only outdoors or in a well-ventilated area. P280: Wear protective gloves, protective clothing, eye protection, face protection.

CONDITIONS FOR SAFE STORAGE and INCOMPATIBILITIES: Keep container tightly closed when not in use. Store containers in a cool, dry location, away from direct sunlight, sources of intense heat, or where freezing is possible. Material should be stored in secondary containers or in a diked area, as appropriate. Inspect all incoming containers before storage, to ensure containers are properly labeled and not damaged. Have appropriate extinguishing equipment in the storage area (such as sprinkler systems or portable fire extinguishers). Empty containers may contain residual product; therefore, empty containers should be handled with care. May be incompatible with water reactive materials and strong oxidizers.

GHS Statements for Safe Storage: P403 + P233: Store in a well-ventilated place. Keep container tightly closed. P405: Store locked up.

SPECIFIC USE(S): These products are for use as a skin staining paint. Follow all industry standards for use of these products.

PROTECTIVE PRACTICES DURING MAINTENANCE OF CONTAMINATED EQUIPMENT: Follow practices indicated in Section 6 (Accidental Release Measures). Make certain that application equipment is locked and tagged-out safely. Always use these products in areas where adequate ventilation is provided. Decontaminate equipment thoroughly, before maintenance begins. Collect all rinsates and dispose of according to applicable Federal, State, or local procedures, or applicable standards.

8. EXPOSURE CONTROLS - PERSONAL PROTECTION

EXPOSURE LIMITS/CONTROL PARAMETERS:

Ventilation and Engineering Controls: Use with adequate ventilation to ensure exposure levels are maintained below the limits provided in this section. Use local exhaust ventilation. Normal office ventilation conforming to the American Society of Heating, Refrigerating, and Air Conditioning Engineers (ASHRAE) Standards is adequate under normal circumstances of use. Persons using this material should consult a qualified Ventilation Engineer and/or Industrial Hygienist if concerns about exposure arise. If necessary, refer to Australian National Code of Practice for the Control of Workplace Hazardous Substances [NOHSC: 2007 (1994)] for further information.

U.S. Workplace Exposure Limits/Control Parameters:

CHEMICAL NAME	CAS #	EXPOSURE LIMITS IN AIR							
		ACGIH-TLVs		OSHA-PELs		NIOSH-RELs		NIOSH	OTHER
		TWA mg/m³	STEL mg/m³	TWA mg/m³	STEL mg/m³	TWA mg/m³	STEL mg/m³	IDLH mg/m³	mg/m³
Proprietary Pigment Green (Copper Phthalo-cyanine Green) Exposure limits given are for Copper dusts, fumes & mists as Cu)	1328-53-6	1 (dusts, mists) 0.2 (fume)	NE	1 (dusts, mists) 0.1 (fume)	NE	1 (dusts, mists) 0.1 (fume)	NE	100 (as Cu)	NE
C.I. White 7 (Titanium Dioxide)	13463-67-7	0.2 (resp. fract.) finescale particles	NE	15 (total dust); 10 (vacated 1989 PEL)	NE	See Pocket Guide App. A		5000	DFG MAK Pregnancy Risk Classification: C
Isopropyl Alcohol	67-63-0	492	984	980	500 ppm (vacated 1989 PEL)	980	1225	2000 ppm (based on LEL)	DFG MAK: TWA = 500 ppm PEAK = 2•MAK, 15 min., average value, 1-hr interval, 4 per shift DFG MAK Pregnancy Risk Classification: C

NE = Not Established.

8. EXPOSURE CONTROLS - PERSONAL PROTECTION (Continued)

EXPOSURE LIMITS/CONTROL PARAMETERS (continued):

Australian Hazardous Chemical Information System (HMIS) Exposure Standards:

CHEMICAL NAME	CAS #	EXPOSURE STANDARDS				
		TWA ppm	TWA mg/m^3	STEL ppm	STEL mg/m^3	Notes
Proprietary Pigment Green (Copper Phthalo-cyanine Green) Exposure limits given are for Copper dusts, fumes & mists as Cu)	1328-53-6	NE	1 (dusts & mists) 0.2 (fume)	NE	NE	Not Applicable
C.I. White 7 (Titanium Dioxide)	13463-67-7	NE	10	NE	NE	(1) This value is for inhalable dust containing no asbestos and < 1% crystalline silica.
Isopropyl Alcohol	67-63-0	400	983	500	1230	Not Applicable

NE = Not Established.

UK Minimum Exposure Limits:

CHEMICAL NAME	CAS #	WORKPLACE EXPOSURE LIMIT				
		Long-Term Exposure Limit (8-Hrs TWA Reference Period)		Short-Term Exposure Limit (15-minute Reference Period)		Comments
		ppm	$mg.m^{-3}$	ppm	$mg.m^{-3}$	The Carcin, Sen and Skin notations are not exhaustive. Notations have been applied to substances identified in IOELV Directives
C.I. White 7 (Titanium Dioxide)	14363-67-7	NE	10 (total inhalable) 4 (respirable)	NE	7	NE
Isopropyl Alcohol	67-63-0	400	999	500	1250	NE

NE = Not Established.

UK Minimum Exposure Limits:

CHEMICAL NAME	CAS #	WORKPLACE EXPOSURE LIMIT				
		Long-Term Exposure Limit (8-Hrs TWA Reference Period)		Short-Term Exposure Limit (15-minute Reference Period)		Comments
		ppm	$mg.m^{-3}$	ppm	$mg.m^{-3}$	The Carcin, Sen and Skin notations are not exhaustive. Notations have been applied to substances identified in IOELV Directives
Proprietary Pigment Green (Copper Phthalo-cyanine Green) copper fumes, as Cu copper dusts & mists, as Cu	1328-53-8	NE	0.2 1	NE	NE 2	NE
C.I. Pigment White 7 (Titanium Dioxide)	14363-67-7	NE	10 (total inhalable) 4 (respirable)	NE	7	NE
Isopropyl Alcohol	67-63-0	400	999	500	1250	NE

NE = Not Established.

Workplace Exposure Standards (New Zealand): Refer to the Hazardous Substances (Classes 6, 8, and 9 Controls) Regulations 2001 (Regulations 29-30).

CHEMICAL NAME	CAS #	WORKPLACE EXPOSURE STANDARDS				
		TWA ppm	TWA mg/m^{-3}	STEL ppm	STEL mg/m^{-3}	Notes
Proprietary Pigment Green (Copper Phthalocyanine Green) copper dust & mists, as Cu copper fume, as Cu	1328-53-8	NE	0.01 0.01	NE	NE 2	NE
C.I. Pigment White 7 (Titanium Dioxide)	14363-67-7	NE	10	NE	NE	Not Applicable
Isopropyl Alcohol	67-63-0	400	983	500	1230	Not Applicable

Exposure Standards Outside the Workplace (New Zealand): Currently, there are no other exposure limits, such as TELS and EELS (See Section 12 [Ecological Information] for EEL information) established for components of this product.

Other International Occupational Exposure Limits: Currently, the following international limits established for components of these products.

Proprietary Pigment Green (Copper Phthalocyanine Green):

	Limit Value - Eight Hours	Limit Value - Short Term
Austria	1 mg/m^3 (inhalable aerosol) (dusts & mists); 0.1 mg/m^3 (fume, respirable fraction)	0.4 mg/m^3
Belgium	1 mg/m^3 (dusts & mists); 0.2 mg/m^3 (fume, respirable fraction)	
Canada (Ontario)	1 mg/m^3 (dusts & mists); 0.2 mg/m^3 (fume, respirable fraction)	
Canada (Quebec)	1 mg/m^3 (dusts & mists); 0.2 mg/m^3 (fume, respirable fraction)	
Denmark	1 mg/m^3 (dusts & mists); 0.1 mg/m^3 (fume, respirable fraction)	2 mg/m^3 (dusts & mists); 0.2 mg/m^3 (fume, respirable fraction)
Finland	0.02 mg/m^3 (dusts & mists) (1)(2)	
France	1 mg/m^3 (dusts & mists); 0.2 mg/m^3 (fume, respirable fraction)	2 mg/m^3 (dusts & mists)
Germany (DFG)	0.01 mg/m^3 (dusts & mists)(1); 0.01 mg/m^3 (fume, respirable fraction)	0.02 mg/m^3 (dusts & mists)(1)(2); 0.02 mg/m^3 (fume, respirable fraction)(1)
Hungary	1 mg/m^3 (dusts & mists); 0.1 mg/m^3 (fume, respirable fraction)	4 mg/m^3 (dusts & mists); 0.4 mg/m^3 (fume, respirable fraction)
Ireland	1 mg/m^3; 0.2 mg/m^3 (fume, respirable fraction)(1) 1 mg/m^3 (fume, respirable fraction)(2)	
Norway	0.1 mg/m^3 (fume, respirable fraction)(1) 1 mg/m^3 (fume, respirable fraction)(2)	

People's Republic of China	1 mg/m³ (dusts & mists); 0.2 mg/m³ (fume, respirable fraction)

8. EXPOSURE CONTROLS - PERSONAL PROTECTION (Continued)

EXPOSURE LIMITS/CONTROL PARAMETERS (continued):

Other International Occupational Exposure Limits (continued):

Proprietary Pigment Green (continued)):

	Limit Value - Eight Hours	Limit Value - Short Term
Poland	1 mg/m³ (dusts & mists); 0.1 mg/m³ (fume, respirable fraction)	2 mg/m³ (dusts & mists); 0.3 mg/m³ (fume, respirable fraction)
Romania	0.5 mg/m³ (dusts & mists); 0.1 mg/m³ (fume, respirable fraction)	1.5 mg/m³ (dusts & mists)(1); 0.3 mg/m³ (fume, respirable fraction)
Singapore	1 mg/m³ (dusts & mists); 0.2 mg/m³ (fume, respirable fraction)	
South Korea	1 mg/m³ (dusts & mists); 0.2 mg/m³ (fume, respirable fraction)	2 mg/m³ (dusts & mists)
Spain	1 mg/m³ (dusts & mists); 0.1 mg/m³ (fume, respirable fraction)	
Sweden	1 mg/m³ (dusts & mists); 0.2 mg/m³ (fume, respirable fraction)	
Switzerland	0.1 mg/m³ (dusts & mists)(inhalable aerosol)	0.2 mg/m³ (dusts & mists)(inhalable aerosol)
The Netherlands	0.1 mg/m³ (dusts & mists)(inhalable aerosol)	
	Remarks	
Finland	Dusts & Mists:(1) Calculated as Cu. (2) Respirable fraction.	
Germany (DFG)	Dusts & Mists: (1) 15 minutes average value. Fume: (1) Respirable fraction. (2) 15minutes average value.	
Ireland	Dusts & Mists: (1) Fume. (2) Inhalable fraction and vapor.	
Norway	Dusts & Mists: (1) Fume. (2) Dust	
Romania	Dusts & Mists: (1) 15 minutes average value. Fume: (1) 15 minutes average value.	

C.I. Pigment White 7 (Titanium Dioxide):

	Limit Value - Eight Hours	Limit Value - Short Term
Belgium	10 mg/m³ (1)	
Canada (Ontario)	10 mg/m³	
Canada (Québec)	10 mg/m³ (1)	
Denmark	6 mg/m³ (total dust)	12 mg/m³ (total dust)
France	11 mg/m³ (inhalable aerosol)	
Germany (DFG)	0.3 mg/m³ (1)(2)	2.4mg/m³ (1)(2)(3)
Ireland	10 mg/m³ (1) 4 mg/m³ (2)	
Japan (JSOH)	0.3 mg/m³ (1)	
Latvia	10 mg/m³	
Norway	5 mg/m³	
People's Republic of China	8 mg/m³ (1)	
Poland	10 mg/m³ (1)	
Romania	10 mg/m³	15 mg/m³ (1)
Singapore	10 mg/m³	
South Korea	10 mg/m³	
Spain	10 mg/m³ (1)	
Sweden	5 mg/m³ (inhalable aerosol)	
Switzerland	3 mg/m³ (respirable aerosol)	
	Remarks	
Canada (Québec)	(1) Total dust.	
Germany (DFG)	(1) Respirable fraction, except ultrafine particles. (2) Multiplied by the material density. (3) 15 minutes average value.	
Ireland	(1) Inhalable fraction. (2) Respirable fraction.	
Japan - JSOH	(1) Nanoparticle, as Ti.	
Poland	(1) Inhalable fraction.	
People's Republic of China	(1) Inhalable fraction.	
Romania	(1) 15 minutes average value.	

Isopropyl Alcohol

	Limit Value - Eight Hours	Limit Value - Short Term
Austria	200 ppm; 500 mg/m³	800 ppm; 2000 mg/m³
Belgium	200 ppm; 500 mg/m³	400 ppm (1); 1000 mg/m³ (1)
Canada (Ontario)	200 ppm	400 ppm
Canada (Québec)	400 ppm; 983 mg/m³	500 ppm; 1230 mg/m³
Denmark	200 ppm; 490 mg/m³	400 ppm; 980 mg/m³
Finland	200 ppm; 500 mg/m³	250 ppm (1); 620 mg/m³ (1)
France		400 ppm; 980 mg/m³
Germany (AGS)	200 ppm; 500 mg/m³	400 ppm (1); 1000 mg/m³ (1)
Germany (DFG)	200 ppm; 500 mg/m³	400 ppm (1); 1000 mg/m³ (1)
Hungary	500 mg/m³	2000 mg/m³
Ireland	200 ppm	400 ppm (1)
Japan (MHLW)	200 ppm	
Japan JSOH	400 ppm (1); 980 mg/m³ (1)	
Latvia	350 mg/m³	600 mg/m³ (1)
Norway	100 ppm; 245 mg/m³	
People's Republic of China	350 mg/m³	700 mg/m³ (1)
Poland	900 mg/m³	1200 mg/m³
Romania	81 ppm; 200 mg/m³	203 ppm (1); 500 mg/m³ (1)
Singapore	400 ppm; 983 mg/m³	500 ppm; 1230 mg/m³
South Korea	200 ppm; 480 mg/m³	400 ppm; 980 mg/m³
Spain	200 ppm; 500 mg/m³	400 ppm; 1000 mg/m³
Sweden	150 ppm; 350 mg/m³	250 ppm (1); 600 mg/m³ (1)
Switzerland	200 ppm; 500 mg/m³	400 ppm; 1000 mg/m³
	Remarks	
Belgium	(1) 15 minutes average value.	
Finland	(1) 15 minutes average value.	
Germany (AGS)	(1) 15 minutes average value.	
Germany (DFG)	(1) 15 minutes average value.	

8. EXPOSURE CONTROLS - PERSONAL PROTECTION (Continued)

EXPOSURE LIMITS/CONTROL PARAMETERS (continued):

Other International Occupational Exposure Limits (continued):

Isopropyl Alcohol (continued)

	Remarks
Ireland	(1) 15 minutes average value.
Japan - JSOH	(1) Occupational exposure limit ceiling: Reference value to the maximal exposure concentration of the substance during a working day.
Latvia	(1) 15 minutes average value.
People's Republic of China	(1) 15 minutes average value.
Romania	(1) 15 minutes average value.
Sweden	(1) 15 minutes average value.

BIOLOGICAL MONITORING AND THE SOURCE OF THOSE VALUES:

U.S. ACGIH Biological Exposure Indices (BEIs): Currently, the following Biological Exposure Indices (BEIs) have been established for the Isopropyl Alcohol component of these products.

CHEMICAL: DETERMINANT	SAMPLING TIME	BEI
Isopropyl Alcohol (listed as 2-propanol) • Acetone in Urine	• End of Shift at End of Workweek	• 40 mg/L

UK Biological Monitoring Guidance Values (BMGVs): Currently, no BMGVs have been established for the components of these products.

Appendix E-Schedule 14 (Requirements for Health Monitoring) per Australia Safe Work Code of Practice Managing Risks and Hazardous Chemicals in the Workplace: Currently, no component of these products has an established monitoring requirement value.

PROTECTIVE EQUIPMENT: The following information on appropriate Personal Protective Equipment is provided to assist employers in complying with OSHA regulations found in 29 CFR Subpart I (beginning at 1910.132, including U.S. Federal OSHA Respiratory Protection (29 CFR 1910.134), OSHA Eye Protection 29 CFR 1910.133, OSHA Hard Protection 29 CFR 1910.138, OSHA Foot Protection 29 CFR 1910.136 and OSHA Body Protection 29 CFR1910.132), equivalent standards of Canada (including CSA Respiratory Standard Z94.4-02, Z94.3-M1982, *Industrial Eye and Face Protectors* and CSA Standard Z195-02, *Protective Footwear*), standards of EU member states (including EN 529:2005 for respiratory PPE, CEN/TR 15419:2006 for hand/body protection, and CR 13464:1999 for face/eye protection), standards of Australia (including AS/NZS 1715:1994 for respiratory PPE, AS/NZS 4501.2:2006 for protective clothing, AS/NZS 2161.1:2000 for glove selection, and AS/NZS 1336:1997 for eye protection), or standards of Japan (including JIS T 8116:2005 for glove selection, JIS T 8150:2006 for respiratory PPE, JIS T 8147:2003 for eye protectors, and JIS T 8030:2005 for protective clothing). Please reference applicable regulations and standards for relevant details.

Respiratory Protection: Maintain airborne contaminant concentrations below exposure limits listed in this section, if applicable. If respiratory protection is needed, use only protection authorized in applicable regulations. Oxygen levels below 19.5% are considered IDLH by U.S. OSHA. In such atmospheres, use of a full-facepiece pressure/demand SCBA or a full facepiece, supplied air respirator with auxiliary self-contained air supply is required under OSHA's Respiratory Protection Standard (1910.134-1998). The following are U.S. NIOSH Respiratory Equipment Guidelines for Isopropyl Alcohol and are provided to assist in selection of respiratory PPE in event of presence of aerosols.

Copper Dusts and Mists, as Cu

Concentration	Respiratory Protection
Up to 5 mg/m^3:	Any Quarter-Mask Respirator.
Up to 10 mg/m^3:	Any Particulate Respirator equipped with an N95, R95, or P95 filter (including N95, R95, and P95 filtering facepieces) except quarter-mask respirators. The following filters may also be used: N99, R99, P99, N100, R100, P100, or Any Supplied-Air Respirator (SAR).
Up to 25 mg/m^3:	Any SAR operated in a continuous-flow mode, or any powered air-purifying respirator with a high-efficiency particulate filter.
Up to 50 mg/m^3:	Any Air-Purifying, Full-Facepiece Respirator with an N100, R100, or P100 filter, or any Powered Air-Purifying Respirator (PAPR) with a tight-fitting facepiece and a high-efficiency particulate filter, or any Self-Contained Breathing Apparatus (SCBA) with a full facepiece, or any SAR with a full facepiece.
Up to 100 mg/m^3:	Any SAR that has a full facepiece and is operated in a pressure-demand or other positive pressure mode.
Emergency or Planned Entry into Unknown Concentrations or IDLH Conditions:	Any SCBA that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode, or any SAR that has a full-facepiece and is operated in a pressure-demand or other positive-pressure mode in combination with an auxiliary SCBA operated in pressure-demand or other positive-pressure mode.
Escape:	Any Air-Purifying, Full-Facepiece Respirator with an N100, R100, or P100 filter, or any appropriate escape-type, SCBA.

Isopropyl Alcohol

Concentration	Respiratory Protection
Up to 2000 ppm:	Any Supplied-Air Respirator (SAR) operated in a continuous-flow mode, or any Chemical Cartridge Respirator with a full facepiece and organic vapor cartridge(s), or any Air-Purifying, Full-Facepiece Respirator (gas mask) with a chin-style, front- or back-mounted organic vapor canister, or any Powered, Air-Purifying Respirator (PAPR) with organic vapor cartridge(s), or any Self-Contained Breathing Apparatus (SCBA) with a full facepiece, or any SAR with a full facepiece.
Emergency or Planned Entry into Unknown Concentrations or IDLH Conditions:	Any SCBA that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode, or any SAR that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode in combination with an auxiliary SCBA operated in pressure-demand or other positive-pressure mode.
Escape:	Any Air-Purifying, Full-Facepiece Respirator (gas mask) with a chin-style, front- or back-mounted organic vapor canister, or any appropriate escape-type, SCBA.

Eye Protection: Depending on the use of these products, splash goggles or safety glasses may be worn. Use goggles or safety glasses for spill response, as stated in Section 6 (Accidental Release Measures) of this SDS. If necessary, refer to appropriate regulations when selecting eye protection.

Hand Protection: Wear butyl rubber, neoprene, or nitrile rubber or latex gloves for routine use. If necessary, refer to appropriate regulations for further information.

Body Protection: Use body protection appropriate for task, such as a lab coat. If necessary, use body protection appropriate for task (e.g., Tyvek suit, rubber apron). If a hazard of injury to the feet exists due to falling objects, rolling objects, where objects may pierce the soles of the feet or where employee's feet may be exposed to electrical hazards, use foot protection, as described in appropriate regulations.

9. PHYSICAL and CHEMICAL PROPERTIES

FORM: Liquid.
COLOR: Blue.
MOLECULAR FORMULA: Mixture.
MOLECULAR WEIGHT: Mixture.
ODOR: Mild.
ODOR THRESHOLD: Not established.
VAPOR DENSITY (air = 1): Not established.
EVAPORATION RATE (*n*-BuAc = 1): < 1
SPECIFIC GRAVITY (water = 1): BD-1: 1.01; ELB, SKB:1.3; TEA: 1.2
MELTING/FREEZING POINT: Not established.
SOLUBILITY IN WATER: Soluble
BOILING POINT: Not established.
VAPOR PRESSURE: Not established.
pH: BD-1: 8.5; ELB, SKB: 8.46, TEA: 8.46
OXIDIZING PROPERTIES: Not applicable.
PERCENT SOLIDS: DB-1: 15%; ELB: 15%, SKB: 10%, TEA: 11%
FLAMMABILITY: Not flammable.
FLASH POINT: Not applicable.
AUTOIGNITION TEMPERATURE: Not applicable.
EXPLOSIVE PROPERTIES: Not applicable.
COEFFICIENT OF OIL/WATER DISTRIBUTION (PARTITION COEFFICIENT): Not established.
HOW TO DETECT THIS SUBSTANCE (identification properties): The odor and color of these products may be distinguishing characteristics to identify it event of a spill.

10. STABILITY and REACTIVITY

CHEMICAL STABILITY: Stable under conditions of normal temperature and pressure.
DECOMPOSITION PRODUCTS:
Combustion: If exposed to extremely high temperatures, these products can decompose to generate carbon, copper, nitrogen and titanium oxides. **Hydrolysis:** None known.
MATERIALS WITH WHICH SUBSTANCE IS INCOMPATIBLE: Strong oxidizers, water-reactive materials.
POSSIBILITY OF HAZARDOUS REACTION OR POLYMERIZATION: Will not occur.
CONDITIONS TO AVOID: Exposure to or contact with extreme temperatures and incompatible chemicals.

11. TOXICOLOGICAL INFORMATION

SYMPTOMS OF EXPOSURE BY ROUTE OF EXPOSURE: The most significant routes of occupational exposure are inhalation and contact with skin and eyes. The symptoms of exposure to this material, via route of entry, are as described below.

Inhalation: These products do not normally present a significant inhalation hazard under anticipated circumstances of use. Inhalation of vapors, mists, or sprays of this material may mildly irritate the nose, throat, and other tissues of the respiratory system.

Contact with Eyes: Eye contact with this material can moderately irritate the eyes, causing discomfort, tearing, and redness. Because the eye tissue may be stained, vision may be temporarily blurred.

Contact with Skin: Skin contact may cause mild irritation in sensitive individuals. Repeated or prolonged skin exposure may cause dermatitis (dry, red skin).

Skin Absorption: No component is known to be absorbed via intact skin.

Ingestion: Though not anticipated to be a significant route of occupational exposure, ingestion of large quantities of this material may cause nausea, vomiting, diarrhea, and discoloration of the mouth, teeth, and tissues of the throat.

Injection: Accidental injection of this liquid (as may occur by a puncture with a contaminated object) will cause local pain, irritation, and redness.

HEALTH EFFECTS OR RISKS FROM EXPOSURE: In the event of exposure, the following symptoms may be observed:

Short Term: Eye contact will cause moderate irritation. Ingestion of large amounts may cause nausea, vomiting, diarrhea. Inhalation of vapors may cause adverse symptoms to the central nervous system due to the Isopropyl Alcohol component.

Long Term: Repeated or prolonged skin exposure may cause dermatitis (dry, red skin).

Hazard Scale: 0 = Minimal 1 = Slight 2 = Moderate 3 = Serious 4 = Severe * = Chronic hazard

TARGET ORGANS:
Short Term: Skin, central nervous system, eyes.
Long Term: Skin.

OVERALL ACUTE TOXICITY ESTIMATES (ATE) FOR PRODUCT:
Oral Route: BD-1: 30,535 mg/kg; ELB: 12,800mg/kg; SKB: 15,493 mg/kg; TEA: > 15,223 mg/kg;
Dermal Route: BD-1: 163,998 mg/kg; ELB: > 16,399 mg/kg; SKB: > 16,399 mg/kg; TEA: > 123,517 mg/kg;
Inhalation Route: BD-1: 3,024 mg/L; ELB: > 5673 mg/kg; SKB: > 53 mg/L; TEA: > 58 mg/L

TOXICITY DATA FOR COMPONENTS: Specific toxicology data currently available for components of these products in greater than 1% concentration are as follows. Due to the large amount of data available, only human data, irritation data, LD50 oral, rat and mouse, skin, rabbit and rat, LC50 inhalation rat and mouse data are included in this SDS. Contact Dynamic Color for information on additional data availalble.

Proprietary Pigment Blue:
LD_{50} (Oral-Rat) > 6400 mg/kg (OECD 401)
LC_{50} (Inhalation-Rat) > 6400 mg/L (No Guideline info)

Proprietary Pigment Green:
LD_{50} (Oral-Rat) > 5000 mg/kg (OECD 401)
LD_{50} (Skin-Rat) > 5000 mg/kg (OECD 402)

11. TOXICOLOGICAL INFORMATION (Continued)

TOXICITY DATA FOR COMPONENTS (continued):

C.I. Pigment White 7 (Titanium Dioxide):
LD_{50} (Oral-Rat) > 2000 mg/kg (CLP Guideline Study)
LC_{50} (Inhalation-Rabbit) 4 hr: > 5.09 mg/L (OECD 403)

Isopropyl Alcohol:
LDLo (Oral-Man): 5272 mg/kg; Behavioral: coma; Vascular: BP lowering not characterized in autonomic section; Lungs, Thorax, or Respiration: chronic pulmonary edema
LDLo (Oral-Human): 3570 mg/kg; Behavioral: coma; Lungs, Thorax, or Respiration: respiratory depression; Gastrointestinal: nausea or vomiting
LDLo (Unreported-Man) = 2770 mg/kg
TDLo (Oral-Man): 14,432 mg/kg; Behavioral: coma; Vascular: BP lowering not characterized in autonomic section; Lungs, Thorax, or Respiration: dyspnea

Isopropyl Alcohol (continued_:
TDLo (Oral-Human): 223 mg/kg; Behavioral: hallucinations, distorted perceptions; Cardiac: pulse rate; Vascular: BP lowering not characterized in autonomic section
TDLo (oral, infant) = 13 gm/kg; Behavioral: somnolence (general depressed activity), irritability; Gastrointestinal: nausea or vomiting
Skin Irritancy (Rabbit): 500 mg; mild
Eye Irritancy (Rabbit): 100 mg; severe
LD_{50} (Oral-Rat) 5840 mg/kg (OECD 401)
LD_{50} (Skin-Rabbit) 16,400 mg/kg (OECD 402)
LD_{50} (Inhalation-Rat) 4 hr: > 10,000 mg/L (OECD 403)

REPEATED DOSE TOXICITY: No component has demonstrated repeated dose toxicity in either animal testing or though workplace data.

CARCINOGENIC POTENTIAL OF COMPONENTS: Components of these products are listed by agencies tracking the carcinogenic potential of chemical compounds, as follows;

Proprietary Pigment Green (Copper Phthalocyanine Green): For Copper Dusts, Fumes and Mists: EPA-D (Not Classifiable as to Human Carcinogenicity)

C.I. Pigment White 7 (Titanium Dioxide): ACGIH TLV-A3 (Confirmed Animal Carcinogen with Unknown Relevance to Humans); IARC-2B (Possibly Carcinogenic to Humans); MAK-4 (Substances with carcinogenic potential for which genotoxicity plays no or at most a minor role. No significant contribution to human cancer risk is expected, provided the MAK value is observed.); NIOSH-Ca (Potential Occupational Carcinogen, with No Further Categorization)

Isopropyl Alcohol: ACGIH TLV-A4 (Not Classifiable as a Human Carcinogen); IARC-3 (Not Classifiable as to Carcinogenicity to Humans)

The remaining components of these products are not found on the following lists: U.S. EPA, U.S. NTP, U.S. OSHA, U.S. NIOSH, GERMAN MAK, IARC, and ACGIH, and therefore are neither considered to be nor suspected to be cancer-causing agents by these agencies.

IRRITANCY OF PRODUCT: Acute exposure to these products via eye contact may irritate contaminated eyes. Acute exposure to these products via skin contact and inhalation may mildly irritate contaminated tissue, especially if exposure is prolonged.

ENDOCRINE TOXICITY: No component is known or suspected to be an endocrine disruptor.

SENSITIZATION TO THE PRODUCT: The components of these products are not known to be human skin or respiratory sensitizers.

REPRODUCTIVE TOXICITY INFORMATION: No components of these products are known to have mutagenic, embryotoxic, teratogenic or reproductive toxicity effects in humans.

12. ECOLOGICAL INFORMATION

ALL WORK PRACTICES MUST BE AIMED AT ELIMINATING ENVIRONMENTAL CONTAMINATION.

MOBILITY: These products have not been tested for mobility in soil. It is expected to be somewhat mobile in soil.

PERSISTENCE AND BIODEGRADABILITY: These products have not been tested for persistence or biodegradability. It is expected that some biodegradation will occur to these products; however, no specific information is known.

BIO-ACCUMULATION POTENTIAL: No component of these products presents a bio-accumulation potential.

EFFECT OF MATERIAL ON PLANTS or ANIMALS: These products may be harmful to plant or animal life, especially if large volumes of these products are released.

EFFECT OF CHEMICAL ON AQUATIC LIFE: These products have not been tested for aquatic toxicity. The following are aquatic toxicity data for some components of these products:

Proprietary Pigment Blue3:
LC_{50} (*Cyprinus carpio* Common carp) 96 hrs: > 100 mg/L (OECD 203)
EC_{50} (*Daphnia magna* Giant Water flea) 48 hrs: > 100 mg/L (OECD 202)
EC_{50} (*Desmodesmus subspicatus* green algae) 72hrs: > 100 mg/L (Read across data from similar material)

C.I. Pigment Green7:
LC_{50} ((*Danio rerio* Zebra fish) 96 hrs: > 100 mg/L (OECD 203)
EC_{50} (*Daphnia magna* Giant Water flea) 48 hrs: > 500 mg/L (OECD 202)
EC_{50} (*Selenastrum capricornutum* green algae) 72hrs: ≥ 100 mg/L (OECD 201)

C.I. Pigment White 7 (Titanium Dioxide):
LC_{50} (*Pimephales promelas* fathead minnow) 96 hrs: > 100 mg/L (No Guideline info)
EC_{50} (*Daphnia Magna* Giant Water flea) 24 hrs: > 100 mg/L (No Guideline info)
EC_{50} (Skeletonema costatum freshwater algae) 72 hours: > 00 mg/L (No Guideline info)

Isopropyl Alcohol:
LC_{50} (*Carassius auratus* Goldfish) 96 hrs: 9640 mg/L (US EPA Committee on Methods for Toxicity Tests with Aquatic Organisms)
EC_{50} (*Daphnia Magna* Giant Water flea) 24 hrs: 10,00 mg/L (OECD 202)
EC_{10} (*Scenedesmus quadricauda* freshwater algae) 8 days: 1800 mg/L (No Guideline info)

OTHER ADVERSE EFFECTS: These products do not contain any component with known ozone depletion potential.

RESULTS OF PBT AND vPvB ASSESSMENT: No Data Available. PBT and vPvB assessments are part of the chemical safety report required for some substances in European Union Regulation (EC) 1907/2006, Article 14.

ENDOCRINE DISRUPTORS: No component has been shown to be or is suspected to cause endocrine disruption to terrestrial or aquatic animals.

ENVIRONMENTAL EXPOSURE CONTROLS: Controls should be engineered to prevent release to the environment, including procedures to prevent spills, atmospheric release and release to waterways.

GHS Statements for Environmental Exposure Controls: Not applicable.

13. DISPOSAL CONSIDERATIONS

PRECAUTIONS TO BE FOLLOWED DURING WASTE HANDLING: Wear proper protective equipment when handling waste materials.

GHS Statements for Waste Handling: P501: Dispose of contents/containers in accordance with all local, regional, national and international regulations.

DISPOSAL CONTAINERS: Waste materials must be placed in and shipped in appropriate 5-gallon or 55-gallon poly or metal waste pails or drums. Permeable cardboard containers are not appropriate and should not be used. Ensure that any required marking or labeling

of the containers be done to all applicable regulations.

13. DISPOSAL CONSIDERATIONS (Continued)

DISPOSAL METHODS: It is the responsibility of the generator to determine at the time of disposal whether the product meets the criteria of a hazardous waste per regulations of the jurisdiction in which the waste is generated and/or disposed of. Waste disposal must be in accordance with appropriate Federal, State, Provincial and local regulations. These products, if unaltered by use, may be disposed of by treatment at a permitted facility or as advised by your local hazardous waste regulatory authority. Shipment of wastes must be done with appropriately permitted and registered transporters.

U.S. EPA WASTE NUMBER: Not applicable to wastes consisting only of these products.

CANADIAN HAZARDOUS WASTE REGULATIONS: As supplied, these products should be tested to see if it meets the criteria of hazardous wastes per Canadian Environmental Protection Agency) regulations and the Canadian Environmental Protection Act, 1999 (CEPA).

Canadian Environmental Protection Act (CEPA) Priority Substances Lists: The Isopropyl Alcohol component is listed as a Substance With Greatest Potential For Human Exposure Substance on Environment Canada/Health Canada Pilot Project List (CEPA 1999, Section 73). Meets categorization criteria: *may present, to individuals in Canada, the greatest potential for exposure; or *are persistent or bioaccumulative in accordance with the regulations, and inherently toxic to human beings or to non-human organisms, as determined by laboratory or other studies.

EUROPEAN WASTE CODES FOR PRODUCT: Wastes from MFSU and Removal of Printing Inks: 08 03 99: Wastes Not Otherwise Specified

EU WASTE FRAMEWORK DIRECTIVE, ANNEX III - WASTE - HAZARDOUS PROPERTIES: These products do not meet the criteria of any hazardous waste property. The components of these products have designated waste codes as listed below.

Isopropyl Alcohol: HP3 Flammable Waste (FW); HP5 Specific Target Organ Toxicity (STOT)/Aspiration Toxicity

C.I. Pigment White 7 (Titanium Dioxide): HP7 Carcinogenic: Waste which induces cancer or increases it incidence; in powder form containing 1% or more of particles with aerodynamic diameter ≤ 10 µm.

AUSTRALIAN HAZARDOUS WASTE REGULATIONS: As supplied, these products should be tested to see if it meets the criteria of hazardous wastes per Australian Department of Agriculture, Water and the Environment regulations. If wastes are to be exported, they should be tested to see if they have requirements under the Australian Hazardous Waste (Regulation of Exports and Imports) Act 1989 and further of the Basel Convention where the waste has any of the characteristics mentioned in Annex III to the Basel Convention.

14. TRANSPORTATION INFORMATION

U.S. DEPARTMENT OF TRANSPORTATION: These products are not classified as dangerous goods, per U.S. DOT regulations, under 49 CFR 172.101.

TRANSPORT CANADA, TRANSPORTATION OF DANGEROUS GOODS REGULATIONS: These products are NOT classified as dangerous goods, per regulations of Transport Canada.

INTERNATIONAL AIR TRANSPORT ASSOCIATION SHIPPING INFORMATION (IATA): These products are NOT classified as dangerous goods.

INTERNATIONAL MARITIME ORGANIZATION SHIPPING INFORMATION (IMO): These products are NOT classified as dangerous goods.

EUROPEAN AGREEMENT CONCERNING THE INTERNATIONAL CARRIAGE OF DANGEROUS GOODS BY ROAD (ADR): These products are NOT classified by the United Nations Economic Commission for Europe to be dangerous goods.

AUSTRALIAN FEDERAL OFFICE OF ROAD SAFETY CODE FOR THE TRANSPORTATION OF DANGEROUS GOODS BY ROAD OR RAIL: These products are NOT classified as dangerous goods, per regulations of the Australian Federal Office of Road Safety.

TRANSPORT IN BULK ACCORDING TO ANNEX II OF MARPOL 73/78 AND THE IBC CODE: Not applicable.

ENVIRONMENTAL HAZARDS: These products are neither environmentally hazardous according to the criteria of the UN Model Regulations (as reflected in the IMDG Code, ADR, RID, and ADN); no component meets the criteria of environmentally hazardous.

15. REGULATORY INFORMATION

UNITED STATES REGULATIONS:

U.S. SARA Reporting Requirements: The components of this product are subject to the reporting requirements of Sections 302, 304, and 313 of Title III of the Superfund Amendments and Reauthorization Act and are listed as follows:

CHEMICAL NAME	SARA 302 (40 CFR 355, Appendix A)	SARA 304 (40 CFR Table 302.4)	SARA 313 (40 CFR 372.65)
Copper Compounds	No	No	N100
Isopropyl Alcohol (mfg-strong acid process)	No	No	Yes

U.S. SARA Threshold Planning Quantity (TPQ): There are no specific Threshold Planning Quantities for this material. The default Federal SDS submission and inventory requirement filing threshold of 10,000 lb (4,540 kg) may apply, per 40 CFR 370.20.

U.S. CERCLA Reportable Quantity (RQ): Not applicable. Copper compounds do not have a specific assigned CERCLA RQ, but compounds in the broad class are CERCLA hazardous substances. For metals listed under CERCLA (including copper compounds), no reporting of releases of the solid form is required if the mean diameter of the pieces of the solid metal released is greater than 100 micrometers (0.004 inches) (Ref: Footnote after Table 302.4 in 40 CFR 302.4).

U.S. TSCA Inventory Status: The components of these products are listed on the TSCA Inventory.

U.S. Hazardous Air Pollutant (HAPs): The components of these products are not listed by the EPA under section 112(b) of the Clean Air Act as a 'HAP'.

U.S. Clean Air Act (CA 112r) Threshold Quantity (TQ): Not applicable.

15. REGULATORY INFORMATION (Continued)

UNITED STATES REGULATIONS (continued):

California Safe Drinking Water And Toxic Enforcement Act (Proposition 65): The Titanium Dioxide component, (airborne, unbound particles of respirable size) is on the California Proposition 65 Lists. If airborne particles of these products are generated, the following warning must be on packaging and labeling of these products: WARNING! These products contain a component known to the State of California to cause cancer. As a liquid, this warning is not expected to be required.

CANADIAN REGULATIONS:

Canadian DSL/NDSL Inventory Status: Components listed by CAS# in Section 3 (Composition and Information on Ingredients) are listed on the DSL Inventory.

Canadian WHMIS HPR 2015 Classification and Symbols: See Section 2 for classification and symbols under WHMIS GHS 2015.

EUROPEAN UNION REGULATIONS:

Safety, Health, and Environmental Regulations/Legislation Specific for the Product: Currently, there is no specific legislation pertaining to these products.

Chemical Safety Assessment: No data available. The chemical safety assessment is required for some substances according to European Union Regulation (EC) 1907/2006, Article 14.

AUSTRALIAN REGULATIONS:

Australian Inventory Of Chemical Substances (AICS) Status: Components listed by CAS# in Section 3 (Composition and Information on Ingredients) are listed on the AICS.

Hazardous Substances Information System (HSIS): Components listed by CAS# in Section 3 (Composition and Information on Ingredients) are not listed in the HSIS.

Standard for the Uniform Scheduling of Drugs and Poisons: Not applicable.

CHINESE REGULATIONS:

Chinese Inventory of Existing Chemical Substances Status: Components listed by CAS# in Section 3 (Composition and Information on Ingredients) are on the Chinese Inventory of Existing Chemical Substances (IECSC).

JAPANESE REGULATIONS:

Japanese ENCS Inventory: Components listed by CAS# in Section 3 (Composition and Information on Ingredients) are on the ENCS Inventory or are excepted.

Japanese Ministry of Economy, Trade, and Industry (METI) Status: Components listed by CAS# in Section 3 (Composition and Information on Ingredients) are not listed as Class I Specified Chemical Substances, Class II Specified Chemical Substances, or Designated Chemical Substances by the Japanese METI.

Poisonous and Deleterious Substances Control Law: Components listed by CAS# in Section 3 (Composition and Information on Ingredients) are not listed as a Specified Poisonous Substance under the Poisonous and Deleterious Substances Control Law.

KOREAN REGULATIONS:

Korean Existing Chemical Substances Inventory Status: Components are listed on the Korean Existing Chemicals List, as indicated in composition tables in Section 3 (Composition and Information on Ingredients).

NEW ZEALAND REGULATIONS:

New Zealand Inventory of Chemicals (NZIoC): Components listed by CAS# in Section 3 (Composition and Information on Ingredients) are on the NZIoC.

MEXICAN REGULATIONS:

Mexican Workplace Regulations (NOM-018-STPS-2000): These products are classified as hazardous.

TAIWANESE REGULATIONS:

Taiwan Existing Chemical Substances Inventory Status: Components listed by CAS# in Section 3 (Composition and Information on Ingredients) are listed on the Taiwan Existing Chemicals List.

16. OTHER INFORMATION

REVISION DETAILS: May 2017: Conversion of old MSDS to GHS compliant SDS. June 2018: Review and up-date entire SDS for most current regulations. April 2022: Review and revise entire SDS for current compliance of all jurisdictions of the SDS.

REFERENCES AND DATA SOURCES: Contact the supplier for information.

METHODS OF EVALUATING INFORMATION FOR THE PURPOSE OF CLASSIFICATION: Bridging principles were used to classify these products.

PREPARED BY: CHEMICAL SAFETY ASSOCIATES, Inc., PO Box 1961, Hilo, HI 96721, 808/969-4846

DYNAMIC

16. OTHER INFORMATION (Continued)

DEFINITIONS OF TERMS

A large number of abbreviations and acronyms appear on an SDS. Some of these, which are commonly used, include the following:

CAS #: This is the Chemical Abstract Service Number that uniquely identifies each constituent.

EXPOSURE LIMITS IN AIR:

CEILING LEVEL: The concentration that shall not be exceeded during any part of the working exposure.

DFG MAK Germ Cell Mutagen Categories: 1: Germ cell mutagens which have been shown to increase the mutant frequency in the progeny of exposed humans. 2: Germ cell mutagens which have been shown to increase the mutant frequency in the progeny of exposed mammals. 3A: Substances which have been shown to induce genetic damage in germ cells of human of animals, or which produce mutagenic effects in somatic cells of mammals *in vivo* and have been shown to reach the germ cells in an active form. 3B: Substances which are suspected of being germ cell mutagens because of their genotoxic effects in mammalian somatic cell *in vivo*; in exceptional cases, substances for which there are no *in vivo* data, but which are clearly mutagenic *in vitro* and structurally related to known *in vivo* mutagens. 4: Not applicable [Category 4 carcinogenic substances are those with non-genotoxic mechanisms of action. By definition, germ cell mutagens are genotoxic. Therefore, a Category 4 for germ cell mutagens cannot apply. At some time in the future, it is conceivable that a Category 4 could be established for genotoxic substances with primary targets other than DNA [e.g., purely aneugenic substances] if research results make this seem sensible.) 5: Germ cell mutagens, the potency of which is considered to be so low that, provided the MAK value is observed, their contribution to genetic risk for humans is expected not to be significant.

DFG MAK Pregnancy Risk Group Classification: **Group A:** A risk of damage to the developing embryo or fetus has been unequivocally demonstrated. Exposure of pregnant women can cause damage of the developing organism, even when MAK and BAT (Biological Tolerance Value for Working Materials) values are observed. **Group B:** Currently available information indicates a risk of damage to the developing embryo or fetus must be considered to be probable. Damage to the developing organism cannot be excluded when pregnant women are exposed, even when MAK and BAT values are observed. **Group C:** There is no reason to fear a risk of damage to the developing embryo or fetus when MAK and BAT values are observed. **Group D:** Classification in one of the groups A-C is not yet possible because, although the data available may indicate a trend, they are not sufficient for final evaluation.

IDLH-Immediately Dangerous to Life and Health: This level represents a concentration from which one can escape within 30-minutes without suffering escape-preventing or permanent injury.

LOQ: Limit of Quantitation.

MAK: Federal Republic of Germany Maximum Concentration Values in the workplace.

NE: Not Established. When no exposure guidelines are established, an entry of NE is made for reference.

NIC: Notice of Intended Change.

NIOSH CEILING: The exposure that shall not be exceeded during any part of the workday. If instantaneous monitoring is not feasible, the ceiling shall be assumed as a 15-minute TWA exposure (unless otherwise specified) that shall not be exceeded at any time during a workday.

NIOSH RELs: NIOSH's Recommended Exposure Limits.

PEL-Permissible Exposure Limit: OSHA's Permissible Exposure Limits. This exposure value means exactly the same as a TLV, except that it is enforceable by OSHA. The OSHA Permissible Exposure Limits are based in the 1989 PELs and the June, 1993 Air Contaminants Rule (Federal Register: 58: 35338-35351 and 58: 40191). Both the current PELs and the vacated PELs are indicated. The phrase, "Vacated 1989 PEL," is placed next to the PEL that was vacated by Court Order.

SKIN: Used when a there is a danger of cutaneous absorption.

STEL-Short Term Exposure Limit: Short Term Exposure Limit, usually a 15-minute time-weighted average (TWA) exposure that should not be exceeded at any time during a workday, even if the 8-hr TWA is within the TLV-TWA, PEL-TWA or REL-TWA.

TLV-Threshold Limit Value: An airborne concentration of a substance that represents conditions under which it is generally believed that nearly all workers may be repeatedly exposed without adverse effect. The duration must be considered, including the 8-hour.

TWA-Time Weighted Average: Time Weighted Average exposure concentration for a conventional 8-hr (TLV, PEL) or up to a 10-hr (REL) workday and a 40-hr workweek.

HAZARDOUS MATERIALS IDENTIFICATION SYSTEM HAZARD RATINGS: This rating system was developed by the National Paint and Coating Association and has been adopted by industry to identify the degree of chemical hazards.

HEALTH HAZARDS: 0 (Minimal Hazard): No significant health risk, irritation of skin or eyes not anticipated. *Skin Irritation:* Essentially non-irritating. PII or Draize = "0". *Eye Irritation:* Essentially non-irritating, or minimal effects which clear in < 24 hours [e.g., mechanical irritation]. Draize = "0". *Oral Toxicity LD_{50} Rat:* < 5000 mg/kg. *Dermal Toxicity LD_{50} Rat or Rabbit:* < 2000 mg/kg. *Inhalation Toxicity 4-hrs LC_{50} Rat:* < 20 mg/L); **1** (Slight Hazard): Minor reversible injury may occur; slightly or mildly irritating. *Skin Irritation:* Slightly or mildly irritating. *Eye Irritation:* Slightly or mildly irritating. *Oral Toxicity LD_{50} Rat:* > 500-5000 mg/kg. *Dermal Toxicity LD_{50} Rat or Rabbit:* > 1000-2000 mg/kg. *Inhalation Toxicity LC_{50} 4-hrs Rat:* > 2-20 mg/L);

HAZARDOUS MATERIALS IDENTIFICATION SYSTEM HAZARD RATINGS (continued):

HEALTH HAZARDS: (continued): 2 (Moderate Hazard): Temporary or transitory injury may occur. *Skin Irritation:* Moderately irritating; primary irritant; sensitizer. PII or Draize > 0, < 5. *Eye Irritation:* Moderately to severely irritating and/or corrosive; reversible corneal opacity; corneal involvement or irritation clearing in 8-21 days. Draize > 0, ≤ 25. *Oral Toxicity LD_{50} Rat:* > 50-500 mg/kg. *Dermal Toxicity LD_{50} Rat or Rabbit:* > 200-1000 mg/kg. **3** (Serious Hazard) [continued]. **3** (Serious Hazard): Major injury likely unless prompt action is taken and medical treatment is given; high level of toxicity; corrosive. *Skin Irritation:* Severely irritating and/or corrosive; may destroy dermal tissue, cause skin burns, dermal necrosis. PII or Draize > 5-8 with destruction of tissue. *Eye Irritation:* Corrosive, irreversible destruction of ocular tissue; corneal involvement or irritation persisting for more than 21 days. Draize > 80 with effects irreversible in 21 days. *Oral Toxicity LD_{50} Rat:* > 1-50 mg/kg. *Dermal Toxicity LD_{50} Rat or Rabbit:* > 20-200 mg/kg. *Inhalation Toxicity LC_{50} 4-hrs Rat:* > 0.05-0.5 mg/L); **4** (Severe Hazard: Life-threatening; major or permanent damage may result from single or repeated exposure. *Skin Irritation:* Not appropriate. Do not rate as a "4", based on skin irritation alone. *Eye Irritation:* Not appropriate. Do not rate as a "4", based on eye irritation alone. *Oral Toxicity LD_{50} Rat:* ≤ 1 mg/kg. *Dermal Toxicity LD_{50} Rat or Rabbit:* ≤ 20 mg/kg. *Inhalation Toxicity LC_{50} 4-hrs Rat:* ≤ 0.05 mg/L).

FLAMMABILITY HAZARD: 0 (Minimal Hazard-Materials that will not burn in air when exposure to a temperature of 815.5°C [1500°F] for a period of 5 minutes.); **1** (Slight Hazard-Materials that must be pre-heated before ignition can occur. Material require considerable pre-heating, under all ambient temperature conditions before ignition and combustion can occur, including: Materials that will burn in air when exposed to a temperature of 815.5°C (1500°F) for a period of 5 minutes or less; Liquids, solids and semisolids having a flash point at or above 93.3°C [200°F] [e.g. OSHA Class IIIB, or; Most ordinary combustible materials [e.g. wood, paper, etc.]); **2** (Moderate Hazard-Materials that must be moderately heated or exposed to relatively high ambient temperatures before ignition can occur. Materials in this degree would not, under normal conditions, form hazardous atmospheres in air, but under high ambient temperatures or moderate heating may release vapor in sufficient quantities to produce hazardous atmospheres in air, including: Liquids having a flash-point at or above 37.8°C [100°F]; Solid materials in the form of course dusts that may burn rapidly but that generally do not form explosive atmospheres; Solid materials in a fibrous or shredded form that may burn rapidly and create flash fire hazards (e.g. cotton, sisal, hemp; Solids and semisolids that readily give off flammable vapors.); **3** (Serious Hazard- Liquids and solids that can be ignited under almost all ambient temperature conditions. Materials in this degree produce hazardous atmospheres with air under almost all ambient temperatures, or, unaffected by ambient temperature, are readily ignited under almost all conditions, including: Liquids having a flash point below 22.8°C [73°F] and having a boiling point at or above 38°C [100°F] and below 37.8°C [100°F] [e.g. OSHA Class IB and IC]; Materials that on account of their physical form or environmental conditions can form explosive mixtures with air and are readily dispersed in air [e.g., dusts of combustible solids, mists or droplets of flammable liquids]; Materials that burn extremely rapidly, usually by reason of self-contained oxygen [e.g. dry nitrocellulose and many organic peroxides]); **4** (Severe Hazard-Materials that will rapidly or completely vaporize at atmospheric pressure and normal ambient temperature or that are readily dispersed in air, and which will burn readily, including: Flammable gases; Flammable cryogenic materials; Any liquid or gaseous material that is liquid while under pressure and has a flash point below 22.8°C [73°F] and a boiling point below 37.8°C [100°F] [e.g. OSHA Class IA; Material that ignite spontaneously when exposed to air at a temperature of 54.4°C [130°F] or below [e.g. pyrophoric]).

PHYSICAL HAZARD: 0 (*Water Reactivity:* Materials that do not react with water. *Organic Peroxides:* Materials that are normally stable, even under fire conditions and will not react with water. *Explosives:* Substances that are Non-Explosive. *Unstable Compressed Gases:* No Rating. *Pyrophorics:* No Rating. *Oxidizers:* No "0" rating allowed. *Unstable Reactives:* Substances that will not polymerize, decompose, condense or self-react.); **1** (*Water Reactivity:* Materials that change or decompose upon exposure to moisture. *Organic Peroxides:* Materials that are normally stable, but can become unstable at high temperatures and pressures. These materials may react with water, but will not release energy. *Explosives:* Division 1.5 & 1.6 substances that are very insensitive explosives or that do not have a mass explosion hazard. *Compressed Gases:* Pressure below OSHA definition. *Pyrophorics:* No Rating. *Oxidizers:* Packaging Group III; Solids: any material that in either concentration tested, exhibits a mean burning time less than or equal to the mean burning time of a 1:7 potassium bromate/cellulose mixture and the criteria for Packing Group I and II are not met. Liquids: any material that exhibits a mean pressure rise time less than or equal to the pressure rise time of a 1:1 nitric acid (65%)/cellulose mixture and the criteria for Packing Group I and II are not met. *Unstable Reactives:* Substances that may decompose, condense or self-react, but only under conditions of high temperature and/or pressure and have little or no potential to cause significant heat generation or explosive hazard. Substances that readily undergo hazardous polymerization in the absence of inhibitors.); **2** (*Water Reactivity:* Materials that may react violently with water. *Organic Peroxides:* Materials that, in themselves, are normally unstable and will readily undergo violent chemical change, but will not detonate. These materials may also react violently with water.

16. OTHER INFORMATION (Continued)

DEFINITIONS OF TERMS (Continued)

HAZARDOUS MATERIALS IDENTIFICATION SYSTEM HAZARD RATINGS (continued):

PHYSICAL HAZARD (continued): 2 (continued): *Explosives:* Division 1.4 – Explosive substances where the explosive effect are largely confined to the package and no projection of fragments of appreciable size or range are expected. An external fire must not cause virtually instantaneous explosion of almost the entire contents of the package. *Compressed Gases:* Pressurized and meet OSHA definition but < 514.7 psi absolute at 21.1°C (70°F) [500 psig]. *Pyrophorics:* No Rating. *Oxidizers:* Packing Group II Solids: any material that, either in concentration tested, exhibits a mean burning time of less than or equal to the mean burning time of a 2:3 potassium bromate/cellulose mixture and the criteria for Packing Group I are not met. Liquids: any material that exhibits a mean pressure rise time less than or equal to the pressure rise of a 1:1 aqueous sodium chlorate solution (40%)/cellulose mixture and the criteria for Packing Group I are not met. *Unstable Reactives:* Substances that may polymerize, decompose, condense, or self-react at ambient temperature and/or pressure, but have a low potential for significant heat generation or explosion. Substances that readily form peroxides upon exposure to air or oxygen at room temperature]; 3 (*Water Reactivity:* Materials that may form explosive reactions with water. *Organic Peroxides:* Materials that are capable of detonation or explosive reaction, but require a strong initiating source, or must be heated under confinement before initiation; or materials that react explosively with water. *Explosives:* Division 1.2 – Explosive substances that have a fire hazard and either a minor blast hazard or a minor projection hazard or both, but do not have a mass explosion hazard. *Compressed Gases:* Pressure ≥ 514.7 psi absolute at 21.1°C (70°F) [500 psig]. *Pyrophorics:* No Rating. *Oxidizers:* Packing Group I Solids: any material that, in either concentration tested, exhibits a mean burning time less than the mean burning time of a 3:2 potassium bromate/cellulose mixture. Liquids: Any material that spontaneously ignites when mixed with cellulose in a 1:1 ratio, or which exhibits a mean pressure rise time less than the pressure rise time of a 1:1 perchloric acid (50%)/cellulose mixture. *Unstable Reactives:* Substances that may polymerize, decompose, condense or self-react at ambient temperature and/or pressure and have a moderate potential to cause significant heat generation or explosion.]; 4 (*Water Reactivity:* Materials that react explosively with water without requiring heat or confinement. *Organic Peroxides:* Materials that are readily capable of detonation or explosive decomposition at normal temperature and pressures. *Explosives:* Division 1.1 & 1.2-explosive substances that have a mass explosion hazard or have a projection hazard. A mass explosion is one that affects almost the entire load instantaneously. *Compressed Gases:* No Rating. *Pyrophorics:* Add to the definition of Flammability "4". *Oxidizers:* No "4" rating. *Unstable Reactives:* Substances that may polymerize, decompose, condense or self-react at ambient temperature and/or pressure and have a high potential to cause significant heat generation or explosion.).

NATIONAL FIRE PROTECTION ASSOCIATION HAZARD RATINGS:

HEALTH HAZARD: 0 (materials that, under emergency conditions, would offer no hazard beyond that of ordinary combustible materials): Gases and vapors whose LC_{50} for acute inhalation toxicity is greater than 10,000 ppm. Dusts and mists whose LC_{50} for acute inhalation toxicity is greater than 200 mg/l. Materials whose LD_{50} for acute dermal toxicity is greater than 2000 mg/kg. Materials whose LD_{50} for acute oral toxicity is greater than 2000 mg/kg. Materials that are essentially non-irritating to the respiratory tract, eyes and skin. 1 (materials that, under emergency conditions, can cause significant irritation): Gases and vapors whose LC_{50} for acute inhalation toxicity is greater than 5,000 ppm but less than or equal to 10,000 ppm. Dusts and mists whose LC_{50} for acute inhalation toxicity is greater than 10 mg/l but less than or equal to 200 mg/l. Materials whose LD_{50} for acute dermal toxicity is greater than 1000 mg/kg but less than or equal to 2000 mg/kg. Materials whose LD_{50} for acute oral toxicity is greater than 500 mg/kg but less than or equal to 2000 mg/kg. Materials that cause slight to moderate irritation to the respiratory tract, eyes and skin. 3 (materials that, under emergency conditions, can cause serious or permanent injury): Gases and vapors whose LC_{50} for acute inhalation toxicity is greater than 1,000 ppm but less than or equal to 3,000 ppm. Dusts and mists whose LC_{50} for acute inhalation toxicity is greater than 0.5 mg/l but less than or equal to 2 mg/l. Materials whose LD_{50} for acute dermal toxicity is greater than 40 mg/kg but less than or equal to 200 mg/kg. Materials whose LD_{50} for acute oral toxicity is greater than 5 mg/kg but less than or equal to 50 mg/kg. Any liquid whose saturated vapor concentration at 20°C (68°F) is equal to or greater than one-fifth its LC_{50} for acute inhalation toxicity, if its LC_{50} is less than or equal to 3000 ppm and that does not meet the criteria for degree of hazard 4. Compressed liquefied gases with boiling points between -30°C (-22°F) and -55°C (-66.5°F) that cause frostbite and irreversible tissue damage. Materials that are respiratory irritants. Cryogenic gases that cause frostbite and irreversible tissue damage. Materials that are corrosive to the respiratory tract. Materials that are corrosive to the eyes or cause irreversible corneal opacity. Materials that are corrosive to the skin. 4 (materials that, under emergency conditions, can be lethal): Gases and vapors whose LC_{50} for acute inhalation toxicity less than or equal to 1,000 ppm. Dusts and mists whose LC_{50} for acute inhalation toxicity is less than or equal to 0.5 mg/l. Materials whose LD_{50} for acute dermal toxicity is less than or equal to 40 mg/kg. Materials whose LD_{50} for acute oral toxicity is less than or equal to 5 mg/kg. Any liquid whose saturated vapor concentration at 20°C (68°F) is equal to or greater than one-fifth its LC_{50} for acute inhalation toxicity, if its LC_{50} is less than or equal to 1000 ppm.

FLAMMABILITY HAZARD: 0 Materials that will not burn under typical fire conditions, including intrinsically noncombustible materials such as concrete, stone, and sand: Materials that will not burn in air when exposed to a temperature of 816°C (1500°F) for a period of 5 minutes in according with Annex D. 1 Materials that must be preheated before ignition can occur. Materials in this degree require considerable preheating, under all ambient temperature conditions, before ignition and combustion can occur: Materials that will burn in air when exposed to a temperature of 816°C (1500°F) for a period of 5 minutes in accordance with Annex D. Liquids, solids and semisolids having a flash point at or above 93.4°C (200°F) (e.g., Class IIIB liquids). Liquids with a flash point greater than 35°C (95°F) that do not sustain combustion when tested using the Method of Testing for Sustained Combustibility, per 49 CFR 173, Appendix H or the UN Recommendation on the Transport of Dangerous Goods, Model Regulations (current edition) and the related Manual of Tests and Criteria (current edition). Liquids with a flash point greater than 35°C (95°F) in a water-miscible solution or dispersion with a water non-combustible liquid/solid content of more than 85 percent by weight. Liquids that have no fire point when tested by ASTM D 92 Standard Test Method for Flash and Fire Points by Cleveland Open Cup, up to a boiling point of the liquid or up to a temperature at which the sample being tested shows an obvious physical change. Combustible pellets with a representative diameter of greater than 2 mm (10 mesh). Solids containing greater than 0.5 percent by weight of a flammable or combustible solvent are rated by the closed-up flash point of the solvent. Most ordinary combustible materials. 2 Materials that must be moderately heated or exposed to relatively high ambient temperatures before ignition can occur. Materials in this degree would not under normal conditions form hazardous atmospheres with air, but under high ambient temperatures or under moderate heating could release vapor in sufficient quantities to produce hazardous atmospheres with air: Liquids having a flash point at or above 37.8°C (100°F) and below 93.4°C (200°F) (e.g., Class II and Class IIIA liquids.) Solid materials in the form of powders or coarse dusts of representative diameter between 420 microns (40 mesh) and 2 mm (10 mesh) that burn rapidly but that generally do not form explosive mixtures in air. Solid materials in fibrous or shredded form that burn rapidly and create flash fire hazards, such as cotton, sisal and hemp. Solids and semisolids that readily give off flammable vapors. Solids containing greater than 0.5 percent by weight of a flammable or combustible solvent are rated by the closed cup flash point of the solvent. 3 Liquids and solids that can be ignited under almost all ambient temperature conditions. Materials in this degree produce hazardous atmospheres with air under almost all ambient temperatures or, though unaffected by ambient temperatures, are readily ignited under almost all conditions: Liquids having a flash point below 22.8°C (73°F) and having a boiling point at or above 37.8°C (100°F) and those liquids having a flash point at or above 22.8°C (73°F) and below 37.8°C (100°F) and below 37.8°C (100°F) (e.g., Class IB and IC liquids). Materials that, on account of their physical form or environmental conditions, can form explosive mixtures with air and are readily dispersed in air. Flammable or combustible dusts with a representative diameter less than 420 microns (40 mesh). Materials that burn with extreme rapidity, usually by reason of self-contained oxygen (e.g., dry nitrocellulose and many organic peroxides). Solids containing greater than 0.5 percent by weight of a flammable or combustible solvent are rated by the closed cup flash point of the solvent. 4 Materials that will rapidly or completely vaporize at atmospheric pressure and normal ambient temperature or that are readily dispersed in air and will burn readily: Flammable gases. Flammable cryogenic materials. Any liquid or gaseous materials that is liquid while under pressure and has a flash point below 22.8°C (73°F) and a boiling point below 37.8°C (100°F) (e.g., Class IA liquids). Materials that ignite when exposed to air, Solids containing greater than 0.5 percent by weight of a flammable or combustible solvent are rated by the closed cup flash point of the solvent.

NATIONAL FIRE PROTECTION ASSOCIATION HAZARD RATINGS (continued):

INSTABILITY HAZARD: 0 Materials that in themselves are normally stable, even under fire conditions: Materials that have an estimated instantaneous power density (product of heat of reaction and reaction rate) at 250°C (482°F) below 0.01 W/mL. Materials that do not exhibit an exotherm at temperatures less than or equal to 500°C (932°F) when tested by differential scanning calorimetry. 1 Materials that in themselves are normally stable, but that can become unstable at elevated temperatures and pressures: Materials that have an estimated instantaneous power density (product of heat of reaction and reaction rate) at 250°C (482°F) at or above 0.01 W/mL and below 10 W/mL. 2 Materials that readily undergo violent chemical change at elevated temperatures and pressures: Materials that have an estimated instantaneous power density (product of heat of reaction and reaction rate) at 250°C (482°F) at or above 10 W/mL and below 100W/mL. 3 Materials that in themselves are capable of detonation or explosive decomposition or explosive reaction, but that require a strong initiating source or that must be heated under confinement before initiation: Materials that have an estimated instantaneous power density (product of heat of reaction and reaction rate) at 250°C (482°F) at or above 100 W/mL and below 1000 W/mL. Materials that are sensitive to thermal or mechanical shock at elevated temperatures and pressures. 4 Materials that in themselves are readily capable of detonation or explosive decomposition or explosive reaction at normal temperatures and pressures: Materials that have an estimated instantaneous power density (product of heat of reaction and reaction rate) at 250°C (482°F) of 1000 W/mL or greater. Materials that are sensitive to localized thermal or mechanical shock at normal temperatures and pressures.

FLAMMABILITY LIMITS IN AIR:

Much of the information related to fire and explosion is derived from the **National Fire Protection Association (NFPA).** Flash Point - Minimum temperature at which a liquid gives off sufficient vapors to form an ignitable mixture with air. Autoignition Temperature: The minimum temperature required to initiate combustion in air with no other source of ignition. LEL - the lowest percent of vapor in air, by volume, that will explode or ignite in the presence of an ignition source. UEL - the highest percent of vapor in air, by volume, that will explode or ignite in the presence of an ignition source.

TOXICOLOGICAL INFORMATION:

Human and Animal Toxicology: Possible health hazards as derived from human data, animal studies, or from the results of studies with similar compounds are presented. Definitions of some terms used in this section are: LD_{Lo} - Lethal Dose (solids & liquids) which kills 50% of the exposed animals; LC_{Lo} - Lethal Concentration (gases) which kills 50% of the exposed animals; **ppm:** concentration expressed in parts of material per million parts of air or water; mg/m^3 concentration expressed in weight of substance per volume of air; **mg/kg** quantity of material, by weight, administered to a test subject, based on their body weight in kg. Other measures of toxicity include **TDLo**, the lowest dose to cause a symptom and **TCLo** the lowest concentration to cause a symptom; TDo, LDLo, and LDo, or TC, TCo, LCLo, and LCo, the lowest dose (or concentration) to cause lethal or toxic effects.

Cancer Information: The sources are: **IARC** - the International Agency for Research on Cancer; **NTP** - the National Toxicology Program; **RTECS** - the Registry of Toxic Effects of Chemical Substances, **OSHA** and **CAL/OSHA**. IARC and NTP rate chemicals on a scale of decreasing potential to cause human cancer with rankings from 1 to 4. Subrankings (2A, 2B, etc.) are also used. **Other Information: BEI** - ACGIH Biological Exposure Indices, represent the levels of determinants which are most likely to be observed in specimens collected from a healthy worker who has been exposed to chemicals to the same extent as a worker with inhalation exposure to the TLV.

REPRODUCTIVE TOXICITY INFORMATION:

A mutagen is a chemical that causes permanent changes to genetic material (DNA) such that the changes will propagate through generational lines. An embryotoxin is a chemical that causes damage to a developing embryo (e.g., within the first eight weeks of pregnancy in humans), but the damage does not propagate across generational lines. A teratogen is a chemical that causes damage to a developing fetus, but the damage does not propagate across generational lines. A reproductive toxin is any substance that interferes in any way with the reproductive process.

ECOLOGICAL INFORMATION:

EC is the effect concentration in water. **BCF** = Bioconcentration Factor, which is used to determine if a substance will concentrate in lifeforms which consume contaminated plant or animal matter. TL_m = median threshold limit; Coefficient of Oil/Water Distribution is represented by log K_{ow} or log K_{oc} and is used to assess a substance's behavior in the environment.

REGULATORY INFORMATION:

U.S. and CANADA:

ACGIH: American Conference of Governmental Industrial Hygienists, a professional association which establishes exposure limits.

This section explains the impact of various laws and regulations on the material. **EPA** is the U.S. Environmental Protection Agency. **NIOSH** is the National Institute of Occupational Safety and Health, which is the research arm of the U.S. Occupational Safety and Health Administration (**OSHA**). **WHMIS** is the Canadian Workplace Hazardous Materials Information System. **DOT** and **TC** are the U.S. Department of Transportation and the Transport Canada, respectively. Superfund Amendments and Reauthorization Act (**SARA**); the Canadian Domestic/Non-Domestic Substances List (**DSL/NDSL**); the U.S. Toxic Substance Control Act (**TSCA**); Marine Pollutant status according to the **DOT**; the Comprehensive Environmental Response, Compensation, and Liability Act (**CERCLA** or **Superfund**); and various state regulations. This section also includes information on the precautionary warnings which appear on the material's package label. **OSHA** - U.S. Occupational Safety and Health Administration.

EUROPEAN and INTERNATIONAL:

The DFG: This is the Federal Republic of Germany's Occupation Health Agency, similar to the U.S. OSHA. **EU** is the European Union (formerly known as the EEC, European Economic Community). **EINECS:** This is the European Inventory of Now-Existing Chemical Substances. The **ARD** is the European Agreement Concerning the International Carriage of Dangerous Goods by Road and the **RID** are the International Regulations Concerning the Carriage of Dangerous Goods by Rail. **AICS** is the Australian Inventory of Chemical Substances. **METI** is the Japanese Ministry of Economy, Trade, and Industry.

DYNAMIC
Color Co.

64503-5111

SAFETY DATA SHEET

Prepared to U.S. OSHA, CMA, ANSI, Canadian WHMIS 2015 GHS, European Union CLP EC 1272/2008 & the 8th ATP 2016/918, the Korean MoEL (Public Notice 2016-19), Singapore SS586 Standard – Parts 2 & 3, Chinese GB/T 16483-2008 & GB/T 17519-2013, New Zealand Hazardous Substances (Hazard Classification) Notice 2020, *Australian WorkSafe* GHS 7, 2022, *Japanese* JIS Z 7252: 2019 (Classification of chemicals) and JIS Z 7253: 2019 (Communication of information on danger of chemicals – labeling and safety data sheets), *and the Global Harmonization Standard*

1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY UNDERTAKING

PRODUCT IDENTIFIER USED ON LABEL:

Product Identifier:	**TATTOO PAINT No. TRQ**
Other Means of Identification:	Not Applicable

RECOMMENDED USE of the PRODUCT and RESTRICTIONS on USE:

Recommended Use:	Tissue Staining Paint
Restrictions on Use:	Other than Recommended Use

SHIPPING CLASSIFICATION:

U.N. Number:	None Allocated
U.N. Dangerous Goods Class/Subsidiary Risk:	None Allocated
HAZCHEM Code (Australia):	None Allocated
Poisons Schedule Number (Australia):	None Allocated

NAME, ADDRESS and TELEPHONE NUMBER of CHEMICAL MANUFACTURER, IMPORTER or OTHER RESPONSIBLE PARTY:

U.S. Supplier/Manufacturer's Name:	**DYNAMIC COLOR COMPANY**
Address:	PO Box 21083 Fort Lauderdale, FL, 33335 USA
Information Phone:	+ 1-954-462-0261 9 a.m. to 4 p.m. (U.S. East Coast Time Zone)
Emergency Phone:	1-800-233-8332 9 a.m. to 4 p.m. (U.S. East Coast Time Zone) (from U.S., Canada, Puerto Rico, U.S. Virgin Islands)
Email:	sales@dynamiccolor.com
Date of Preparation:	April 12, 2001
Date of Revision:	April 7, 2022

2. HAZARD IDENTIFICATION

GLOBAL HARMONIZATION LABELING AND CLASSIFICATION: Classified in accordance with Global Harmonization Standard under U.S. OSHA Hazard Communication Standard, Canadian *WHMIS 2015 GHS*, European CLP Regulation (EC) 1272/2008, Japanese JIS Z 7252: 2019 (Classification of chemicals) and JIS Z 7253: 2019 (Communication of information on danger of chemicals – labeling and safety data sheets), New Zealand Hazardous Substances (Hazard Classification) Notice 2020, Australian WorkSafe GHS 7, 2022, Singapore SS586, Chinese GHS standard. Korean MoEL classification is given separately.

Classification: Eye Irritation Category 2A, Specific Target Organs Toxicity (Inhalation-Irritation) Single Exposure Category 3

Signal Word: Warning

Hazard Statements: H319: Causes serious eye irritation. H335: May cause respiratory irritation.

Precautionary Statements:

Prevention: P261: Avoid breathing mists or sprays. P264 + P265: Wash hands and other contamination areas thoroughly after handling. Do not touch eyes.P270: Do not eat, drink or smoke when using this product. P271: Use only outdoors or in a well-ventilated area. P280: Wear protective gloves, protective clothing, eye protection, face protection.

Response: P305 + P351 + P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. P337 + P317: If eye irritation persists: Get medical help. P304 + P340: If inhaled, remove victim to fresh air and keep at rest in a position comfortable for breathing. P319: Get medical help if you feel unwell. P321: Specific treatment (remove from exposure and treat symptoms). Refer to Safety Data Sheet for more information.

Storage: P403 + P233: Store in a well-ventilated place. Keep container tightly closed. P405: Store locked up.

Disposal: P501: Dispose of contents/containers in accordance with all local, regional, national and international regulations.

Hazard Symbols/Pictograms: GHS07

KOREAN MoEL (Notice 2016-19) LABELING AND CLASSIFICATION: Classified in accordance with MoEL Notice 2016-19. Under the MoEL regulation, no differences in classification are applicable.

PERCENT OF UNKNOWN ACUTE TOXICITY: Unknown toxicity by inhalation is 78%. Unknown dermal toxicity is 88%. Unknown oral toxicity is 88%

2. HAZARD IDENTIFICATION (Continued)

EMERGENCY OVERVIEW: Product Description: This product is a turquoise liquid that has a mild odor. **Health Hazards:** The primary health hazard associated with this product is the potential for mild irritation of contaminated tissue. Eye contact may cause more serious irritation. The Titanium Dioxide component is a suspect carcinogen by inhalation of respirable particles. Due to the liquid form of this product, this hazard is not expected to be significant. **Flammability Hazards:** This product is not flammable. If involved in a fire, the product may decompose to produce carbon, copper, metallic, nitrogen and titanium oxides, chlorine, formaldehyde, hydrogen chloride. **Reactivity Hazards:** This product is not reactive. **Environmental Hazards:** Not tested. This product may have adverse effects when released into the environment. **Emergency Recommendations:** Emergency responders must wear the personal protective equipment suitable for the situation to which they are responding.

3. COMPOSITION and INFORMATION ON INGREDIENTS

Chemical Name	CAS #	European EINECS # / Index #	Japanese MITI/ENC #	Korean ECL #	New Zealand NZIoC #	Chinese IECSC Inventory	Taiwan NESCI ECS Inventory	Australian AICS	% w/w	LABEL ELEMENTS GHS under U.S. OSHA, Canadian WHMIS HPR-GHS & EU Classification (1272/2008), Japanese, New Zealand, Taiwan, Chinese and Korean Regulations Korean ISHA Classification Hazard Statements
Titanium Dioxide (C.I. White 7)	13463-67-7	236-675-7 No Index #	1-558	KE-33900	May be used under an appropriate group standard	Listed	Listed	Listed	10%	GHS Under All Countries Classification: Not classified Self-Classification Classification: Carcinogenic Cat. 2 Hazard Statements: H351: Suspected of causing cancer. Under U.S. OSHA, Canadian WHMIS HPR-2015 only Classification: Combustible Dust Hazard
Isopropyl Alcohol	67-63-0	200-661-7 603-117-00-0	2-207	KE-29363	HSR001180	Listed	Listed	Listed	10%	GHS Under All Countries Harmonized Classification: Flammable Liquid Cat. 2, Eye Irritation Cat. 2A, Specific Target Organ Toxicity (Inhalation, Ingestion-Narcotic Effects) Single Exposure Cat. 3 Hazard Statements: H226: Flammable liquid and vapor. H319: Causes serious eye irritation. H336: May cause drowsiness or dizziness.
Proprietary Green Pigment					May be used under an appropriate group standard	Listed	Listed	Listed	2%	Classification: Not Classified Under U.S. OSHA, Canadian WHMIS HPR-2015 only Classification: Combustible Dust Hazard
Water	7732-18-5	231-791-2 No Index #	Not Identified in the Listing	KE-35400	Excepted	Listed	Listed	Listed	Balance	Classification: Not Classified

See Section 15 for information on other country inventory listing of components, as applicable
The specific chemical identity and/or exact percentage (concentration) of composition has been withheld as a trade secret.

4. FIRST-AID MEASURES

PROTECTION OF FIRST AID RESPONDERS: Rescuers should be taken for medical attention, if necessary. Only trained personnel should administer supplemental oxygen and/or cardio-pulmonary resuscitation, if necessary.

DESCRIPTION OF FIRST AID MEASURES: Victim(s) must be taken for medical attention. Take copy of label and MSDS to physician or other health professional with victim(s). Remove victim(s) to fresh air, as quickly as possible.

Skin Exposure: If this product contaminates the skin and adverse effect occurs, begin decontamination with running water. Minimum flushing is for 20 minutes. The contaminated individual must seek medical attention if any adverse effects occur after flushing.

GHS Precautionary Statements for Skin Exposure: None applicable.

Eye Exposure: If this product enters the eyes, open contaminated individual's eyes while under gently running water. Use sufficient force to open eyelids. Have contaminated individual "roll" eyes. Minimum flushing is for 20 minutes. Contaminated individual must seek medical attention if adverse effect continues after flushing.

GHS Precautionary Statements for Eye Exposure: P305 + P351 + P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. P337 + P317: If eye irritation persists: Get medical attention.

Inhalation: If aerosols are inhaled and adverse effect occurs, remove victim to fresh air. The contaminated individual must seek medical attention if any adverse effects occur.

GHS Precautionary Statements for Inhalation Exposure: P304 + P340: If inhaled, remove victim to fresh air and keep at rest in a position comfortable for breathing. P319: Get medical help if you feel unwell.

Ingestion: If swallowed, CALL PHYSICIAN OR POISON CONTROL CENTER FOR MOST CURRENT INFORMATION. If professional advice is not available, do not induce vomiting. Never induce vomiting or give diluents (milk or water) to someone who is unconscious, having convulsions, or unable to swallow. If victim is convulsing, maintain an open airway and obtain immediate medical attention.

GHS Precautionary Statements for Ingestion Exposure: None applicable.

4. FIRST-AID MEASURES (Continued)

MOST IMPORTANT SYMPTOMS and EFFECTS, WHETHER ACUTE OR DELAYED: See Sections 2 (Hazard Information) and 11 (Toxicological Information) for information.

Acute:

Symptoms/Effects: May cause irritation by contact with the skin, eyes and respiratory system. All potential effects are dependent on concentration and duration of exposure.

Symptoms/Effects After Inhalation: EXPOSURE TO HIGH CONCENTRATIONS: Coughing, or respiratory irritation.

Symptoms/Effects After Skin Contact: Mild irritation.

Symptoms/Effects After Eye Contact: Moderate irritation of eye tissue.

Symptoms/Effects After Ingestion: Irritation of digestive system.

Chronic:

Symptoms/Effects After Skin Contact: Dermatitis (dry, red skin).

Symptoms/Effects After Eye Contact: None known.

Symptoms/Effects After Accidental Injection: None known.

Symptoms/Effects After Inhalation: None known.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: Skin or respiratory conditions may be aggravated by exposure to this product.

INDICATION OF IMMEDIATE MEDICAL ATTENTION AND SPECIAL TREATMENT IF NEEDED: Treat symptoms and eliminate exposure.

COMPLIANCE WITH SAFE WORK AUSTRALIA MODEL CODE FIRST AID IN THE WORKPLACE CODE OF PRACTICE: Compliance with all requirements should be in place under Section 3 (First Aid Equipment, Facilities and Training) should be in place.

5. FIRE-FIGHTING MEASURES

FLASH POINT: Not flammable. **AUTOIGNITION TEMPERATURE:** Not applicable.

FLAMMABLE LIMITS (in air by volume, %): Not applicable.

FIRE EXTINGUISHING MEDIA: Unless incompatibilities exist for surrounding materials, carbon dioxide, water spray, 'ABC' type chemical extinguishers, foam, dry chemical and halon extinguishers can be used to fight fires involving this product.

UNSUITABLE FIRE EXTINGUISHING MEDIA: None known.

SPECIAL HAZARDS ARISING FROM THE SUBSTANCE: When involved in a fire, this material may decompose and produce irritating vapors and toxic gases (e.g., carbon, copper, metallic, nitrogen and titanium oxides, chlorine, formaldehyde, hydrogen chloride).

Explosion Sensitivity to Mechanical Impact or Static Discharge: Not sensitive.

SPECIAL PROTECTIVE ACTIONS FOR FIRE-FIGHTERS: Incipient fire responders should wear eye protection. Structural firefighters must wear Self-Contained Breathing Apparatus and full protective equipment. Due to the presence of pigment, the runoff water from this product can discolor contaminated objects. If possible, prevent runoff water from entering storm drains, bodies of water, or other environmentally sensitive areas. If necessary, rinse fire-response equipment with soapy water before returning it to service.

GHS Statements for Fire Response: None applicable.

Australian HazChem Code: Not applicable.

6. ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS AND EMERGENCY PROCEDURES: Uncontrolled releases should be responded to by trained personnel using pre-planned procedures. Proper protective equipment should be used. Call CHEMTREC (1-800-424-9300) for emergency assistance. Or if in Canada, call CANUTEC (613-996-6666). The atmosphere must at least 19.5 percent Oxygen before non-emergency personnel can be allowed in the area without Self-Contained Breathing Apparatus and fire protection.

PERSONAL PROTECTIVE EQUIPMENT: Proper protective equipment should be used.

Small Spills: Wear rubber gloves, splash goggles, and appropriate body protection.

Large Spills: Minimum Personal Protective Equipment should be rubber gloves, rubber boots, face shield, and Tyvek suit. Minimum level of personal protective equipment for releases in which the level of oxygen is less than 19.5% or is unknown must be **Level B: triple-gloves (rubber gloves and nitrile gloves over latex gloves), chemical resistant suit and boots, hard hat, and Self-Contained Breathing Apparatus.**

METHODS FOR CLEAN-UP AND CONTAINMENT:

Small Spills: Carefully absorb spill using polypads or other non-reactive absorbent. Place spilled material in appropriate container for disposal, sealing tightly. Remove all residue before decontamination of spill area.

Large Spills: Access to the spill area should be restricted. For large spills, dike or otherwise contain spill and absorb spill with polypads or other non-reactive absorbent material.

All Spills: Place all spill residue in a double plastic bag or other containment and seal. Decontaminate the area thoroughly. Do not mix with wastes from other materials. Dispose of in accordance with applicable Federal, State, and local procedures (see Section 13, Disposal Considerations). For spills on water, contain, minimize dispersion and collect. Dispose of recovered material and report spill per regulatory requirements.

ENVIRONMENTAL PRECAUTIONS: Avoid release to the environment. Run-off water may be contaminated by other materials and should be contained to prevent possible environmental damage.

REFERENCE TO OTHER SECTIONS: See information in Section 8 (Exposure Controls – Personal Protection) and Section 13 (Disposal Considerations) for additional information.

7. HANDLING and STORAGE

PRECAUTIONS FOR SAFE HANDLING: As with all chemicals, avoid getting this product ON YOU or IN YOU. Wash thoroughly after handling this product. Do not eat, drink, smoke, or apply cosmetics while handling this product. Avoid breathing aerosols from the product. Keep away from incompatible materials (see Section 10, Stability and Reactivity). Containers of this product must be properly labeled. Use in a well-ventilated location. Remove contaminated clothing.

GHS Statements for Safe Handling: P261: Avoid breathing mists or sprays. P264 + P265: Wash hands and other contamination areas thoroughly after handling. Do not touch eyes.P270: Do not eat, drink or smoke when using this product. P271: Use only outdoors or in a well-ventilated area. P280: Wear protective gloves, protective clothing, eye protection, face protection.

CONDITIONS FOR SAFE STORAGE and INCOMPATIBILITIES: Keep container tightly closed when not in use. Store containers in a cool, dry location, away from direct sunlight, sources of intense heat, or where freezing is possible. Material should be stored in secondary containers or in a diked area, as appropriate. Inspect all incoming containers before storage, to ensure containers are properly labeled and not damaged. Have appropriate extinguishing equipment in the storage area (such as sprinkler systems or portable fire extinguishers). Empty containers may contain residual product; therefore, empty containers should be handled with care. May be incompatible with water reactive materials and strong oxidizers.

GHS Statements for Safe Storage: P403 + P233: Store in a well-ventilated place. Keep container tightly closed. P405: Store locked up.

SPECIFIC USE(S): This product is for use as a skin staining paint. Follow all industry standards for use of this product.

PROTECTIVE PRACTICES DURING MAINTENANCE OF CONTAMINATED EQUIPMENT: Follow practices indicated in Section 6 (Accidental Release Measures). Make certain that application equipment is locked and tagged-out safely. Always use this product in areas where adequate ventilation is provided. Decontaminate equipment thoroughly, before maintenance begins. Collect all rinsates and dispose of according to applicable Federal, State, or local procedures, or applicable standards.

8. EXPOSURE CONTROLS - PERSONAL PROTECTION

EXPOSURE LIMITS/CONTROL PARAMETERS:

Ventilation and Engineering Controls: Use with adequate ventilation to ensure exposure levels are maintained below the limits provided in this section. Use local exhaust ventilation. Normal office ventilation conforming to the American Society of Heating, Refrigerating, and Air Conditioning Engineers (ASHRAE) Standards is adequate under normal circumstances of use. Persons using this material should consult a qualified Ventilation Engineer and/or Industrial Hygienist if concerns about exposure arise. If necessary, refer to Australian National Code of Practice for the Control of Workplace Hazardous Substances [NOHSC: 2007 (1994)] for further information.

U.S. Workplace Exposure Limits/Control Parameters:

CHEMICAL NAME	CAS #	EXPOSURE LIMITS IN AIR							
		ACGIH-TLVs		OSHA-PELs		NIOSH-RELs		NIOSH	OTHER
		TWA mg/m^3	STEL mg/m^3	TWA mg/m^3	STEL mg/m^3	TWA mg/m^3	STEL mg/m^3	IDLH mg/m^3	mg/m^3
C.I. White 7 (Titanium Dioxide)	13463-67-7	0.2 (resp. fract.) finescale particles	NE	15 (total dust); 10 (vacated 1989 PEL)	NE	See Pocket Guide App. A		5000	DFG MAK Pregnancy Risk Classification: C
Proprietary Green Pigment Exposure limits given are for Copper dusts, fumes & mists as Cu)		1 (dusts, mists) 0.2 (fume)	NE	1 (dusts, mists) 0.1 (fume)	NE	1 (dusts, mists) 0.1 (fume)	NE	100 (as Cu)	NE
Isopropyl Alcohol	67-63-0	492	984	980	500 ppm (vacated 1989 PEL)	980	1225	2000 ppm (based on LEL)	DFG MAK: TWA = 500 ppm PEAK = 2•MAK, 15 min., average value, 1-hr interval, 4 per shift DFG MAK Pregnancy Risk Classification: C

NE = Not Established.

Australian Hazardous Chemical Information System (HMIS) Exposure Standards:

CHEMICAL NAME	CAS #	EXPOSURE STANDARDS				
		TWA ppm	TWA mg/m^3	STEL ppm	STEL mg/m^3	Notes
Proprietary Green Pigment Exposure limits given are for Copper dusts, fumes & mists as Cu)		NE	1 (dusts & mists) 0.2 (fume)	NE	NE	Not Applicable
C.I. White 7 (Titanium Dioxide)	13463-67-7	NE	10	NE	NE	(1) This value is for inhalable dust containing no asbestos and < 1% crystalline silica.
Isopropyl Alcohol	67-63-0	400	983	500	1230	Not Applicable

NE = Not Established.

8. EXPOSURE CONTROLS - PERSONAL PROTECTION (Continued)

EXPOSURE LIMITS/CONTROL PARAMETERS (continued):

UK Minimum Exposure Limits:

CHEMICAL NAME	CAS #	WORKPLACE EXPOSURE LIMIT				
		Long-Term Exposure Limit (8-Hrs TWA Reference Period)		Short-Term Exposure Limit (15-minute Reference Period)		Comments
		ppm	$mg.m^{-3}$	ppm	$mg.m^{-3}$	The Carcin, Sen and Skin notations are not exhaustive. Notations have been applied to substances identified in IOELV Directives
Proprietary Green Pigment Exposure limits given are for Copper dusts, fumes & mists as Cu) copper fumes, as Cu copper dusts & mists, as Cu		NE	 0.2 1	NE	 NE 2	NE
C.I. Pigment White 7 (Titanium Dioxide)	14363-67-7	NE	10 (total inhalable) 4 (respirable)	NE	7	NE
Isopropyl Alcohol	67-63-0	400	999	500	1250	NE

NE = Not Established.

Workplace Exposure Standards (New Zealand): Refer to the Hazardous Substances (Classes 6, 8, and 9 Controls) Regulations 2001 (Regulations 29-30).

CHEMICAL NAME	CAS #	WORKPLACE EXPOSURE STANDARDS				
		TWA ppm	TWA mg/m^{-3}	STEL ppm	STEL mg/m^{-3}	Notes
Proprietary Green Pigment copper dust & mists, as Cu copper fume, as Cu		NE	 0.01 0.01	NE	 NE 2	NE
C.I. Pigment White 7 (Titanium Dioxide)	14363-67-7	NE	10	NE	NE	Not Applicable
Isopropyl Alcohol	67-63-0	400	983	500	1230	Not Applicable

Exposure Standards Outside the Workplace (New Zealand): Currently, there are no other exposure limits, such as TELS and EELS (See Section 12 [Ecological Information] for EEL information) established for components of this product.

Other International Occupational Exposure Limits: Currently, the following international limits established for components of this product.

Proprietary Green Pigment:

	Limit Value - Eight Hours	Limit Value - Short Term
Austria	1 mg/m^3 (inhalable aerosol) (dusts & mists); 0.1 mg/m^3 (fume, respirable fraction)	0.4 mg/m^3
Belgium	1 mg/m^3 (dusts & mists); 0.2 mg/m^3 (fume, respirable fraction)	
Canada (Ontario)	1 mg/m^3 (dusts & mists); 0.2 mg/m^3 (fume, respirable fraction)	
Canada (Québec)	1 mg/m^3 (dusts & mists); 0.2 mg/m^3 (fume, respirable fraction)	
Denmark	1 mg/m^3 (dusts & mists); 0.1 mg/m^3 (fume, respirable fraction)	2 mg/m^3 (dusts & mists); 0.2 mg/m^3 (fume, respirable fraction)
Finland	0.02 mg/m^3 (dusts & mists) (1)(2)	
France	1 mg/m^3 (dusts & mists); 0.2 mg/m^3 (fume, respirable fraction)	2 mg/m^3 (dusts & mists)
Germany (DFG)	0.01 mg/m^3 (dusts & mists)(1); 0.01 mg/m^3 (fume, respirable fraction)	0.02 mg/m^3 (dusts & mists)(1)(2); 0.02 mg/m^3 (fume, respirable fraction)(1)
Hungary	1 mg/m^3 (dusts & mists); 0.1 mg/m^3 (fume, respirable fraction)	4 mg/m^3 (dusts & mists); 0.4 mg/m^3 (fume, respirable fraction)
Ireland	1 mg/m^3; 0.2 mg/m^3 (fume, respirable fraction)(1) 1 mg/m^3 (fume, respirable fraction)(2)	
Norway	0.1 mg/m^3 (fume, respirable fraction)(1) 1 mg/m^3 (fume, respirable fraction)(2)	
People's Republic of China	1 mg/m^3 (dusts & mists); 0.2 mg/m^3 (fume, respirable fraction)	
Poland	1 mg/m^3 (dusts & mists); 0.1 mg/m^3 (fume, respirable fraction)	2 mg/m^3 (dusts & mists); 0.3 mg/m^3 (fume, respirable fraction)
Romania	0.5 mg/m^3 (dusts & mists); 0.1 mg/m^3 (fume, respirable fraction)	1.5 mg/m^3 (dusts & mists)(1); 0.3 mg/m^3 (fume, respirable fraction)
Singapore	1 mg/m^3 (dusts & mists); 0.2 mg/m^3 (fume, respirable fraction)	
South Korea	1 mg/m^3 (dusts & mists); 0.2 mg/m^3 (fume, respirable fraction)	2 mg/m^3 (dusts & mists)
Spain	1 mg/m^3 (dusts & mists); 0.1 mg/m^3 (fume, respirable fraction)	
Sweden	1 mg/m^3 (dusts & mists); 0.2 mg/m^3 (fume, respirable fraction)	
Switzerland	0.1 mg/m^3 (dusts & mists)(inhalable aerosol)	0.2 mg/m^3 (dusts & mists)(inhalable aerosol)
The Netherlands	0.1 mg/m^3 (dusts & mists)(inhalable aerosol)	
	Remarks	
Finland	Dusts & Mists:(1) Calculated as Cu. (2) Respirable fraction.	
Germany (DFG)	Dusts & Mists: (1) 15 minutes average value. Fume: (1) Respirable fraction. (2) 15minutes average value.	
Ireland	Dusts & Mists: (1) Fume. (2) Inhalable fraction and vapor.	
Norway	Dusts & Mists: (1) Fume. (2) Dust	
Romania	Dusts & Mists: (1) 15 minutes average value. Fume: (1) 15 minutes average value.	

C.I. Pigment White 7 (Titanium Dioxide):

	Limit Value - Eight Hours	Limit Value - Short Term
Belgium	10 mg/m^3 (1)	
Canada (Ontario)	10 mg/m^3	
Canada (Québec)	10 mg/m^3 (1)	
Denmark	6 mg/m^3 (total dust)	12 mg/m^3 (total dust)
France	11 mg/m^3 (inhalable aerosol)	
Germany (DFG)	0.3 mg/m^3 (1)(2)	2.4mg/m^3 (1)(2)(3)

Ireland	10 mg/m³ (1) 4 mg/m³ (2)
Japan (JSOH)	0.3 mg/m³ (1)

8. EXPOSURE CONTROLS - PERSONAL PROTECTION (Continued)

Other International Occupational Exposure Limits (continued):

C.I. Pigment White 7 (Titanium Dioxide) [continued]:

	Limit Value - Eight Hours	Limit Value - Short Term
Latvia	10 mg/m³	
Norway	5 mg/m³	
People's Republic of China	8 mg/m³ (1)	
Poland	10 mg/m³ (1)	
Romania	10 mg/m³	15 mg/m³ (1)
Singapore	10 mg/m³	
South Korea	10 mg/m³	
Spain	10 mg/m³ (1)	
Sweden	5 mg/m³ (inhalable aerosol)	
Switzerland	3 mg/m³ (respirable aerosol)	
	Remarks:	
Canada (Québec)	(1) Total dust.	
Germany (DFG)	(1) Respirable fraction, except ultrafine particles. (2) Multiplied by the material density. (3) 15 minutes average value.	
Ireland	(1) Inhalable fraction. (2) Respirable fraction.	
Japan - JSOH	(1) Nanoparticle, as Ti.	
Poland	(1) Inhalable fraction.	
People's Republic of China	(1) Inhalable fraction.	
Romania	(1) 15 minutes average value.	

Isopropyl Alcohol

	Limit Value - Eight Hours	Limit Value - Short Term
Austria	200 ppm; 500 mg/m³	800 ppm; 2000 mg/m³
Belgium	200 ppm; 500 mg/m³	400 ppm (1); 1000 mg/m³ (1)
Canada (Ontario)	200 ppm	400 ppm
Canada (Québec)	400 ppm; 983 mg/m³	500 ppm; 1230 mg/m³
Denmark	200 ppm; 490 mg/m³	400 ppm; 980 mg/m³
Finland	200 ppm; 500 mg/m³	250 ppm (1); 620 mg/m³ (1)
France		400 ppm; 980 mg/m³
Germany (AGS)	200 ppm; 500 mg/m³	400 ppm (1); 1000 mg/m³ (1)
Germany (DFG)	200 ppm; 500 mg/m³	400 ppm (1); 1000 mg/m³ (1)
Hungary	500 mg/m³	2000 mg/m³
Ireland	200 ppm	400 ppm (1)
Japan (MHLW)	200 ppm	
Japan JSOH	400 ppm (1); 980 mg/m³ (1)	
Latvia	350 mg/m³	600 mg/m³ (1)
Norway	100 ppm; 245 mg/m³	
People's Republic of China	350 mg/m³	700 mg/m³ (1)
Poland	900 mg/m³	1200 mg/m³
Romania	81 ppm; 200 mg/m³	203 ppm (1); 500 mg/m³ (1)
Singapore	400 ppm; 983 mg/m³	500 ppm; 1230 mg/m³
South Korea	200 ppm; 480 mg/m³	400 ppm; 980 mg/m³
Spain	200 ppm; 500 mg/m³	400 ppm; 1000 mg/m³
Sweden	150 ppm; 350 mg/m³	250 ppm (1); 600 mg/m³ (1)
Switzerland	200 ppm; 500 mg/m³	400 ppm; 1000 mg/m³
	Remarks:	
Belgium	(1) 15 minutes average value.	
Finland	(1) 15 minutes average value.	
Germany (AGS)	(1) 15 minutes average value.	
Germany (DFG)	(1) 15 minutes average value.	
Ireland	(1) 15 minutes average value.	
Japan - JSOH	(1) Occupational exposure limit ceiling: Reference value to the maximal exposure concentration of the substance during a working day.	
Latvia	(1) 15 minutes average value.	
People's Republic of China	(1) 15 minutes average value.	
Romania	(1) 15 minutes average value.	
Sweden	(1) 15 minutes average value.	

BIOLOGICAL MONITORING AND THE SOURCE OF THOSE VALUES:

U.S. ACGIH Biological Exposure Indices (BEIs): Currently, the following Biological Exposure Indices (BEIs) have been established for the Isopropyl Alcohol component of this product.

CHEMICAL: DETERMINANT	SAMPLING TIME	BEI
Isopropyl Alcohol (listed as 2-propanol) • Acetone in Urine	• End of Shift at End of Workweek	• 40 mg/L

UK Biological Monitoring Guidance Values (BMGVs): Currently, no BMGVs have been established for the components of this product.

Appendix E-Schedule 14 (Requirements for Health Monitoring) per Australia Safe Work Code of Practice Managing Risks and Hazardous Chemicals in the Workplace: Currently, no component of this product has an established monitoring requirement value.

8. EXPOSURE CONTROLS - PERSONAL PROTECTION (Continued)

PROTECTIVE EQUIPMENT: The following information on appropriate Personal Protective Equipment is provided to assist employers in complying with OSHA regulations found in 29 CFR Subpart I (beginning at 1910.132, including U.S. Federal OSHA Respiratory Protection (29 CFR 1910.134), OSHA Eye Protection 29 CFR 1910.133, OSHA Hard Protection 29 CFR 1910.138, OSHA Foot Protection 29 CFR 1910.136 and OSHA Body Protection 29 CFR1910.132), equivalent standards of Canada (including CSA Respiratory Standard Z94.4-02, Z94.3-M1982, *Industrial Eye and Face Protectors* and CSA Standard Z195-02, *Protective Footwear*), standards of EU member states (including EN 529:2005 for respiratory PPE, CEN/TR 15419:2006 for hand/body protection, and CR 13464:1999 for face/eye protection), standards of Australia (including AS/NZS 1715:1994 for respiratory PPE, AS/NZS 4501.2:2006 for protective clothing, AS/NZS 2161.1:2000 for glove selection, and AS/NZS 1336:1997 for eye protection), or standards of Japan (including JIS T 8116:2005 for glove selection, JIS T 8150:2006 for respiratory PPE, JIS T 8147:2003 for eye protectors, and JIS T 8030:2005 for protective clothing). Please reference applicable regulations and standards for relevant details.

Respiratory Protection: Maintain airborne contaminant concentrations below exposure limits listed in this section, if applicable. If respiratory protection is needed, use only protection authorized in applicable regulations. Oxygen levels below 19.5% are considered IDLH by U.S. OSHA. In such atmospheres, use of a full-facepiece pressure/demand SCBA or a full facepiece, supplied air respirator with auxiliary self-contained air supply is required under OSHA's Respiratory Protection Standard (1910.134-1998). The following are U.S. NIOSH Respiratory Equipment Guidelines for Isopropyl Alcohol and the Green Pigment; provided to assist in selection of respiratory PPE in event of presence of aerosols.

Copper Dusts and Mists, as Cu

Concentration	Respiratory Protection
Up to 5 mg/m^3:	Any Quarter-Mask Respirator.
Up to 10 mg/m^3:	Any Particulate Respirator equipped with an N95, R95, or P95 filter (including N95, R95, and P95 filtering facepieces) except quarter-mask respirators. The following filters may also be used: N99, R99, P99, N100, R100, P100, or Any Supplied-Air Respirator (SAR).
Up to 25 mg/m^3:	Any SAR operated in a continuous-flow mode, or any powered air-purifying respirator with a high-efficiency particulate filter.
Up to 50 mg/m^3:	Any Air-Purifying, Full-Facepiece Respirator with an N100, R100, or P100 filter, or any Powered Air-Purifying Respirator (PAPR) with a tight-fitting facepiece and a high-efficiency particulate filter, or any Self-Contained Breathing Apparatus (SCBA) with a full facepiece, or any SAR with a full facepiece.
Up to 100 mg/m^3:	Any SAR that has a full facepiece and is operated in a pressure-demand or other positive pressure mode.
Emergency or Planned Entry into Unknown Concentrations or IDLH Conditions:	Any SCBA that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode, or any SAR that has a full-facepiece and is operated in a pressure-demand or other positive-pressure mode in combination with an auxiliary SCBA operated in pressure-demand or other positive-pressure mode.
Escape:	Any Air-Purifying, Full-Facepiece Respirator with an N100, R100, or P100 filter, or any appropriate escape-type, SCBA.

Isopropyl Alcohol

Concentration	Respiratory Protection
Up to 2000 ppm:	Any Supplied-Air Respirator (SAR) operated in a continuous-flow mode, or any Chemical Cartridge Respirator with a full facepiece and organic vapor cartridge(s), or any Air-Purifying, Full-Facepiece Respirator (gas mask) with a chin-style, front- or back-mounted organic vapor canister, or any Powered, Air-Purifying Respirator (PAPR) with organic vapor cartridge(s), or any Self-Contained Breathing Apparatus (SCBA) with a full facepiece, or any SAR with a full facepiece.
Emergency or Planned Entry into Unknown Concentrations or IDLH Conditions:	Any SCBA that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode, or any SAR that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode in combination with an auxiliary SCBA operated in pressure-demand or other positive-pressure mode.
Escape:	Any Air-Purifying, Full-Facepiece Respirator (gas mask) with a chin-style, front- or back-mounted organic vapor canister, or any appropriate escape-type, SCBA.

Eye Protection: Depending on the use of this product, splash goggles or safety glasses may be worn. Use goggles or safety glasses for spill response, as stated in Section 6 (Accidental Release Measures) of this SDS. If necessary, refer to appropriate regulations when selecting eye protection.

Hand Protection: Wear butyl rubber, neoprene, or nitrile rubber or latex gloves for routine use. If necessary, refer to appropriate regulations for further information.

Body Protection: Use body protection appropriate for task, such as a lab coat. If necessary, use body protection appropriate for task (e.g., Tyvek suit, rubber apron). If a hazard of injury to the feet exists due to falling objects, rolling objects, where objects may pierce the soles of the feet or where employee's feet may be exposed to electrical hazards, use foot protection, as described in appropriate regulations.

9. PHYSICAL and CHEMICAL PROPERTIES

FORM: Liquid.
COLOR: Turquoise.
MOLECULAR FORMULA: Mixture.
MOLECULAR WEIGHT: Mixture.
ODOR: Mild.
ODOR THRESHOLD: Not established.
VAPOR DENSITY (air = 1): 2 (calc.)
VAPOR PRESSURE: 50 mmHg
SPECIFIC GRAVITY (water = 1): 1.2
MELTING/FREEZING POINT: ~0°C (~32°F)
SOLUBILITY IN WATER: Soluble
BOILING POINT: 92°C (197.6°F)
EVAPORATION RATE (*n*-BuAc = 1): < 1
pH: Not established.
OXIDIZING PROPERTIES: Not applicable.
PERCENT SOLIDS: 12%
FLAMMABILITY: Not flammable.
FLASH POINT: Not applicable.
AUTOIGNITION TEMPERATURE: Not applicable.
EXPLOSIVE PROPERTIES: Not applicable.
COEFFICIENT OF OIL/WATER DISTRIBUTION (PARTITION COEFFICIENT): Not established.
HOW TO DETECT THIS SUBSTANCE (identification properties): The odor and color of this product may be distinguishing characteristics to identify it event of a spill.

10. STABILITY and REACTIVITY

CHEMICAL STABILITY: Stable under conditions of normal temperature and pressure.

10. STABILITY and REACTIVITY (Continued)

DECOMPOSITION PRODUCTS:

Combustion: If exposed to extremely high temperatures, this product can decompose to generate carbon, copper, metallic, nitrogen and titanium oxides, chlorine, formaldehyde, hydrogen chloride. **Hydrolysis:** None known.

MATERIALS WITH WHICH SUBSTANCE IS INCOMPATIBLE: Strong oxidizers, water-reactive materials.

POSSIBILITY OF HAZARDOUS REACTION OR POLYMERIZATION: Will not occur.

CONDITIONS TO AVOID: Exposure to or contact with extreme temperatures and incompatible chemicals.

11. TOXICOLOGICAL INFORMATION

SYMPTOMS OF EXPOSURE BY ROUTE OF EXPOSURE: The most significant routes of occupational exposure are inhalation and contact with skin and eyes. The symptoms of exposure to this material, via route of entry, are as described below.

Inhalation: This product does not normally present a significant inhalation hazard under anticipated circumstances of use. Inhalation of vapors, mists, or sprays of this material may mildly irritate the nose, throat, and other tissues of the respiratory system.

Contact with Eyes: Eye contact with this material can moderately irritate the eyes, causing discomfort, tearing, and redness. Because the eye tissue may be stained, vision may be temporarily blurred.

Contact with Skin: Skin contact may cause mild irritation in sensitive individuals. Repeated or prolonged skin exposure may cause dermatitis (dry, red skin).

Skin Absorption: No component is known to be absorbed via intact skin.

Ingestion: Though not anticipated to be a significant route of occupational exposure, ingestion of large quantities of this material may cause nausea, vomiting, diarrhea, and discoloration of the mouth, teeth, and tissues of the throat.

Injection: Accidental injection of this liquid (as may occur by a puncture with a contaminated object) will cause local pain, irritation, and redness.

HEALTH EFFECTS OR RISKS FROM EXPOSURE: In the event of exposure, the following symptoms may be observed:

Short Term: Eye contact will cause moderate irritation. Ingestion of large amounts may cause nausea, vomiting, diarrhea. Inhalation of vapors may cause adverse symptoms to the central nervous system due to the Isopropyl Alcohol component.

Long Term: Repeated or prolonged skin exposure may cause dermatitis (dry, red skin).

Hazard Scale: 0 = Minimal 1 = Slight 2 = Moderate 3 = Serious 4 = Severe * = Chronic hazard

TARGET ORGANS:

Short Term: Skin, central nervous system, eyes.

Long Term: Skin.

OVERALL ACUTE TOXICITY ESTIMATES (ATE) FOR PRODUCT:

Oral Route: > 14,060 mg/kg; Dermal Route: > 99,049 mg/kg; Inhalation Route: > 51 mg/L

TOXICITY DATA FOR COMPONENTS: Specific toxicology data currently available for components of this product in greater than 1% concentration are as follows. Due to the large amount of data available, only human data, irritation data, LD50 oral, rat and mouse, skin, rabbit and rat, LC50 inhalation rat and mouse data are included in this SDS. Contact Dynamic Color for information on additional data available.

Proprietary Green Pigment:
LD_{50} (Oral-Rat) > 5000 mg/kg (OECD 401)
LD_{50} (Skin-Rat) > 5000 mg/kg (OECD 402)

C.I. Pigment White 7 (Titanium Dioxide):
LD_{50} (Oral-Rat) > 2000 mg/kg (CLP Guideline Study)
LC_{50} (Inhalation-Rabbit) 4 hr: > 5.09 mg/L (OECD 403)

Isopropyl Alcohol:
LDLo (Oral-Man): 5272 mg/kg; Behavioral: coma; Vascular: BP lowering not characterized in autonomic section; Lungs, Thorax, or Respiration: chronic pulmonary edema
LDLo (Oral-Human): 3570 mg/kg; Behavioral: coma; Lungs, Thorax, or Respiration: respiratory depression; Gastrointestinal: nausea or vomiting
LDLo (Unreported-Man) = 2770 mg/kg
TDLo (Oral-Man): 14,432 mg/kg; Behavioral: coma; Vascular: BP lowering not characterized in autonomic section; Lungs, Thorax, or Respiration: dyspnea
TDLo (Oral-Human): 223 mg/kg; Behavioral: hallucinations, distorted perceptions; Cardiac: pulse rate; Vascular: BP lowering not characterized in autonomic section
TDLo (Oral-Infant): 13 gm/kg; Behavioral: somnolence (general depressed activity), irritability; Gastrointestinal: nausea or vomiting
Skin Irritancy (Rabbit): 500 mg; mild
Eye Irritancy (Rabbit): 100 mg; severe
LD_{50} (Oral-Rat) 5840 mg/kg (OECD 401)
LD_{50} (Skin-Rabbit) 16,400 mg/kg (OECD 402)
LD_{50} (Inhalation-Rat) 4 hr: > 10,000 mg/L (OECD 403)

REPEATED DOSE TOXICITY: No component has demonstrated repeated dose toxicity in either animal testing or though workplace data.

CARCINOGENIC POTENTIAL OF COMPONENTS: Components of this product are listed by agencies tracking the carcinogenic potential of chemical compounds, as follows.

Proprietary Green Pigment: For Copper Dusts, Fumes and Mists: EPA-D (Not Classifiable as to Human Carcinogenicity)

C.I. Pigment White 7 (Titanium Dioxide): ACGIH TLV-A3 (Confirmed Animal Carcinogen with Unknown Relevance to Humans); IARC-2B (Possibly Carcinogenic to Humans); MAK-4 (Substances with carcinogenic potential for which genotoxicity plays no or at most a minor role. No significant contribution to human cancer risk is expected, provided the MAK value is observed.); NIOSH-Ca (Potential Occupational Carcinogen, with No Further Categorization)

11. TOXICOLOGICAL INFORMATION (Continued)

CARCINOGENIC POTENTIAL OF COMPONENTS (continued):

Isopropyl Alcohol: ACGIH TLV-A4 (Not Classifiable as a Human Carcinogen); IARC-3 (Not Classifiable as to Carcinogenicity to Humans)

The remaining components of this product are not found on the following lists: U.S. EPA, U.S. NTP, U.S. OSHA, U.S. NIOSH, GERMAN MAK, IARC, and ACGIH, and therefore are neither considered to be nor suspected to be cancer-causing agents by these agencies.

IRRITANCY OF PRODUCT: Acute exposure to this product via eye contact may irritate contaminated eyes. Acute exposure to this product via skin contact and inhalation may mildly irritate contaminated tissue, especially if exposure is prolonged.

ENDOCRINE TOXICITY: No component is known or suspected to be an endocrine disruptor.

SENSITIZATION TO THE PRODUCT: The components of this product are not known to be human skin or respiratory sensitizers.

REPRODUCTIVE TOXICITY INFORMATION: No components of this product are known to have mutagenic, embryotoxic, teratogenic or reproductive toxicity effects in humans.

12. ECOLOGICAL INFORMATION

ALL WORK PRACTICES MUST BE AIMED AT ELIMINATING ENVIRONMENTAL CONTAMINATION.

MOBILITY: This product has not been tested for mobility in soil. It is expected to be somewhat mobile in soil.

PERSISTENCE AND BIODEGRADABILITY: This product has not been tested for persistence or biodegradability. It is expected that some biodegradation will occur to this product; however, no specific information is known.

BIO-ACCUMULATION POTENTIAL: No component of this product presents a bio-accumulation potential.

EFFECT OF MATERIAL ON PLANTS or ANIMALS: This product may be harmful to plant or animal life, especially if large volumes of this product are released.

EFFECT OF CHEMICAL ON AQUATIC LIFE: This product has not been tested for aquatic toxicity. The following are aquatic toxicity data for some components of this product:

Proprietary Green Pigment:
LC_{50} (*Danio reiro* Zebra fish) 96 hrs: > 100 mg/L (OECD 203)
EC_{50} (*Daphnia magna*) 48 hrs: > 500 mg/L (OECD 202)
EC_{50} (*Selenastrum capricornutum* green algae) 72hrs: ≥ 100 mg/L (OECD 201)

C.I. Pigment White 7 (Titanium Dioxide):
LC_{50} (*Pimephales promelas* fathead minnow) 96 hrs: > 100 mg/L (No Guideline info)
EC_{50} (*Daphnia Magna* Giant Water flea) 24 hrs: > 100 mg/L (No Guideline info)

C.I. Pigment White 7 (Titanium Dioxide) [continued]:
EC_{50} (Skeletonema costatum freshwater algae) 72 hours: > 00 mg/L (No Guideline info)

Isopropyl Alcohol:
LC_{50} (*Carassius auratus* Goldfish) 96 hrs: 9640 mg/L (US EPA Committee on Methods for Toxicity Tests with Aquatic Organisms)
EC_{50} (*Daphnia Magna* Giant Water flea) 24 hrs: 10,00 mg/L (OECD 202)
EC_{10} (*Scenedesmus quadricauda* freshwater algae) 8 days: 1800 mg/L (No Guideline info)

OTHER ADVERSE EFFECTS: This product does not contain any component with known ozone depletion potential.

RESULTS OF PBT AND vPvB ASSESSMENT: No Data Available. PBT and vPvB assessments are part of the chemical safety report required for some substances in European Union Regulation (EC) 1907/2006, Article 14.

ENDOCRINE DISRUPTORS: No component has been shown to be or is suspected to cause endocrine disruption to terrestrial or aquatic animals.

ENVIRONMENTAL EXPOSURE CONTROLS: Controls should be engineered to prevent release to the environment, including procedures to prevent spills, atmospheric release and release to waterways.

GHS Statements for Environmental Exposure Controls: Not applicable.

13. DISPOSAL CONSIDERATIONS

PRECAUTIONS TO BE FOLLOWED DURING WASTE HANDLING: Wear proper protective equipment when handling waste materials.

GHS Statements for Waste Handling: P501: Dispose of contents/containers in accordance with all local, regional, national and international regulations.

DISPOSAL CONTAINERS: Waste materials must be placed in and shipped in appropriate 5-gallon or 55-gallon poly or metal waste pails or drums. Permeable cardboard containers are not appropriate and should not be used. Ensure that any required marking or labeling of the containers be done to all applicable regulations.

DISPOSAL METHODS: It is the responsibility of the generator to determine at the time of disposal whether the product meets the criteria of a hazardous waste per regulations of the jurisdiction in which the waste is generated and/or disposed of. Waste disposal must be in accordance with appropriate Federal, State, Provincial and local regulations. This product, if unaltered by use, may be disposed of by treatment at a permitted facility or as advised by your local hazardous waste regulatory authority. Shipment of wastes must be done with appropriately permitted and registered transporters.

U.S. EPA WASTE NUMBER: Not applicable to wastes consisting only of this product.

CANADIAN HAZARDOUS WASTE REGULATIONS: As supplied, this product should be tested to see if it meets the criteria of hazardous wastes per Canadian Environmental Protection Agency) regulations and the Canadian Environmental Protection Act, 1999 (CEPA).

Canadian Environmental Protection Act (CEPA) Priority Substances Lists: The Isopropyl Alcohol component is listed as a Substance With Greatest Potential For Human Exposure Substance on Environment Canada/Health Canada Pilot Project List (CEPA 1999, Section 73). Meets categorization criteria: *may present, to individuals in Canada, the greatest potential for exposure; or *are persistent or bioaccumulative in accordance with the regulations, and inherently toxic to human beings or to non-human organisms, as determined by laboratory or other studies.

EUROPEAN WASTE CODES FOR PRODUCT: Wastes from MFSU and Removal of Printing Inks: 08 03 99: Wastes Not Otherwise Specified

EU WASTE FRAMEWORK DIRECTIVE, ANNEX III - WASTE - HAZARDOUS PROPERTIES: This product does not meet the criteria of any

hazardous waste property. The components of this product have designated waste codes as listed below.

Isopropyl Alcohol: HP3 Flammable Waste (FW); HP5 Specific Target Organ Toxicity (STOT)/Aspiration Toxicity

C.I. Pigment White 7 (Titanium Dioxide): HP7 Carcinogenic: Waste which induces cancer or increases it incidence; in powder form containing 1% or more of particles with aerodynamic diameter ≤ 10 µm.

13. DISPOSAL CONSIDERATIONS (Continued)

AUSTRALIAN HAZARDOUS WASTE REGULATIONS: As supplied, this product should be tested to see if it meets the criteria of hazardous wastes per Australian Department of Agriculture, Water and the Environment regulations. If wastes are to be exported, they should be tested to see if they have requirements under the Australian Hazardous Waste (Regulation of Exports and Imports) Act 1989 and further of the Basel Convention where the waste has any of the characteristics mentioned in Annex III to the Basel Convention.

14. TRANSPORTATION INFORMATION

U.S. DEPARTMENT OF TRANSPORTATION: This product is not classified as dangerous goods, per U.S. DOT regulations, under 49 CFR 172.101.

TRANSPORT CANADA, TRANSPORTATION OF DANGEROUS GOODS REGULATIONS: This product is NOT classified as dangerous goods, per regulations of Transport Canada.

INTERNATIONAL AIR TRANSPORT ASSOCIATION SHIPPING INFORMATION (IATA): This product is NOT classified as dangerous goods.

INTERNATIONAL MARITIME ORGANIZATION SHIPPING INFORMATION (IMO): This product is NOT classified as dangerous goods.

EUROPEAN AGREEMENT CONCERNING THE INTERNATIONAL CARRIAGE OF DANGEROUS GOODS BY ROAD (ADR): This product is NOT classified by the United Nations Economic Commission for Europe to be dangerous goods.

AUSTRALIAN FEDERAL OFFICE OF ROAD SAFETY CODE FOR THE TRANSPORTATION OF DANGEROUS GOODS BY ROAD OR RAIL: This product is NOT classified as dangerous goods, per regulations of the Australian Federal Office of Road Safety.

TRANSPORT IN BULK ACCORDING TO ANNEX II OF MARPOL 73/78 AND THE IBC CODE: Not applicable.

ENVIRONMENTAL HAZARDS: This product is neither environmentally hazardous according to the criteria of the UN Model Regulations (as reflected in the IMDG Code, ADR, RID, and ADN); no component meets the criteria of environmentally hazardous.

15. REGULATORY INFORMATION

UNITED STATES REGULATIONS:

U.S. SARA Reporting Requirements: The components of this product are subject to the reporting requirements of Sections 302, 304, and 313 of Title III of the Superfund Amendments and Reauthorization Act and are listed as follows:

CHEMICAL NAME	SARA 302 (40 CFR 355, Appendix A)	SARA 304 (40 CFR Table 302.4)	SARA 313 (40 CFR 372.65)
Copper Compounds	No	No	N100
Isopropyl Alcohol (mfg-strong acid process)	No	No	Yes

U.S. SARA Threshold Planning Quantity (TPQ): There are no specific Threshold Planning Quantities for this material. The default Federal SDS submission and inventory requirement filing threshold of 10,000 lb (4,540 kg) may apply, per 40 CFR 370.20.

U.S. CERCLA Reportable Quantity (RQ): Not applicable. Copper compounds do not have a specific assigned CERCLA RQ, but compounds in the broad class are CERCLA hazardous substances. For metals listed under CERCLA (including copper compounds), no reporting of releases of the solid form is required if the mean diameter of the pieces of the solid metal released is greater than 100 micrometers (0.004 inches) (Ref: Footnote after Table 302.4 in 40 CFR 302.4).

U.S. TSCA Inventory Status: The components of this product are listed on the TSCA Inventory.

U.S. Hazardous Air Pollutant (HAPs): The components of this product are not listed by the EPA under section 112(b) of the Clean Air Act as a 'HAP'.

U.S. Clean Air Act (CA 112r) Threshold Quantity (TQ): Not applicable.

California Safe Drinking Water And Toxic Enforcement Act (Proposition 65): The Titanium Dioxide component, (airborne, unbound particles of respirable size) is on the California Proposition 65 Lists. If airborne particles of this product are generated, the following warning must be on packaging and labeling of this product: WARNING! This product contains a component known to the State of California to cause cancer. As a liquid, this warning is not expected to be required.

CANADIAN REGULATIONS:

Canadian DSL/NDSL Inventory Status: Components listed by CAS# in Section 3 (Composition and Information on Ingredients) are listed on the DSL Inventory.

Canadian WHMIS HPR 2015 Classification and Symbols: See Section 2 for classification and symbols under WHMIS GHS 2015.

EUROPEAN UNION REGULATIONS:

Safety, Health, and Environmental Regulations/Legislation Specific for the Product: Currently, there is no specific legislation pertaining to this product.

Chemical Safety Assessment: No data available. The chemical safety assessment is required for some substances according to European Union Regulation (EC) 1907/2006, Article 14.

AUSTRALIAN REGULATIONS:

Australian Inventory Of Chemical Substances (AICS) Status: Components listed by CAS# in Section 3 (Composition and Information on Ingredients) are listed on the AICS.

Hazardous Substances Information System (HSIS): Components listed by CAS# in Section 3 (Composition and Information on Ingredients) are not listed in the HSIS.

Standard for the Uniform Scheduling of Drugs and Poisons: Not applicable.

CHINESE REGULATIONS:

Chinese Inventory of Existing Chemical Substances Status: Components listed by CAS# in Section 3 (Composition and Information on Ingredients) are on the Chinese Inventory of Existing Chemical Substances (IECSC).

15. REGULATORY INFORMATION (Continued)

JAPANESE REGULATIONS:

Japanese ENCS Inventory: Components listed by CAS# in Section 3 (Composition and Information on Ingredients) are on the ENCS Inventory or are excepted.

Japanese Ministry of Economy, Trade, and Industry (METI) Status: Components listed by CAS# in Section 3 (Composition and Information on Ingredients) are not listed as Class I Specified Chemical Substances, Class II Specified Chemical Substances, or Designated Chemical Substances by the Japanese METI.

Poisonous and Deleterious Substances Control Law: Components listed by CAS# in Section 3 (Composition and Information on Ingredients) are not listed as a Specified Poisonous Substance under the Poisonous and Deleterious Substances Control Law.

KOREAN REGULATIONS:

Korean Existing Chemical Substances Inventory Status: Components are listed on the Korean Existing Chemicals List, as indicated in composition tables in Section 3 (Composition and Information on Ingredients).

NEW ZEALAND REGULATIONS:

New Zealand Inventory of Chemicals (NZIoC): Components listed by CAS# in Section 3 (Composition and Information on Ingredients) are on the NZIoC.

MEXICAN REGULATIONS:

Mexican Workplace Regulations (NOM-018-STPS-2000): This product is classified as hazardous.

TAIWANESE REGULATIONS:

Taiwan Existing Chemical Substances Inventory Status: Components listed by CAS# in Section 3 (Composition and Information on Ingredients) are listed on the Taiwan Existing Chemicals List.

16. OTHER INFORMATION

REVISION DETAILS: May 2017: Conversion of old MSDS to GHS compliant SDS. June 2018: Review and up-date entire SDS for most current regulations. April 2022: Review and revise entire SDS for current compliance of all jurisdictions of the SDS.

REFERENCES AND DATA SOURCES: Contact the supplier for information.

METHODS OF EVALUATING INFORMATION FOR THE PURPOSE OF CLASSIFICATION: Bridging principles were used to classify this product.

PREPARED BY: CHEMICAL SAFETY ASSOCIATES, Inc., PO Box 1961, Hilo, HI 96721, 808/969-4846

DYNAMIC

DEFINITIONS OF TERMS

A large number of abbreviations and acronyms appear on an SDS. Some of these, which are commonly used, include the following:

CAS #: This is the Chemical Abstract Service Number that uniquely identifies each constituent.

EXPOSURE LIMITS IN AIR:

CEILING LEVEL: The concentration that shall not be exceeded during any part of the working exposure.

DFG MAK Germ Cell Mutagen Categories: 1: Germ cell mutagens which have been shown to increase the mutant frequency in the progeny of exposed humans. 2: Germ cell mutagens which have been shown to increase the mutant frequency in the progeny of exposed mammals. 3A: Substances which have been shown to induce genetic damage in germ cells of human of animals, or which produce mutagenic effects in somatic cells of mammals *in vivo* and have been shown to reach the germ cells in an active form. 3B: Substances which are suspected of being germ cell mutagens because of their genotoxic effects in mammalian somatic cell *in vivo*; in exceptional cases, substances for which there are no *in vivo* data, but which are clearly mutagenic *in vitro* and structurally related to known *in vivo* mutagens. 4: Not applicable (Category 4 carcinogenic substances are those with non-genotoxic mechanisms of action. By definition, germ cell mutagens are genotoxic. Therefore, a Category 4 for germ cell mutagens cannot apply. At some time in the future, it is conceivable that a Category 4 could be established for genotoxic substances with primary targets other than DNA [e.g., purely aneugenic substances] if research results make this seem sensible.) 5: Germ cell mutagens, the potency of which is considered to be so low that, provided the MAK value is observed, their contribution to genetic risk for humans is expected not to be significant.

DFG MAK Pregnancy Risk Group Classification: Group A: A risk of damage to the developing embryo or fetus has been unequivocally demonstrated. Exposure of pregnant women can cause damage of the developing organism, even when MAK and BAT (Biological Tolerance Value for Working Materials) values are observed. Group B: Currently available information indicates a risk of damage to the developing embryo or fetus must be considered to be probable. Damage to the developing organism cannot be excluded when pregnant women are exposed, even when MAK and BAT values are observed. Group C: There is no reason to fear a risk of damage to the developing embryo or fetus when MAK and BAT values are observed. Group D: Classification in one of the groups A-C is not yet possible because, although the data available may indicate a trend, they are not sufficient for final evaluation.

IDLH-Immediately Dangerous to Life and Health: This level represents a concentration from which one can escape within 30-minutes without suffering escape-preventing or permanent injury.

LOQ: Limit of Quantitation.

MAK: Federal Republic of Germany Maximum Concentration Values in the workplace.

NE: Not Established. When no exposure guidelines are established, an entry of NE is made for reference.

NIC: Notice of Intended Change.

NIOSH CEILING: The exposure that shall not be exceeded during any part of the workday. If instantaneous monitoring is not feasible, the ceiling shall be assumed as a 15-minute TWA exposure (unless otherwise specified) that shall not be exceeded at any time during a workday.

NIOSH RELs: NIOSH's Recommended Exposure Limits.

PEL-Permissible Exposure Limit: OSHA's Permissible Exposure Limits. This exposure value means exactly the same as a TLV, except that it is enforceable by OSHA. The OSHA Permissible Exposure Limits are based in the 1989 PELs and the June, 1993 Air Contaminants Rule (Federal Register: 58: 35338-35351 and 58: 40191). Both the current PELs and the vacated PELs are indicated. The phrase, "Vacated 1989 PEL," is placed next to the PEL that was vacated by Court Order.

SKIN: Used when a there is a danger of cutaneous absorption.

STEL-Short Term Exposure Limit: Short Term Exposure Limit, usually a 15-minute time-weighted average (TWA) exposure that should not be exceeded at any time during a workday, even if the 8-hr TWA is within the TLV-TWA, PEL-TWA or REL-TWA.

TLV-Threshold Limit Value: An airborne concentration of a substance that represents conditions under which it is generally believed that nearly all workers may be repeatedly exposed without adverse effect. The duration must be considered, including the 8-hour.

TWA-Time Weighted Average: Time Weighted Average exposure concentration for a conventional 8-hr (TLV, PEL) or up to a 10-hr (REL) workday and a 40-hr workweek.

HAZARDOUS MATERIALS IDENTIFICATION SYSTEM HAZARD RATINGS:

This rating system was developed by the National Paint and Coating Association and has been adopted by industry to identify the degree of chemical hazards.

HEALTH HAZARDS: 0 (Minimal Hazard: No significant health risk, irritation of skin or eyes not anticipated. *Skin Irritation:* Essentially non-irritating. PII or Draize = "0". *Eye Irritation:* Essentially non-irritating, or minimal effects which clear in < 24 hours [e.g., mechanical irritation]. Draize = "0". *Oral Toxicity LD_{50} Rat:* < 5000 mg/kg. *Dermal Toxicity LD_{50}/Rat or Rabbit:* < 2000 mg/kg. *Inhalation Toxicity 4-hrs LC_{50} Rat:* < 20 mg/L.); 1 (Slight Hazard): Minor reversible injury may occur; slightly or mildly irritating. *Skin Irritation:* Slightly or mildly irritating. *Eye Irritation:* Slightly or mildly irritating. *Oral Toxicity LD_{50} Rat:* > 500-5000 mg/kg. *Dermal Toxicity LD_{50}/Rat or Rabbit:* > 1000-2000 mg/kg. *Inhalation Toxicity LC_{50} 4-hrs Rat:* > 2-20 mg/L); 2 (Moderate Hazard): Temporary or transitory injury may occur. *Skin Irritation:* Moderately irritating; primary irritant; sensitizer. PII or Draize > 0, < 5. *Eye Irritation:* Moderately to severely irritating and/or corrosive; reversible corneal opacity; corneal involvement or irritation clearing in 8-21 days. Draize > 0, ≤ 25. *Oral Toxicity LD_{50} Rat:* > 50-500 mg/kg. *Dermal Toxicity LD_{50}/Rat or Rabbit:* > 200-1000 mg/kg. 3 (Serious Hazard) (continued): 3 (Serious Hazard): Major injury likely unless prompt action is taken and medical treatment is given; high level of toxicity; corrosive. *Skin Irritation:* Severely irritating and/or corrosive; may destroy dermal tissue, cause skin burns, dermal necrosis. PII or Draize > 5-8 with destruction of tissue. *Eye Irritation:* Corrosive, irreversible destruction of ocular tissue; corneal involvement or irritation persisting for more than 21 days. Draize > 80 with effects irreversible in 21 days. *Oral Toxicity LD_{50} Rat:* > 1-50 mg/kg. *Dermal Toxicity LD_{50}/Rat or Rabbit:* > 20-200 mg/kg. *Inhalation Toxicity LC_{50} 4-hrs Rat:* > 0.05-0.5 mg/L.); 4 (Severe Hazard: Life-threatening; major or permanent damage may result from single or repeated exposure. *Skin Irritation:* Not appropriate. Do not rate as a "4", based on skin irritation alone. *Eye Irritation:* Not appropriate. Do not rate as a "4", based on eye irritation alone. *Oral Toxicity LD_{50} Rat:* ≤ 1 mg/kg. *Dermal Toxicity LD_{50}/Rat or Rabbit:* ≤ 20 mg/kg. *Inhalation Toxicity LC_{50} 4-hrs Rat:* ≤ 0.05 mg/L).

HAZARDOUS MATERIALS IDENTIFICATION SYSTEM HAZARD RATINGS (continued):

FLAMMABILITY HAZARD: 0 (Minimal Hazard-Materials that will not burn in air when exposure to a temperature of 815.5°C [1500°F] for a period of 5 minutes.); 1 (Slight Hazard-Materials that must be pre-heated before ignition can occur. Material require considerable pre-heating, under all ambient temperature conditions before ignition and combustion can occur, including: Materials that will burn in air when exposed to a temperature of 815.5°C (1500°F) for a period of 5 minutes or less; Liquids, solids and semisolids having a flash point at or above 93.3°C [200°F] (e.g. OSHA Class IIIB, or; Most ordinary combustible materials [e.g. wood, paper, etc.]; 2 (Moderate Hazard-Materials that must be moderately heated or exposed to relatively high ambient temperatures before ignition can occur. Materials in this degree would not, under normal conditions, form hazardous atmospheres in air, but under high ambient temperatures or moderate heating may release vapor in sufficient quantities to produce hazardous atmospheres in air, including: Liquids having a flash-point at or above 37.8°C [100°F]; Solid materials in the form of course dusts that may burn rapidly but that generally do not form explosive atmospheres; Solid materials in a fibrous or shredded form that may burn rapidly and create flash fire hazards (e.g. cotton, sisal, hemp; Solids and semisolids that readily give off flammable vapors.); 3 (Serious Hazard- Liquids and solids that can be ignited under almost all ambient temperature conditions. Materials in this degree produce hazardous atmospheres with air under almost all ambient temperatures, or, unaffected by ambient temperature, are readily ignited under almost all conditions, including: Liquids having a flash point below 22.8°C [73°F] and having a boiling point at or above 38°C [100°F] and below 37.8°C [100°F] [e.g. OSHA Class IB and IC]; Materials that on account of their physical form or environmental conditions can form explosive mixtures with air and are readily dispersed in air [e.g., dusts of combustible solids, mists or droplets of flammable liquids]; Materials that burn extremely rapidly, usually by reason of self-contained oxygen [e.g. dry nitrocellulose and many organic peroxides]); 4 (Severe Hazard-Materials that will rapidly or completely vaporize at atmospheric pressure and normal ambient temperature or that are readily dispersed in air, and which will burn readily, including: Flammable gases; Flammable cryogenic materials; Any liquid or gaseous material that is liquid while under pressure and has a flash point below 22.8°C [73°F] and a boiling point below 37.8°C [100°F] [e.g. OSHA Class IA; Material that ignite spontaneously when exposed to air at a temperature of 54.4°C [130°F] or below [e.g. pyrophoric]).

PHYSICAL HAZARD: 0 (*Water Reactivity:* Materials that do not react with water. *Organic Peroxides:* Materials that are normally stable, even under fire conditions and will not react with water. *Explosives:* Substances that are Non-Explosive. *Unstable Compressed Gases:* No Rating. *Pyrophorics:* No Rating. *Oxidizers:* No "0" rating allowed. *Unstable Reactives:* Substances that will not polymerize, decompose, condense or self-react.); 1 (*Water Reactivity:* Materials that change or decompose upon exposure to moisture. *Organic Peroxides:* Materials that are normally stable, but can become unstable at high temperatures and pressures. These materials may react with water, but will not release energy. *Explosives:* Division 1.5 & 1.6 substances that are very insensitive explosives or that do not have a mass explosion hazard. *Compressed Gases:* Pressure below OSHA definition. *Pyrophorics:* No Rating. *Oxidizers:* Packaging Group III; Solids: any material that in either concentration tested, exhibits a mean burning time less than or equal to the mean burning time of a 3:7 potassium bromate/cellulose mixture and the criteria for Packing Group I and II are not met. Liquids: any material that exhibits a mean pressure rise time less than or equal to the pressure rise time of a 1:1 nitric acid (65%)/cellulose mixture and the criteria for Packing Group I and II are not met. *Unstable Reactives:* Substances that may decompose, condense or self-react, but only under conditions of high temperature and/or pressure and have little or no potential to cause significant heat generation or explosive hazard. Substances that readily undergo hazardous polymerization in the absence of inhibitors.); 2 (*Water Reactivity:* Materials that may react violently with water. *Organic Peroxides:* Materials that, in themselves, are normally unstable and will readily undergo violent chemical change, but will not detonate. These materials may also react violently with water. *Explosives:* Division 1.4 - Explosive substances where the explosive effect are largely confined to the package and no projection of fragments of appreciable size or range are expected. An external fire must not cause virtually instantaneous explosion of almost the entire contents of the package. *Compressed Gases:* Pressurized and meet OSHA definition but < 514.7 psi absolute at 21.1°C [70°F] [500 psig]. *Pyrophorics:* No Rating. *Oxidizers:* Packing Group II Solids: any material that, either in concentration tested, exhibits a mean burning time of less than or equal to the mean burning time of a 2:3 potassium bromate/cellulose mixture and the criteria for Packing Group I are not met. Liquids: any material that exhibits a mean pressure rise time less than or equal to the pressure rise of a 1:1 aqueous sodium chlorate solution (40%)/cellulose mixture and the criteria for Packing Group I are not met. *Unstable Reactives:* Substances that may polymerize, decompose, condense, or self-react at ambient temperature and/or pressure, but have a low potential for significant heat generation or explosion. Substances that readily form peroxides upon exposure to air or oxygen at room temperature); 3 (*Water Reactivity:* Materials that may form explosive reactions with water. *Organic Peroxides:* Materials that are capable of detonation or explosive reaction, but require a strong initiating source, or must be heated under confinement before initiation; or materials that react explosively with water. *Explosives:* Division 1.2 – Explosive substances that have a fire hazard and either a minor blast hazard or a minor projection hazard or both, but do not have a mass explosion hazard. *Compressed Gases:* Pressure ≥ 514.7 psi absolute at 21.1°C [70°F] [500 psig]. *Pyrophorics:* No Rating. *Oxidizers:* Packing Group I Solids: any material that, in either concentration tested, exhibits a mean burning time less than the mean burning time of a 3:2 potassium bromate/cellulose mixture. Liquids: Any material that spontaneously ignites when mixed with cellulose in a 1:1 ratio, or which exhibits a mean pressure rise time less than the pressure rise time of a 1:1 perchloric acid (50%)/cellulose mixture. *Unstable Reactives:* Substances that may polymerize, decompose, condense or self-react at ambient temperature and/or pressure and have a moderate potential to cause significant heat generation or explosion.); 4 (*Water Reactivity:* Materials that react explosively with water without requiring heat or confinement. *Organic Peroxides:* Materials that are readily capable of detonation or explosive decomposition at normal temperature and pressures. *Explosives:* Division 1.1 & 1.2-explosive substances that have a mass explosion hazard or have a projection hazard. A mass explosion is one that affects almost the entire load instantaneously. *Compressed Gases:* No Rating. *Pyrophorics:* Add to the definition of Flammability "4". *Oxidizers:* No "4" rating. *Unstable Reactives:* Substances that may polymerize, decompose, condense or self-react at ambient temperature and/or pressure and have a high potential to cause significant heat generation or explosion.).

16. OTHER INFORMATION (Continued)

DEFINITIONS OF TERMS (Continued)

HAZARDOUS MATERIALS IDENTIFICATION SYSTEM HAZARD RATINGS (continued):

PHYSICAL HAZARD (continued): 2 (continued):

NATIONAL FIRE PROTECTION ASSOCIATION HAZARD RATINGS:

HEALTH HAZARD: 0 (materials that, under emergency conditions, would offer no hazard beyond that of ordinary combustible materials): Gases and vapors whose LC_{50} for acute inhalation toxicity is greater than 10,000 ppm. Dusts and mists whose LC_{50} for acute inhalation toxicity is greater than 200 mg/L. Materials whose LD_{50} for acute dermal toxicity is greater than 2000 mg/kg. Materials whose LD_{50} for acute oral toxicity is greater than 2000 mg/kg. Materials that are essentially non-irritating to the respiratory tract, eyes and skin. 1 (materials that, under emergency conditions, can cause significant irritation): Gases and vapors whose LC_{50} for acute inhalation toxicity is greater than 5,000 ppm but less than or equal to 10,000 ppm. Dusts and mists whose LC_{50} for acute inhalation toxicity is greater than 10 mg/L but less than or equal to 200 mg/L. Materials whose LD_{50} for acute dermal toxicity is greater than 1000 mg/kg but less than or equal to 2000 mg/kg. Materials whose LD_{50} for acute oral toxicity is greater than 500 mg/kg but less than or equal to 2000 mg/kg. Materials that cause slight to moderate irritation to the respiratory tract, eyes and skin. 3 (materials that, under emergency conditions, can cause serious or permanent injury): Gases and vapors whose LC_{50} for acute inhalation toxicity is greater than 1,000 ppm but less than or equal to 3,000 ppm. Dusts and mists whose LC_{50} for acute inhalation toxicity is greater than 0.5 mg/L but less than or equal to 2 mg/L. Materials whose LD_{50} for acute dermal toxicity is greater than 40 mg/kg but less than or equal to 200 mg/kg. Materials whose LD_{50} for acute oral toxicity is greater than 5 mg/kg but less than or equal to 50 mg/kg. Any liquid whose saturated vapor concentration at 20°C (68°F) is equal to or greater than one-fifth its LC_{50} for acute inhalation toxicity, if its LC_{50} is less than or equal to 3000 ppm and that does not meet the criteria for degree of hazard 4. Compressed liquefied gases with boiling points between -30°C (-22°F) and -55°C (-66.5°F) that cause frostbite and irreversible tissue damage. Materials that are respiratory irritants. Cryogenic gases that cause frostbite and irreversible tissue damage. Materials that are corrosive to the respiratory tract. Materials that are corrosive to the eyes or cause irreversible corneal opacity. Materials that are corrosive to the skin. 4 (materials that, under emergency conditions, can be lethal): Gases and vapors whose LC_{50} for acute inhalation toxicity less than or equal to 1,000 ppm. Dusts and mists whose LC_{50} for acute inhalation toxicity is less than or equal to 0.5 mg/L. Materials whose LD_{50} for acute dermal toxicity is less than or equal to 40 mg/kg. Materials whose LD_{50} for acute oral toxicity is less than or equal to 5 mg/kg. Any liquid whose saturated vapor concentration at 20°C (68°F) is equal to or greater than one-fifth its LC_{50} for acute inhalation toxicity, if its LC_{50} is less than or equal to 1000 ppm.

FLAMMABILITY HAZARD: 0 Materials that will not burn under typical fire conditions, including intrinsically noncombustible materials such as concrete, stone, and sand: Materials that will not burn in air when exposed to a temperature of 816°C (1500°F) for a period of 5 minutes in according with Annex D. 1 Materials that must be preheated before ignition can occur. Materials in this degree require considerable preheating, under all ambient temperature conditions, before ignition and combustion can occur: Materials that will burn in air when exposed to a temperature of 816°C (1500°F) for a period of 5 minutes in accordance with Annex D. Liquids, solids and semisolids having a flash point at or above 93.4°C (200°F) (e.g., Class IIIB liquids). Liquids with a flash point greater than 35°C (95°F) that do not sustain combustion when tested using the Method of Testing for Sustained Combustibility, per 49 CFR 173, Appendix H or the UN Recommendation on the Transport of Dangerous Goods, Model Regulations (current edition) and the related Manual of Tests and Criteria (current edition). Liquids with a flash point greater than 35°C (95°F) in a water-miscible solution or dispersion with a water non-combustible liquid/solid content of more than 85 percent by weight. Liquids that have no fire point when tested by ASTM D 92 Standard Test Method for Flash and Fire Points by Cleveland Open Cup, up to a boiling point of the liquid or up to a temperature at which the sample being tested shows an obvious physical change. Combustible pellets with a representative diameter of greater than 2 mm (10 mesh). Solids containing greater than 0.5 percent by weight of a flammable or combustible solvent are rated by the closed-up flash point of the solvent. Most ordinary combustible materials. 2 Materials that must be moderately heated or exposed to relatively high ambient temperatures before ignition can occur. Materials in this degree would not under normal conditions form hazardous atmospheres with air, but under high ambient temperatures or under moderate heating could release vapor in sufficient quantities to produce hazardous atmospheres with air: Liquids having a flash point at or above 37.8°C (100°F) and below 93.4°C (200°F) (e.g., Class II and Class IIIA liquids.) Solid materials in the form of powders or coarse dusts of representative diameter between 420 microns (40 mesh) and 2 mm (10 mesh) that burn rapidly but that generally do not form explosive mixtures in air. Solid materials in fibrous or shredded form that burn rapidly and create flash fire hazards, such as cotton, sisal and hemp. Solids and semisolids that readily give off flammable vapors. Solids containing greater than 0.5 percent by weight of a flammable or combustible solvent are rated by the closed cup flash point of the solvent. 3 Liquids and solids that can be ignited under almost all ambient temperature conditions. Materials in this degree produce hazardous atmospheres with air under almost all ambient temperatures or, though unaffected by ambient temperatures, are readily ignited under almost all conditions: Liquids having a flash point below 22.8°C (73°F) and having a boiling point at or above 37.8°C (100°F) and those liquids having a flash point at or above 22.8°C (73°F) and below 37.8°C (100°F) and below 37.8°C (100°F) (e.g., Class IB and IC liquids). Materials that, on account of their physical form or environmental conditions, can form explosive mixtures with air and are readily dispersed in air. Flammable or combustible dusts with a representative diameter less than 420 microns (40 mesh). Materials that burn with extreme rapidity, usually by reason of self-contained oxygen (e.g., dry nitrocellulose and many organic peroxides). Solids containing greater than 0.5 percent by weight of a flammable or combustible solvent are rated by the closed cup flash point of the solvent. 4 Materials that will rapidly or completely vaporize at atmospheric pressure and normal ambient temperature or that are readily dispersed in air and will burn readily: Flammable gases. Flammable cryogenic materials. Any liquid or gaseous materials that is liquid while under pressure and has a flash point below 22.8°C (73°F) and a boiling point below 37.8°C (100°F) (e.g., Class IA liquids). Materials that ignite when exposed to air. Solids containing greater than 0.5 percent by weight of a flammable or combustible solvent are rated by the closed cup flash point of the solvent.

NATIONAL FIRE PROTECTION ASSOCIATION HAZARD RATINGS (continued):

INSTABILITY HAZARD: 0 Materials that in themselves are normally stable, even under fire conditions: Materials that have an estimated instantaneous power density (product of heat of reaction and reaction rate) at 250°C (482°F) below 0.01 W/mL. Materials that do not exhibit an exotherm at temperatures less than or equal to 500°C (932°F) when tested by differential scanning calorimetry. 1 Materials that in themselves are normally stable, but that can become unstable at elevated temperatures and pressures: Materials that have an estimated instantaneous power density (product of heat of reaction and reaction rate) at 250°C (482°F) at or above 0.01 W/mL and below 10 W/mL. 2 Materials that readily undergo violent chemical change at elevated temperatures and pressures: Materials that have an estimated instantaneous power density (product of heat of reaction and reaction rate) at 250°C (482°F) at or above 10 W/mL and below 100W/mL. 3 Materials that in themselves are capable of detonation or explosive decomposition or explosive reaction, but that require a strong initiating source or that must be heated under confinement before initiation: Materials that have an estimated instantaneous power density (product of heat of reaction and reaction rate) at 250°C (482°F) at or above 100 W/mL and below 1000 W/mL. Materials that are sensitive to thermal or mechanical shock at elevated temperatures and pressures. 4 Materials that in themselves are readily capable of detonation or explosive decomposition or explosive reaction at normal temperatures and pressures: Materials that have an estimated instantaneous power density (product of heat of reaction and reaction rate) at 250°C (482°F) of 1000 W/mL or greater. Materials that are sensitive to localized thermal or mechanical shock at normal temperatures and pressures.

FLAMMABILITY LIMITS IN AIR:

Much of the information related to fire and explosion is derived from the **National Fire Protection Association (NFPA)**. Flash Point - Minimum temperature at which a liquid gives off sufficient vapors to form an ignitable mixture with air. Autoignition Temperature: The minimum temperature required to initiate combustion in air with no other source of ignition. LEL - the lowest percent of vapor in air, by volume, that will explode or ignite in the presence of an ignition source. UEL - the highest percent of vapor in air, by volume, that will explode or ignite in the presence of an ignition source.

TOXICOLOGICAL INFORMATION:

Human and Animal Toxicology: Possible health hazards as derived from human data, animal studies, or from the results of studies with similar compounds are presented. Definitions of some terms used in this section are: LD_{50} - Lethal Dose (solids & liquids) which kills 50% of the exposed animals; LC_{50} - Lethal Concentration (gases) which kills 50% of the exposed animals; ppm concentration expressed in parts of material per million parts of air or water; mg/m^3 concentration expressed in weight of substance per volume of air; mg/kg quantity of material, by weight, administered to a test subject, based on their body weight in kg. Other measures of toxicity include TDL_o, the lowest dose to cause a symptom and TCL_o the lowest concentration to cause a symptom; TD_{lo}, LDL_o, and LD_o, or TC, TC_o, LCL_o, and LC_o, the lowest dose (or concentration) to cause lethal or toxic effects.

Cancer Information: The sources are: **IARC** - the International Agency for Research on Cancer; **NTP** - the National Toxicology Program, **RTECS** - the Registry of Toxic Effects of Chemical Substances, **OSHA** and **CAL/OSHA**. IARC and NTP rate chemicals on a scale of decreasing potential to cause human cancer with rankings from 1 to 4. Subrankings (2A, 2B, etc.) are also used. **Other Information: BEI** - ACGIH Biological Exposure Indices, represent the levels of determinants which are most likely to be observed in specimens collected from a healthy worker who has been exposed to chemicals to the same extent as a worker with inhalation exposure to the TLV.

REPRODUCTIVE TOXICITY INFORMATION:

A mutagen is a chemical that causes permanent changes to genetic material (DNA) such that the changes will propagate through generational lines. An embryotoxin is a chemical that causes damage to a developing embryo (e.g., within the first eight weeks of pregnancy in humans), but the damage does not propagate across generational lines. A teratogen is a chemical that causes damage to a developing fetus, but the damage does not propagate across generational lines. A reproductive toxin is any substance that interferes in any way with the reproductive process.

ECOLOGICAL INFORMATION:

EC is the effect concentration in water. **BCF** = Bioconcentration Factor, which is used to determine if a substance will concentrate in lifeforms which consume contaminated plant or animal matter. TL_m = median threshold limit; Coefficient of Oil/Water Distribution is represented by log K_{ow} or log K_{ow} and is used to assess a substance's behavior in the environment.

REGULATORY INFORMATION:

U.S. and CANADA:

ACGIH: American Conference of Governmental Industrial Hygienists, a professional association which establishes exposure limits.

This section explains the impact of various laws and regulations on the material. **EPA** is the U.S. Environmental Protection Agency. **NIOSH** is the National Institute of Occupational Safety and Health, which is the research arm of the U.S. Occupational Safety and Health Administration (OSHA). **WHMIS** is the Canadian Workplace Hazardous Materials Information System. **DOT** and **TC** are the U.S. Department of Transportation and the Transport Canada, respectively. Superfund Amendments and Reauthorization Act (**SARA**); the Canadian Domestic/Non-Domestic Substances List (**DSL/NDSL**); the U.S. Toxic Substance Control Act (**TSCA**); Marine Pollutant status according to the **DOT**; the Comprehensive Environmental Response, Compensation, and Liability Act (**CERCLA or Superfund**); and various state regulations. This section also includes information on the precautionary warnings which appear on the material's package label. **OSHA** - U.S. Occupational Safety and Health Administration.

EUROPEAN and INTERNATIONAL:

The **DFG:** This is the Federal Republic of Germany's Occupation Health Agency, similar to the U.S. OSHA. **EU** is the European Union (formerly known as the **EEC**, European Economic Community). **EINECS:** This is the European Inventory of Now-Existing Chemical Substances. The **ARD** is the European Agreement Concerning the International Carriage of Dangerous Goods by Road and the **RID** are the International Regulations Concerning the Carriage of Dangerous Goods by Rail. **AICS** is the Australian Inventory of Chemical Substances. **METI** is the Japanese Ministry of Economy, Trade, and Industry.

DYNAMIC PLATINUM. Bright Orange.

Safety Data Sheets

In accordance with Regulation (EC) No 1907/2006 (REACH), as amended by Regulation (EU) Date of issue: 16/01/2022 Date of revision: 29/01/2022

SECTION 1: Identification of the substance or mixture and of the company or firm

1.1. Product identification.

Product form: Mixture
Product name: Bright Orange
Trademark: DYNAMIC PLATINUM

1.2. Identified relevant uses of the substance or mixture and uses advised against.

1.2.1. Identified relevant uses

Main category of use: Professional use for tattoo or micropigmentation.

1.2.2. Uses advised against

No additional information available.

1.3. Supplier details for safety data sheet.

Maimi Paint, SL
Address: C/ Ciudad de Sevilla, number 5, 46988
Paterna, Valencia, Spain.
+34 648 61 81 88

1.4. Emergency telephone numbers.

SPAIN

Entity/Company: Information Service - Toxicological Institute of Toxicology and Forensic Sciences, Madrid Department.
Address: C/ José Echegaray, No.4, 28232 Las Rozas de Madrid.
Emergency telephone number: +34 91 562 04 20.
Comment: Toxicological information only, Information in Spanish (24h/365 days).

BPR Assistance Service:
Ministry of Health, Social Services and Equality Paseo del Prado 18-20, 28071 Madrid.
Email: biocidas-helpdesk@mscbs.es

CLP and REACH Assistance:
REACH and CLP Information Portal C/ Julián Camarillo.
6B, 4th Floor, 28037 Madrid
Email: info@reach-pir.es

AUSTRIA

BPR, REACH, and CLP Assistance:
Federal Ministry for Climate Action, Environment, Energy, Mobility, Innovation, and Technology, Div. VI/7 Stubenbastei 5, A, 1010 Vienna.
Phone: +43 1 31 00 472
Email BPR: biozide@umweltbundesamt.at
Email CLP and REACH: oficina@reachhelpdesk.at

CROATIA

BPR and REACH Assistance:
Ministry of Health, Ksaver 200a - 10000 Zagreb
Phone: +385 1 4607 555

Fax: +385 1 4607 631
Email BPR: biocidi@miz.hr
Email REACH: helpdesk-reach@miz.hr

DENMARK

REACH, CLP, and BPR Assistance:
Danish Environmental Protection Agency Tolderlundsvej 5, 5000 Odense C
Phone: +45 72 54 44 66
Email CLP: clphelpdesk@mst.dk
Email REACH: reachspm@mst.dk
Email BPR: biocideshelpdesk@mst.dk

FRANCE

BPR and CLP Assistance:
ANSES - National Agency for Food, Environmental and Occupational Health and Safety. 253 Avenue du General Leclerc, 94701 Maisons-Alfort Cedex
Email: helpdesk-biocides@anses.fr

REACH Assistance:
INERIS RDC/VIVA/EVEC Parque Tecnológico Alata BP2 - F-60550 Verneuil en Halatte
Phone: +33 8 20 20 18 16
Fax: +33 3 44 55 55 67 67

HUNGARY

BPR, CLP, and REACH Assistance:
National Public Health Center Budapest, Albert Flórián Street, 2-6
Phone: BPR: +36 1 476 1100/2960; CLP: +36 1 476 1135; REACH: +36 1 476 1134
Emails:
BPR: biocide.helpdesk (at) nnk.gov.hu
CLP: clp.helpdesk (at) nnk.gov.hu
REACH: reach.helpdesk (at) nnk.gov.hu

ITALY

BPR Assistance:
Ministry of Health: Directorate General of Medical Devices, Pharmaceutical Service and Healthcare Safety - Office VII Viale Giorgio Ribotta, 5 00144 Rome
Phone (for technical and scientific questions):
Dott.ssa Emanuela Fabbri +39 06 59 94 37 33 33
Dott.ssa Daniela Gigante +39 06 59 94 38 49
Email: Biocidi@sanita.it

CLP Assistance:
Istituto Superiore di Sanità National Center for Chemicals, Cosmetics, and Consumer Protection Viale Regina Elena 299, 00161 Rome.
Email: helpdesk.clp@iss.it

REACH Assistance:
Ministry of Economic Development Via Molise 2, 00187 Rome
Email: helpdesk tecnica@mise.gov.it

LITHUANIA

BPR Assistance:
National Public Health Center of the Ministry of Health, Vilnius Department Kalvariju St. 153, LT-08221 Vilnius,

Phone: +370 5 264 9678
Fax: +370 5 264 9664
Email: vilnius@nvsc.lt

CLP and REACH Assistance:
Environmental Protection Agency A. Juozapaviciaus str. 9, LT-09311 Vilnius
Email: reachclp@aaa.am.lt

MONTENEGRO

REACH, CLP, and BPR Assistance:
Ministry of Sustainable Development and Tourism, Agency for Nature and Environmental Protection IV Proleterske 19, 81000 Podgorica.
Email: asistencia@epa.org.me

POLAND

BPR Assistance:
Office for Registration of Medicinal Products, Medical Devices, and Biocidal Products al. Jerozolimskie 181c 02-222 Warsaw
Phone: +48 22 492 11 00
Fax: +48 22 492 11 09
Email: pb@urpl.gov.pl

CLP and REACH Assistance: Chemical Substances Office ul. Dowborczykow 30/34 90-019 Lodz
Phone: +48 42 2538 424; +48 42 2538 427
Fax: +48 42 2538 444

SERBIA

REACH, CLP, and BPR Assistance:
Ministry of Environmental Protection Address: 1, Youth Brigade Street 11070 Belgrade
Phone: +381 11 7155 225
Fax: +381 11 3132 574
Email: info.hemikalije@ekologija.gov.rs

TURKEY

REACH and CLP Assistance:
Ministry of Environment and Urbanization General Directorate of Environmental Management Department of Chemicals Management Mustafa Kemal Mahallesi Eskiÿehir Devlet Yolu (Dumlupÿnar Bulvarÿ) 9. km. No: 278 Çankaya / Ankara
Phone: +90 (312) 586 -31 87/31 88/ 31 89/ 31 90

BPR Helpdesk:
Ministry of Health Üniversiteler Mah. Dumlupÿnar Bulv. 6001. Cad. No:9 06800 Bilkent - Çankaya / Ankara-TURKEY
Phone: +90 312 565 5212 / 5218 / 5222 / 5222
E-mail: thsk.cevre@saglik.gov.tr

BELGIUM

BPR and CLP Helpdesk:
Federal Public Service (FPS) Health, Food Chain Safety and Environment Place Victor Horta 40/10, 1060 Brussels
Email BPR: info.biocides@environment.belgium.be

REACH Helpdesk:
FPS Economy, Rue du Progrès, 50, B-1210 Brussels
Phone: +32 (0) 800 120 33

Fax: +32 (0) 2 277 53 04
Email: reachinfo@economie.fgov.be

CYPRUS

BPR Assistance:
Department of Agriculture Louki Akrita 1412, Nicosia
Phone: +357 22 408 636; +357 22 408 669
Email: ahadjigeorgiou@da.moa.gov.cy; alegavriel@da.moa.gov.cy

CLP and REACH Helpdesk:
Department of Labour Inspection CY-1493, Nicosia
Phone CLP: +357 22405611; +357 22 40 56 08
Fax: +357 22663788
Email CLP: CLP@dli.mlsi.gov.cy

Phone REACH: +357 22 40 56 09; +357 22 40 56 08
Email REACH: REACH@dli.mlsi.gov.cy

ESTONIA

BPR, CLP, and REACH Helpdesk:
Health Board/Health Board of Estonia; Chemical Safety Department Paldiski mnt 81, 10617 Tallinn
Email BPR: bpr@terviseamet.ee
Email CLP: clp@terviseamet.ee
Email REACH: reach@terviseamet.ee

GERMANY

BPR, CLP, and REACH Helpdesk:
BAuA - Federal Institute for Occupational Safety and Health Friedrich-Henkel-Weg 1 - 25 D-44149 Dortmund
Phone: + 49 (0) 231 9071 2971
Fax: +49 (0) 231 9071 2679
Email: reach-clp-biozid@baua.bund.de

ICELAND

BPR, CLP, and REACH Helpdesk:
Environment Agency Iceland Suðurlandsbraut 24, 108 Reykjavik
Phone: +354 591 2000
Fax: +354 591 2010
Email: ust@ust.is

LATVIA

BPR, CLP, and REACH Helpdesk:
Latvian Environment, Geology and Meteorology Centre (LEGMC) Chemicals and Hazardous Waste Department
Maskavas iela 165, Riga, LV-1019
Phone: +371 6703 2027
Fax: +371 6714 5154
Email BPR: biocidas@lvgmc.lv
Email CLP and REACH: reach@lvgmc.lv

LUXEMBOURG

Competent Authority BPR:
Environment Administration Chemicals and Dangerous Substances Service 1, avenue du Rock'n'Roll, L-4361 Esch-

sur-Alzette, Luxembourg
Email: biocides@aev.etat.lu

NETHERLANDS

BPR Helpdesk:
CtGB - Board for the Authorization of Plant Protection Products and Biocides Bennekomseweg 41, 6717 LL Ede
Phone: +31 0 317 47 47 18 10
Email: servicedesk@ctgb.nl

CLP and REACH Helpdesk:
National Institute for Public Health and the Environment (RIVM) Antonie van Leeuwenhoeklaan 9, P.O. Box 1 - 3720 BA Bilthoven.

PORTUGAL

BPR Helpdesk:
Directorate-General of Health (DGS) Alameda D. Afonso Henriques, 45 - 1049 005 Lisbon
Phone: +351 218 430 500
Fax: +351 218 430 742
Email: geral@dgs.pt

CLP and REACH Helpdesk:
Agency for Competitiveness and Innovation, IP (Portuguese Agency for Competitiveness and Innovation) Estrada do Paço do Lumiar, Campus do Lumiar, Building A 1649 - 038 Lisbon

SLOVAKIA

BPR, CLP, and REACH Helpdesk:
Ministry of Economy of the Slovak Republic Chemicals and Preparations Division Mlynske nivy 44/a, 827 15 Bratislava
Phone: +421 2 4854 4511

SWEDEN

BPR, CLP, and REACH Helpdesk:
Swedish Chemicals Agency P.O. Box 2, SE 172 13 Sundbyberg
Phone: +46 8 5194 1100; +46 8 519 41 111

BULGARIA

Competent Authority BPR:
Ministry of Health, 5, “Sveta Nedelya” Square, Sofia-1000
Phone: +359 2 9301 214
Fax: +359 2 9883413
Email: amaslarska@mh.government.bg; vhristova@mh.government.bg
CLP and REACH Helpdesk:
Ministry of Environment and Water 67, R. W. Gladstone / 22, Maria Luisa Blvd Sofia 1000
Fax: + 359 2 980 33 17

CZECH REPUBLIC

Competent Authority BPR:
Ministry of Health of the Czech Republic Palackeho namesti 4 CZ - 128 01 Prague 2
Phone: +420 267 082 305
Fax: +420 267 082 228
Email: biocidy@mzcr.cz

CLP and REACH Helpdesk:

CENIA Vrsovicka 1442/65, 100 10 Prague 10
Phone: +420 267 125 323
Email CLP: clp@cenia.cz
Email REACH: reach@cenia.cz

FINLAND

REACH, CLP, and BPR Helpdesk:
Finnish Safety and Chemicals Agency (Tukes) P.O. Box 66, 00521 Helsinki
Phone: +358 400 393 033 (REACH/CLP); +358 50 597 6338 (BPR)

GREECE

CLP and REACH Helpdesk:
Energy, Industrial Products, and Chemicals Directorate - DG of the State General Laboratory of Chemicals under the Independent Authority for Public Revenue (IAPR) 16, An. Tsocha St. GR-11521 Athens
Phone: +30 210 64 79 286; +30 210 64 79 287
Fax: +30 210 64 66 917
Email: elhelpdesk@gcsl.gr

BPR Helpdesk:
Energy, Industrial Products, and Chemicals Directorate - DG of the State General Laboratory of Chemicals under the Independent Authority for Public Revenue (IAPR) 16, An. Tsocha St. GR-11521 Athens
Phone: +30 210 64 79 286; +30 210 64 79 287
Fax: +30 210 64 66 917
Email: elhelpdesk@gcsl.gr

IRELAND

Competent Authority BPR:
Pesticides Registration and Control Division - Department of Agriculture, Food and the Marine, Back Weston Laboratories Complex, Backweston, Celbridge, Co Kildare.
Phone: +353 1 615 7552
Email: biocides@Agriculture.gov.ie

CLP and REACH Helpdesk:
Health and Safety Authority - The Metropolitan Building, James Joyce St, Dublin 1
Phone: +353 1 614 7000
Fax: +353 1 614 7120
Email: Chemicals@hsa.ie

LIECHTENSTEIN

CLP and REACH Helpdesk:
Environment Office - Dr. Grass-Str. 12 / P.O. Box 684, Vaduz FL-9490
Phone: +423 236 64 00
Fax: +423 236 64 11
Email BPR: biocide@llv.li
Email CLP: clp@llv.li
Email REACH: reach@llv.li

MALTA

BPR, CLP, and REACH Helpdesk:
Malta Competition and Consumer Affairs Authority (MCCAA) Directorate for Technical Regulation, Technical Regulation Division, Mizzi House, National Road, Blata l-Bajda, HMR9010
Phone: +356 2395 2000
Fax: +356 2124 2406

DYNAMIC PLATINUM: Bright Orange:

Safety Data Sheets

In accordance with Regulation (EC) No 1907/2006 (REACH), as amended by Regulation (EU) Date of issue: 16/01/2022 Date of revision: 29/01/2022

Email BPR: biocidas@mccaa.org.mt
Email REACH and CLP: helpdesk.mccaa@mccaa.org.mt

NORWAY

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Norwegian Environment Agency P.O. Box 5672 Torgarden, 7485 Trondheim
Phone: +47 73 58 05 00
Email BPR: biocides@miljodir.no
Email CLP and REACH: kjemikalier@miljodir.no

ROMANIA

Competent Authority BPR:
Ministry of Health, National Committee of Biocidal Products R. Dr. A. Leonte, Nr 1-3, 050463 Bucharest
Phone: +40 21 311 86 20
Fax +40 21 311 86 20
Email: helpdesk.biocide@insp.gov.ro

CLP and REACH Helpdesk:
National Environmental Protection Agency (NEPA). Splaiul Independentei Street 294, 1st Floor, District 6 - 060031, Bucharest
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SLOVENIA

BPR, CLP, and REACH Helpdesk:
Chemicals Office of the Republic of Slovenia Ajdovščina 4, SI-1000 Ljubljana
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Email CLP and REACH: reach.mz@gov.si

SWITZERLAND

REACH Helpdesk:
Common Notification Authority for Chemicals - FOPH - SECO 3003 Bern
Phone: +41 (0)58 465 12 53
Email: reachhelpdesk@bag.admin.ch

BPR Helpdesk:
Common Notification Authority for Chemicals FOEN - FOPH - SECO 3003 Bern
Phone: +41 (0)58 462 73 05
Email: cheminfo@bag.admin.ch

DYNAMIC PLATINUM: Bright Orange.

Safety Data Sheets

In accordance with Regulation (EC) No 1907/2006 (REACH), as amended by Regulation (EU) Date of issue: 16/01/2022 Date of revision: 29/01/2022

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture.

Classification according to Regulation (EU) No. 1272/2008 [CLP]: Not classified

Adverse physicochemical effects on human health and the environment: As far as is known, the product does not present any particular hazards if the general rules of industrial hygiene.

2.2. Label elements.

Labeling according to Regulation (EC) No. 1272/2008 [CLP].
May contain traces of nickel and/or chromium. May cause allergic reactions; allergy testing is recommended.
Allergy testing is recommended. Product irradiated with gamma rays for sterilization.
Read instructions for use before using the product.

2.3. Other hazards.

Does not contain PBT/vPvB substances evaluated in accordance with Regulation (EC) No. 1907/2006 with Annex XIII of REACH.

SECTION 3: Information on composition/components

3.1. Substances.

Not applicable.

3.2 Mixtures.

Name	Product identifier	(%)
CI(77891) CI(16255) CI(19140) CI(42090) CI(77266)	CAS: 13463-67-7 CAS: 2611-82-7 CAS:1934-21-0 CAS: 3844-45-9 CAS: 1333-86-4	15-20 0-5 5-10 0 0
GLYCERIN	CAS: 56-81-5 CE: 200-289-5	15-20
BUTYLENE GLYCOL	CAS: 107-88-0 CE: 203-529-7	0-5
AQUA	CAS: 7732-18-5 CE: 231-791-2	50-55
HAMAMELIS VIRGINIANA WATER	CAS: 84696-19-5 CE: 283-637-9	0-5

There are no additional ingredients present that, to the best knowledge of the manufacturer and in the applicable concentrations, are classified as hazardous to health or the environment.
The specific percentage of the composition may not be disclosed as a trade secret.

Full text of H and EUH phrases: see section 16.

DYNAMIC PLATINUM: Bright Orange:

Safety Data Sheets

In accordance with Regulation (EC) No 1907/2006 (REACH), as amended by Regulation (EU) Date of issue: 16/01/2022 Date of revision: 29/01/2022

SECTION 4: First Aid

4.1. Description of first aid.

First aid measures in case of inhalation:
Remove person to fresh air and keep in a position that facilitates breathing. Consult a doctor if you feel unwell.

First-aid measures after skin contact:
Wash skin with plenty of water. If you feel unwell, seek medical advice.

First-aid measures after eye contact:
Flush eyes with water as a precaution. Consult a physician if you feel unwell.

First-aid measures after ingestion:
Call a poison control center or doctor if you feel unwell.

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

No further information available.

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

Symptomatic treatment.

SECTION 5: Fire-fighting measures

5.1. Extinguishing media.

Suitable extinguishing media:
Water spray. Dry powder. Foam. Carbon dioxide.

5.2 . Specific hazards arising from the substance or mixture.

Hazardous decomposition products in case of fire:
Possible emission of toxic fumes.

5.3. Recommendations for fire-fighting personnel.

Protection during fire fighting:
Do not intervene without appropriate protective equipment. Self-contained and insulated breathing apparatus. Full body protection.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures.

6.1.1. For non-emergency services personnel.

Emergency procedures:

Ventilate the spill area.

6.1.2. For emergency personnel.

Protective equipment:

Do not intervene without appropriate protective equipment. For further information see section 8: “Exposure control/ personal protection”.

6.2. Environmental precautions.

Avoid release to the environment.

6.3. Containment and containment methods and material.

Clean-up procedures:

Absorb spilled liquid with an absorbent product.

Other information:

Dispose of materials or solid waste at an authorized authorized facility.

6.4. Reference to other sections.

For further information, see section 13.

SECTION 7: Handling and Storage

7.1. Precautions for Safe Handling.

Precautions for safe handling:

The workstation should be well-ventilated. Wear personal protective equipment.

Hygienic measures:

Do not eat, drink or smoke during use. Wash hands after handling.

7.2 Safe storage conditions including possible incompatibility.

Storage conditions:

Keep locked and padlocked. Store in a well-ventilated place. Storage recommended at a maximum temperature of 32ºC.

7.3. Specific end uses.

No further information available.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters.

8.1.1. National occupational and biological exposure limit values :
This mixture as supplied does not contain any hazardous materials with occupational exposure limits or biological limits established by specific regulatory agencies.

8.1.2. Recommended Monitoring Methods
No further information available.

8.1.3. Air contaminants formed
No further information available

8.1.4. DNEL and PNECs
No further information available.

8.1.5. Control Bands
No further information available.

8.2. Exposure Controls.

8.2.1. Appropriate engineering controls
Appropriate engineering controls:
The workplace should be well ventilated.

8.2.2. Personal Protective Equipment
Symbols for personal protective equipment:

8.2.2.1. Eye and face protection
Eye protection: Safety glasses.

8.2.2.2. Skin protection
Skin and body protection: Wear suitable protective clothing Hand protection: Protective gloves.

8.2.2.3. Respiratory tract protection
Respiratory protection: In case of insufficient ventilation, use suitable respiratory system.

8.2.2.4. Thermal hazards
No further information available

8.2.3. Control of environmental exposure
Control of environmental exposure: Avoid release to the environment.

DYNAMIC PLATINUM: Bright Orange.

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SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties.

Form/State:	Liquid
Appearance:	Liquid
Color:	Orange
Odor:	Characteristic odor
Olfactory Threshold:	Data not available
PH:	Liquid
Relative evaporation rate (butyl acetate=1):	Data not available
Melting point:	Not applicable
Solidification point:	Data not available
Boiling point:	> 100 ºC
Flammability point:	
Autoignition temperature:	Data not available
Decomposition temperature:	Data not available
Flammability (solid, gas):	Data not available
Vapor pressure:	Data not available
Relative vapor density at 20 ºC:	Data not available
Relative density:	Data not available
Solubility:	Data not available
Partition coefficient N-octanol/water (Log Pow):	Data not available
Viscosity, kinematic:	Data not available
Viscosity, dynamic:	Data not available
Explosive properties:	Data not available
Oxidizing properties:	Data not available
Explosion limits:	Data not available
Particle size:	< 15 microns

9.2. Other information.

No information available.

SECTION 10: Stability and reactivity

10.1. Reactivity.

The product is not reactive under normal conditions of use, storage and transport.

10.2. Chemical stability.

Stable under normal conditions.

10.3. Possibility of hazardous reactions.

No dangerous reactions are known under normal conditions of use.

10.4. Conditions to avoid.

None under recommended storage and handling conditions (see section 7).

10.5. Incompatible materials.

No further information available.

10.6. Hazardous decomposition products.

SECTION 11: Toxicological information

11.1. Information on toxicological effects.

Acute toxicity (oral):	Declassified
Acute toxicity (dermal):	Declassified
Acute toxicity (inhalation):	Declassified
Skin corrosion or irritation:	Declassified
Serious eye damage or eye irritation:	Declassified
Respiratory or skin sensitization:	Declassified
Germ cell mutagenicity:	Declassified
Carcinogenicity:	Declassified

DYNAMIC PLATINUM: Bright Orange:

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SECTION 12: Ecological information

12.1. Toxicity.

Ecology - general:

This product is not considered harmful to aquatic organisms and does not cause long-term adverse effects in the environment.

Short-term (acute) hazard to the aquatic environment:

Unclassified.

Long-term (acute) hazard to the aquatic environment:

Unclassified.

12.2. Persistence and degradability.

Readily biodegradable.

12.3. Bioaccumulative potential.

Bioaccumulation is unlikely.

12.4. Mobility in soil.

The product is soluble in water. Absorbed in soil.

12.5. PBT and vPvB assay results.

No PBT/vPvB ingredients are present.

12.6. Endocrine disrupting properties.

No further information available.

12.7. Other side effects.

No further information available.

SECTION 13: Disposal considerations

13.1. Waste Treatment Methods.

Approved waste treatment methods:

Remove contents/container in accordance with the collector’s recycling instructions.

DYNAMIC PLATINUM: Bright Orange.

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SECTION 14: Transport information

According to ADR / IMDG / IATA / DNA / RID

	ADR	IMDG	IATA	AND	RID
14.1. ONU Number	Not regulated	Not regulated	Not regulated	Not regulated	Not regulated
14.2.Official United Nations transport designation	Not regulated	Not regulated	Not regulated	Not regulated	Not regulated
14.3. Transport hazard classes	Not regulated	Not regulated	Not regulated	Not regulated	Not regulated
14.4.Packaging group	Not regulated	Not regulated	Not regulated	Not regulated	Not regulated
14.5. Dangers to the enviroment	Not regulated	Not regulated	Not regulated	Not regulated	Not regulated

No additional information is available.

14.6. Special precautions for users.

Transport by land
Not regulated

Sea transport
Not regulated

Air transport
Not regulated

Inland waterway transport
Not regulated

Rail transport
Not regulated

14.7. Bulk transport in accordance with MARPOL Annex II and the IBC Code.

Not applicable.

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SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations and legislation specific to the substance or mixture.

15.1.1. EU Regulations

Contains no substances subject to restrictions according to REACH Annex XVII.
Does not contain any substance included in the REACH candidate list.
Does not contain any substances listed in Annex XIV of REACH.
Does not contain any substances subject to Regulation (EU) No. 649/2012 of the European Parliament and of the Council of 4 July 2012 concerning the export and import of dangerous chemicals.
It does not contain any substances subject to Regulation (EU) No 2019/1021 of the European Parliament and of the Council of 20 June 2019 on persistent organic pollutants.
Does not contain any substances subject to REGULATION (EC) No. 1005/2009 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 16 September 2009 on substances that deplete the ozone layer.
Does not contain any substances subject to Regulation (EU) 2019/1148 of the European Parliament and of the Council of 20 June 2019 on the placing on the market and use of explosives precursors.

Respect the regulations in force:

Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006, concerning the Registration, Evaluation, Authorization and Restriction of Chemicals (REACH), establishing a European Chemicals Agency, amending Directive 1999/45/EC and repealing Council Regulation (EEC) No. 793/93 and Commission Regulation (EC) No. 1488/94, as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC. COMMISSION REGULATION (EU) 2020/2081 of 14 December 2020 amending Annex XVII to Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorization and Restriction of Chemicals (REACH) as regards substances in tattoo or permanent makeup inks, Official Journal of the European Union of 15 December 2020, L 423/6. Commission Regulation (EU) 2015/830 of 28 May 2015 amending Regulation (EC) No 1907/2006. Not classified as hazardous according to Directives 67/548/EEC and/or 1999/45/EC. Regulation (EC) No 1272/2008 on classification, labeling and packaging. Official Journal of the European Union Union 27.7.2012, No. L 201/60. EC 67/548 or EC 1999/45 classification.Does not contain substances subject to Regulation (EC) 273/2004 of the European Parliament and of the Council of 11 February 2004 on the manufacture and placing on the market of certain substances used in the illicit manufacture of narcotic drugs and psychotropic substances.

15.1.2. National regulations

No further information available

15.2. Chemical safety assessment.

A chemical safety assessment has not been carried out.

DYNAMIC PLATINUM: Bright Orange:

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SECTION 16: Other information

Abbreviations and acronyms:

ADN	European Agreement on the International Carriage of Dangerous Goods by Inland Waterways
ADR	European Agreement concerning the International Carriage of Dangerous Goods by Road
ATE	Estimation of Acute Toxicity
FBC	Bioconcentration factor
VLB	Biological limit value
DBO	Biochemical oxygen demand
DQO	Chemical oxygen demand
DMEL	Derived level with minimal effect
DNEL	Level without derivative effect
CE NO.	EC Number
CE50	Average effective concentration
EN	European standard
IARC	International Agency for Research on Cancer
IATA	International Air Transport Association
IMDG	International Maritime Dangerous Goods Code
CL50	Lethal concentration for 50% of a population of Tests
LD50	Lethal dose for 50% of a test population (Mean lethal dose)
LOAEL	Lower level with observed adverse effect
NOAEC	Concentration with no observed adverse effect
NOAEL	Level with no observed adverse effect
NOEC	Concentration with no observed effect
OCDE	Organization for Economic Cooperation and Development
VLA	Occupational exposure limit
PBT	Persistent, bioaccumulative and toxic substance
PNEC	Expected concentration without effect
RID	Regulation on the international carriage of dangerous goods by rail
FDS	Safety Data Sheets
STP	Treatment plant
DTO	Theoretical oxygen need (BThO)
TLM	Average tolerance limit
COV	Volatile organic compounds
CAS NO.	CAS number
N.E.P	Not specified elsewhere
vPvB	Very persistent and very bioaccumulative
ED	Endocrine disrupting properties

DYNAMIC PLATINUM: Bright Orange:

Safety Data Sheets

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Full text of H and EUH phrases:

Acute Tox. 4 (Cutaneous)	Acute toxicity (dermal), category 4.
Acute Tox. 4 (Inhalation: dust, fog)	Acute toxicity (inhalation: dust, mist) Category 4.
Aquatic Chronic 3	Hazardous to the aquatic environment Chronic hazard, category 3.
H312	Harmful in contact with skin.
H332	Harmful if inhaled.
H412	Harmful to aquatic organisms with long lasting effects.

Classification complies with: ATP 12

Safety Data Sheet (SDS), EU

This information is based on our present knowledge and is intended to describe the product for the protection of health, safety and the environment. Therefore, it should not be construed as a guarantee of any specific product characteristics.

64503-3161

SAFETY DATA SHEET

Prepared to U.S. OSHA, CMA, ANSI, Canadian WHMIS 2015 GHS, European Union CLP EC 1272/2008 & the 8th ATP 2016/918, the Korean MoEL (Public Notice 2016-19), Singapore SS586 Standard – Parts 2 & 3, Chinese GB/T 16483-2008 & GB/T 17519-2013, New Zealand Hazardous Substances (Hazard Classification) Notice 2020, *Australian WorkSafe* GHS 7, 2022, *Japanese* JIS Z 7252: 2019 (Classification of chemicals) and JIS Z 7253: 2019 (Communication of information on danger of chemicals – labeling and safety data sheets), *and the Global Harmonization Standard*

1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY UNDERTAKING

PRODUCT IDENTIFIER USED ON LABEL:

Product Identifier: **TATTOO PAINT No. BUB**
TATTOO PAINT No. HTP

Other Means of Identification: Not Applicable

RECOMMENDED USE of the PRODUCT and RESTRICTIONS on USE:

Recommended Use: Tissue Staining Paint

Restrictions on Use: Other than Recommended Use

SHIPPING CLASSIFICATION:

U.N. Number: None Allocated

U.N. Dangerous Goods Class/Subsidiary Risk: None Allocated

HAZCHEM Code (Australia): None Allocated

Poisons Schedule Number (Australia): None Allocated

NAME, ADDRESS and TELEPHONE NUMBER of CHEMICAL MANUFACTURER, IMPORTER or OTHER RESPONSIBLE PARTY:

U.S. Supplier/Manufacturer's Name: **DYNAMIC COLOR COMPANY**

Address: PO Box 21083
Fort Lauderdale, FL, 33335 USA

Information Phone: + 1-954-462-0261 9 a.m. to 4 p.m. (U.S. East Coast Time Zone)

Emergency Phone: 1-800-233-8332 9 a.m. to 4 p.m. (U.S. East Coast Time Zone)
(from U.S., Canada, Puerto Rico, U.S. Virgin Islands)

Email: sales@dynamiccolor.com

Date of Preparation: April 12, 2001

Date of Revision: April 12, 2022

2. HAZARD IDENTIFICATION

GLOBAL HARMONIZATION LABELING AND CLASSIFICATION: Classified in accordance with Global Harmonization Standard under U.S. OSHA Hazard Communication Standard, Canadian *WHMIS 2015 GHS*, European CLP Regulation (EC) 1272/2008, Japanese JIS Z 7252: 2019 (Classification of chemicals) and JIS Z 7253: 2019 (Communication of information on danger of chemicals – labeling and safety data sheets), New Zealand Hazardous Substances (Hazard Classification) Notice 2020, Australian WorkSafe GHS 7, 2022, Singapore SS586, Chinese GHS standard. Korean MoEL classification is given separately.

Classification: Eye Irritation Category 2A, Specific Target Organs Toxicity (Inhalation-Irritation) Single Exposure Category 3

Signal Word: Warning

Hazard Statements: H319: Causes serious eye irritation. H335: May cause respiratory irritation.

Precautionary Statements:

Prevention: P261: Avoid breathing mists or sprays. P264 + P265: Wash hands and other contamination areas thoroughly after handling. Do not touch eyes.P270: Do not eat, drink or smoke when using these products. P271: Use only outdoors or in a well-ventilated area. P280: Wear protective gloves, protective clothing, eye protection, face protection.

Response: P305 + P351 + P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. P337 + P317: If eye irritation persists: Get medical help. P304 + P340: If inhaled, remove victim to fresh air and keep at rest in a position comfortable for breathing. P319: Get medical help if you feel unwell. P321: Specific treatment (remove from exposure and treat symptoms). Refer to Safety Data Sheet for more information.

Storage: P403 + P233: Store in a well-ventilated place. Keep container tightly closed. P405: Store locked up.

Disposal: P501: Dispose of contents/containers in accordance with all local, regional, national and international regulations.

Hazard Symbols/Pictograms: GHS07

KOREAN MoEL (Notice 2016-19) LABELING AND CLASSIFICATION: Classified in accordance with MoEL Notice 2016-19. Under the MoEL regulation, no differences in classification are applicable.

PERCENT OF UNKNOWN ACUTE TOXICITY: Unknown toxicity by inhalation is 78-80%. Unknown dermal toxicity is 90%. Unknown oral toxicity is 78-80%

2. HAZARD IDENTIFICATION (Continued)

EMERGENCY OVERVIEW: Product Description: These products are pink-colored liquids that have a mild odor. **Health Hazards:** The primary health hazard associated with these products is the potential for mild irritation of contaminated tissue. Eye contact may cause more serious irritation. The Titanium Dioxide component is a suspect carcinogen by inhalation of respirable particles. Due to the liquid form of these products, this hazard is not expected to be significant. **Flammability Hazards:** These products are not flammable. If involved in a fire, the product may decompose to produce carbon, metallic, nitrogen and titanium oxides, chlorine, formaldehyde, hydrogen chloride. **Reactivity Hazards:** These products are not reactive. **Environmental Hazards:** Not tested. These products may have adverse effects when released into the environment. **Emergency Recommendations:** Emergency responders must wear the personal protective equipment suitable for the situation to which they are responding.

3. COMPOSITION and INFORMATION ON INGREDIENTS

Chemical Name	CAS #	European EINECS # / Index #	Japanese MITI/ENC #	Korean ECL #	New Zealand NZIoC #	Chinese IECSC Inventory	Taiwan NESCI ECS Inventory	Australian AICS	% w/w	LABEL ELEMENTS GHS under U.S. OSHA, Canadian WHMIS HPR-GHS & EU Classification (1272/2008), Japanese, New Zealand, Taiwan, Chinese and Korean Regulations Korean ISHA Classification Hazard Statements
Isopropyl Alcohol	67-63-0	200-661-7 603-117-00-0	2-207	KE-29363	HSR001180	Listed	Listed	Listed	10%	GHS Under All Countries Harmonized Classification: Flammable Liquid Cat. 2, Eye Irritation Cat. 2A, Specific Target Organ Toxicity (Inhalation, Ingestion-Narcotic Effects) Single Exposure Cat. 3 Hazard Statements: H226: Flammable liquid and vapor. H319: Causes serious eye irritation. H336: May cause drowsiness or dizziness.
Titanium Dioxide (C.I. White 7)	13463-67-7	236-675-7 No Index #	1-558	KE-33900	May be used under an appropriate group standard	Listed	Listed	Listed	10%	GHS Under All Countries Classification: Not classified Self-Classification Classification: Carcinogenic Cat. 2 Hazard Statements: H351: Suspected of causing cancer. Under U.S. OSHA, Canadian WHMIS HPR-2015 only Classification: Combustible Dust Hazard
Proprietary Red Pigment				Not Listed / Cannot Be Pre-registered	May be used under an appropriate group standard	Listed	Listed	Not Listed	2-5%	Classification: Not Classified
Water	7732-18-5	231-791-2 No Index #	Not Identified in the Listing	KE-35400	Excepted	Listed	Listed	Listed	Balance	Classification: Not Classified

See Section 15 for information on other country inventory listing of components, as applicable
The specific chemical identity and/or exact percentage (concentration) of composition has been withheld as a trade secret.

4. FIRST-AID MEASURES

PROTECTION OF FIRST AID RESPONDERS: Rescuers should be taken for medical attention, if necessary. Only trained personnel should administer supplemental oxygen and/or cardio-pulmonary resuscitation, if necessary.

DESCRIPTION OF FIRST AID MEASURES: Victim(s) must be taken for medical attention. Take copy of label and MSDS to physician or other health professional with victim(s). Remove victim(s) to fresh air, as quickly as possible.

Skin Exposure: If these products contaminate the skin and adverse effect occurs, begin decontamination with running water. Minimum flushing is for 20 minutes. The contaminated individual must seek medical attention if any adverse effects occur after flushing.

GHS Precautionary Statements for Skin Exposure: None applicable.

Eye Exposure: If these products enter the eyes, open contaminated individual's eyes while under gently running water. Use sufficient force to open eyelids. Have contaminated individual "roll" eyes. Minimum flushing is for 20 minutes. Contaminated individual must seek medical attention if adverse effect continues after flushing.

GHS Precautionary Statements for Eye Exposure: P305 + P351 + P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. P337 + P317: If eye irritation persists: Get medical attention.

Inhalation: If aerosols are inhaled and adverse effect occurs, remove victim to fresh air. The contaminated individual must seek medical attention if any adverse effects occur.

GHS Precautionary Statements for Inhalation Exposure: P304 + P340: If inhaled, remove victim to fresh air and keep at rest in a position comfortable for breathing. P319: Get medical help if you feel unwell.

Ingestion: If swallowed, CALL PHYSICIAN OR POISON CONTROL CENTER FOR MOST CURRENT INFORMATION. If professional advice is not available, do not induce vomiting. Never induce vomiting or give diluents (milk or water) to someone who is unconscious, having convulsions, or unable to swallow. If victim is convulsing, maintain an open airway and obtain immediate medical attention.

GHS Precautionary Statements for Ingestion Exposure: None applicable.

4. FIRST-AID MEASURES (Continued)

MOST IMPORTANT SYMPTOMS and EFFECTS, WHETHER ACUTE OR DELAYED: See Sections 2 (Hazard Information) and 11 (Toxicological Information) for information.

Acute:

Symptoms/Effects: May cause irritation by contact with the skin, eyes and respiratory system. All potential effects are dependent on concentration and duration of exposure.

Symptoms/Effects After Inhalation: EXPOSURE TO HIGH CONCENTRATIONS: Coughing, or respiratory irritation.

Symptoms/Effects After Skin Contact: Mild irritation.

Symptoms/Effects After Eye Contact: Moderate irritation of eye tissue.

Symptoms/Effects After Ingestion: Irritation of digestive system.

Chronic:

Symptoms/Effects After Skin Contact: Dermatitis (dry, red skin).

Symptoms/Effects After Eye Contact: None known.

Symptoms/Effects After Accidental Injection: None known.

Symptoms/Effects After Inhalation: None known.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: Skin or respiratory conditions may be aggravated by exposure to these products.

INDICATION OF IMMEDIATE MEDICAL ATTENTION AND SPECIAL TREATMENT IF NEEDED: Treat symptoms and eliminate exposure.

COMPLIANCE WITH SAFE WORK AUSTRALIA MODEL CODE FIRST AID IN THE WORKPLACE CODE OF PRACTICE: Compliance with all requirements should be in place under Section 3 (First Aid Equipment, Facilities and Training) should be in place.

5. FIRE-FIGHTING MEASURES

FLASH POINT: Not flammable. **AUTOIGNITION TEMPERATURE:** Not applicable.

FLAMMABLE LIMITS (in air by volume, %): Not applicable.

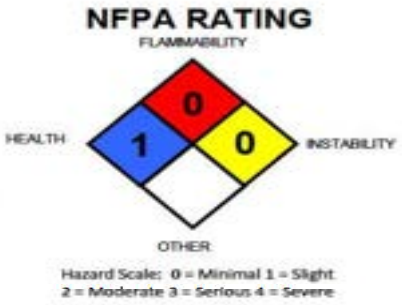
FIRE EXTINGUISHING MEDIA: Unless incompatibilities exist for surrounding materials, carbon dioxide, water spray, 'ABC' type chemical extinguishers, foam, dry chemical and halon extinguishers can be used to fight fires involving these products.

UNSUITABLE FIRE EXTINGUISHING MEDIA: None known.

SPECIAL HAZARDS ARISING FROM THE SUBSTANCE: When involved in a fire, this material may decompose and produce irritating vapors and toxic gases (e.g., carbon, metallic, nitrogen and titanium oxides, chlorine, formaldehyde, hydrogen chloride).

Explosion Sensitivity to Mechanical Impact or Static Discharge: Not sensitive.

SPECIAL PROTECTIVE ACTIONS FOR FIRE-FIGHTERS: Incipient fire responders should wear eye protection. Structural firefighters must wear Self-Contained Breathing Apparatus and full protective equipment. Due to the presence of pigment, the runoff water from these products can discolor contaminated objects. If possible, prevent runoff water from entering storm drains, bodies of water, or other environmentally sensitive areas. If necessary, rinse fire-response equipment with soapy water before returning it to service.



GHS Statements for Fire Response: None applicable.

Australian HazChem Code: Not applicable.

6. ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS AND EMERGENCY PROCEDURES: Uncontrolled releases should be responded to by trained personnel using pre-planned procedures. Proper protective equipment should be used. Call CHEMTREC (1-800-424-9300) for emergency assistance. Or if in Canada, call CANUTEC (613-996-6666). The atmosphere must at least 19.5 percent Oxygen before non-emergency personnel can be allowed in the area without Self-Contained Breathing Apparatus and fire protection.

PERSONAL PROTECTIVE EQUIPMENT: Proper protective equipment should be used.

Small Spills: Wear rubber gloves, splash goggles, and appropriate body protection.

Large Spills: Minimum Personal Protective Equipment should be rubber gloves, rubber boots, face shield, and Tyvek suit. Minimum level of personal protective equipment for releases in which the level of oxygen is less than 19.5% or is unknown must be **Level B: triple-gloves (rubber gloves and nitrile gloves over latex gloves), chemical resistant suit and boots, hard hat, and Self-Contained Breathing Apparatus.**

METHODS FOR CLEAN-UP AND CONTAINMENT:

Small Spills: Carefully absorb spill using polypads or other non-reactive absorbent. Place spilled material in appropriate container for disposal, sealing tightly. Remove all residue before decontamination of spill area.

Large Spills: Access to the spill area should be restricted. For large spills, dike or otherwise contain spill and absorb spill with polypads or other non-reactive absorbent material.

All Spills: Place all spill residue in a double plastic bag or other containment and seal. Decontaminate the area thoroughly. Do not mix with wastes from other materials. Dispose of in accordance with applicable Federal, State, and local procedures (see Section 13, Disposal Considerations). For spills on water, contain, minimize dispersion and collect. Dispose of recovered material and report spill per regulatory requirements.

ENVIRONMENTAL PRECAUTIONS: Avoid release to the environment. Run-off water may be contaminated by other materials and should be contained to prevent possible environmental damage.

REFERENCE TO OTHER SECTIONS: See information in Section 8 (Exposure Controls – Personal Protection) and Section 13 (Disposal Considerations) for additional information.

7. HANDLING and STORAGE

PRECAUTIONS FOR SAFE HANDLING: As with all chemicals, avoid getting these products ON YOU or IN YOU. Wash thoroughly after handling these products. Do not eat, drink, smoke, or apply cosmetics while handling these products. Avoid breathing aerosols from the product. Keep away from incompatible materials (see Section 10, Stability and Reactivity). Containers of these products must be properly labeled. Use in a well-ventilated location. Remove contaminated clothing.

GHS Statements for Safe Handling: P261: Avoid breathing mists or sprays. P264 + P265: Wash hands and other contamination areas thoroughly after handling. Do not touch eyes.P270: Do not eat, drink or smoke when using these products. P271: Use only outdoors or in a well-ventilated area. P280: Wear protective gloves, protective clothing, eye protection, face protection.

CONDITIONS FOR SAFE STORAGE and INCOMPATIBILITIES: Keep container tightly closed when not in use. Store containers in a cool, dry location, away from direct sunlight, sources of intense heat, or where freezing is possible. Material should be stored in secondary containers or in a diked area, as appropriate. Inspect all incoming containers before storage, to ensure containers are properly labeled and not damaged. Have appropriate extinguishing equipment in the storage area (such as sprinkler systems or portable fire extinguishers). Empty containers may contain residual product; therefore, empty containers should be handled with care. May be incompatible with water reactive materials and strong oxidizers.

GHS Statements for Safe Storage: P403 + P233: Store in a well-ventilated place. Keep container tightly closed. P405: Store locked up.

SPECIFIC USE(S): These products are for use as a skin staining paint. Follow all industry standards for use of these products.

PROTECTIVE PRACTICES DURING MAINTENANCE OF CONTAMINATED EQUIPMENT: Follow practices indicated in Section 6 (Accidental Release Measures). Make certain that application equipment is locked and tagged-out safely. Always use these products in areas where adequate ventilation is provided. Decontaminate equipment thoroughly, before maintenance begins. Collect all rinsates and dispose of according to applicable Federal, State, or local procedures, or applicable standards.

8. EXPOSURE CONTROLS - PERSONAL PROTECTION

EXPOSURE LIMITS/CONTROL PARAMETERS:

Ventilation and Engineering Controls: Use with adequate ventilation to ensure exposure levels are maintained below the limits provided in this section. Use local exhaust ventilation. Normal office ventilation conforming to the American Society of Heating, Refrigerating, and Air Conditioning Engineers (ASHRAE) Standards is adequate under normal circumstances of use. Persons using this material should consult a qualified Ventilation Engineer and/or Industrial Hygienist if concerns about exposure arise. If necessary, refer to Australian National Code of Practice for the Control of Workplace Hazardous Substances [NOHSC: 2007 (1994)] for further information.

U.S. Workplace Exposure Limits/Control Parameters:

CHEMICAL NAME	CAS #	EXPOSURE LIMITS IN AIR							
		ACGIH-TLVs		OSHA-PELs		NIOSH-RELs		NIOSH	OTHER
		TWA mg/m^3	STEL mg/m^3	TWA mg/m^3	STEL mg/m^3	TWA mg/m^3	STEL mg/m^3	IDLH mg/m^3	mg/m^3
C.I. White 7 (Titanium Dioxide)	13463-67-7	0.2 (resp. fract.) finescale particles	NE	15 (total dust); 10 (vacated 1989 PEL)	NE	See Pocket Guide App. A		5000	DFG MAK Pregnancy Risk Classification: C
Isopropyl Alcohol	67-63-0	492	984	980	500 ppm (vacated 1989 PEL)	980	1225	2000 ppm (based on LEL)	DFG MAK: TWA = 500 ppm PEAK = 2•MAK, 15 min., average value, 1-hr interval, 4 per shift DFG MAK Pregnancy Risk Classification: C

NE = Not Established.

Australian Hazardous Chemical Information System (HMIS) Exposure Standards:

CHEMICAL NAME	CAS #	EXPOSURE STANDARDS				
		TWA ppm	TWA mg/m^3	STEL ppm	STEL mg/m^3	Notes
C.I. White 7 (Titanium Dioxide)	13463-67-7	NE	10	NE	NE	(1) This value is for inhalable dust containing no asbestos and < 1% crystalline silica.
Isopropyl Alcohol	67-63-0	400	983	500	1230	Not Applicable

NE = Not Established.

UK Minimum Exposure Limits:

CHEMICAL NAME	CAS #	WORKPLACE EXPOSURE LIMIT				
		Long-Term Exposure Limit (8-Hrs TWA Reference Period)		Short-Term Exposure Limit (15-minute Reference Period)		Comments
		ppm	$mg.m^{-3}$	ppm	$mg.m^{-3}$	The Carcin, Sen and Skin notations are not exhaustive. Notations have been applied to substances identified in IOELV Directives
C.I. Pigment White 7 (Titanium Dioxide)	14363-67-7	NE	10 (total inhalable) 4 (respirable)	NE	7	NE
Isopropyl Alcohol	67-63-0	400	999	500	1250	NE

NE = Not Established.

8. EXPOSURE CONTROLS - PERSONAL PROTECTION (Continued)

EXPOSURE LIMITS/CONTROL PARAMETERS (continued):

Workplace Exposure Standards (New Zealand): Refer to the Hazardous Substances (Classes 6, 8, and 9 Controls) Regulations 2001 (Regulations 29-30).

CHEMICAL NAME	CAS #	WORKPLACE EXPOSURE STANDARDS				
		TWA ppm	TWA mg/m^3	STEL ppm	STEL mg/m^3	Notes
C.I. Pigment White 7 (Titanium Dioxide)	14363-67-7	NE	10	NE	NE	Not Applicable
Isopropyl Alcohol	67-63-0	400	983	500	1230	Not Applicable

Exposure Standards Outside the Workplace (New Zealand): Currently, there are no other exposure limits, such as TELS and EELS (See Section 12 [Ecological Information] for EEL information) established for components of these products.

Other International Occupational Exposure Limits: Currently, the following international limits established for components of these products.

C.I. Pigment White 7 (Titanium Dioxide):

	Limit Value - Eight Hours	Limit Value - Short Term
Belgium	10 mg/m^3 (1)	
Canada (Ontario)	10 mg/m^3	
Canada (Québec)	10 mg/m^3 (1)	
Denmark	6 mg/m^3 (total dust)	12 mg/m^3 (total dust)
France	11 mg/m^3 (inhalable aerosol)	
Germany (DFG)	0.3 mg/m^3 (1)(2)	2.4mg/m^3 (1)(2)(3)
Ireland	10 mg/m^3 (1) 4 mg/m^3 (2)	
Japan (JSOH)	0.3 mg/m^3 (1)	
Latvia	10 mg/m^3	
Norway	5 mg/m^3	
People's Republic of China	8 mg/m^3 (1)	
Poland	10 mg/m^3 (1)	
Romania	10 mg/m^3	15 mg/m^3 (1)
Singapore	10 mg/m^3	
South Korea	10 mg/m^3	
Spain	10 mg/m^3 (1)	
Sweden	5 mg/m^3 (inhalable aerosol)	
Switzerland	3 mg/m^3 (respirable aerosol)	
	Remarks	
Canada (Québec)	(1) Total dust.	
Germany (DFG)	(1) Respirable fraction, except ultrafine particles. (2) Multiplied by the material density. (3) 15 minutes average value.	
Ireland	(1) Inhalable fraction. (2) Respirable fraction.	
Japan - JSOH	(1) Nanoparticle, as Ti.	
Poland	(1) Inhalable fraction.	
People's Republic of China	(1) Inhalable fraction.	
Romania	(1) 15 minutes average value.	

Isopropyl Alcohol

	Limit Value - Eight Hours	Limit Value - Short Term
Austria	200 ppm; 500 mg/m^3	800 ppm; 2000 mg/m^3
Belgium	200 ppm; 500 mg/m^3	400 ppm (1); 1000 mg/m^3 (1)
Canada (Ontario)	200 ppm	400 ppm
Canada (Québec)	400 ppm; 983 mg/m^3	500 ppm; 1230 mg/m^3
Denmark	200 ppm; 490 mg/m^3	400 ppm; 980 mg/m^3
Finland	200 ppm; 500 mg/m^3	250 ppm (1); 620 mg/m^3 (1)
France		400 ppm; 980 mg/m^3
Germany (AGS)	200 ppm; 500 mg/m^3	400 ppm (1); 1000 mg/m^3 (1)
Germany (DFG)	200 ppm; 500 mg/m^3	400 ppm (1); 1000 mg/m^3 (1)
Hungary	500 mg/m^3	2000 mg/m^3
Ireland	200 ppm	400 ppm (1)
Japan (MHLW)	200 ppm	
Japan JSOH	400 ppm (1); 980 mg/m^3 (1)	
Latvia	350 mg/m^3	600 mg/m^3 (1)
Norway	100 ppm; 245 mg/m^3	
People's Republic of China	350 mg/m^3	700 mg/m^3 (1)
Poland	900 mg/m^3	1200 mg/m^3
Romania	81 ppm; 200 mg/m^3	203 ppm (1); 500 mg/m^3 (1)
Singapore	400 ppm; 983 mg/m^3	500 ppm; 1230 mg/m^3
South Korea	200 ppm; 480 mg/m^3	400 ppm; 980 mg/m^3
Spain	200 ppm; 500 mg/m^3	400 ppm; 1000 mg/m^3
Sweden	150 ppm; 350 mg/m^3	250 ppm (1); 600 mg/m^3 (1)
Switzerland	200 ppm; 500 mg/m^3	400 ppm; 1000 mg/m^3
	Remarks	
Belgium	(1) 15 minutes average value.	
Finland	(1) 15 minutes average value.	
Germany (AGS)	(1) 15 minutes average value.	
Germany (DFG)	(1) 15 minutes average value.	
Ireland	(1) 15 minutes average value.	
Japan - JSOH	(1) Occupational exposure limit ceiling: Reference value to the maximal exposure concentration of the substance during a working day.	
Latvia	(1) 15 minutes average value.	
People's Republic of China	(1) 15 minutes average value.	
Romania	(1) 15 minutes average value.	
Sweden	(1) 15 minutes average value.	

8. EXPOSURE CONTROLS - PERSONAL PROTECTION (Continued)

BIOLOGICAL MONITORING AND THE SOURCE OF THOSE VALUES:

U.S. ACGIH Biological Exposure Indices (BEIs): Currently, the following Biological Exposure Indices (BEIs) have been established for the Isopropyl Alcohol component of these products.

CHEMICAL: DETERMINANT	SAMPLING TIME	BEI
Isopropyl Alcohol (listed as 2-propanol) • Acetone in Urine	• End of Shift at End of Workweek	• 40 mg/L

UK Biological Monitoring Guidance Values (BMGVs): Currently, no BMGVs have been established for the components of these products.

Appendix E-Schedule 14 (Requirements for Health Monitoring) per Australia Safe Work Code of Practice Managing Risks and Hazardous Chemicals in the Workplace: Currently, no component of these products has an established monitoring requirement value.

PROTECTIVE EQUIPMENT: The following information on appropriate Personal Protective Equipment is provided to assist employers in complying with OSHA regulations found in 29 CFR Subpart I (beginning at 1910.132, including U.S. Federal OSHA Respiratory Protection (29 CFR 1910.134), OSHA Eye Protection 29 CFR 1910.133, OSHA Hard Protection 29 CFR 1910.138, OSHA Foot Protection 29 CFR 1910.136 and OSHA Body Protection 29 CFR1910.132), equivalent standards of Canada (including CSA Respiratory Standard Z94.4-02, Z94.3-M1982, *Industrial Eye and Face Protectors* and CSA Standard Z195-02, *Protective Footwear*), standards of EU member states (including EN 529:2005 for respiratory PPE, CEN/TR 15419:2006 for hand/body protection, and CR 13464:1999 for face/eye protection), standards of Australia (including AS/NZS 1715:1994 for respiratory PPE, AS/NZS 4501.2:2006 for protective clothing, AS/NZS 2161.1:2000 for glove selection, and AS/NZS 1336:1997 for eye protection), or standards of Japan (including JIS T 8116:2005 for glove selection, JIS T 8150:2006 for respiratory PPE, JIS T 8147:2003 for eye protectors, and JIS T 8030:2005 for protective clothing). Please reference applicable regulations and standards for relevant details.

Respiratory Protection: Maintain airborne contaminant concentrations below exposure limits listed in this section, if applicable. If respiratory protection is needed, use only protection authorized in applicable regulations. Oxygen levels below 19.5% are considered IDLH by U.S. OSHA. In such atmospheres, use of a full-facepiece pressure/demand SCBA or a full facepiece, supplied air respirator with auxiliary self-contained air supply is required under OSHA's Respiratory Protection Standard (1910.134-1998). The following are U.S. NIOSH Respiratory Equipment Guidelines for Isopropyl Alcohol are provided to assist in selection of respiratory PPE in event of presence of aerosols.

Isopropyl Alcohol

Concentration	Respiratory Protection
Up to 2000 ppm:	Any Supplied-Air Respirator (SAR) operated in a continuous-flow mode, or any Chemical Cartridge Respirator with a full facepiece and organic vapor cartridge(s), or any Air-Purifying, Full-Facepiece Respirator (gas mask) with a chin-style, front- or back-mounted organic vapor canister, or any Powered, Air-Purifying Respirator (PAPR) with organic vapor cartridge(s), or any Self-Contained Breathing Apparatus (SCBA) with a full facepiece, or any SAR with a full facepiece.

Eye Protection: Depending on the use of these products, splash goggles or safety glasses may be worn. Use goggles or safety glasses for spill response, as stated in Section 6 (Accidental Release Measures) of this SDS. If necessary, refer to appropriate regulations when selecting eye protection.

Hand Protection: Wear butyl rubber, neoprene, or nitrile rubber or latex gloves for routine use. If necessary, refer to appropriate regulations for further information.

Body Protection: Use body protection appropriate for task, such as a lab coat. If necessary, use body protection appropriate for task (e.g., Tyvek suit, rubber apron). If a hazard of injury to the feet exists due to falling objects, rolling objects, where objects may pierce the soles of the feet or where employee's feet may be exposed to electrical hazards, use foot protection, as described in appropriate regulations.

9. PHYSICAL and CHEMICAL PROPERTIES

FORM: Liquid.
COLOR: Pink.
MOLECULAR FORMULA: Mixture.
MOLECULAR WEIGHT: Mixture.
ODOR: Mild.
ODOR THRESHOLD: Not established.
VAPOR DENSITY (air = 1): 2 (calc.)
VAPOR PRESSURE: 50 mmHg
SPECIFIC GRAVITY (water = 1): 1.3
MELTING/FREEZING POINT: ~0°C (~32°F)
SOLUBILITY IN WATER: Dispersible in all proportions.
BOILING POINT: 92°C (197.6°F)
EVAPORATION RATE (*n*-BuAc = 1): < 1
pH: 8.46
OXIDIZING PROPERTIES: Not applicable.
PERCENT SOLIDS: 10-12%
FLAMMABILITY: Not flammable.
FLASH POINT: Not applicable.
AUTOIGNITION TEMPERATURE: Not applicable.
EXPLOSIVE PROPERTIES: Not applicable.
COEFFICIENT OF OIL/WATER DISTRIBUTION (PARTITION COEFFICIENT): Not established.
HOW TO DETECT THIS SUBSTANCE (identification properties): The odor and color of these products may be distinguishing characteristics to identify it event of a spill.

10. STABILITY and REACTIVITY

CHEMICAL STABILITY: Stable under conditions of normal temperature and pressure.
DECOMPOSITION PRODUCTS:
Combustion: If exposed to extremely high temperatures, these products can decompose to generate carbon, metallic, nitrogen and titanium oxides, chlorine, formaldehyde, hydrogen chloride. **Hydrolysis:** None known.
MATERIALS WITH WHICH SUBSTANCE IS INCOMPATIBLE: Strong oxidizers, water-reactive materials.

10. STABILITY and REACTIVITY (Continued)

POSSIBILITY OF HAZARDOUS REACTION OR POLYMERIZATION: Will not occur.

CONDITIONS TO AVOID: Exposure to or contact with extreme temperatures and incompatible chemicals.

11. TOXICOLOGICAL INFORMATION

SYMPTOMS OF EXPOSURE BY ROUTE OF EXPOSURE: The most significant routes of occupational exposure are inhalation and contact with skin and eyes. The symptoms of exposure to this material, via route of entry, are as described below.

Inhalation: These products do not normally present a significant inhalation hazard under anticipated circumstances of use. Inhalation of vapors, mists, or sprays of this material may mildly irritate the nose, throat, and other tissues of the respiratory system.

Contact with Eyes: Eye contact with this material can moderately irritate the eyes, causing discomfort, tearing, and redness. Because the eye tissue may be stained, vision may be temporarily blurred.

Contact with Skin: Skin contact may cause mild irritation in sensitive individuals. Repeated or prolonged skin exposure may cause dermatitis (dry, red skin).

Skin Absorption: No component is known to be absorbed via intact skin.

Ingestion: Though not anticipated to be a significant route of occupational exposure, ingestion of large quantities of this material may cause nausea, vomiting, diarrhea, and discoloration of the mouth, teeth, and tissues of the throat.

Injection: Accidental injection of this liquid (as may occur by a puncture with a contaminated object) will cause local pain, irritation, and redness.

HEALTH EFFECTS OR RISKS FROM EXPOSURE: In the event of exposure, the following symptoms may be observed:

Short Term: Eye contact will cause moderate irritation. Ingestion of large amounts may cause nausea, vomiting, diarrhea. Inhalation of vapors may cause adverse symptoms to the central nervous system due to the Isopropyl Alcohol component.

Long Term: Repeated or prolonged skin exposure may cause dermatitis (dry, red skin).

Hazard Scale: 0 = Minimal 1 = Slight 2 = Moderate 3 = Serious 4 = Severe * = Chronic hazard

TARGET ORGANS:

Short Term: Skin, central nervous system, eyes. **Long Term:** Skin.

OVERALL ACUTE TOXICITY ESTIMATES (ATE) FOR PRODUCT:

Oral Route: > 14,890 mg/kg; Dermal Route: > 163,998 mg/kg; Inhalation Route: > 50 mg/L

TOXICITY DATA FOR COMPONENTS: Specific toxicology data currently available for components of these products in greater than 1% concentration are as follows. Due to the large amount of data available, only human data, irritation data, LD50 oral, rat and mouse, skin, rabbit and rat, LC50 inhalation rat and mouse data are included in this SDS. Contact Dynamic Color for information on additional data available.

C.I. Pigment White 7 (Titanium Dioxide):
LD_{50} (Oral-Rat) > 2000 mg/kg (CLP Guideline Study)
LC_{50} (Inhalation-Rabbit) 4 hr: > 5.09 mg/L (OECD 403)

Isopropyl Alcohol:
LDLo (Oral-Man): 5272 mg/kg; Behavioral: coma; Vascular: BP lowering not characterized in autonomic section; Lungs, Thorax, or Respiration: chronic pulmonary edema
LDLo (Oral-Human): 3570 mg/kg; Behavioral: coma; Lungs, Thorax, or Respiration: respiratory depression; Gastrointestinal: nausea or vomiting
LDLo (Unreported-Man) = 2770 mg/kg
TDLo (Oral-Man): 14,432 mg/kg; Behavioral: coma; Vascular: BP lowering not characterized in autonomic section; Lungs, Thorax, or Respiration: dyspnea
TDLo (Oral-Human): 223 mg/kg; Behavioral: hallucinations, distorted perceptions; Cardiac: pulse rate; Vascular: BP lowering not characterized in autonomic section
TDLo (Oral-Infant): 13 gm/kg; Behavioral: somnolence (general depressed activity), irritability; Gastrointestinal: nausea or vomiting
Skin Irritancy (Rabbit): 500 mg; mild
Eye Irritancy (Rabbit): 100 mg; severe
LD_{50} (Oral-Rat) 5840 mg/kg (OECD 401)
LD_{50} (Skin-Rabbit) 16,400 mg/kg (OECD 402)
LD_{50} (Inhalation-Rat) 4 hr: > 10,000 mg/L (OECD 403)

REPEATED DOSE TOXICITY: No component has demonstrated repeated dose toxicity in either animal testing or though workplace data.

CARCINOGENIC POTENTIAL OF COMPONENTS: Components of these products are listed by agencies tracking the carcinogenic potential of chemical compounds, as follows.

C.I. Pigment White 7 (Titanium Dioxide): ACGIH TLV-A3 (Confirmed Animal Carcinogen with Unknown Relevance to Humans); IARC-2B (Possibly Carcinogenic to Humans); MAK-4 (Substances with carcinogenic potential for which genotoxicity plays no or at most a minor role. No significant contribution to human cancer risk is expected, provided the MAK value is observed.); NIOSH-Ca (Potential Occupational Carcinogen, with No Further Categorization)

Isopropyl Alcohol: ACGIH TLV-A4 (Not Classifiable as a Human Carcinogen); IARC-3 (Not Classifiable as to Carcinogenicity to Humans)

The remaining components of these products are not found on the following lists: U.S. EPA, U.S. NTP, U.S. OSHA, U.S. NIOSH, GERMAN MAK, IARC, and ACGIH, and therefore are neither considered to be nor suspected to be cancer-causing agents by these agencies.

IRRITANCY OF PRODUCT: Acute exposure to these products via eye contact may irritate contaminated eyes. Acute exposure to these products via skin contact and inhalation may mildly irritate contaminated tissue, especially if exposure is prolonged.

ENDOCRINE TOXICITY: No component is known or suspected to be an endocrine disruptor.

SENSITIZATION TO THE PRODUCT: The components of these products are not known to be human skin or respiratory sensitizers.

11. TOXICOLOGICAL INFORMATION (Continued)

REPRODUCTIVE TOXICITY INFORMATION: No components of these products are known to have mutagenic, embryotoxic, teratogenic or reproductive toxicity effects in humans.

12. ECOLOGICAL INFORMATION

ALL WORK PRACTICES MUST BE AIMED AT ELIMINATING ENVIRONMENTAL CONTAMINATION.

MOBILITY: These products have not been tested for mobility in soil. It is expected to be somewhat mobile in soil.

PERSISTENCE AND BIODEGRADABILITY: These products have not been tested for persistence or biodegradability. It is expected that some biodegradation will occur to these products; however, no specific information is known.

BIO-ACCUMULATION POTENTIAL: No component of these products presents a bio-accumulation potential.

EFFECT OF MATERIAL ON PLANTS or ANIMALS: These products may be harmful to plant or animal life, especially if large volumes of these products are released.

EFFECT OF CHEMICAL ON AQUATIC LIFE: These products have not been tested for aquatic toxicity. The following are aquatic toxicity data for some components of these products:

C.I. Pigment White 7 (Titanium Dioxide):
LC_{50} (*Pimephales promelas* fathead minnow) 96 hrs: > 100 mg/L (No Guideline info)
EC_{50} (*Daphnia Magna* Giant Water flea) 24 hrs: > 100 mg/L (No Guideline info)
EC_{50} (Skeletonema costatum freshwater algae) 72 hours: > 00 mg/L (No Guideline info)

Isopropyl Alcohol:
LC_{50} (*Carassius auratus* Goldfish) 96 hrs: 9640 mg/L (US EPA Committee on Methods for Toxicity Tests with Aquatic Organisms)
EC_{50} (*Daphnia Magna* Giant Water flea) 24 hrs: 10,00 mg/L (OECD 202)
EC_{10} (*Scenedesmus quadricauda* freshwater algae) 8 days: 1800 mg/L (No Guideline info)

OTHER ADVERSE EFFECTS: These products do not contain any component with known ozone depletion potential.

RESULTS OF PBT AND vPvB ASSESSMENT: No Data Available. PBT and vPvB assessments are part of the chemical safety report required for some substances in European Union Regulation (EC) 1907/2006, Article 14.

ENDOCRINE DISRUPTORS: No component has been shown to be or is suspected to cause endocrine disruption to terrestrial or aquatic animals.

ENVIRONMENTAL EXPOSURE CONTROLS: Controls should be engineered to prevent release to the environment, including procedures to prevent spills, atmospheric release and release to waterways.

GHS Statements for Environmental Exposure Controls: Not applicable.

13. DISPOSAL CONSIDERATIONS

PRECAUTIONS TO BE FOLLOWED DURING WASTE HANDLING: Wear proper protective equipment when handling waste materials.

GHS Statements for Waste Handling: P501: Dispose of contents/containers in accordance with all local, regional, national and international regulations.

DISPOSAL CONTAINERS: Waste materials must be placed in and shipped in appropriate 5-gallon or 55-gallon poly or metal waste pails or drums. Permeable cardboard containers are not appropriate and should not be used. Ensure that any required marking or labeling of the containers be done to all applicable regulations.

DISPOSAL METHODS: It is the responsibility of the generator to determine at the time of disposal whether the product meets the criteria of a hazardous waste per regulations of the jurisdiction in which the waste is generated and/or disposed of. Waste disposal must be in accordance with appropriate Federal, State, Provincial and local regulations. These products, if unaltered by use, may be disposed of by treatment at a permitted facility or as advised by your local hazardous waste regulatory authority. Shipment of wastes must be done with appropriately permitted and registered transporters.

U.S. EPA WASTE NUMBER: Not applicable to wastes consisting only of these products.

CANADIAN HAZARDOUS WASTE REGULATIONS: As supplied, these products should be tested to see if it meets the criteria of hazardous wastes per Canadian Environmental Protection Agency) regulations and the Canadian Environmental Protection Act, 1999 (CEPA).

Canadian Environmental Protection Act (CEPA) Priority Substances Lists: The Isopropyl Alcohol component is listed as a Substance With Greatest Potential For Human Exposure Substance on Environment Canada/Health Canada Pilot Project List (CEPA 1999, Section 73). Meets categorization criteria: *may present, to individuals in Canada, the greatest potential for exposure; or *are persistent or bioaccumulative in accordance with the regulations, and inherently toxic to human beings or to non-human organisms, as determined by laboratory or other studies.

EUROPEAN WASTE CODES FOR PRODUCT: Wastes from MFSU and Removal of Printing Inks: 08 03 99: Wastes Not Otherwise Specified

EU WASTE FRAMEWORK DIRECTIVE, ANNEX III - WASTE - HAZARDOUS PROPERTIES: These products do not meet the criteria of any hazardous waste property. The components of these products have designated waste codes as listed below.

Isopropyl Alcohol: HP3 Flammable Waste (FW); HP5 Specific Target Organ Toxicity (STOT)/Aspiration Toxicity

C.I. Pigment White 7 (Titanium Dioxide): HP7 Carcinogenic: Waste which induces cancer or increases it incidence; in powder form containing 1% or more of particles with aerodynamic diameter ≤ 10 µm.

AUSTRALIAN HAZARDOUS WASTE REGULATIONS: As supplied, these products should be tested to see if it meets the criteria of hazardous wastes per Australian Department of Agriculture, Water and the Environment regulations. If wastes are to be exported, they should be tested to see if they have requirements under the Australian Hazardous Waste (Regulation of Exports and Imports) Act 1989 and further of the Basel Convention where the waste has any of the characteristics mentioned in Annex III to the Basel Convention.

14. TRANSPORTATION INFORMATION

U.S. DEPARTMENT OF TRANSPORTATION: These products are not classified as dangerous goods, per U.S. DOT regulations, under 49 CFR 172.101.

14. TRANSPORTATION INFORMATION (Continue)

TRANSPORT CANADA, TRANSPORTATION OF DANGEROUS GOODS REGULATIONS: These products are NOT classified as dangerous goods, per regulations of Transport Canada.

INTERNATIONAL AIR TRANSPORT ASSOCIATION SHIPPING INFORMATION (IATA): These products are NOT classified as dangerous goods.

INTERNATIONAL MARITIME ORGANIZATION SHIPPING INFORMATION (IMO): These products are NOT classified as dangerous goods.

EUROPEAN AGREEMENT CONCERNING THE INTERNATIONAL CARRIAGE OF DANGEROUS GOODS BY ROAD (ADR): These products are NOT classified by the United Nations Economic Commission for Europe to be dangerous goods.

AUSTRALIAN FEDERAL OFFICE OF ROAD SAFETY CODE FOR THE TRANSPORTATION OF DANGEROUS GOODS BY ROAD OR RAIL: These products are NOT classified as dangerous goods, per regulations of the Australian Federal Office of Road Safety.

TRANSPORT IN BULK ACCORDING TO ANNEX II OF MARPOL 73/78 AND THE IBC CODE: Not applicable.

ENVIRONMENTAL HAZARDS: These products are neither environmentally hazardous according to the criteria of the UN Model Regulations (as reflected in the IMDG Code, ADR, RID, and ADN); no component meets the criteria of environmentally hazardous.

15. REGULATORY INFORMATION

UNITED STATES REGULATIONS:

U.S. SARA Reporting Requirements: The components of these products are subject to the reporting requirements of Sections 302, 304, and 313 of Title III of the Superfund Amendments and Reauthorization Act and are listed as follows:

CHEMICAL NAME	SARA 302 (40 CFR 355, Appendix A)	SARA 304 (40 CFR Table 302.4)	SARA 313 (40 CFR 372.65)
Isopropyl Alcohol (mfg-strong acid process)	No	No	Yes

U.S. SARA Threshold Planning Quantity (TPQ): There are no specific Threshold Planning Quantities for this material. The default Federal SDS submission and inventory requirement filing threshold of 10,000 lb (4,540 kg) may apply, per 40 CFR 370.20.

U.S. CERCLA Reportable Quantity (RQ): Not applicable.

U.S. TSCA Inventory Status: The components of these products are listed on the TSCA Inventory.

U.S. Hazardous Air Pollutant (HAPs): The components of these products are not listed by the EPA under section 112(b) of the Clean Air Act as a 'HAP'.

U.S. Clean Air Act (CA 112r) Threshold Quantity (TQ): Not applicable.

California Safe Drinking Water And Toxic Enforcement Act (Proposition 65): The Titanium Dioxide component, (airborne, unbound particles of respirable size) is on the California Proposition 65 Lists. If airborne particles of these products are generated, the following warning must be on packaging and labeling of these products: WARNING! These products contain a component known to the State of California to cause cancer. As a liquid, this warning is not expected to be required.

CANADIAN REGULATIONS:

Canadian DSL/NDSL Inventory Status: Components listed by CAS# in Section 3 (Composition and Information on Ingredients) are listed on the DSL Inventory.

Canadian WHMIS HPR 2015 Classification and Symbols: See Section 2 for classification and symbols under WHMIS GHS 2015.

EUROPEAN UNION REGULATIONS:

Safety, Health, and Environmental Regulations/Legislation Specific for the Product: Currently, there is no specific legislation pertaining to these products.

Chemical Safety Assessment: No data available. The chemical safety assessment is required for some substances according to European Union Regulation (EC) 1907/2006, Article 14.

AUSTRALIAN REGULATIONS:

Australian Inventory Of Chemical Substances (AICS) Status: Components listed by CAS# in Section 3 (Composition and Information on Ingredients) are listed on the AICS.

Hazardous Substances Information System (HSIS): Components listed by CAS# in Section 3 (Composition and Information on Ingredients) are not listed in the HSIS.

Standard for the Uniform Scheduling of Drugs and Poisons: Not applicable.

CHINESE REGULATIONS:

Chinese Inventory of Existing Chemical Substances Status: Components listed by CAS# in Section 3 (Composition and Information on Ingredients) are on the Chinese Inventory of Existing Chemical Substances (IECSC).

JAPANESE REGULATIONS:

Japanese ENCS Inventory: Components listed by CAS# in Section 3 (Composition and Information on Ingredients) are on the ENCS Inventory or are excepted.

Japanese Ministry of Economy, Trade, and Industry (METI) Status: Components listed by CAS# in Section 3 (Composition and Information on Ingredients) are not listed as Class I Specified Chemical Substances, Class II Specified Chemical Substances, or Designated Chemical Substances by the Japanese METI.

Poisonous and Deleterious Substances Control Law: Components listed by CAS# in Section 3 (Composition and Information on Ingredients) are not listed as a Specified Poisonous Substance under the Poisonous and Deleterious Substances Control Law.

KOREAN REGULATIONS:

Korean Existing Chemical Substances Inventory Status: The Red Pigment is not listed on the Korean Existing Chemical List; the remaining components are listed on the Korean Existing Chemicals List, as indicated in composition tables in Section 3 (Composition and Information on Ingredients).

15. REGULATORY INFORMATION (Continued)

NEW ZEALAND REGULATIONS:

New Zealand Inventory of Chemicals (NZIoC): Components listed by CAS# in Section 3 (Composition and Information on Ingredients) are on the NZIoC.

MEXICAN REGULATIONS:

Mexican Workplace Regulations (NOM-018-STPS-2000): These products are classified as hazardous.

TAIWANESE REGULATIONS:

Taiwan Existing Chemical Substances Inventory Status: Components listed by CAS# in Section 3 (Composition and Information on Ingredients) are listed on the Taiwan Existing Chemicals List.

16. OTHER INFORMATION

REVISION DETAILS: May 2017: Conversion of old MSDS to GHS compliant SDS. June 2018: Review and up-date entire SDS for most current regulations. April 2022: Review and revise entire SDS for current compliance of all jurisdictions of the SDS.

REFERENCES AND DATA SOURCES: Contact the supplier for information.

METHODS OF EVALUATING INFORMATION FOR THE PURPOSE OF CLASSIFICATION: Bridging principles were used to classify these products.

PREPARED BY: CHEMICAL SAFETY ASSOCIATES, Inc., PO Box 1961, Hilo, HI 96721, 808/969-4846

DYNAMIC

The data in this Safety Data Sheet is true and accurate to the best of Dynamic Color Company's knowledge. However, since data, safety standards, and government regulations are subject to change conditions of handling, use, or misuse are beyond the control of Dynamic Color, Dynamic Color Company MAKES NO WARRANTY, EITHER EXPRESSED OR IMPLIED, WITH RESPECT TO THE COMPLETENESS OR CONTINUING ACCURACY OF THE INFORMATION CONTAINED HEREIN AND DISCLAIMS ALL LIABILITY FOR RELIANCE THEREON. The user is required to comply with all laws and regulations relating to the purchase, use, storage, and disposal of the product. User must be familiar with and follow generally accepted safe handling procedures of chemicals, and is solely responsible for any effects caused by its misuse or mixing of this chemical with any other substance.

DEFINITIONS OF TERMS

A large number of abbreviations and acronyms appear on an SDS. Some of these, which are commonly used, include the following:

CAS #: This is the Chemical Abstract Service Number that uniquely identifies each constituent.

EXPOSURE LIMITS IN AIR:

CEILING LEVEL: The concentration that shall not be exceeded during any part of the working exposure.

DFG MAK Germ Cell Mutagen Categories: 1: Germ cell mutagens which have been shown to increase the mutant frequency in the progeny of exposed humans. 2: Germ cell mutagens which have been shown to increase the mutant frequency in the progeny of exposed mammals. 3A: Substances which have been shown to induce genetic damage in germ cells of human of animals, or which produce mutagenic effects in somatic cells of mammals *in vivo* and have been shown to reach the germ cells in an active form. 3B: Substances which are suspected of being germ cell mutagens because of their genotoxic effects in mammalian somatic cell *in vivo*; in exceptional cases, substances for which there are no *in vivo* data, but which are clearly mutagenic *in vitro* and structurally related to known *in vivo* mutagens. 4: Not applicable (Category 4 carcinogenic substances are those with non-genotoxic mechanisms of action. By definition, germ cell mutagens are genotoxic. Therefore, a Category 4 for germ cell mutagens cannot apply. At some time in the future, it is conceivable that a Category 4 could be established for genotoxic substances with primary targets other than DNA [e.g., purely aneugenic substances] if research results make this seem sensible.) 5: Germ cell mutagens, the potency of which is considered to be so low that, provided the MAK value is observed, their contribution to genetic risk for humans is expected not to be significant.

DFG MAK Pregnancy Risk Group Classification: Group A: A risk of damage to the developing embryo or fetus has been unequivocally demonstrated. Exposure of pregnant women can cause damage of the developing organism, even when MAK and BAT (Biological Tolerance Value for Working Materials) values are observed. Group B: Currently available information indicates a risk of damage to the developing embryo or fetus must be considered to be probable. Damage to the developing organism cannot be excluded when pregnant women are exposed, even when MAK and BAT values are observed. Group C: There is no reason to fear a risk of damage to the developing embryo or fetus when MAK and BAT values are observed. Group D: Classification in one of the groups A-C is not yet possible because, although the data available may indicate a trend, they are not sufficient for final evaluation.

IDLH-Immediately Dangerous to Life and Health: This level represents a concentration from which one can escape within 30-minutes without suffering escape-preventing or permanent injury.

LOQ: Limit of Quantitation.

MAK: Federal Republic of Germany Maximum Concentration Values in the workplace.

NE: Not Established. When no exposure guidelines are established, an entry of NE is made for reference.

NIC: Notice of Intended Change.

NIOSH CEILING: The exposure that shall not be exceeded during any part of the workday. If instantaneous monitoring is not feasible, the ceiling shall be assumed as a 15-minute TWA exposure (unless otherwise specified) that shall not be exceeded at any time during a workday.

NIOSH RELs: NIOSH's Recommended Exposure Limits.

PEL-Permissible Exposure Limit: OSHA's Permissible Exposure Limits. This exposure value means exactly the same as a TLV, except that it is enforceable by OSHA. The OSHA Permissible Exposure Limits are based in the 1989 PELs and the June, 1993 Air Contaminants Rule (Federal Register: 58: 35338-35351 and 58: 40191). Both the current PELs and the vacated PELs are indicated. The phrase, "Vacated 1989 PEL," is placed next to the PEL that was vacated by Court Order.

SKIN: Used when a there is a danger of cutaneous absorption.

STEL-Short Term Exposure Limit: Short Term Exposure Limit, usually a 15-minute time-weighted average (TWA) exposure that should not be exceeded at any time during a workday, even if the 8-hr TWA is within the TLV-TWA, PEL-TWA or REL-TWA.

TLV-Threshold Limit Value: An airborne concentration of a substance that represents conditions under which it is generally believed that nearly all workers may be repeatedly exposed without adverse effect. The duration must be considered, including the 8-hour.

TWA-Time Weighted Average: Time Weighted Average exposure concentration for a conventional 8-hr (TLV, PEL) or up to a 10-hr (REL) workday and a 40-hr workweek.

HAZARDOUS MATERIALS IDENTIFICATION SYSTEM HAZARD RATINGS: This rating system was developed by the National Paint and Coating Association and has been adopted by industry to identify the degree of chemical hazards.

HEALTH HAZARDS: 0 (Minimal Hazard: No significant health risk, irritation of skin or eyes not anticipated. *Skin Irritation:* Essentially non-irritating. PII or Draize = "0". *Eye Irritation:* Essentially non-irritating, or minimal effects which clear in < 24 hours [e.g., mechanical irritation]. Draize = "0". *Oral Toxicity LD_{50} Rat:* < 5000 mg/kg. *Dermal Toxicity LD_{50}/Rat or Rabbit:* < 2000 mg/kg. *Inhalation Toxicity 4-hrs LC_{50} Rat:* < 20 mg/L);

HAZARDOUS MATERIALS IDENTIFICATION SYSTEM HAZARD RATINGS (continued):

HEALTH HAZARDS (continued): 1 (Slight Hazard): Minor reversible injury may occur; slightly or mildly irritating. *Skin Irritation:* Slightly or mildly irritating. *Eye Irritation:* Slightly or mildly irritating. *Oral Toxicity LD_{50} Rat:* > 500-5000 mg/kg. *Dermal Toxicity LD_{50}/Rat or Rabbit:* > 1000-2000 mg/kg. *Inhalation Toxicity LC_{50} 4-hrs Rat:* > 2-20 mg/L); 2 (Moderate Hazard): Temporary or transitory injury may occur. *Skin Irritation:* Moderately irritating; primary irritant; sensitizer. PII or Draize > 0, < 5. *Eye Irritation:* Moderately to severely irritating and/or corrosive; reversible corneal opacity; corneal involvement or irritation clearing in 8-21 days. Draize > 0, ≤ 25. *Oral Toxicity LD_{50} Rat:* > 50-500 mg/kg. *Dermal Toxicity LD_{50}/Rat or Rabbit:* > 200-1000 mg/kg. 3 (Serious Hazard) [continued]: 3 (Serious Hazard): Major injury likely unless prompt action is taken and medical treatment is given; high level of toxicity; corrosive. *Skin Irritation:* Severely irritating and/or corrosive; may destroy dermal tissue, cause skin burns, dermal necrosis. PII or Draize > 5-8 with destruction of tissue. *Eye Irritation:* Corrosive, irreversible destruction of ocular tissue; corneal involvement or irritation persisting for more than 21 days. Draize > 80 with effects irreversible in 21 days. *Oral Toxicity LD_{50} Rat:* > 1-50 mg/kg. *Dermal Toxicity LD_{50}/Rat or Rabbit:* > 20-200 mg/kg. *Inhalation Toxicity LC_{50} 4-hrs Rat:* > 0.05-0.5 mg/L); 4 (Severe Hazard: Life-threatening; major or permanent damage may result from single or repeated exposure. *Skin Irritation:* Not appropriate. Do not rate as a "4", based on skin irritation alone. *Eye Irritation:* Not appropriate. Do not rate as a "4", based on eye irritation alone. *Oral Toxicity LD_{50} Rat:* ≤ 1 mg/kg. *Dermal Toxicity LD_{50}/Rat or Rabbit:* ≤ 20 mg/kg. *Inhalation Toxicity LC_{50} 4-hrs Rat:* ≤ 0.05 mg/L).

FLAMMABILITY HAZARD: 0 (Minimal Hazard-Materials that will not burn in air when exposure to a temperature of 815.5°C [1500°F] for a period of 5 minutes.); 1 (Slight Hazard-Materials that must be pre-heated before ignition can occur. Material require considerable pre-heating, under all ambient temperature conditions before ignition and combustion can occur, including: Materials that will burn in air when exposed to a temperature of 815.5°C (1500°F) for a period of 5 minutes or less; Liquids, solids and semisolids having a flash point at or above 93.3°C [200°F] (e.g. OSHA Class IIIB, or; Most ordinary combustible materials [e.g. wood, paper, etc.]; 2 (Moderate Hazard-Materials that must be moderately heated or exposed to relatively high ambient temperatures before ignition can occur. Materials in this degree would not, under normal conditions, form hazardous atmospheres in air, but under high ambient temperatures or moderate heating may release vapor in sufficient quantities to produce hazardous atmospheres in air, including: Liquids having a flash point at or above 37.8°C [100°F]; Solid materials in the form of course dusts that may burn rapidly but that generally do not form explosive atmospheres; Solid materials in a fibrous or shredded form that may burn rapidly and create flash fire hazards (e.g. cotton, sisal, hemp; Solids and semisolids that readily give off flammable vapors.); 3 (Serious Hazard- Liquids and solids that can be ignited under almost all ambient temperature conditions. Materials in this degree produce hazardous atmospheres with air under almost all ambient temperatures, or, unaffected by ambient temperature, are readily ignited under almost all conditions, including: Liquids having a flash point below 22.8°C [73°F] and having a boiling point at or above 38°C [100°F] and below 37.8°C [100°F] [e.g. OSHA Class IB and IC]; Materials that on account of their physical form or environmental conditions can form explosive mixtures with air and are readily dispersed in air [e.g., dusts of combustible solids, mists or droplets of flammable liquids]; Materials that burn extremely rapidly, usually by reason of self-contained oxygen [e.g. dry nitrocellulose and many organic peroxides]); 4 (Severe Hazard-Materials that will rapidly or completely vaporize at atmospheric pressure and normal ambient temperature or that are readily dispersed in air, and which will burn readily, including: Flammable gases; Flammable cryogenic materials; Any liquid or gaseous material that is liquid while under pressure and has a flash point below 22.8°C [73°F] and a boiling point below 37.8°C [100°F] [e.g. OSHA Class IA; Material that ignite spontaneously when exposed to air at a temperature of 54.4°C [130°F] or below [e.g. pyrophoric]).

PHYSICAL HAZARD: 0 (*Water Reactivity:* Materials that do not react with water. *Organic Peroxides:* Materials that are normally stable, even under fire conditions and will not react with water. *Explosives:* Substances that are Non-Explosive. *Unstable Compressed Gases:* No Rating. *Pyrophorics:* No Rating. *Oxidizers:* No "0" rating allowed. *Unstable Reactives:* Substances that will not polymerize, decompose, condense or self-react.); 1 (*Water Reactivity:* Materials that change or decompose upon exposure to moisture. *Organic Peroxides:* Materials that are normally stable, but can become unstable at high temperatures and pressures. These materials may react with water, but will not release energy. *Explosives:* Division 1.5 & 1.6 substances that are very insensitive explosives or that do not have a mass explosion hazard. *Compressed Gases:* Pressure below OSHA definition. *Pyrophorics:* No Rating. *Oxidizers:* Packaging Group III; Solids: any material that in either concentration tested, exhibits a mean burning time less than or equal to the mean burning time of a 3:7 potassium bromate/cellulose mixture and the criteria for Packing Group I and II are not met. Liquids: any material that exhibits a mean pressure rise time less than or equal to the pressure rise time of a 1:1 nitric acid (65%)/cellulose mixture and the criteria for Packing Group I and II are not met.

16. OTHER INFORMATION (Continued)

DEFINITIONS OF TERMS (Continued)

HAZARDOUS MATERIALS IDENTIFICATION SYSTEM HAZARD RATINGS (continued):

PHYSICAL HAZARD (continued): 2 (continued): *Unstable Reactives*: Substances that may decompose, condense or self-react, but only under conditions of high temperature and/or pressure and have little or no potential to cause significant heat generation or explosive hazard. Substances that readily undergo hazardous polymerization in the absence of inhibitors.); 2 (*Water Reactivity*: Materials that may react violently with water. *Organic Peroxides*: Materials that, in themselves, are normally unstable and will readily undergo violent chemical change, but will not detonate. These materials may also react violently with water. *Explosives*: Division 1.4 – Explosive substances where the explosive effect are largely confined to the package and no projection of fragments of appreciable size or range are expected. An external fire must not cause virtually instantaneous explosion of almost the entire contents of the package. *Compressed Gases*: Pressurized and meet OSHA definition but < 514.7 psi absolute at 21.1°C (70°F) [500 psig]. *Pyrophorics*: No Rating. *Oxidizers*: Packing Group II Solids: any material that, either in concentration tested, exhibits a mean burning time of less than or equal to the mean burning time of a 2:3 potassium bromate/cellulose mixture and the criteria for Packing Group I are not met. Liquids: any material that exhibits a mean pressure rise time less than or equal to the pressure rise of a 1:1 aqueous sodium chlorate solution (40%)/cellulose mixture and the criteria for Packing Group I are not met. *Unstable Reactives*: Substances that may polymerize, decompose, condense, or self-react at ambient temperature and/or pressure, but have a low potential for significant heat generation or explosion. Substances that readily form peroxides upon exposure to air or oxygen at room temperature); 3 (*Water Reactivity*: Materials that may form explosive reactions with water. *Organic Peroxides*: Materials that are capable of detonation or explosive reaction, but require a strong initiating source, or must be heated under confinement before initiation; or materials that react explosively with water. *Explosives*: Division 1.2 – Explosive substances that have a fire hazard and either a minor blast hazard or a minor projection hazard or both, but do not have a mass explosion hazard. *Compressed Gases*: Pressure ≥ 514.7 psi absolute at 21.1°C (70°F) [500 psig]. *Pyrophorics*: No Rating. *Oxidizers*: Packing Group I Solids: any material that, in either concentration tested, exhibits a mean burning time less than the mean burning time of a 3:2 potassium bromate/cellulose mixture. Liquids: Any material that spontaneously ignites when mixed with cellulose in a 1:1 ratio, or which exhibits a mean pressure rise time less than the pressure rise time of a 1:1 perchloric acid (50%)/cellulose mixture. *Unstable Reactives*: Substances that may polymerize, decompose, condense or self-react at ambient temperature and/or pressure and have a moderate potential to cause significant heat generation or explosion.); 4 (*Water Reactivity*: Materials that react explosively with water without requiring heat or confinement. *Organic Peroxides*: Materials that are readily capable of detonation or explosive decomposition at normal temperature and pressures. *Explosives*: Division 1.1 & 1.2-explosive substances that have a mass explosion hazard or have a projection hazard. A mass explosion is one that affects almost the entire load instantaneously. *Compressed Gases*: No Rating. *Pyrophorics*: Add to the definition of Flammability "4". *Oxidizers*: No "4" rating. *Unstable Reactives*: Substances that may polymerize, decompose, condense or self-react at ambient temperature and/or pressure and have a high potential to cause significant heat generation or explosion.).

NATIONAL FIRE PROTECTION ASSOCIATION HAZARD RATINGS:

HEALTH HAZARD: 0 (materials that, under emergency conditions, would offer no hazard beyond that of ordinary combustible materials): Gases and vapors whose LC_{50} for acute inhalation toxicity is greater than 10,000 ppm. Dusts and mists whose LC_{50} for acute inhalation toxicity is greater than 200 mg/L. Materials whose LD_{50} for acute dermal toxicity is greater than 2000 mg/kg. Materials whose LD_{50} for acute oral toxicity is greater than 2000 mg/kg. Materials that are essentially non-irritating to the respiratory tract, eyes and skin. **1** (materials that, under emergency conditions, can cause significant irritation): Gases and vapors whose LC_{50} for acute inhalation toxicity is greater than 5,000 ppm but less than or equal to 10,000 ppm. Dusts and mists whose LC_{50} for acute inhalation toxicity is greater than 10 mg/L but less than or equal to 200 mg/L. Materials whose LD_{50} for acute dermal toxicity is greater than 1000 mg/kg but less than or equal to 2000 mg/kg. Materials whose LD_{50} for acute oral toxicity is greater than 500 mg/kg but less than or equal to 2000 mg/kg. Materials that cause slight to moderate irritation to the respiratory tract, eyes and skin. **3** (materials that, under emergency conditions, can cause serious or permanent injury): Gases and vapors whose LC_{50} for acute inhalation toxicity is greater than 1,000 ppm but less than or equal to 3,000 ppm. Dusts and mists whose LC_{50} for acute inhalation toxicity is greater than 0.5 mg/L but less than or equal to 2 mg/L. Materials whose LD_{50} for acute dermal toxicity is greater than 40 mg/kg but less than or equal to 200 mg/kg. Materials whose LD_{50} for acute oral toxicity is greater than 5 mg/kg but less than or equal to 50 mg/kg. Any liquid whose saturated vapor concentration at 20°C (68°F) is equal to or greater than one-fifth its LC_{50} for acute inhalation toxicity, if its LC_{50} is less than or equal to 3000 ppm and that does not meet the criteria for degree of hazard 4. Compressed liquefied gases with boiling points between -30°C (-22°F) and -55°C (-66.5°F) that cause frostbite and irreversible tissue damage. Materials that are respiratory irritants. Cryogenic gases that cause frostbite and irreversible tissue damage. Materials that are corrosive to the respiratory tract. Materials that are corrosive to the eyes or cause irreversible corneal opacity. Materials that are corrosive to the skin. **4** (materials that, under emergency conditions, can be lethal): Gases and vapors whose LC_{50} for acute inhalation toxicity less than or equal to 1,000 ppm. Dusts and mists whose LC_{50} for acute inhalation toxicity is less than or equal to 0.5 mg/L. Materials whose LD_{50} for acute dermal toxicity is less than or equal to 40 mg/kg. Materials whose LD_{50} for acute oral toxicity is less than or equal to 5 mg/kg. Any liquid whose saturated vapor concentration at 20°C (68°F) is equal to or greater than one-fifth its LC_{50} for acute inhalation toxicity, if its LC_{50} is less than or equal to 1000 ppm.

FLAMMABILITY HAZARD: 0 Materials that will not burn under typical fire conditions, including intrinsically noncombustible materials such as concrete, stone, and sand: Materials that will not burn in air when exposed to a temperature of 816°C (1500°F) for a period of 5 minutes in according with Annex D. **1** Materials that must be preheated before ignition can occur. Materials in this degree require considerable preheating, under all ambient temperature conditions, before ignition and combustion can occur: Materials that will burn in air when exposed to a temperature of 816°C (1500°F) for a period of 5 minutes in accordance with Annex D. Liquids, solids and semisolids having a flash point at or above 93.4°C (200°F) (e.g., Class IIIB liquids). Liquids with a flash point greater than 35°C (95°F) that do not sustain combustion when tested using the Method of Testing for Sustained Combustibility, per 49 CFR 173, Appendix H or the UN Recommendation on the Transport of Dangerous Goods, Model Regulations (current edition) and the related Manual of Tests and Criteria (current edition). Liquids with a flash point greater than 35°C (95°F) in a water-miscible solution or dispersion with a water non-combustible liquid/solid content of more than 85 percent by weight. Liquids that have no fire point when tested by ASTM D 92 Standard Test Method for Flash and Fire Points by Cleveland Open Cup, up to a boiling point of the liquid or up to a temperature at which the sample being tested shows an obvious physical change. Combustible pellets with a representative diameter of greater than 2 mm (10 mesh). Solids containing greater than 0.5 percent by weight of a flammable or combustible solvent are rated by the closed-up flash point of the solvent. Most ordinary combustible materials. **2** Materials that must be moderately heated or exposed to relatively high ambient temperatures before ignition can occur. Materials in this degree would not under normal conditions form hazardous atmospheres with air, but under high ambient temperatures or under moderate heating could release vapor in sufficient quantities to produce hazardous atmospheres with air: Liquids having a flash point at or above 37.8°C (100°F) and below 93.4°C (200°F) (e.g., Class II and Class IIIA liquids.) Solid materials in the form of powders or coarse dusts of representative diameter between 420 microns (40 mesh) and 2 mm (10 mesh) that burn rapidly but that generally do not form explosive mixtures in air. Solid materials in fibrous or shredded form that burn rapidly and create flash fire hazards, such as cotton, sisal and hemp. Solids and semisolids that readily give off flammable vapors. Solids containing greater than 0.5 percent by weight of a flammable or combustible solvent are rated by the closed cup flash point of the solvent.

NATIONAL FIRE PROTECTION ASSOCIATION HAZARD RATINGS (continued):

FLAMMABILITY HAZARD (continued): 3 Liquids and solids that can be ignited under almost all ambient temperature conditions. Materials in this degree produce hazardous atmospheres with air under almost all ambient temperatures or, though unaffected by ambient temperatures, are readily ignited under almost all conditions: Liquids having a flash point below 22.8°C (73°F) and having a boiling point at or above 37.8°C (100°F) and those liquids having a flash point at or above 22.8°C (73°F) and below 37.8°C (100°F) and below 37.8°C (100°F) (e.g., Class IB and IC liquids). Materials that, on account of their physical form or environmental conditions, can form explosive mixtures with air and are readily dispersed in air. Flammable or combustible dusts with a representative diameter less than 420 microns (40 mesh). Materials that burn with extreme rapidity, usually by reason of self-contained oxygen (e.g., dry nitrocellulose and many organic peroxides). Solids containing greater than 0.5 percent by weight of a flammable or combustible solvent are rated by the closed cup flash point of the solvent. **4** Materials that will rapidly or completely vaporize at atmospheric pressure and normal ambient temperature or that are readily dispersed in air and will burn readily: Flammable gases. Flammable cryogenic materials. Any liquid or gaseous materials that is liquid while under pressure and has a flash point below 22.8°C (73°F) and a boiling point below 37.8°C (100°F) (e.g., Class IA liquids). Materials that ignite when exposed to air, Solids containing greater than 0.5 percent by weight of a flammable or combustible solvent are rated by the closed cup flash point of the solvent.

INSTABILITY HAZARD: 0 Materials that in themselves are normally stable, even under fire conditions: Materials that have an estimated instantaneous power density (product of heat of reaction and reaction rate) at 250°C (482°F) below 0.01 W/mL. Materials that do not exhibit an exotherm at temperatures less than or equal to 500°C (932°F) when tested by differential scanning calorimetry. **1** Materials that in themselves are normally stable, but that can become unstable at elevated temperatures and pressures: Materials that have an estimated instantaneous power density (product of heat of reaction and reaction rate) at 250°C (482°F) at or above 0.01 W/mL and below 10 W/mL. **2** Materials that readily undergo violent chemical change at elevated temperatures and pressures: Materials that have an estimated instantaneous power density (product of heat of reaction and reaction rate) at 250°C (482°F) at or above 10 W/mL and below 100W/mL. **3** Materials that in themselves are capable of detonation or explosive decomposition or explosive reaction, but that require a strong initiating source or that must be heated under confinement before initiation: Materials that have an estimated instantaneous power density (product of heat of reaction and reaction rate) at 250°C (482°F) at or above 100 W/mL and below 1000 W/mL. Materials that are sensitive to thermal or mechanical shock at elevated temperatures and pressures. **4** Materials that in themselves are readily capable of detonation or explosive decomposition or explosive reaction at normal temperatures and pressures: Materials that have an estimated instantaneous power density (product of heat of reaction and reaction rate) at 250°C (482°F) of 1000 W/mL or greater. Materials that are sensitive to localized thermal or mechanical shock at normal temperatures and pressures.

FLAMMABILITY LIMITS IN AIR:

Much of the information related to fire and explosion is derived from the National Fire Protection Association (NFPA). Flash Point - Minimum temperature at which a liquid gives off sufficient vapors to form an ignitable mixture with air. Autoignition Temperature: The minimum temperature required to initiate combustion in air with no other source of ignition. LEL - the lowest percent of vapor in air, by volume, that will explode or ignite in the presence of an ignition source. UEL - the highest percent of vapor in air, by volume, that will explode or ignite in the presence of an ignition source.

TOXICOLOGICAL INFORMATION:

Human and Animal Toxicology: Possible health hazards as derived from human data, animal studies, or from the results of studies with similar compounds are presented. Definitions of some terms used in this section are: LD_{50} - Lethal Dose (solids & liquids) which kills 50% of the exposed animals; LC_{50} - Lethal Concentration (gases) which kills 50% of the exposed animals; ppm concentration expressed in parts of material per million parts of air or water; mg/m^3 concentration expressed in weight of substance per volume of air; mg/kg quantity of material, by weight, administered to a test subject, based on their body weight in kg. Other measures of toxicity include TDL_o, the lowest dose to cause a symptom and TCL_o the lowest concentration to cause a symptom; TD_{50}, LDL_o, and LD_{50}, or TC, TC_o, LCL_o, and LC_{50}, the lowest dose (or concentration) to cause lethal or toxic effects.

Cancer Information: The sources are: **IARC** - the International Agency for Research on Cancer; **NTP** - the National Toxicology Program, **RTECS** - the Registry of Toxic Effects of Chemical Substances, **OSHA** and **CAL/OSHA**. IARC and NTP rate chemicals on a scale of decreasing potential to cause human cancer with rankings from 1 to 4. Subrankings (2A, 2B, etc.) are also used. **Other Information: BEI** - ACGIH Biological Exposure Indices, represent the levels of determinants which are most likely to be observed in specimens collected from a healthy worker who has been exposed to chemicals to the same extent as a worker with inhalation exposure to the TLV.

REPRODUCTIVE TOXICITY INFORMATION:

A mutagen is a chemical that causes permanent changes to genetic material (DNA) such that the changes will propagate through generational lines. An embryotoxin is a chemical that causes damage to a developing embryo (e.g., within the first eight weeks of pregnancy in humans), but the damage does not propagate across generational lines. A teratogen is a chemical that causes damage to a developing fetus, but the damage does not propagate across generational lines. A reproductive toxin is any substance that interferes in any way with the reproductive process.

ECOLOGICAL INFORMATION:

EC is the effect concentration in water. **BCF** = Bioconcentration Factor, which is used to determine if a substance will concentrate in lifeforms which consume contaminated plant or animal matter. TL_m = median threshold limit; Coefficient of Oil/Water Distribution is represented by log K_{ow} or log K_{oc} and is used to assess a substance's behavior in the environment.

REGULATORY INFORMATION:

U.S. and CANADA:

ACGIH: American Conference of Governmental Industrial Hygienists, a professional association which establishes exposure limits.

This section explains the impact of various laws and regulations on the material. **EPA** is the U.S. Environmental Protection Agency. **NIOSH** is the National Institute of Occupational Safety and Health, which is the research arm of the U.S. Occupational Safety and Health Administration (**OSHA**). **WHMIS** is the Canadian Workplace Hazardous Materials Information System. **DOT** and **TC** are the U.S. Department of Transportation and the Transport Canada, respectively. Superfund Amendments and Reauthorization Act (**SARA**); the Canadian Domestic/Non-Domestic Substances List (**DSL/NDSL**); the U.S. Toxic Substance Control Act (**TSCA**); Marine Pollutant status according to the **DOT**; the Comprehensive Environmental Response, Compensation, and Liability Act (**CERCLA or Superfund**); and various state regulations. This section also includes information on the precautionary warnings which appear on the material's package label. **OSHA** - U.S. Occupational Safety and Health Administration.

EUROPEAN and INTERNATIONAL:

The DFG: This is the Federal Republic of Germany's Occupation Health Agency, similar to the U.S. OSHA. **EU** is the European Union (formerly known as the **EEC**, European Economic Community). **EINECS:** This is the European Inventory of Now-Existing Chemical Substances. The **ARD** is the European Agreement Concerning the International Carriage of Dangerous Goods by Road and the **RID** are the International Regulations Concerning the Carriage of Dangerous Goods by Rail. **AICS** is the Australian Inventory of Chemical Substances. **METI** is the Japanese Ministry of Economy, Trade, and Industry.

DYNAMIC

Color Co.

SAFETY DATA SHEET

Prepared to U.S. OSHA, CMA, ANSI, Canadian WHMIS 2015 GHS, European Union CLP EC 1272/2008 & the 8th ATP 2016/918, the Korean MoEL (Public Notice 2016-19), Singapore SS586 Standard – Parts 2 & 3, Chinese GB/T 16483-2008 & GB/T 17519-2013, New Zealand Hazardous Substances (Hazard Classification) Notice 2020, *Australian WorkSafe* GHS 7, 2022, *Japanese* JIS Z 7252: 2019 (Classification of chemicals) and JIS Z 7253: 2019 (Communication of information on danger of chemicals – labeling and safety data sheets), *and the Global Harmonization Standard*

1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY UNDERTAKING

PRODUCT IDENTIFIER USED ON LABEL:

Product Identifier: **TATTOO PAINT No. BRN**
TATTOO PAINT No. LBR

Other Means of Identification: Not Applicable

RECOMMENDED USE of the PRODUCT and RESTRICTIONS on USE:

Recommended Use: Tissue Staining Paint

Restrictions on Use: Other than Recommended Use

SHIPPING CLASSIFICATION:

U.N. Number: None Allocated

U.N. Dangerous Goods Class/Subsidiary Risk: None Allocated

HAZCHEM Code (Australia): None Allocated

Poisons Schedule Number (Australia): None Allocated

NAME, ADDRESS and TELEPHONE NUMBER of CHEMICAL MANUFACTURER, IMPORTER or OTHER RESPONSIBLE PARTY:

U.S. Supplier/Manufacturer's Name: **DYNAMIC COLOR COMPANY**

Address: PO Box 21083
Fort Lauderdale, FL, 33335 USA

Information Phone: + 1-954-462-0261 9 a.m. to 4 p.m. (U.S. East Coast Time Zone)

Emergency Phone: 1-800-233-8332 9 a.m. to 4 p.m. (U.S. East Coast Time Zone)
(from U.S., Canada, Puerto Rico, U.S. Virgin Islands)

Email: sales@dynamiccolor.com

Date of Preparation: April 12, 2001

Date of Revision: April 13, 2022

2. HAZARD IDENTIFICATION

GLOBAL HARMONIZATION LABELING AND CLASSIFICATION: Classified in accordance with Global Harmonization Standard under U.S. OSHA Hazard Communication Standard, Canadian *WHMIS 2015 GHS*, European CLP Regulation (EC) 1272/2008, Japanese JIS Z 7252: 2019 (Classification of chemicals) and JIS Z 7253: 2019 (Communication of information on danger of chemicals – labeling and safety data sheets), New Zealand Hazardous Substances (Hazard Classification) Notice 2020, Australian WorkSafe GHS 7, 2022, Singapore SS586, Chinese GHS standard. Korean MoEL classification is given separately.

Classification: Eye Irritation Category 2A, Specific Target Organs Toxicity (Inhalation-Narcotic Effects/Irritation) Single Exposure Category 3

Signal Word: Warning

Hazard Statements: H319: Causes serious eye irritation. H335: May cause respiratory irritation. H336: May cause drowsiness or dizziness.

Other Hazards Not Otherwise Classified: None.

Precautionary Statements:

Prevention: P261: Avoid breathing mists or sprays. P264 + P265: Wash hands and other contamination areas thoroughly after handling. Do not touch eyes.P270: Do not eat, drink or smoke when using these products. P271: Use only outdoors or in a well-ventilated area. P280: Wear protective gloves, protective clothing, eye protection, face protection.

Response: P305 + P351 + P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. P337 + P317: If eye irritation persists: Get medical help. P304 + P340: If inhaled, remove victim to fresh air and keep at rest in a position comfortable for breathing. P319: Get medical help if you feel unwell. P321: Specific treatment (remove from exposure and treat symptoms). Refer to Safety Data Sheet for more information.

Storage: P403 + P233: Store in a well-ventilated place. Keep container tightly closed. P405: Store locked up.

Disposal: P501: Dispose of contents/containers in accordance with all local, regional, national and international regulations.

Hazard Symbols/Pictograms: GHS07

KOREAN MoEL (Notice 2016-19) LABELING AND CLASSIFICATION: Classified in accordance with MoEL Notice 2016-19. Under the MoEL regulation, no differences in classification are applicable.

PERCENT OF UNKNOWN ACUTE TOXICITY: Unknown toxicity by inhalation: 80%. Unknown dermal toxicity: 80%. Unknown oral toxicity is 80%

2. HAZARD IDENTIFICATION (Continued)

EMERGENCY OVERVIEW: Product Description: These products are brown liquids that have a mild odor. **Health Hazards:** The primary health hazard associated with these products is the potential for mild irritation of contaminated tissue. Eye contact may cause more serious irritation. Inhalation of fumes or vapors may cause respiratory system irritation or narcotic effects. **Flammability Hazards:** These products are not flammable. If involved in a fire, the product may decompose to produce carbon, metallic, nitrogen and sulfur oxides, ammonia, benzenes, chlorine, formaldehyde, hydrogen chloride and polymers. **Reactivity Hazards:** These products are not reactive. **Environmental Hazards:** Not tested. These products may have adverse effects when released into the environment. **Emergency Recommendations:** Emergency responders must wear the personal protective equipment suitable for the situation to which they are responding.

3. COMPOSITION and INFORMATION ON INGREDIENTS

Chemical Name	CAS #	European EINECS # / Index #	Japanese MITI/ENC #	Korean ECL #	New Zealand NZIoC #	Chinese IECSC Inventory	Taiwan NESCI ECS Inventory	Australian AICS	% w/w	LABEL ELEMENTS GHS under U.S. OSHA, Canadian WHMIS HPR-GHS & EU Classification (1272/2008), Japanese, New Zealand, Taiwan, Chinese and Korean Regulations Korean ISHA Classification Hazard Statements
Isopropyl Alcohol	67-63-0	200-661-7 603-117-00-0	2-207	KE-29363	HSR001180	Listed	Listed	Listed	10%	GHS Under All Countries Harmonized Classification: Flammable Liquid Cat. 2, Eye Irritation Cat. 2A, Specific Target Organ Toxicity (Inhalation, Ingestion-Narcotic Effects) Single Exposure Cat. 3 Hazard Statements: H226: Flammable liquid and vapor. H319: Causes serious eye irritation. H336: May cause drowsiness or dizziness.
Proprietary Pigment Orange					May be used under an appropriate group standard	Listed	Listed	Listed	5-10%	Classification: Not Classified Under U.S. OSHA, Canadian WHMIS HPR-2015 only Classification: Combustible Dust Hazard
Proprietary Pigment Violet					May be used under an appropriate group standard	Listed	Listed	Listed	0.25-10%	Classification: Not Classified
Styrene Acrylic Polymer Resin (GD-1)					May be used under an appropriate group standard	Listed	Listed	Listed	5%	GHS Under All Countries Harmonized Classification: Skin Irritation Cat. 2, Eye Irritation Cat. 2A, Specific Target Organ Toxicity (Inhalation, Narcotic Effects/Respiratory Irritation) Single Exposure Cat. 3 Hazard Statements: H315: Causes skin irritation. H319: Causes serious eye irritation. H335: May cause respiratory irritation. H336: May cause drowsiness or dizziness.
Water	7732-18-5	231-791-2 No Index #	Not Identified in the Listing	KE-35400	Excepted	Listed	Listed	Listed	Balance	Classification: Not Classified

See Section 15 for information on other country inventory listing of components, as applicable
The specific chemical identity and/or exact percentage (concentration) of composition has been withheld as a trade secret.

4. FIRST-AID MEASURES

PROTECTION OF FIRST AID RESPONDERS: Rescuers should be taken for medical attention, if necessary. Only trained personnel should administer supplemental oxygen and/or cardio-pulmonary resuscitation, if necessary.

DESCRIPTION OF FIRST AID MEASURES: Victim(s) must be taken for medical attention. Take copy of label and MSDS to physician or other health professional with victim(s). Remove victim(s) to fresh air, as quickly as possible.

Skin Exposure: If these products contaminate the skin and adverse effect occurs, begin decontamination with running water. Minimum flushing is for 20 minutes. The contaminated individual must seek medical attention if any adverse effects occur after flushing.

GHS Precautionary Statements for Skin Exposure: None applicable.

Eye Exposure: If these products enter the eyes, open contaminated individual's eyes while under gently running water. Use sufficient force to open eyelids. Have contaminated individual "roll" eyes. Minimum flushing is for 20 minutes. Contaminated individual must seek medical attention if adverse effect continues after flushing.

GHS Precautionary Statements for Eye Exposure: P305 + P351 + P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. P337 + P317: If eye irritation persists: Get medical attention.

Inhalation: If aerosols are inhaled and adverse effect occurs, remove victim to fresh air. The contaminated individual must seek medical attention if any adverse effects occur.

GHS Precautionary Statements for Inhalation Exposure: P304 + P340: If inhaled, remove victim to fresh air and keep at rest in a position comfortable for breathing. P319: Get medical help if you feel unwell.

4. FIRST-AID MEASURES (Continued)

DESCRIPTION OF FIRST AID MEASURES (continued):

Ingestion: If swallowed, CALL PHYSICIAN OR POISON CONTROL CENTER FOR MOST CURRENT INFORMATION. If professional advice is not available, do not induce vomiting. Never induce vomiting or give diluents (milk or water) to someone who is unconscious, having convulsions, or unable to swallow. If victim is convulsing, maintain an open airway and obtain immediate medical attention.

GHS Precautionary Statements for Ingestion Exposure: None applicable.

MOST IMPORTANT SYMPTOMS and EFFECTS, WHETHER ACUTE OR DELAYED: See Sections 2 (Hazard Information) and 11 (Toxicological Information) for information.

Acute:

Symptoms/Effects: May cause irritation by contact with the skin, eyes and respiratory system. All potential effects are dependent on concentration and duration of exposure.

Symptoms/Effects After Inhalation: EXPOSURE TO HIGH CONCENTRATIONS: Coughing, or respiratory irritation.

Symptoms/Effects After Skin Contact: Mild irritation.

Symptoms/Effects After Eye Contact: Moderate irritation of eye tissue.

Symptoms/Effects After Ingestion: Irritation of digestive system.

Chronic:

Symptoms/Effects After Skin Contact: Dermatitis (dry, red skin).

Symptoms/Effects After Eye Contact: None known.

Symptoms/Effects After Accidental Injection: None known.

Symptoms/Effects After Inhalation: None known.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: Skin or respiratory conditions may be aggravated by exposure to these products.

INDICATION OF IMMEDIATE MEDICAL ATTENTION AND SPECIAL TREATMENT IF NEEDED: Treat symptoms and eliminate exposure.

COMPLIANCE WITH SAFE WORK AUSTRALIA MODEL CODE FIRST AID IN THE WORKPLACE CODE OF PRACTICE: Compliance with all requirements should be in place under Section 3 (First Aid Equipment, Facilities and Training) should be in place.

5. FIRE-FIGHTING MEASURES

FLASH POINT: Not flammable. **AUTOIGNITION TEMPERATURE:** Not applicable.

FLAMMABLE LIMITS (in air by volume, %): Not applicable.

FIRE EXTINGUISHING MEDIA: Unless incompatibilities exist for surrounding materials, carbon dioxide, water spray, 'ABC' type chemical extinguishers, foam, dry chemical and halon extinguishers can be used to fight fires involving these products.

UNSUITABLE FIRE EXTINGUISHING MEDIA: None known.

SPECIAL HAZARDS ARISING FROM THE SUBSTANCE: When involved in a fire, this material may decompose and produce irritating vapors and toxic gases (e.g., carbon, metallic, nitrogen and sulfur oxides, ammonia, benzenes, chlorine, formaldehyde, hydrogen chloride and polymers).

Explosion Sensitivity to Mechanical Impact or Static Discharge: Not sensitive.

SPECIAL PROTECTIVE ACTIONS FOR FIRE-FIGHTERS: Incipient fire responders should wear eye protection. Structural firefighters must wear Self-Contained Breathing Apparatus and full protective equipment. Due to the presence of pigment, the runoff water from these products can discolor contaminated objects. If possible, prevent runoff water from entering storm drains, bodies of water, or other environmentally sensitive areas. If necessary, rinse fire-response equipment with soapy water before returning it to service.

GHS Statements for Fire Response: None applicable.

Australian HazChem Code: Not applicable.

6. ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS AND EMERGENCY PROCEDURES: Uncontrolled releases should be responded to by trained personnel using pre-planned procedures. Proper protective equipment should be used. Call CHEMTREC (1-800-424-9300) for emergency assistance. Or if in Canada, call CANUTEC (613-996-6666). The atmosphere must at least 19.5 percent Oxygen before non-emergency personnel can be allowed in the area without Self-Contained Breathing Apparatus and fire protection.

PERSONAL PROTECTIVE EQUIPMENT: Proper protective equipment should be used.

Small Spills: Wear rubber gloves, splash goggles, and appropriate body protection.

Large Spills: Minimum Personal Protective Equipment should be rubber gloves, rubber boots, face shield, and Tyvek suit. Minimum level of personal protective equipment for releases in which the level of oxygen is less than 19.5% or is unknown must be **Level B: triple-gloves (rubber gloves and nitrile gloves over latex gloves), chemical resistant suit and boots, hard hat, and Self-Contained Breathing Apparatus.**

METHODS FOR CLEAN-UP AND CONTAINMENT:

Small Spills: Carefully absorb spill using polypads or other non-reactive absorbent. Place spilled material in appropriate container for disposal, sealing tightly. Remove all residue before decontamination of spill area.

Large Spills: Access to the spill area should be restricted. For large spills, dike or otherwise contain spill and absorb spill with polypads or other non-reactive absorbent material.

All Spills: Place all spill residue in a double plastic bag or other containment and seal. Decontaminate the area thoroughly. Do not mix with wastes from other materials. Dispose of in accordance with applicable Federal, State, and local procedures (see Section 13, Disposal Considerations). For spills on water, contain, minimize dispersion and collect. Dispose of recovered material and report spill per regulatory requirements.

6. ACCIDENTAL RELEASE MEASURES (Continued)

ENVIRONMENTAL PRECAUTIONS: Avoid release to the environment. Run-off water may be contaminated by other materials and should be contained to prevent possible environmental damage.

REFERENCE TO OTHER SECTIONS: See information in Section 8 (Exposure Controls – Personal Protection) and Section 13 (Disposal Considerations) for additional information.

7. HANDLING and STORAGE

PRECAUTIONS FOR SAFE HANDLING: As with all chemicals, avoid getting these products ON YOU or IN YOU. Wash thoroughly after handling these products. Do not eat, drink, smoke, or apply cosmetics while handling these products. Avoid breathing aerosols from the product. Keep away from incompatible materials (see Section 10, Stability and Reactivity). Containers of these products must be properly labeled. Use in a well-ventilated location. Remove contaminated clothing.

GHS Statements for Safe Handling: P261: Avoid breathing mists or sprays. P264 + P265: Wash hands and other contamination areas thoroughly after handling. Do not touch eyes.P270: Do not eat, drink or smoke when using these products. P271: Use only outdoors or in a well-ventilated area. P280: Wear protective gloves, protective clothing, eye protection, face protection.

CONDITIONS FOR SAFE STORAGE and INCOMPATIBILITIES: Keep container tightly closed when not in use. Store containers in a cool, dry location, away from direct sunlight, sources of intense heat, or where freezing is possible. Material should be stored in secondary containers or in a diked area, as appropriate. Inspect all incoming containers before storage, to ensure containers are properly labeled and not damaged. Have appropriate extinguishing equipment in the storage area (such as sprinkler systems or portable fire extinguishers). Empty containers may contain residual product; therefore, empty containers should be handled with care. May be incompatible with water reactive materials and strong oxidizers.

GHS Statements for Safe Storage: P403 + P233: Store in a well-ventilated place. Keep container tightly closed. P405: Store locked up.

SPECIFIC USE(S): These products are for use as a skin staining paint. Follow all industry standards for use of these products.

PROTECTIVE PRACTICES DURING MAINTENANCE OF CONTAMINATED EQUIPMENT: Follow practices indicated in Section 6 (Accidental Release Measures). Make certain that application equipment is locked and tagged-out safely. Always use these products in areas where adequate ventilation is provided. Decontaminate equipment thoroughly, before maintenance begins. Collect all rinsates and dispose of according to applicable Federal, State, or local procedures, or applicable standards.

8. EXPOSURE CONTROLS - PERSONAL PROTECTION

EXPOSURE LIMITS/CONTROL PARAMETERS:

Ventilation and Engineering Controls: Use with adequate ventilation to ensure exposure levels are maintained below the limits provided in this section. Use local exhaust ventilation. Normal office ventilation conforming to the American Society of Heating, Refrigerating, and Air Conditioning Engineers (ASHRAE) Standards is adequate under normal circumstances of use. Persons using this material should consult a qualified Ventilation Engineer and/or Industrial Hygienist if concerns about exposure arise. If necessary, refer to Australian National Code of Practice for the Control of Workplace Hazardous Substances [NOHSC: 2007 (1994)] for further information.

U.S. Workplace Exposure Limits/Control Parameters:

CHEMICAL NAME	CAS #	EXPOSURE LIMITS IN AIR							
		ACGIH-TLVs		OSHA-PELs		NIOSH-RELs		NIOSH	OTHER
		TWA mg/m³	STEL mg/m³	TWA mg/m³	STEL mg/m³	TWA mg/m³	STEL mg/m³	IDLH mg/m³	mg/m³
Isopropyl Alcohol	67-63-0	492	984	980	500 ppm (vacated 1989 PEL)	980	1225	2000 ppm (based on LEL)	DFG MAK: TWA = 500 ppm PEAK = 2•MAK, 15 min., average value, 1-hr interval, 4 per shift DFG MAK Pregnancy Risk Classification: C

NE = Not Established.

Australian Hazardous Chemical Information System (HMIS) Exposure Standards:

CHEMICAL NAME	CAS #	EXPOSURE STANDARDS				
		TWA ppm	TWA mg/m³	STEL ppm	STEL mg/m³	Notes
Isopropyl Alcohol	67-63-0	400	983	500	1230	Not Applicable

NE = Not Established.

UK Minimum Exposure Limits:

CHEMICAL NAME	CAS #	WORKPLACE EXPOSURE LIMIT				
		Long-Term Exposure Limit (8-Hrs TWA Reference Period)		Short-Term Exposure Limit (15-minute Reference Period)		Comments
		ppm	mg.m⁻³	ppm	mg.m⁻³	The Carcin, Sen and Skin notations are not exhaustive. Notations have been applied to substances identified in IOELV Directives
Isopropyl Alcohol	67-63-0	400	999	500	1250	NE

NE = Not Established.

8. EXPOSURE CONTROLS - PERSONAL PROTECTION (Continued)

EXPOSURE LIMITS/CONTROL PARAMETERS (continued):

Workplace Exposure Standards (New Zealand): Refer to the Hazardous Substances (Classes 6, 8, and 9 Controls) Regulations 2001 (Regulations 29-30).

CHEMICAL NAME	CAS #	WORKPLACE EXPOSURE STANDARDS				
		TWA ppm	TWA mg/m^3	STEL ppm	STEL mg/m^3	Notes
Isopropyl Alcohol	67-63-0	400	983	500	1230	Not Applicable

Exposure Standards Outside the Workplace (New Zealand): Currently, there are no other exposure limits, such as TELS and EELS (See Section 12 [Ecological Information] for EEL information) established for components of these products.

Other International Occupational Exposure Limits: Currently, the following international limits established for components of these products.

Isopropyl Alcohol

	Limit Value - Eight Hours	Limit Value - Short Term
Austria	200 ppm; 500 mg/m³	800 ppm; 2000 mg/m³
Belgium	200 ppm; 500 mg/m³	400 ppm (1); 1000 mg/m³ (1)
Canada (Ontario)	200 ppm	400 ppm
Canada (Quebec)	400 ppm; 983 mg/m³	500 ppm; 1230 mg/m³
Denmark	200 ppm; 490 mg/m³	400 ppm; 980 mg/m³
Finland	200 ppm; 500 mg/m³	250 ppm (1); 620 mg/m³ (1)
France		400 ppm; 980 mg/m³
Germany (AGS)	200 ppm; 500 mg/m³	400 ppm (1); 1000 mg/m³ (1)
Germany (DFG)	200 ppm; 500 mg/m³	400 ppm (1); 1000 mg/m³ (1)
Hungary	500 mg/m³	2000 mg/m³
Ireland	200 ppm	400 ppm (1)
Japan (MHLW)	200 ppm	
Japan JSOH	400 ppm (1); 980 mg/m³ (1)	
Latvia	350 mg/m³	600 mg/m³ (1)
Norway	100 ppm; 245 mg/m³	
People's Republic of China	350 mg/m³	700 mg/m³ (1)
Poland	900 mg/m³	1200 mg/m³
Romania	81 ppm; 200 mg/m³	203 ppm (1); 500 mg/m³ (1)
Singapore	400 ppm; 983 mg/m³	500 ppm; 1230 mg/m³
South Korea	200 ppm; 480 mg/m³	400 ppm; 980 mg/m³
Spain	200 ppm; 500 mg/m³	400 ppm; 1000 mg/m³
Sweden	150 ppm; 350 mg/m³	250 ppm (1); 600 mg/m³ (1)
Switzerland	200 ppm; 500 mg/m³	400 ppm; 1000 mg/m³
	Remarks:	
Belgium	(1) 15 minutes average value.	
Finland	(1) 15 minutes average value.	
Germany (AGS)	(1) 15 minutes average value.	
Germany (DFG)	(1) 15 minutes average value.	
Ireland	(1) 15 minutes average value.	
Japan - JSOH	(1) Occupational exposure limit ceiling: Reference value to the maximal exposure concentration of the substance during a working day.	
Latvia	(1) 15 minutes average value.	
People's Republic of China	(1) 15 minutes average value.	
Romania	(1) 15 minutes average value.	
Sweden	(1) 15 minutes average value.	

BIOLOGICAL MONITORING AND THE SOURCE OF THOSE VALUES:

U.S. ACGIH Biological Exposure Indices (BEIs): Currently, the following Biological Exposure Indices (BEIs) have been established for the Isopropyl Alcohol component of these products.

CHEMICAL: DETERMINANT	SAMPLING TIME	BEI
Isopropyl Alcohol (listed as 2-propanol) • Acetone in Urine	• End of Shift at End of Workweek	• 40 mg/L

UK Biological Monitoring Guidance Values (BMGVs): Currently, no BMGVs have been established for the components of these products.

Appendix E-Schedule 14 (Requirements for Health Monitoring) per Australia Safe Work Code of Practice Managing Risks and Hazardous Chemicals in the Workplace: Currently, no component of these products has an established monitoring requirement value.

PROTECTIVE EQUIPMENT: The following information on appropriate Personal Protective Equipment is provided to assist employers in complying with OSHA regulations found in 29 CFR Subpart I (beginning at 1910.132, including U.S. Federal OSHA Respiratory Protection (29 CFR 1910.134), OSHA Eye Protection 29 CFR 1910.133, OSHA Hard Protection 29 CFR 1910.138, OSHA Foot Protection 29 CFR 1910.136 and OSHA Body Protection 29 CFR1910.132), equivalent standards of Canada (including CSA Respiratory Standard Z94.4-02, Z94.3-M1982, *Industrial Eye and Face Protectors* and CSA Standard Z195-02, *Protective Footwear*), standards of EU member states (including EN 529:2005 for respiratory PPE, CEN/TR 15419:2006 for hand/body protection, and CR 13464:1999 for face/eye protection), standards of Australia (including AS/NZS 1715:1994 for respiratory PPE, AS/NZS 4501.2:2006 for protective clothing, AS/NZS 2161.1:2000 for glove selection, and AS/NZS 1336:1997 for eye protection), or standards of Japan (including JIS T 8116:2005 for glove selection, JIS T 8150:2006 for respiratory PPE, JIS T 8147:2003 for eye protectors, and JIS T 8030:2005 for protective clothing). Please reference applicable regulations and standards for relevant details.

Respiratory Protection: Maintain airborne contaminant concentrations below exposure limits listed in this section, if applicable. If respiratory protection is needed, use only protection authorized in applicable regulations. Oxygen levels below 19.5% are considered IDLH by U.S. OSHA. In such atmospheres, use of a full-facepiece pressure/demand SCBA or a full facepiece, supplied air respirator with auxiliary self-contained air supply is required under OSHA's Respiratory Protection Standard (1910.134-1998).

8. EXPOSURE CONTROLS - PERSONAL PROTECTION (Continued)

Respiratory Protection (continued): The following are U.S. NIOSH Respiratory Equipment Guidelines for Isopropyl Alcohol are provided to assist in selection of respiratory PPE in event of presence of aerosols.

Isopropyl Alcohol

Concentration	Respiratory Protection
Up to 2000 ppm:	Any Supplied-Air Respirator (SAR) operated in a continuous-flow mode, or any Chemical Cartridge Respirator with a full facepiece and organic vapor cartridge(s), or any Air-Purifying, Full-Facepiece Respirator (gas mask) with a chin-style, front- or back-mounted organic vapor canister, or any Powered, Air-Purifying Respirator (PAPR) with organic vapor cartridge(s), or any Self-Contained Breathing Apparatus (SCBA) with a full facepiece, or any SAR with a full facepiece.
Emergency or Planned Entry into Unknown Concentrations or IDLH Conditions:	Any SCBA that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode, or any SAR that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode in combination with an auxiliary SCBA operated in pressure-demand or other positive-pressure mode.
Escape:	Any Air-Purifying, Full-Facepiece Respirator (gas mask) with a chin-style, front- or back-mounted organic vapor canister, or any appropriate escape-type, SCBA.

Eye Protection: Depending on the use of these products, splash goggles or safety glasses may be worn. Use goggles or safety glasses for spill response, as stated in Section 6 (Accidental Release Measures) of this SDS. If necessary, refer to appropriate regulations when selecting eye protection.

Hand Protection: Wear butyl rubber, neoprene, or nitrile rubber or latex gloves for routine use. If necessary, refer to appropriate regulations for further information.

Body Protection: Use body protection appropriate for task, such as a lab coat. If necessary, use body protection appropriate for task (e.g., Tyvek suit, rubber apron). If a hazard of injury to the feet exists due to falling objects, rolling objects, where objects may pierce the soles of the feet or where employee's feet may be exposed to electrical hazards, use foot protection, as described in appropriate regulations.

9. PHYSICAL and CHEMICAL PROPERTIES

FORM: Liquid.
COLOR: Brown.
MOLECULAR FORMULA: Mixture.
MOLECULAR WEIGHT: Mixture.
ODOR: Mild.
ODOR THRESHOLD: Not established.
VAPOR DENSITY (air = 1): 2 (calc.)
VAPOR PRESSURE: 50 mmHg
SPECIFIC GRAVITY (water = 1): BRN: 1.01; LBR: 1.02
MELTING/FREEZING POINT: ~0°C (~32°F)
SOLUBILITY IN WATER: Dispersible in all proportions.
BOILING POINT: 92°C (197.6°F)
EVAPORATION RATE (*n*-BuAc = 1): < 1
pH: 8.46
OXIDIZING PROPERTIES: Not applicable.
PERCENT SOLIDS: 10%
FLAMMABILITY: Not flammable.
FLASH POINT: Not applicable.
AUTOIGNITION TEMPERATURE: Not applicable.
EXPLOSIVE PROPERTIES: Not applicable.
COEFFICIENT OF OIL/WATER DISTRIBUTION (PARTITION COEFFICIENT): Not established.
HOW TO DETECT THIS SUBSTANCE (identification properties): The odor and color of these products may be distinguishing characteristics to identify it event of a spill.

10. STABILITY and REACTIVITY

CHEMICAL STABILITY: Stable under conditions of normal temperature and pressure.
DECOMPOSITION PRODUCTS:
Combustion: If exposed to extremely high temperatures, these products can decompose to generate carbon, metallic, nitrogen and sulfur oxides, ammonia, benzenes, chlorine, formaldehyde, hydrogen chloride and polymers. **Hydrolysis:** None known.
MATERIALS WITH WHICH SUBSTANCE IS INCOMPATIBLE: Strong oxidizers, water-reactive materials.
POSSIBILITY OF HAZARDOUS REACTION OR POLYMERIZATION: Will not occur.
CONDITIONS TO AVOID: Exposure to or contact with extreme temperatures and incompatible chemicals.

11. TOXICOLOGICAL INFORMATION

SYMPTOMS OF EXPOSURE BY ROUTE OF EXPOSURE: The most significant routes of occupational exposure are inhalation and contact with skin and eyes. The symptoms of exposure to this material, via route of entry, are as described below.

Inhalation: These products do not normally present a significant inhalation hazard under anticipated circumstances of use. Inhalation of vapors, mists, or sprays of this material may mildly irritate the nose, throat, and other tissues of the respiratory system.

Contact with Eyes: Eye contact with this material can moderately irritate the eyes, causing discomfort, tearing, and redness. Because the eye tissue may be stained, vision may be temporarily blurred.

Contact with Skin: Skin contact may cause mild irritation in sensitive individuals. Repeated or prolonged skin exposure may cause dermatitis (dry, red skin).

Skin Absorption: No component is known to be absorbed via intact skin.

Ingestion: Though not anticipated to be a significant route of occupational exposure, ingestion of large quantities of this material may cause nausea, vomiting, diarrhea, and discoloration of the mouth, teeth, and tissues of the throat.

Injection: Accidental injection of this liquid (as may occur by a puncture with a contaminated object) will cause local pain, irritation, and redness.

HEALTH EFFECTS OR RISKS FROM EXPOSURE: In the event of exposure, the following symptoms may be observed:

Short Term: Eye contact will cause moderate irritation. Ingestion of large amounts may cause nausea, vomiting, diarrhea. Inhalation of vapors may cause adverse symptoms to the central nervous system due to the Isopropyl Alcohol component.

Long Term: Repeated or prolonged skin exposure may cause dermatitis (dry, red skin).

11. TOXICOLOGICAL INFORMATION (Continued)

TARGET ORGANS:

Short Term: Skin, central nervous system, eyes.

Long Term: Skin.

OVERALL ACUTE TOXICITY ESTIMATES (ATE) FOR PRODUCT:

Oral Route: > 14,897 mg/kg; Dermal Route: > 17,826 mg/kg; Inhalation Route: > 84.96 mg/L

TOXICITY DATA FOR COMPONENTS: Specific toxicology data currently available for components of these products in greater than 1% concentration are as follows. Due to the large amount of data available, only human data, irritation data, LD50 oral, rat and mouse, skin, rabbit and rat, LC50 inhalation rat and mouse data are included in this SDS. Contact Dynamic Color for information on additional data available.

Proprietary Pigment Orange:

LD_{50} (Oral-Rat) > 2000 mg/kg (OECD 401)

LD_{50} (Skin-Rat) > 2000 mg/kg (OECD 402)

LC_{50} (Inhalation-Rat) 4 hr: 4.25 mg/L (OECD 403)

Isopropyl Alcohol:

LDLo (Oral-Man): 5272 mg/kg; Behavioral: coma; Vascular: BP lowering not characterized in autonomic section; Lungs, Thorax, or Respiration: chronic pulmonary edema

LDLo (Oral-Human): 3570 mg/kg; Behavioral: coma; Lungs, Thorax, or Respiration: respiratory depression; Gastrointestinal: nausea or vomiting

LDLo (Unreported-Man) = 2770 mg/kg

TDLo (Oral-Man): 14,432 mg/kg; Behavioral: coma; Vascular: BP lowering not characterized in autonomic section; Lungs, Thorax, or Respiration: dyspnea

TDLo (Oral-Human): 223 mg/kg; Behavioral: hallucinations, distorted perceptions; Cardiac: pulse rate; Vascular: BP lowering not characterized in autonomic section

TDLo (Oral-Infant): 13 gm/kg; Behavioral: somnolence (general depressed activity), irritability; Gastrointestinal: nausea or vomiting

Skin Irritancy (Rabbit): 500 mg; mild

Eye Irritancy (Rabbit): 100 mg; severe

LD_{50} (Oral-Rat) 5840 mg/kg (OECD 401)

LD_{50} (Skin-Rabbit) 16,400 mg/kg (OECD 402)

LD_{50} (Inhalation-Rat) 4 hr: > 10,000 mg/L (OECD 403)

Hazard Scale: 0 = Minimal 1 = Slight 2 = Moderate 3 = Serious 4 = Severe * = Chronic hazard

REPEATED DOSE TOXICITY: No component has demonstrated repeated dose toxicity in either animal testing or though workplace data.

CARCINOGENIC POTENTIAL OF COMPONENTS: Components of these products are listed by agencies tracking the carcinogenic potential of chemical compounds, as follows.

Isopropyl Alcohol: ACGIH TLV-A4 (Not Classifiable as a Human Carcinogen); IARC-3 (Not Classifiable as to Carcinogenicity to Humans)

The remaining components of these products are not found on the following lists: U.S. EPA, U.S. NTP, U.S. OSHA, U.S. NIOSH, GERMAN MAK, IARC, and ACGIH, and therefore are neither considered to be nor suspected to be cancer-causing agents by these agencies.

IRRITANCY OF PRODUCT: Acute exposure to these products via eye contact may irritate contaminated eyes. Acute exposure to these products via skin contact and inhalation may mildly irritate contaminated tissue, especially if exposure is prolonged.

ENDOCRINE TOXICITY: No component is known or suspected to be an endocrine disruptor.

SENSITIZATION TO THE PRODUCT: The components of these products are not known to be human skin or respiratory sensitizers.

REPRODUCTIVE TOXICITY INFORMATION: No components of these products are known to have mutagenic, embryotoxic, teratogenic or reproductive toxicity effects in humans.

12. ECOLOGICAL INFORMATION

ALL WORK PRACTICES MUST BE AIMED AT ELIMINATING ENVIRONMENTAL CONTAMINATION.

MOBILITY: These products have not been tested for mobility in soil. It is expected to be somewhat mobile in soil.

PERSISTENCE AND BIODEGRADABILITY: These products have not been tested for persistence or biodegradability. It is expected that some biodegradation will occur to these products; however, no specific information is known.

BIO-ACCUMULATION POTENTIAL: These products have not been tested. No data are available for components indicate a bioaccumulation potential.

EFFECT OF MATERIAL ON PLANTS or ANIMALS: These products may be harmful to plant or animal life, especially if large volumes of these products are released.

EFFECT OF CHEMICAL ON AQUATIC LIFE: These products have not been tested for aquatic toxicity. The following are aquatic toxicity data for some components of these products:

Proprietary Pigment Orange:

LC_{50} (fish) 96 hrs: > 100 mg/L (OECD 203)

EC_{50} (*Daphnia magna* Giant water flew) 48 hrs: > 100 mg/L (OECD 202)

EC_{50} (*Selenastrum capricornutum* green algae) 72hrs: ≥ 100 mg/L (OECD 201)

Isopropyl Alcohol:

LC_{50} (*Carassius auratus* Goldfish) 96 hrs: 9640 mg/L (US EPA Committee on Methods for Toxicity Tests with Aquatic Organisms)

EC_{50} (*Daphnia Magna* Giant Water flea) 24 hrs: 10,00 mg/L (OECD 202)

EC_{50} (*Scenedesmus quadricauda* freshwater algae) 8 days: 1800 mg/L (No Guideline info)

OTHER ADVERSE EFFECTS: These products do not contain any component with known ozone depletion potential.

RESULTS OF PBT AND vPvB ASSESSMENT: PBT and vPvB assessments are part of the chemical safety report required for some substances in European Union Regulation (EC) 1907/2006, Article 14.

12. ECOLOGICAL INFORMATION (Continued)

ENDOCRINE DISRUPTORS: No component has been shown to be or is suspected to cause endocrine disruption to terrestrial or aquatic animals.

ENVIRONMENTAL EXPOSURE CONTROLS: Controls should be engineered to prevent release to the environment, including procedures to prevent spills, atmospheric release and release to waterways.

GHS Statements for Environmental Exposure Controls: Not applicable.

13. DISPOSAL CONSIDERATIONS

PRECAUTIONS TO BE FOLLOWED DURING WASTE HANDLING: Wear proper protective equipment when handling waste materials.

GHS Statements for Waste Handling: P501: Dispose of contents/containers in accordance with all local, regional, national and international regulations.

DISPOSAL CONTAINERS: Waste materials must be placed in and shipped in appropriate 5-gallon or 55-gallon poly or metal waste pails or drums. Permeable cardboard containers are not appropriate and should not be used. Ensure that any required marking or labeling of the containers be done to all applicable regulations.

DISPOSAL METHODS: It is the responsibility of the generator to determine at the time of disposal whether the product meets the criteria of a hazardous waste per regulations of the jurisdiction in which the waste is generated and/or disposed of. Waste disposal must be in accordance with appropriate Federal, State, Provincial and local regulations. These products, if unaltered by use, may be disposed of by treatment at a permitted facility or as advised by your local hazardous waste regulatory authority. Shipment of wastes must be done with appropriately permitted and registered transporters.

U.S. EPA WASTE NUMBER: Not applicable to wastes consisting only of these products.

CANADIAN HAZARDOUS WASTE REGULATIONS: As supplied, these products should be tested to see if it meets the criteria of hazardous wastes per Canadian Environmental Protection Agency) regulations and the Canadian Environmental Protection Act, 1999 (CEPA).

Canadian Environmental Protection Act (CEPA) Priority Substances Lists: The Isopropyl Alcohol component is listed as a Substance With Greatest Potential For Human Exposure Substance on Environment Canada/Health Canada Pilot Project List (CEPA 1999, Section 73). Meets categorization criteria: *may present, to individuals in Canada, the greatest potential for exposure; or *are persistent or bioaccumulative in accordance with the regulations, and inherently toxic to human beings or to non-human organisms, as determined by laboratory or other studies.

EUROPEAN WASTE CODES FOR PRODUCT: Wastes from MFSU and Removal of Printing Inks: 08 03 99: Wastes Not Otherwise Specified

EU WASTE FRAMEWORK DIRECTIVE, ANNEX III - WASTE - HAZARDOUS PROPERTIES: These products do not meet the criteria of any hazardous waste property. The components of these products have designated waste codes as listed below.

Isopropyl Alcohol: HP3 Flammable Waste (FW); HP5 Specific Target Organ Toxicity (STOT)/Aspiration Toxicity

AUSTRALIAN HAZARDOUS WASTE REGULATIONS: As supplied, these products should be tested to see if it meets the criteria of hazardous wastes per Australian Department of Agriculture, Water and the Environment regulations. If wastes are to be exported, they should be tested to see if they have requirements under the Australian Hazardous Waste (Regulation of Exports and Imports) Act 1989 and further of the Basel Convention where the waste has any of the characteristics mentioned in Annex III to the Basel Convention.

14. TRANSPORTATION INFORMATION

U.S. DEPARTMENT OF TRANSPORTATION: These products are not classified as dangerous goods, per U.S. DOT regulations, under 49 CFR 172.101.

TRANSPORT CANADA, TRANSPORTATION OF DANGEROUS GOODS REGULATIONS: These products are NOT classified as dangerous goods, per regulations of Transport Canada.

INTERNATIONAL AIR TRANSPORT ASSOCIATION SHIPPING INFORMATION (IATA): These products are NOT classified as dangerous goods.

INTERNATIONAL MARITIME ORGANIZATION SHIPPING INFORMATION (IMO): These products are NOT classified as dangerous goods.

EUROPEAN AGREEMENT CONCERNING THE INTERNATIONAL CARRIAGE OF DANGEROUS GOODS BY ROAD (ADR): These products are NOT classified by the United Nations Economic Commission for Europe to be dangerous goods.

AUSTRALIAN FEDERAL OFFICE OF ROAD SAFETY CODE FOR THE TRANSPORTATION OF DANGEROUS GOODS BY ROAD OR RAIL: These products are NOT classified as dangerous goods, per regulations of the Australian Federal Office of Road Safety.

TRANSPORT IN BULK ACCORDING TO ANNEX II OF MARPOL 73/78 AND THE IBC CODE: Not applicable.

ENVIRONMENTAL HAZARDS: These products are neither environmentally hazardous according to the criteria of the UN Model Regulations (as reflected in the IMDG Code, ADR, RID, and ADN); no component meets the criteria of environmentally hazardous.

15. REGULATORY INFORMATION

UNITED STATES REGULATIONS:

U.S. SARA Reporting Requirements: The components of these products are subject to the reporting requirements of Sections 302, 304, and 313 of Title III of the Superfund Amendments and Reauthorization Act and are listed as follows:

CHEMICAL NAME	SARA 302 (40 CFR 355, Appendix A)	SARA 304 (40 CFR Table 302.4)	SARA 313 (40 CFR 372.65)

Isopropyl Alcohol (mfg-strong acid process)	No	No	Yes

U.S. SARA Threshold Planning Quantity (TPQ): There are no specific Threshold Planning Quantities for this material. The default Federal SDS submission and inventory requirement filing threshold of 10,000 lb (4,540 kg) may apply, per 40 CFR 370.20.

15. REGULATORY INFORMATION (Continued)

UNITED STATES REGULATIONS (continued):

U.S. CERCLA Reportable Quantity (RQ): Not applicable.

U.S. TSCA Inventory Status: The components of these products are listed on the TSCA Inventory.

U.S. Hazardous Air Pollutant (HAPs): The components of these products are not listed by the EPA under section 112(b) of the Clean Air Act as a 'HAP'.

U.S. Clean Air Act (CA 112r) Threshold Quantity (TQ): Not applicable.

California Safe Drinking Water And Toxic Enforcement Act (Proposition 65): No component is on the California Proposition 65 Lists. No Proposition 65 warning is required.

CANADIAN REGULATIONS:

Canadian DSL/NDSL Inventory Status: Components listed by CAS# in Section 3 (Composition and Information on Ingredients) are listed on the DSL Inventory.

Canadian WHMIS HPR 2015 Classification and Symbols: See Section 2 for classification and symbols under WHMIS GHS 2015.

EUROPEAN UNION REGULATIONS:

Safety, Health, and Environmental Regulations/Legislation Specific for the Product: Currently, there is no specific legislation pertaining to these products.

Chemical Safety Assessment: No data available. The chemical safety assessment is required for some substances according to European Union Regulation (EC) 1907/2006, Article 14.

AUSTRALIAN REGULATIONS:

Australian Inventory Of Chemical Substances (AICS) Status: Components listed by CAS# in Section 3 (Composition and Information on Ingredients) are listed on the AICS.

Hazardous Substances Information System (HSIS): Components listed by CAS# in Section 3 (Composition and Information on Ingredients) are not listed in the HSIS.

Standard for the Uniform Scheduling of Drugs and Poisons: Not applicable.

CHINESE REGULATIONS:

Chinese Inventory of Existing Chemical Substances Status: Components listed by CAS# in Section 3 (Composition and Information on Ingredients) are on the Chinese Inventory of Existing Chemical Substances (IECSC).

JAPANESE REGULATIONS:

Japanese ENCS Inventory: Components listed by CAS# in Section 3 (Composition and Information on Ingredients) are on the ENCS Inventory or are excepted.

Japanese Ministry of Economy, Trade, and Industry (METI) Status: Components listed by CAS# in Section 3 (Composition and Information on Ingredients) are not listed as Class I Specified Chemical Substances, Class II Specified Chemical Substances, or Designated Chemical Substances by the Japanese METI.

Poisonous and Deleterious Substances Control Law: Components listed by CAS# in Section 3 (Composition and Information on Ingredients) are not listed as a Specified Poisonous Substance under the Poisonous and Deleterious Substances Control Law.

KOREAN REGULATIONS:

Korean Existing Chemical Substances Inventory Status: Components are listed on the Korean Existing Chemicals List, as indicated in composition tables in Section 3 (Composition and Information on Ingredients).

NEW ZEALAND REGULATIONS:

New Zealand Inventory of Chemicals (NZIoC): Components listed by CAS# in Section 3 (Composition and Information on Ingredients) are on the NZIoC.

MEXICAN REGULATIONS:

Mexican Workplace Regulations (NOM-018-STPS-2000): These products are classified as hazardous.

TAIWANESE REGULATIONS:

Taiwan Existing Chemical Substances Inventory Status: Components listed by CAS# in Section 3 (Composition and Information on Ingredients) are listed on the Taiwan Existing Chemicals List.

16. OTHER INFORMATION

REVISION DETAILS: May 2017: Conversion of old MSDS to GHS compliant SDS. June 2018: Review and up-date entire SDS for most current regulations. April 2022: Review and revise entire SDS for current compliance of all jurisdictions of the SDS.

REFERENCES AND DATA SOURCES: Contact the supplier for information.

METHODS OF EVALUATING INFORMATION FOR THE PURPOSE OF CLASSIFICATION: Bridging principles were used to classify these products.

PREPARED BY: CHEMICAL SAFETY ASSOCIATES, Inc., PO Box 1961, Hilo, HI 96721, 808/969-4846

DYNAMIC

DEFINITIONS OF TERMS

A large number of abbreviations and acronyms appear on an SDS. Some of these, which are commonly used, include the following:

CAS #: This is the Chemical Abstract Service Number that uniquely identifies each constituent.

EXPOSURE LIMITS IN AIR:

CEILING LEVEL: The concentration that shall not be exceeded during any part of the working exposure.

DFG MAK Germ Cell Mutagen Categories: 1: Germ cell mutagens which have been shown to increase the mutant frequency in the progeny of exposed humans. 2: Germ cell mutagens which have been shown to increase the mutant frequency in the progeny of exposed mammals. 3A: Substances which have been shown to induce genetic damage in germ cells of human of animals, or which produce mutagenic effects in somatic cells of mammals *in vivo* and have been shown to reach the germ cells in an active form. 3B: Substances which are suspected of being germ cell mutagens because of their genotoxic effects in mammalian somatic cell *in vivo*; in exceptional cases, substances for which there are no *in vivo* data, but which are clearly mutagenic *in vitro* and structurally related to known *in vivo* mutagens. 4: Not applicable (Category 4 carcinogenic substances are those with non-genotoxic mechanisms of action. By definition, germ cell mutagens are genotoxic. Therefore, a Category 4 for germ cell mutagens cannot apply. At some time in the future, it is conceivable that a Category 4 could be established for genotoxic substances with primary targets other than DNA [e.g., purely aneugenic substances] if research results make this seem sensible.) 5: Germ cell mutagens, the potency of which is considered to be so low that, provided the MAK value is observed, their contribution to genetic risk for humans is expected not to be significant.

DFG MAK Pregnancy Risk Group Classification: Group A: A risk of damage to the developing embryo or fetus has been unequivocally demonstrated. Exposure of pregnant women can cause damage of the developing organism, even when MAK and BAT (Biological Tolerance Value for Working Materials) values are observed. Group B: Currently available information indicates a risk of damage to the developing embryo or fetus must be considered to be probable. Damage to the developing organism cannot be excluded when pregnant women are exposed, even when MAK and BAT values are observed. Group C: There is no reason to fear a risk of damage to the developing embryo or fetus when MAK and BAT values are observed. Group D: Classification in one of the groups A-C is not yet possible because, although the data available may indicate a trend, they are not sufficient for final evaluation.

IDLH-Immediately Dangerous to Life and Health: This level represents a concentration from which one can escape within 30-minutes without suffering escape-preventing or permanent injury.

LOQ: Limit of Quantitation.

MAK: Federal Republic of Germany Maximum Concentration Values in the workplace.

NE: Not Established. When no exposure guidelines are established, an entry of NE is made for reference.

NIC: Notice of Intended Change.

NIOSH CEILING: The exposure that shall not be exceeded during any part of the workday. If instantaneous monitoring is not feasible, the ceiling shall be assumed as a 15-minute TWA exposure (unless otherwise specified) that shall not be exceeded at any time during a workday.

NIOSH RELs: NIOSH's Recommended Exposure Limits.

PEL-Permissible Exposure Limit: OSHA's Permissible Exposure Limits. This exposure value means exactly the same as a TLV, except that it is enforceable by OSHA. The OSHA Permissible Exposure Limits are based in the 1989 PELs and the June, 1993 Air Contaminants Rule (Federal Register: 58: 35338-35351 and 58: 40191). Both the current PELs and the vacated PELs are indicated. The phrase, "Vacated 1989 PEL," is placed next to the PEL that was vacated by Court Order.

SKIN: Used when a there is a danger of cutaneous absorption.

STEL-Short Term Exposure Limit: Short Term Exposure Limit, usually a 15-minute time-weighted average (TWA) exposure that should not be exceeded at any time during a workday, even if the 8-hr TWA is within the TLV-TWA, PEL-TWA or REL-TWA.

TLV-Threshold Limit Value: An airborne concentration of a substance that represents conditions under which it is generally believed that nearly all workers may be repeatedly exposed without adverse effect. The duration must be considered, including the 8-hour.

TWA-Time Weighted Average: Time Weighted Average exposure concentration for a conventional 8-hr (TLV, PEL) or up to a 10-hr (REL) workday and a 40-hr workweek.

HAZARDOUS MATERIALS IDENTIFICATION SYSTEM HAZARD RATINGS:

This rating system was developed by the National Paint and Coating Association and has been adopted by industry to identify the degree of chemical hazards.

HEALTH HAZARDS: 0 (Minimal Hazard: No significant health risk, irritation of skin or eyes not anticipated. *Skin Irritation:* Essentially non-irritating. PII or Draize = "0". *Eye Irritation:* Essentially non-irritating, or minimal effects which clear in < 24 hours [e.g., mechanical irritation]. Draize = "0". *Oral Toxicity LD_{50} Rat:* < 5000 mg/kg. *Dermal Toxicity LD_{50}/Rat or Rabbit:* < 2000 mg/kg. *Inhalation Toxicity 4-hrs LC_{50} Rat:* < 20 mg/L.); 1 (Slight Hazard): Minor reversible injury may occur; slightly or mildly irritating. *Skin Irritation:* Slightly or mildly irritating. *Eye Irritation:* Slightly or mildly irritating. *Oral Toxicity LD_{50} Rat:* > 500-5000 mg/kg. *Dermal Toxicity LD_{50}/Rat or Rabbit:* > 1000-2000 mg/kg. *Inhalation Toxicity LC_{50} 4-hrs Rat:* > 2-20 mg/L); 2 (Moderate Hazard): Temporary or transitory injury may occur. *Skin Irritation:* Moderately irritating; primary irritant; sensitizer. PII or Draize > 0, < 5.

HAZARDOUS MATERIALS IDENTIFICATION SYSTEM HAZARD RATINGS (continued):

HEALTH HAZARDS (continued): 2 (continued): *Eye Irritation:* Moderately to severely irritating and/or corrosive; reversible corneal opacity; corneal involvement or irritation clearing in 8-21 days. Draize > 0, ≤ 25. *Oral Toxicity LD_{50} Rat:* > 50-500 mg/kg. *Dermal Toxicity LD_{50}/Rat or Rabbit:* > 200-1000 mg/kg. 3 (Serious Hazard): Major injury likely unless prompt action is taken and medical treatment is given; high level of toxicity; corrosive. *Skin Irritation:* Severely irritating and/or corrosive; may destroy dermal tissue, cause skin burns, dermal necrosis. PII or Draize > 5-8 with destruction of tissue. *Eye Irritation:* Corrosive, irreversible destruction of ocular tissue; corneal involvement or irritation persisting for more than 21 days. Draize > 80 with effects irreversible in 21 days. *Oral Toxicity LD_{50} Rat:* > 1-50 mg/kg. *Dermal Toxicity LD_{50}/Rat or Rabbit:* > 20-200 mg/kg. *Inhalation Toxicity LC_{50} 4-hrs Rat:* > 0.05-0.5 mg/L.); 4 (Severe Hazard: Life-threatening; major or permanent damage may result from single or repeated exposure. *Skin Irritation:* Not appropriate. Do not rate as a "4", based on skin irritation alone. *Eye Irritation:* Not appropriate. Do not rate as a "4", based on eye irritation alone. *Oral Toxicity LD_{50} Rat:* ≤ 1 mg/kg. *Dermal Toxicity LD_{50}/Rat or Rabbit:* ≤ 20 mg/kg. *Inhalation Toxicity LC_{50} 4-hrs Rat:* ≤ 0.05 mg/L).

FLAMMABILITY HAZARD: 0 (Minimal Hazard-Materials that will not burn in air when exposure to a temperature of 815.5°C [1500°F] for a period of 5 minutes.); 1 (Slight Hazard-Materials that must be pre-heated before ignition can occur. Material require considerable pre-heating, under all ambient temperature conditions before ignition and combustion can occur, including: Materials that will burn in air when exposed to a temperature of 815.5°C (1500°F) for a period of 5 minutes or less: Liquids, solids and semisolids having a flash point at or above 93.3°C [200°F] (e.g. OSHA Class IIIB, or; Most ordinary combustible materials [e.g. wood, paper, etc.]); 2 (Moderate Hazard-Materials that must be moderately heated or exposed to relatively high ambient temperatures before ignition can occur. Materials in this degree would not, under normal conditions, form hazardous atmospheres in air, but under high ambient temperatures or moderate heating may release vapor in sufficient quantities to produce hazardous atmospheres in air, including: Liquids having a flash-point at or above 37.8°C [100°F]; Solid materials in the form of course dusts that may burn rapidly but that generally do not form explosive atmospheres; Solid materials in a fibrous or shredded form that may burn rapidly and create flash fire hazards (e.g. cotton, sisal, hemp; Solids and semisolids that readily give off flammable vapors.); 3 (Serious Hazard- Liquids and solids that can be ignited under almost all ambient temperature conditions. Materials in this degree produce hazardous atmospheres with air under almost all ambient temperatures, or, unaffected by ambient temperature, are readily ignited under almost all conditions, including: Liquids having a flash point below 22.8°C [73°F] and having a boiling point at or above 38°C [100°F] and below 37.8°C [100°F] [e.g. OSHA Class IB and IC]; Materials that on account of their physical form or environmental conditions can form explosive mixtures with air and are readily dispersed in air [e.g., dusts of combustible solids, mists or droplets of flammable liquids]; Materials that burn extremely rapidly, usually by reason of self-contained oxygen [e.g. dry nitrocellulose and many organic peroxides]); 4 (Severe Hazard-Materials that will rapidly or completely vaporize at atmospheric pressure and normal ambient temperature or that are readily dispersed in air, and which will burn readily, including: Flammable gases; Flammable cryogenic materials; Any liquid or gaseous material that is liquid while under pressure and has a flash point below 22.8°C [73°F] and a boiling point below 37.8°C [100°F] [e.g. OSHA Class IA; Material that ignite spontaneously when exposed to air at a temperature of 54.4°C [130°F] or below [e.g. pyrophoric]).

PHYSICAL HAZARD: 0 (*Water Reactivity:* Materials that do not react with water. *Organic Peroxides:* Materials that are normally stable, even under fire conditions and will not react with water. *Explosives:* Substances that are Non-Explosive. *Unstable Compressed Gases:* No Rating. *Pyrophorics:* No Rating. *Oxidizers:* No "0" rating allowed. *Unstable Reactives:* Substances that will not polymerize, decompose, condense or self-react.); 1 (*Water Reactivity:* Materials that change or decompose upon exposure to moisture. *Organic Peroxides:* Materials that are normally stable, but can become unstable at high temperatures and pressures. These materials may react with water, but will not release energy. *Explosives:* Division 1.5 & 1.6 substances that are very insensitive explosives or that do not have a mass explosion hazard. *Compressed Gases:* Pressure below OSHA definition. *Pyrophorics:* No Rating. *Oxidizers:* Packaging Group III; Solids: any material that in either concentration tested, exhibits a mean burning time less than or equal to the mean burning time of a 3:7 potassium bromate/cellulose mixture and the criteria for Packing Group I and II are not met. Liquids: any material that exhibits a mean pressure rise time less than or equal to the pressure rise time of a 1:1 nitric acid (65%)/cellulose mixture and the criteria for Packing Group I and II are not met. *Unstable Reactives:* Substances that may decompose, condense or self-react, but only under conditions of high temperature and/or pressure and have little or no potential to cause significant heat generation or explosive hazard. Substances that readily undergo hazardous polymerization in the absence of inhibitors.); 2 (*Water Reactivity:* Materials that may react violently with water. *Organic Peroxides:* Materials that, in themselves, are normally unstable and will readily undergo violent chemical change, but will not detonate. These materials may also react violently with water. *Explosives:* Division 1.4 – Explosive substances where the explosive effect are largely confined to the package and no projection of fragments of appreciable size or range are expected. An external fire must not cause virtually instantaneous explosion of almost the entire contents of the package. *Compressed Gases:* Pressurized and meet OSHA definition but < 514.7 psi absolute at 21.1°C [70°F] [500 psig]. *Pyrophorics:* No Rating.

16. OTHER INFORMATION (Continued)

DEFINITIONS OF TERMS (Continued)

HAZARDOUS MATERIALS IDENTIFICATION SYSTEM HAZARD RATINGS (continued):

PHYSICAL HAZARD (continued):2 (continued): *Oxidizers:* Packing Group II Solids: any material that, either in concentration tested, exhibits a mean burning time of less than or equal to the mean burning time of a 2:3 potassium bromate/cellulose mixture and the criteria for Packing Group I are not met. Liquids: any material that exhibits a mean pressure rise time less than or equal to the pressure rise of a 1:1 aqueous sodium chlorate solution (40%)/cellulose mixture and the criteria for Packing Group I are not met. *Unstable Reactives:* Substances that may polymerize, decompose, condense, or self-react at ambient temperature and/or pressure, but have a low potential for significant heat generation or explosion. Substances that readily form peroxides upon exposure to air or oxygen at room temperature); 3 (*Water Reactivity:* Materials that may form explosive reactions with water. *Organic Peroxides:* Materials that are capable of detonation or explosive reaction, but require a strong initiating source, or must be heated under confinement before initiation; or materials that react explosively with water. *Explosives:* Division 1.2 – Explosive substances that have a fire hazard and either a minor blast hazard or a minor projection hazard or both, but do not have a mass explosion hazard. *Compressed Gases:* Pressure ≥ 514.7 psi absolute at 21.1°C (70°F) [500 psig]. *Pyrophorics:* No Rating. *Oxidizers:* Packing Group I Solids: any material that, in either concentration tested, exhibits a mean burning time less than the mean burning time of a 3:.2 potassium bromate/cellulose mixture. Liquids: Any material that spontaneously ignites when mixed with cellulose in a 1:1 ratio, or which exhibits a mean pressure rise time less than the pressure rise time of a 1:1 perchloric acid (50%)/cellulose mixture. *Unstable Reactives:* Substances that may polymerize, decompose, condense or self-react at ambient temperature and/or pressure and have a moderate potential to cause significant heat generation or explosion.); 4 (*Water Reactivity:* Materials that react explosively with water without requiring heat or confinement. *Organic Peroxides:* Materials that are readily capable of detonation or explosive decomposition at normal temperature and pressures. *Explosives:* Division 1.1 & 1.2-explosive substances that have a mass explosion hazard or have a projection hazard. A mass explosion is one that affects almost the entire load instantaneously. *Compressed Gases:* No Rating. *Pyrophorics:* Add to the definition of Flammability "4". *Oxidizers:* No "4" rating. *Unstable Reactives:* Substances that may polymerize, decompose, condense or self-react at ambient temperature and/or pressure and have a high potential to cause significant heat generation or explosion.).

NATIONAL FIRE PROTECTION ASSOCIATION HAZARD RATINGS:

HEALTH HAZARD: 0 (materials that, under emergency conditions, would offer no hazard beyond that of ordinary combustible materials): Gases and vapors whose LC_{50} for acute inhalation toxicity is greater than 10,000 ppm. Dusts and mists whose LC_{50} for acute inhalation toxicity is greater than 200 mg/L. Materials whose LD_{50} for acute dermal toxicity is greater than 2000 mg/kg. Materials whose LD_{50} for acute oral toxicity is greater than 2000 mg/kg. Materials that are essentially non-irritating to the respiratory tract, eyes and skin. 1 (materials that, under emergency conditions, can cause significant irritation): Gases and vapors whose LC_{50} for acute inhalation toxicity is greater than 5,000 ppm but less than or equal to 10,000 ppm. Dusts and mists whose LC_{50} for acute inhalation toxicity is greater than 10 mg/l. but less than or equal to 200 mg/L. Materials whose LD_{50} for acute dermal toxicity is greater than 1000 mg/kg but less than or equal to 2000 mg/kg. Materials whose LD_{50} for acute oral toxicity is greater than 500 mg/kg but less than or equal to 2000 mg/kg. Materials that cause slight to moderate irritation to the respiratory tract, eyes and skin. 3 (materials that, under emergency conditions, can cause serious or permanent injury): Gases and vapors whose LC_{50} for acute inhalation toxicity is greater than 1,000 ppm but less than or equal to 3,000 ppm. Dusts and mists whose LC_{50} for acute inhalation toxicity is greater than 0.5 mg/L but less than or equal to 2 mg/L. Materials whose LD_{50} for acute dermal toxicity is greater than 40 mg/kg but less than or equal to 200 mg/kg. Materials whose LD_{50} for acute oral toxicity is greater than 5 mg/kg but less than or equal to 50 mg/kg. Any liquid whose saturated vapor concentration at 20°C (68°F) is equal to or greater than one-fifth its LC_{50} for acute inhalation toxicity, if its LC_{50} is less than or equal to 3000 ppm and that does not meet the criteria for degree of hazard 4. Compressed liquefied gases with boiling points between -30°C (-22°F) and -55°C (-66.5°F) that cause frostbite and irreversible tissue damage. Materials that are respiratory irritants. Cryogenic gases that cause frostbite and irreversible tissue damage. Materials that are corrosive to the respiratory tract. Materials that are corrosive to the eyes or cause irreversible corneal opacity. Materials that are corrosive to the skin. 4 (materials that, under emergency conditions, can be lethal): Gases and vapors whose LC_{50} for acute inhalation toxicity less than or equal to 1,000 ppm. Dusts and mists whose LC_{50} for acute inhalation toxicity is less than or equal to 0.5 mg/L. Materials whose LD_{50} for acute dermal toxicity is less than or equal to 40 mg/kg. Materials whose LD_{50} for acute oral toxicity is less than or equal to 5 mg/kg. Any liquid whose saturated vapor concentration at 20°C (68°F) is equal to or greater than one-fifth its LC_{50} for acute inhalation toxicity, if its LC_{50} is less than or equal to 1000 ppm.

FLAMMABILITY HAZARD: 0 Materials that will not burn under typical fire conditions, including intrinsically noncombustible materials such as concrete, stone, and sand: Materials that will not burn in air when exposed to a temperature of 816°C (1500°F) for a period of 5 minutes in according with Annex D. 1 Materials that must be preheated before ignition can occur. Materials in this degree require considerable preheating, under all ambient temperature conditions, before ignition and combustion can occur: Materials that will burn in air when exposed to a temperature of 816°C (1500°F) for a period of 5 minutes in accordance with Annex D. Liquids, solids and semisolids having a flash point at or above 93.4°C (200°F) (e.g., Class IIIB liquids). Liquids with a flash point greater than 35°C (95°F) that do not sustain combustion when tested using the Method of Testing for Sustained Combustibility, per 49 CFR 173, Appendix H or the UN Recommendation on the Transport of Dangerous Goods, Model Regulations (current edition) and the related Manual of Tests and Criteria (current edition). Liquids with a flash point greater than 35°C (95°F) in a water-miscible solution or dispersion with a water non-combustible liquid/solid content of more than 85 percent by weight. Liquids that have no fire point when tested by ASTM D 92 Standard Test Method for Flash and Fire Points by Cleveland Open Cup, up to a boiling point of the liquid or up to a temperature at which the sample being tested shows an obvious physical change. Combustible pellets with a representative diameter of greater than 2 mm (10 mesh). Solids containing greater than 0.5 percent by weight of a flammable or combustible solvent are rated by the closed-up flash point of the solvent. Most ordinary combustible materials. 2 Materials that must be moderately heated or exposed to relatively high ambient temperatures before ignition can occur. Materials in this degree would not under normal conditions form hazardous atmospheres with air, but under high ambient temperatures or under moderate heating could release vapor in sufficient quantities to produce hazardous atmospheres with air: Liquids having a flash point at or above 37.8°C (100°F) and below 93.4°C (200°F) (e.g., Class II and Class IIIA liquids.) Solid materials in the form of powders or coarse dusts of representative diameter between 420 microns (40 mesh) and 2 mm (10 mesh) that burn rapidly but that generally do not form explosive mixtures in air. Solid materials in fibrous or shredded form that burn rapidly and create flash fire hazards, such as cotton, sisal and hemp. Solids and semisolids that readily give off flammable vapors. Solids containing greater than 0.5 percent by weight of a flammable or combustible solvent are rated by the closed cup flash point of the solvent. 3 Liquids and solids that can be ignited under almost all ambient temperature conditions. Materials in this degree produce hazardous atmospheres with air under almost all ambient temperatures or, though unaffected by ambient temperatures, are readily ignited under almost all conditions: Liquids having a flash point below 22.8°C (73°F) and having a boiling point at or above 37.8°C (100°F) and those liquids having a flash point at or above 22.8°C (73°F) and below 37.8°C (100°F) and below 37.8°C (100°F) (e.g., Class IB and IC liquids).

NATIONAL FIRE PROTECTION ASSOCIATION HAZARD RATINGS (continued):

FLAMMABILITY HAZARD (continued): 3 (continued): Materials that, on account of their physical form or environmental conditions, can form explosive mixtures with air and are readily dispersed in air. Flammable or combustible dusts with a representative diameter less than 420 microns (40 mesh). Materials that burn with extreme rapidity, usually by reason of self-contained oxygen (e.g., dry nitrocellulose and many organic peroxides). Solids containing greater than 0.5 percent by weight of a flammable or combustible solvent are rated by the closed cup flash point of the solvent. 4 Materials that will rapidly or completely vaporize at atmospheric pressure and normal ambient temperature or that are readily dispersed in air and will burn readily: Flammable gases. Flammable cryogenic materials. Any liquid or gaseous materials that is liquid while under pressure and has a flash point below 22.8°C (73°F) and a boiling point below 37.8°C (100°F) (e.g., Class IA liquids). Materials that ignite when exposed to air, Solids containing greater than 0.5 percent by weight of a flammable or combustible solvent are rated by the closed cup flash point of the solvent.

INSTABILITY HAZARD: 0 Materials that in themselves are normally stable, even under fire conditions: Materials that have an estimated instantaneous power density (product of heat of reaction and reaction rate) at 250°C (482°F) below 0.01 W/mL. Materials that do not exhibit an exotherm at temperatures less than or equal to 500°C (932°F) when tested by differential scanning calorimetry. 1 Materials that in themselves are normally stable, but that can become unstable at elevated temperatures and pressures: Materials that have an estimated instantaneous power density (product of heat of reaction and reaction rate) at 250°C (482°F) at or above 0.01 W/mL and below 10 W/mL. 2 Materials that readily undergo violent chemical change at elevated temperatures and pressures: Materials that have an estimated instantaneous power density (product of heat of reaction and reaction rate) at 250°C (482°F) at or above 10 W/mL and below 100W/mL. 3 Materials that in themselves are capable of detonation or explosive decomposition or explosive reaction, but that require a strong initiating source or that must be heated under confinement before initiation: Materials that have an estimated instantaneous power density (product of heat of reaction and reaction rate) at 250°C (482°F) at or above 100 W/mL and below 1000 W/mL. Materials that are sensitive to thermal or mechanical shock at elevated temperatures and pressures. 4 Materials that in themselves are readily capable of detonation or explosive decomposition or explosive reaction at normal temperatures and pressures: Materials that have an estimated instantaneous power density (product of heat of reaction and reaction rate) at 250°C (482°F) of 1000 W/mL or greater. Materials that are sensitive to localized thermal or mechanical shock at normal temperatures and pressures.

FLAMMABILITY LIMITS IN AIR:

Much of the information related to fire and explosion is derived from the National Fire Protection Association (NFPA). Flash Point - Minimum temperature at which a liquid gives off sufficient vapors to form an ignitable mixture with air. Autoignition Temperature: The minimum temperature required to initiate combustion in air with no other source of ignition. LEL - the lowest percent of vapor in air, by volume, that will explode or ignite in the presence of an ignition source. UEL - the highest percent of vapor in air, by volume, that will explode or ignite in the presence of an ignition source.

TOXICOLOGICAL INFORMATION:

Human and Animal Toxicology: Possible health hazards as derived from human data, animal studies, or from the results of studies with similar compounds are presented. Definitions of some terms used in this section are: LD_{50} - Lethal Dose (solids & liquids) which kills 50% of the exposed animals; LC_{50} - Lethal Concentration (gases) which kills 50% of the exposed animals; ppm concentration expressed in parts of material per million parts of air or water; mg/m^3 concentration expressed in weight of substance per volume of air; mg/kg quantity of material, by weight, administered to a test subject, based on their body weight in kg. Other measures of toxicity include TDLo, the lowest dose to cause a symptom and TCLo the lowest concentration to cause a symptom; TDo, LDLo, and LDo, or TC, TCo, LCLo, and LCo, the lowest dose (or concentration) to cause lethal or toxic effects.

Cancer Information: The sources are: **IARC** - the International Agency for Research on Cancer; **NTP** - the National Toxicology Program, **RTECS** - the Registry of Toxic Effects of Chemical Substances, **OSHA** and **CAL/OSHA**. IARC and NTP rate chemicals on a scale of decreasing potential to cause human cancer with rankings from 1 to 4. Subrankings (2A, 2B, etc.) are also used. **Other Information: BEI** – ACGIH Biological Exposure Indices, represent the levels of determinants which are most likely to be observed in specimens collected from a healthy worker who has been exposed to chemicals to the same extent as a worker with inhalation exposure to the TLV.

REPRODUCTIVE TOXICITY INFORMATION:

A mutagen is a chemical that causes permanent changes to genetic material (DNA) such that the changes will propagate through generational lines. An embryotoxin is a chemical that causes damage to a developing embryo (e.g., within the first eight weeks of pregnancy in humans), but the damage does not propagate across generational lines. A teratogen is a chemical that causes damage to a developing fetus, but the damage does not propagate across generational lines. A reproductive toxin is any substance that interferes in any way with the reproductive process.

ECOLOGICAL INFORMATION:

EC is the effect concentration in water. BCF = Bioconcentration Factor, which is used to determine if a substance will concentrate in lifeforms which consume contaminated plant or animal matter. TL_m = median threshold limit; Coefficient of Oil/Water Distribution is represented by log K_{ow} or log K_{oc} and is used to assess a substance's behavior in the environment.

REGULATORY INFORMATION:

U.S. and CANADA:

ACGIH: American Conference of Governmental Industrial Hygienists, a professional association which establishes exposure limits.

This section explains the impact of various laws and regulations on the material. **EPA** is the U.S. Environmental Protection Agency. **NIOSH** is the National Institute of Occupational Safety and Health, which is the research arm of the U.S. Occupational Safety and Health Administration (**OSHA**). **WHMIS** is the Canadian Workplace Hazardous Materials Information System. **DOT** and **TC** are the U.S. Department of Transportation and the Transport Canada, respectively. Superfund Amendments and Reauthorization Act (**SARA**); the Canadian Domestic/Non-Domestic Substances List (**DSL/NDSL**); the U.S. Toxic Substance Control Act (**TSCA**); Marine Pollutant status according to the **DOT**; the Comprehensive Environmental Response, Compensation, and Liability Act (**CERCLA or Superfund**); and various state regulations. This section also includes information on the precautionary warnings which appear on the material's package label. **OSHA** - U.S. Occupational Safety and Health Administration.

EUROPEAN and INTERNATIONAL:

The **DFG:** This is the Federal Republic of Germany's Occupation Health Agency, similar to the U.S. OSHA. **EU** is the European Union (formerly known as the **EEC**, European Economic Community). **EINECS:** This is the European Inventory of Now-Existing Chemical Substances. The **ARD** is the European Agreement Concerning the International Carriage of Dangerous Goods by Road and the **RID** are the International Regulations Concerning the Carriage of Dangerous Goods by Rail. **AICS** is the Australian Inventory of Chemical Substances. **METI** is the Japanese Ministry of Economy, Trade, and Industry.

DYNAMIC
Color Co.

64503-7031

SAFETY DATA SHEET

Prepared to U.S. OSHA, CMA, ANSI, Canadian WHMIS 2015 GHS, European Union CLP EC 1272/2008 & the 8th ATP 2016/918, the Korean MoEL (Public Notice 2016-19), Singapore SS586 Standard – Parts 2 & 3, Chinese GB/T 16483-2008 & GB/T 17519-2013, New Zealand Hazardous Substances (Hazard Classification) Notice 2020, *Australian WorkSafe* GHS 7, 2022, *Japanese* JIS Z 7252: 2019 (Classification of chemicals) and JIS Z 7253: 2019 (Communication of information on danger of chemicals – labeling and safety data sheets), *and the Global Harmonization Standard*

1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY UNDERTAKING

PRODUCT IDENTIFIER USED ON LABEL:

Product Identifier: **TATTOO PAINT No. LYM**
Other Means of Identification: Not Applicable

RECOMMENDED USE of the PRODUCT and RESTRICTIONS on USE:

Recommended Use: Tissue Staining Paint
Restrictions on Use: Other than Recommended Use

SHIPPING CLASSIFICATION:

U.N. Number: None Allocated
U.N. Dangerous Goods Class/Subsidiary Risk: None Allocated
HAZCHEM Code (Australia): None Allocated
Poisons Schedule Number (Australia): None Allocated

NAME, ADDRESS and TELEPHONE NUMBER of CHEMICAL MANUFACTURER, IMPORTER or OTHER RESPONSIBLE PARTY:

U.S. Supplier/Manufacturer's Name: **DYNAMIC COLOR COMPANY**
Address: PO Box 21083
Fort Lauderdale, FL, 33335 USA
Information Phone: + 1-954-462-0261 9 a.m. to 4 p.m. (U.S. East Coast Time Zone)
Emergency Phone: 1-800-233-8332 9 a.m. to 4 p.m. (U.S. East Coast Time Zone)
(from U.S., Canada, Puerto Rico, U.S. Virgin Islands)
Email: sales@dynamiccolor.com
Date of Preparation: April 12, 2001
Date of Revision: April 7, 2022

2. HAZARD IDENTIFICATION

GLOBAL HARMONIZATION LABELING AND CLASSIFICATION: Classified in accordance with Global Harmonization Standard under U.S. OSHA Hazard Communication Standard, Canadian *WHMIS 2015 GHS*, European CLP Regulation (EC) 1272/2008, Japanese JIS Z 7252: 2019 (Classification of chemicals) and JIS Z 7253: 2019 (Communication of information on danger of chemicals – labeling and safety data sheets), New Zealand Hazardous Substances (Hazard Classification) Notice 2020, Australian WorkSafe GHS 7, 2022, Singapore SS586, Chinese GHS standard. Korean MoEL classification is given separately.

Classification: Eye Irritation Category 2A, Specific Target Organs Toxicity (Inhalation-Irritation) Single Exposure Category 3
Signal Word: Warning
Hazard Statements: H319: Causes serious eye irritation. H335: May cause respiratory irritation.
Other Hazards Not Otherwise Classified: This product contains an azo pigment that is under assessment to determine if it is a PBT/vPvBT (Persistent, Bioaccumulative or Toxic to the Environment compound.
Precautionary Statements:
Prevention: P261: Avoid breathing mists or sprays. P264 + P265: Wash hands and other contamination areas thoroughly after handling. Do not touch eyes.P270: Do not eat, drink or smoke when using this product. P271: Use only outdoors or in a well-ventilated area. P280: Wear protective gloves, protective clothing, eye protection, face protection.
Response: P305 + P351 + P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. P337 + P317: If eye irritation persists: Get medical help. P304 + P340: If inhaled, remove victim to fresh air and keep at rest in a position comfortable for breathing. P319: Get medical help if you feel unwell. P321: Specific treatment (remove from exposure and treat symptoms). Refer to Safety Data Sheet for more information.
Storage: P403 + P233: Store in a well-ventilated place. Keep container tightly closed. P405: Store locked up.
Disposal: P501: Dispose of contents/containers in accordance with all local, regional, national and international regulations.
Hazard Symbols/Pictograms: GHS07

KOREAN MoEL (Notice 2016-19) LABELING AND CLASSIFICATION: Classified in accordance with MoEL Notice 2016-19. Under the MoEL regulation, no differences in classification are applicable.

PERCENT OF UNKNOWN ACUTE TOXICITY: Unknown toxicity by inhalation is 80%. Unknown dermal toxicity is 80%. Unknown oral toxicity is 70%

2. HAZARD IDENTIFICATION (Continued)

EMERGENCY OVERVIEW: Product Description: This product is a yellow liquid that has a mild odor. **Health Hazards:** The primary health hazard associated with this product is the potential for mild irritation of contaminated tissue. Eye contact may cause more serious irritation. The Titanium Dioxide component is a suspect carcinogen by inhalation of respirable particles. Due to the liquid form of this product, this hazard is not expected to be significant. **Flammability Hazards:** This product is not flammable. If involved in a fire, the product may decompose to produce carbon, copper, metallic, nitrogen, sulfur and titanium oxides, chlorine, formaldehyde, hydrogen chloride. **Reactivity Hazards:** This product is not reactive. **Environmental Hazards:** Not tested. This product may have adverse effects when released into the environment. This product contains an azo pigment that is under investigation to determine if it is possible persistent, bioaccumulative or toxic to the environment compound. **Emergency Recommendations:** Emergency responders must wear the personal protective equipment suitable for the situation to which they are responding.

3. COMPOSITION and INFORMATION ON INGREDIENTS

Chemical Name	CAS #	European EINECS # / Index #	Japanese MITI/ENC #	Korean ECL #	New Zealand NZIoC #	Chinese IECSC Inventory	Taiwan NESCI ECS Inventory	Australian AICS	% w/w	LABEL ELEMENTS GHS under U.S. OSHA, Canadian WHMIS HPR-GHS & EU Classification (1272/2008), Japanese, New Zealand, Taiwan, Chinese and Korean Regulations Korean ISHA Classification Hazard Statements
Proprietary Yellow Azo Pigment					May be used under an appropriate group standard	Listed	Listed	Listed	40%	Classification: Not Classified EU ECHA Properties of Concern: This compound is undergoing assessment as a probable Persistent, Bioaccumulative or Toxic to the Environment
Isopropyl Alcohol	67-63-0	200-661-7 603-117-00-0	2-207	KE-25363	HSR001180	Listed	Listed	Listed	8%	GHS Under All Countries Harmonized Classification: Flammable Liquid Cat. 2, Eye Irritation Cat. 2A, Specific Target Organ Toxicity (Inhalation, Ingestion-Narcotic Effects) Single Exposure Cat. 3 Hazard Statements: H226: Flammable liquid and vapor. H319: Causes serious eye irritation. H336: May cause drowsiness or dizziness.
Titanium Dioxide (C.I. White 7)	13463-67-7	236-675-7 No Index #	1-558	KE-33900	May be used under an appropriate group standard	Listed	Listed	Listed	6%	GHS Under All Countries Classification: Not classified Self-Classification Classification: Carcinogenic Cat. 2 Hazard Statements: H351: Suspected of causing cancer. Under U.S. OSHA, Canadian WHMIS HPR-2015 only Classification: Combustible Dust Hazard
Proprietary Green Pigment					May be used under an appropriate group standard	Listed	Listed	Listed	1%	Classification: Not Classified Under U.S. OSHA, Canadian WHMIS HPR-2015 only Classification: Combustible Dust Hazard
Water	7732-18-5	231-791-2 No Index #	Not identified in the Listing	KE-35400	Excepted	Listed	Listed	Listed	Balance	Classification: Not Classified

See Section 15 for information on other country inventory listing of components, as applicable
The specific chemical identity and/or exact percentage (concentration) of composition has been withheld as a trade secret.

4. FIRST-AID MEASURES

PROTECTION OF FIRST AID RESPONDERS: Rescuers should be taken for medical attention, if necessary. Only trained personnel should administer supplemental oxygen and/or cardio-pulmonary resuscitation, if necessary.

DESCRIPTION OF FIRST AID MEASURES: Victim(s) must be taken for medical attention. Take copy of label and MSDS to physician or other health professional with victim(s). Remove victim(s) to fresh air, as quickly as possible.

Skin Exposure: If this product contaminates the skin and adverse effect occurs, begin decontamination with running water. Minimum flushing is for 20 minutes. The contaminated individual must seek medical attention if any adverse effects occur after flushing.

GHS Precautionary Statements for Skin Exposure: None applicable.

Eye Exposure: If this product enters the eyes, open contaminated individual's eyes while under gently running water. Use sufficient force to open eyelids. Have contaminated individual "roll" eyes. Minimum flushing is for 20 minutes. Contaminated individual must seek medical attention if adverse effect continues after flushing.

GHS Precautionary Statements for Eye Exposure: P305 + P351 + P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. P337 + P317: If eye irritation persists: Get medical attention.

Inhalation: If aerosols are inhaled and adverse effect occurs, remove victim to fresh air. The contaminated individual must seek medical attention if any adverse effects occur.

GHS Precautionary Statements for Inhalation Exposure: P304 + P340: If inhaled, remove victim to fresh air and keep at rest in a position comfortable for breathing. P319: Get medical help if you feel unwell.

4. FIRST-AID MEASURES (Continued)

DESCRIPTION OF FIRST AID MEASURES (continued):

Ingestion: If swallowed, CALL PHYSICIAN OR POISON CONTROL CENTER FOR MOST CURRENT INFORMATION. If professional advice is not available, do not induce vomiting. Never induce vomiting or give diluents (milk or water) to someone who is unconscious, having convulsions, or unable to swallow. If victim is convulsing, maintain an open airway and obtain immediate medical attention.

GHS Precautionary Statements for Ingestion Exposure: None applicable.

MOST IMPORTANT SYMPTOMS and EFFECTS, WHETHER ACUTE OR DELAYED: See Sections 2 (Hazard Information) and 11 (Toxicological Information) for information.

Acute:

Symptoms/Effects: May cause irritation by contact with the skin, eyes and respiratory system. All potential effects are dependent on concentration and duration of exposure.

Symptoms/Effects After Inhalation: EXPOSURE TO HIGH CONCENTRATIONS: Coughing, or respiratory irritation.

Symptoms/Effects After Skin Contact: Mild irritation.

Symptoms/Effects After Eye Contact: Moderate irritation of eye tissue.

Symptoms/Effects After Ingestion: Irritation of digestive system.

Chronic:

Symptoms/Effects After Skin Contact: Dermatitis (dry, red skin).

Symptoms/Effects After Eye Contact: None known.

Symptoms/Effects After Accidental Injection: None known.

Symptoms/Effects After Inhalation: None known.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: Skin or respiratory conditions may be aggravated by exposure to this product.

INDICATION OF IMMEDIATE MEDICAL ATTENTION AND SPECIAL TREATMENT IF NEEDED: Treat symptoms and eliminate exposure.

COMPLIANCE WITH SAFE WORK AUSTRALIA MODEL CODE FIRST AID IN THE WORKPLACE CODE OF PRACTICE: Compliance with all requirements should be in place under Section 3 (First Aid Equipment, Facilities and Training) should be in place.

5. FIRE-FIGHTING MEASURES

FLASH POINT: Not flammable. **AUTOIGNITION TEMPERATURE:** Not applicable.

FLAMMABLE LIMITS (in air by volume, %): Not applicable.

FIRE EXTINGUISHING MEDIA: Unless incompatibilities exist for surrounding materials, carbon dioxide, water spray, 'ABC' type chemical extinguishers, foam, dry chemical and halon extinguishers can be used to fight fires involving this product.

UNSUITABLE FIRE EXTINGUISHING MEDIA: None known.

SPECIAL HAZARDS ARISING FROM THE SUBSTANCE: When involved in a fire, this material may decompose and produce irritating vapors and toxic gases (e.g., carbon, copper, metallic, nitrogen, sulfur and titanium oxides, chlorine, formaldehyde, hydrogen chloride).

Explosion Sensitivity to Mechanical Impact or Static Discharge: Not sensitive.

SPECIAL PROTECTIVE ACTIONS FOR FIRE-FIGHTERS: Incipient fire responders should wear eye protection. Structural firefighters must wear Self-Contained Breathing Apparatus and full protective equipment. Due to the presence of pigment, the runoff water from this product can discolor contaminated objects. If possible, prevent runoff water from entering storm drains, bodies of water, or other environmentally sensitive areas. If necessary, rinse fire-response equipment with soapy water before returning it to service.

GHS Statements for Fire Response: None applicable.

Australian HazChem Code: Not applicable.

6. ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS AND EMERGENCY PROCEDURES: Uncontrolled releases should be responded to by trained personnel using pre-planned procedures. Proper protective equipment should be used. Call CHEMTREC (1-800-424-9300) for emergency assistance. Or if in Canada, call CANUTEC (613-996-6666). The atmosphere must at least 19.5 percent Oxygen before non-emergency personnel can be allowed in the area without Self-Contained Breathing Apparatus and fire protection.

PERSONAL PROTECTIVE EQUIPMENT: Proper protective equipment should be used.

Small Spills: Wear rubber gloves, splash goggles, and appropriate body protection.

Large Spills: Minimum Personal Protective Equipment should be rubber gloves, rubber boots, face shield, and Tyvek suit. Minimum level of personal protective equipment for releases in which the level of oxygen is less than 19.5% or is unknown must be **Level B: triple-gloves (rubber gloves and nitrile gloves over latex gloves), chemical resistant suit and boots, hard hat, and Self-Contained Breathing Apparatus.**

METHODS FOR CLEAN-UP AND CONTAINMENT:

Small Spills: Carefully absorb spill using polypads or other non-reactive absorbent. Place spilled material in appropriate container for disposal, sealing tightly. Remove all residue before decontamination of spill area.

Large Spills: Access to the spill area should be restricted. For large spills, dike or otherwise contain spill and absorb spill with polypads or other non-reactive absorbent material.

All Spills: Place all spill residue in a double plastic bag or other containment and seal. Decontaminate the area thoroughly. Do not mix with wastes from other materials. Dispose of in accordance with applicable Federal, State, and local procedures (see Section 13, Disposal Considerations). For spills on water, contain, minimize dispersion and collect. Dispose of recovered material and report spill per regulatory requirements.

6. ACCIDENTAL RELEASE MEASURES (Continued)

ENVIRONMENTAL PRECAUTIONS: Avoid release to the environment. Run-off water may be contaminated by other materials and should be contained to prevent possible environmental damage.

REFERENCE TO OTHER SECTIONS: See information in Section 8 (Exposure Controls – Personal Protection) and Section 13 (Disposal Considerations) for additional information.

7. HANDLING and STORAGE

PRECAUTIONS FOR SAFE HANDLING: As with all chemicals, avoid getting this product ON YOU or IN YOU. Wash thoroughly after handling this product. Do not eat, drink, smoke, or apply cosmetics while handling this product. Avoid breathing aerosols from the product. Keep away from incompatible materials (see Section 10, Stability and Reactivity). Containers of this product must be properly labeled. Use in a well-ventilated location. Remove contaminated clothing.

GHS Statements for Safe Handling: P261: Avoid breathing mists or sprays. P264 + P265: Wash hands and other contamination areas thoroughly after handling. Do not touch eyes.P270: Do not eat, drink or smoke when using this product. P271: Use only outdoors or in a well-ventilated area. P280: Wear protective gloves, protective clothing, eye protection, face protection.

CONDITIONS FOR SAFE STORAGE and INCOMPATIBILITIES: Keep container tightly closed when not in use. Store containers in a cool, dry location, away from direct sunlight, sources of intense heat, or where freezing is possible. Material should be stored in secondary containers or in a diked area, as appropriate. Inspect all incoming containers before storage, to ensure containers are properly labeled and not damaged. Have appropriate extinguishing equipment in the storage area (such as sprinkler systems or portable fire extinguishers). Empty containers may contain residual product; therefore, empty containers should be handled with care. May be incompatible with water reactive materials and strong oxidizers.

GHS Statements for Safe Storage: P403 + P233: Store in a well-ventilated place. Keep container tightly closed. P405: Store locked up.

SPECIFIC USE(S): This product is for use as a skin staining paint. Follow all industry standards for use of this product.

PROTECTIVE PRACTICES DURING MAINTENANCE OF CONTAMINATED EQUIPMENT: Follow practices indicated in Section 6 (Accidental Release Measures). Make certain that application equipment is locked and tagged-out safely. Always use this product in areas where adequate ventilation is provided. Decontaminate equipment thoroughly, before maintenance begins. Collect all rinsates and dispose of according to applicable Federal, State, or local procedures, or applicable standards.

8. EXPOSURE CONTROLS - PERSONAL PROTECTION

EXPOSURE LIMITS/CONTROL PARAMETERS:

Ventilation and Engineering Controls: Use with adequate ventilation to ensure exposure levels are maintained below the limits provided in this section. Use local exhaust ventilation. Normal office ventilation conforming to the American Society of Heating, Refrigerating, and Air Conditioning Engineers (ASHRAE) Standards is adequate under normal circumstances of use. Persons using this material should consult a qualified Ventilation Engineer and/or Industrial Hygienist if concerns about exposure arise. If necessary, refer to Australian National Code of Practice for the Control of Workplace Hazardous Substances [NOHSC: 2007 (1994)] for further information.

U.S. Workplace Exposure Limits/Control Parameters:

CHEMICAL NAME	CAS #	EXPOSURE LIMITS IN AIR							
		ACGIH-TLVs		OSHA-PELs		NIOSH-RELs		NIOSH	OTHER
		TWA mg/m³	STEL mg/m³	TWA mg/m³	STEL mg/m³	TWA mg/m³	STEL mg/m³	IDLH mg/m³	mg/m³
C.I. White 7 (Titanium Dioxide)	13463-67-7	0.2 (resp. fract.) finescale particles	NE	15 (total dust); 10 (vacated 1989 PEL)	NE	See Pocket Guide App. A		5000	DFG MAK Pregnancy Risk Classification: C
Proprietary Green Pigment Exposure limits given are for Copper dusts, fumes & mists as Cu)		1 (dusts, mists) 0.2 (fume)	NE	1 (dusts, mists) 0.1 (fume)	NE	1 (dusts, mists) 0.1 (fume)	NE	100 (as Cu)	NE
Isopropyl Alcohol	67-63-0	492	984	980	500 ppm (vacated 1989 PEL)	980	1225	2000 ppm (based on LEL)	DFG MAK: TWA = 500 ppm PEAK = 2•MAK, 15 min., average value, 1-hr interval, 4 per shift DFG MAK Pregnancy Risk Classification: C

NE = Not Established.

Australian Hazardous Chemical Information System (HMIS) Exposure Standards:

CHEMICAL NAME	CAS #	EXPOSURE STANDARDS				
		TWA ppm	TWA mg/m³	STEL ppm	STEL mg/m³	Notes
Proprietary Green Pigment Exposure limits given are for Copper dusts, fumes & mists as Cu)		NE	1 (dusts & mists) 0.2 (fume)	NE	NE	Not Applicable

NE = Not Established.

8. EXPOSURE CONTROLS - PERSONAL PROTECTION (Continued)

EXPOSURE LIMITS/CONTROL PARAMETERS (continued):

Australian Hazardous Chemical Information System (HMIS) Exposure Standards (continued):

CHEMICAL NAME	CAS #	EXPOSURE STANDARDS				
		TWA ppm	TWA mg/m³	STEL ppm	STEL mg/m³	Notes
C.I. White 7 (Titanium Dioxide)	13463-67-7	NE	10	NE	NE	(1) This value is for inhalable dust containing no asbestos and < 1% crystalline silica.
Isopropyl Alcohol	67-63-0	400	983	500	1230	Not Applicable

NE = Not Established.

UK Minimum Exposure Limits:

CHEMICAL NAME	CAS #	WORKPLACE EXPOSURE LIMIT				
		Long-Term Exposure Limit (8-Hrs TWA Reference Period)		Short-Term Exposure Limit (15-minute Reference Period)		Comments
		ppm	mg.m⁻³	ppm	mg.m⁻³	The Carcin, Sen and Skin notations are not exhaustive. Notations have been applied to substances identified in IOELV Directives
Proprietary Green Pigment Exposure limits given are for Copper dusts, fumes & mists as Cu) copper fumes, as Cu copper dusts & mists, as Cu		NE	0.2 1	NE	NE 2	NE
C.I. Pigment White 7 (Titanium Dioxide)	14363-67-7	NE	10 (total inhalable) 4 (respirable)	NE	7	NE
Isopropyl Alcohol	67-63-0	400	999	500	1250	NE

NE = Not Established.

Workplace Exposure Standards (New Zealand): Refer to the Hazardous Substances (Classes 6, 8, and 9 Controls) Regulations 2001 (Regulations 29-30).

CHEMICAL NAME	CAS #	WORKPLACE EXPOSURE STANDARDS				
		TWA ppm	TWA mg/m⁻³	STEL ppm	STEL mg/m⁻³	Notes
Proprietary Green Pigment copper dust & mists, as Cu copper fume, as Cu		NE	0.01 0.01	NE	NE 2	NE
C.I. Pigment White 7 (Titanium Dioxide)	14363-67-7	NE	10	NE	NE	Not Applicable
Isopropyl Alcohol	67-63-0	400	983	500	1230	Not Applicable

Exposure Standards Outside the Workplace (New Zealand): Currently, there are no other exposure limits, such as TELS and EELS (See Section 12 [Ecological Information] for EEL information) established for components of this product.

Other International Occupational Exposure Limits: Currently, the following international limits established for components of this product.

Proprietary Green Pigment:

	Limit Value - Eight Hours	Limit Value - Short Term
Austria	1 mg/m³ (inhalable aerosol) (dusts & mists); 0.1 mg/m³ (fume, respirable fraction)	0.4 mg/m³
Belgium	1 mg/m³ (dusts & mists); 0.2 mg/m³ (fume, respirable fraction)	
Canada (Ontario)	1 mg/m³ (dusts & mists); 0.2 mg/m³ (fume, respirable fraction)	
Canada (Quebec)	1 mg/m³ (dusts & mists); 0.2 mg/m³ (fume, respirable fraction)	
Denmark	1 mg/m³ (dusts & mists); 0.1 mg/m³ (fume, respirable fraction)	2 mg/m³ (dusts & mists); 0.2 mg/m³ (fume, respirable fraction)
Finland	0.02 mg/m³ (dusts & mists) (1)(2)	
France	1 mg/m³ (dusts & mists); 0.2 mg/m³ (fume, respirable fraction)	2 mg/m³ (dusts & mists)
Germany (DFG)	0.01 mg/m³ (dusts & mists)(1); 0.01 mg/m³ (fume, respirable fraction)	0.02 mg/m³ (dusts & mists)(1)(2); 0.02 mg/m³ (fume, respirable fraction)(1)
Hungary	1 mg/m³ (dusts & mists); 0.1 mg/m³ (fume, respirable fraction)	4 mg/m³ (dusts & mists); 0.4 mg/m³ (fume, respirable fraction)
Ireland	1 mg/m³; 0.2 mg/m³ (fume, respirable fraction)(1) 1 mg/m³ (fume, respirable fraction)(2)	
Norway	0.1 mg/m³ (fume, respirable fraction)(1) 1 mg/m³ (fume, respirable fraction)(2)	
People's Republic of China	1 mg/m³ (dusts & mists); 0.2 mg/m³ (fume, respirable fraction)	
Poland	1 mg/m³ (dusts & mists); 0.1 mg/m³ (fume, respirable fraction)	2 mg/m³ (dusts & mists); 0.3 mg/m³ (fume, respirable fraction)
Romania	0.5 mg/m³ (dusts & mists); 0.1 mg/m³ (fume, respirable fraction)	1.5 mg/m³ (dusts & mists)(1); 0.3 mg/m³ (fume, respirable fraction)
Singapore	1 mg/m³ (dusts & mists); 0.2 mg/m³ (fume, respirable fraction)	
South Korea	1 mg/m³ (dusts & mists); 0.2 mg/m³ (fume, respirable fraction)	2 mg/m³ (dusts & mists)
Spain	1 mg/m³ (dusts & mists); 0.1 mg/m³ (fume, respirable fraction)	
Sweden	1 mg/m³ (dusts & mists); 0.2 mg/m³ (fume, respirable fraction)	
Switzerland	0.1 mg/m³ (dusts & mists)(inhalable aerosol)	0.2 mg/m³ (dusts & mists)(inhalable aerosol)
The Netherlands	0.1 mg/m³ (dusts & mists)(inhalable aerosol)	
	Remarks	
Finland	Dusts & Mists:(1) Calculated as Cu. (2) Respirable fraction.	
Germany (DFG)	Dusts & Mists: (1) 15 minutes average value. Fume: (1) Respirable fraction. (2) 15minutes average value.	
Ireland	Dusts & Mists: (1) Fume. (2) Inhalable fraction and vapor.	
Norway	Dusts & Mists: (1) Fume. (2) Dust	

Romania	Dusts & Mists: (1) 15 minutes average value. Fume: (1) 15 minutes average value.

8. EXPOSURE CONTROLS - PERSONAL PROTECTION (Continued)

Other International Occupational Exposure Limits (continued):

C.I. Pigment White 7 (Titanium Dioxide):

	Limit Value - Eight Hours	Limit Value - Short Term
Belgium	10 mg/m³ (1)	
Canada (Ontario)	10 mg/m³	
Canada (Québec)	10 mg/m³ (1)	
Denmark	6 mg/m³ (total dust)	12 mg/m³ (total dust)
France	11 mg/m³ (inhalable aerosol)	
Germany (DFG)	0.3 mg/m³ (1)(2)	2.4mg/m³ (1)(2)(3)
Ireland	10 mg/m³ (1) 4 mg/m³ (2)	
Japan (JSOH)	0.3 mg/m³ (1)	
Latvia	10 mg/m³	
Norway	5 mg/m³	
People's Republic of China	8 mg/m³ (1)	
Poland	10 mg/m³ (1)	
Romania	10 mg/m³	15 mg/m³ (1)
Singapore	10 mg/m³	
South Korea	10 mg/m³	
Spain	10 mg/m³ (1)	
Sweden	5 mg/m³ (inhalable aerosol)	
Switzerland	3 mg/m³ (respirable aerosol)	
	Remarks	
Canada (Québec)	(1) Total dust.	
Germany (DFG)	(1) Respirable fraction, except ultrafine particles. (2) Multiplied by the material density. (3) 15 minutes average value.	
Ireland	(1) Inhalable fraction. (2) Respirable fraction.	
Japan - JSOH	(1) Nanoparticle, as Ti.	
Poland	(1) Inhalable fraction.	
People's Republic of China	(1) Inhalable fraction.	
Romania	(1) 15 minutes average value.	

Isopropyl Alcohol

	Limit Value - Eight Hours	Limit Value - Short Term
Austria	200 ppm; 500 mg/m³	800 ppm; 2000 mg/m³
Belgium	200 ppm; 500 mg/m³	400 ppm (1); 1000 mg/m³ (1)
Canada (Ontario)	200 ppm	400 ppm
Canada (Québec)	400 ppm; 983 mg/m³	500 ppm; 1230 mg/m³
Denmark	200 ppm; 490 mg/m³	400 ppm; 980 mg/m³
Finland	200 ppm; 500 mg/m³	250 ppm (1); 620 mg/m³ (1)
France		400 ppm; 980 mg/m³
Germany (AGS)	200 ppm; 500 mg/m³	400 ppm (1); 1000 mg/m³ (1)
Germany (DFG)	200 ppm; 500 mg/m³	400 ppm (1); 1000 mg/m³ (1)
Hungary	500 mg/m³	2000 mg/m³
Ireland	200 ppm	400 ppm (1)
Japan (MHLW)	200 ppm	
Japan JSOH	400 ppm (1); 980 mg/m³ (1)	
Latvia	350 mg/m³	600 mg/m³ (1)
Norway	100 ppm; 245 mg/m³	
People's Republic of China	350 mg/m³	700 mg/m³ (1)
Poland	900 mg/m³	1200 mg/m³
Romania	81 ppm; 200 mg/m³	203 ppm (1); 500 mg/m³ (1)
Singapore	400 ppm; 983 mg/m³	500 ppm; 1230 mg/m³
South Korea	200 ppm; 480 mg/m³	400 ppm; 980 mg/m³
Spain	200 ppm; 500 mg/m³	400 ppm; 1000 mg/m³
Sweden	150 ppm; 350 mg/m³	250 ppm (1); 600 mg/m³ (1)
Switzerland	200 ppm; 500 mg/m³	400 ppm; 1000 mg/m³
	Remarks	
Belgium	(1) 15 minutes average value.	
Finland	(1) 15 minutes average value.	
Germany (AGS)	(1) 15 minutes average value.	
Germany (DFG)	(1) 15 minutes average value.	
Ireland	(1) 15 minutes average value.	
Japan - JSOH	(1) Occupational exposure limit ceiling: Reference value to the maximal exposure concentration of the substance during a working day.	
Latvia	(1) 15 minutes average value.	
People's Republic of China	(1) 15 minutes average value.	
Romania	(1) 15 minutes average value.	
Sweden	(1) 15 minutes average value.	

BIOLOGICAL MONITORING AND THE SOURCE OF THOSE VALUES:

U.S. ACGIH Biological Exposure Indices (BEIs): Currently, the following Biological Exposure Indices (BEIs) have been established for the Isopropyl Alcohol component of this product.

CHEMICAL: DETERMINANT	SAMPLING TIME	BEI
Isopropyl Alcohol (listed as 2-propanol) • Acetone in Urine	• End of Shift at End of Workweek	• 40 mg/L

UK Biological Monitoring Guidance Values (BMGVs): Currently, no BMGVs have been established for the components of this product.

Appendix E-Schedule 14 (Requirements for Health Monitoring) per Australia Safe Work Code of Practice Managing Risks and Hazardous Chemicals in the Workplace: Currently, no component of this product has an established monitoring requirement value.

8. EXPOSURE CONTROLS - PERSONAL PROTECTION (Continued)

PROTECTIVE EQUIPMENT: The following information on appropriate Personal Protective Equipment is provided to assist employers in complying with OSHA regulations found in 29 CFR Subpart I (beginning at 1910.132, including U.S. Federal OSHA Respiratory Protection (29 CFR 1910.134), OSHA Eye Protection 29 CFR 1910.133, OSHA Hard Protection 29 CFR 1910.138, OSHA Foot Protection 29 CFR 1910.136 and OSHA Body Protection 29 CFR1910.132), equivalent standards of Canada (including CSA Respiratory Standard Z94.4-02, Z94.3-M1982, *Industrial Eye and Face Protectors* and CSA Standard Z195-02, *Protective Footwear*), standards of EU member states (including EN 529:2005 for respiratory PPE, CEN/TR 15419:2006 for hand/body protection, and CR 13464:1999 for face/eye protection), standards of Australia (including AS/NZS 1715:1994 for respiratory PPE, AS/NZS 4501.2:2006 for protective clothing, AS/NZS 2161.1:2000 for glove selection, and AS/NZS 1336:1997 for eye protection), or standards of Japan (including JIS T 8116:2005 for glove selection, JIS T 8150:2006 for respiratory PPE, JIS T 8147:2003 for eye protectors, and JIS T 8030:2005 for protective clothing). Please reference applicable regulations and standards for relevant details.

Respiratory Protection: Maintain airborne contaminant concentrations below exposure limits listed in this section, if applicable. If respiratory protection is needed, use only protection authorized in applicable regulations. Oxygen levels below 19.5% are considered IDLH by U.S. OSHA. In such atmospheres, use of a full-facepiece pressure/demand SCBA or a full facepiece, supplied air respirator with auxiliary self-contained air supply is required under OSHA's Respiratory Protection Standard (1910.134-1998). The following are U.S. NIOSH Respiratory Equipment Guidelines for Isopropyl Alcohol and C.I. Green Pigment & (as a copper compound); provided to assist in selection of respiratory PPE in event of presence of aerosols.

Copper Dusts and Mists, as Cu

Concentration	Respiratory Protection
Up to 5 mg/m^3:	Any Quarter-Mask Respirator.
Up to 10 mg/m^3:	Any Particulate Respirator equipped with an N95, R95, or P95 filter (including N95, R95, and P95 filtering facepieces) except quarter-mask respirators. The following filters may also be used: N99, R99, P99, N100, R100, P100, or Any Supplied-Air Respirator (SAR).
Up to 25 mg/m^3:	Any SAR operated in a continuous-flow mode, or any powered air-purifying respirator with a high-efficiency particulate filter.
Up to 50 mg/m^3:	Any Air-Purifying, Full-Facepiece Respirator with an N100, R100, or P100 filter, or any Powered Air-Purifying Respirator (PAPR) with a tight-fitting facepiece and a high-efficiency particulate filter, or any Self-Contained Breathing Apparatus (SCBA) with a full facepiece, or any SAR with a full facepiece.
Up to 100 mg/m^3:	Any SAR that has a full facepiece and is operated in a pressure-demand or other positive pressure mode.
Emergency or Planned Entry into Unknown Concentrations or IDLH Conditions:	Any SCBA that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode, or any SAR that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode in combination with an auxiliary SCBA operated in pressure-demand or other positive-pressure mode.
Escape:	Any Air-Purifying, Full-Facepiece Respirator with an N100, R100, or P100 filter, or any appropriate escape-type, SCBA.

Isopropyl Alcohol

Concentration	Respiratory Protection
Up to 2000 ppm:	Any Supplied-Air Respirator (SAR) operated in a continuous-flow mode, or any Chemical Cartridge Respirator with a full facepiece and organic vapor cartridge(s), or any Air-Purifying, Full-Facepiece Respirator (gas mask) with a chin-style, front- or back-mounted organic vapor canister, or any Powered, Air-Purifying Respirator (PAPR) with organic vapor cartridge(s), or any Self-Contained Breathing Apparatus (SCBA) with a full facepiece, or any SAR with a full facepiece.
Emergency or Planned Entry into Unknown Concentrations or IDLH Conditions:	Any SCBA that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode, or any SAR that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode in combination with an auxiliary SCBA operated in pressure-demand or other positive-pressure mode.
Escape:	Any Air-Purifying, Full-Facepiece Respirator (gas mask) with a chin-style, front- or back-mounted organic vapor canister, or any appropriate escape-type, SCBA.

Eye Protection: Depending on the use of this product, splash goggles or safety glasses may be worn. Use goggles or safety glasses for spill response, as stated in Section 6 (Accidental Release Measures) of this SDS. If necessary, refer to appropriate regulations when selecting eye protection.

Hand Protection: Wear butyl rubber, neoprene, or nitrile rubber or latex gloves for routine use. If necessary, refer to appropriate regulations for further information.

Body Protection: Use body protection appropriate for task, such as a lab coat. If necessary, use body protection appropriate for task (e.g., Tyvek suit, rubber apron). If a hazard of injury to the feet exists due to falling objects, rolling objects, where objects may pierce the soles of the feet or where employee's feet may be exposed to electrical hazards, use foot protection, as described in appropriate regulations.

9. PHYSICAL and CHEMICAL PROPERTIES

FORM: Liquid.
COLOR: Yellow.
MOLECULAR FORMULA: Mixture.
MOLECULAR WEIGHT: Mixture.
ODOR: Mild.
ODOR THRESHOLD: Not established.
VAPOR DENSITY (air = 1): 2 (calc.)
VAPOR PRESSURE: 50 mmHg
SPECIFIC GRAVITY (water = 1): 1.2
MELTING/FREEZING POINT: ~0°C (~32°F)
SOLUBILITY IN WATER: Soluble
BOILING POINT: 92°C (197.6°F)
EVAPORATION RATE (*n*-BuAc = 1): < 1
pH: Not established.
OXIDIZING PROPERTIES: Not applicable.
PERCENT SOLIDS: 61%
FLAMMABILITY: Not flammable.
FLASH POINT: Not applicable.
AUTOIGNITION TEMPERATURE: Not applicable.
EXPLOSIVE PROPERTIES: Not applicable.
COEFFICIENT OF OIL/WATER DISTRIBUTION (PARTITION COEFFICIENT): Not established.
HOW TO DETECT THIS SUBSTANCE (identification properties): The odor and color of this product may be distinguishing characteristics to identify it event of a spill.

10. STABILITY and REACTIVITY

CHEMICAL STABILITY: Stable under conditions of normal temperature and pressure.

10. STABILITY and REACTIVITY (Continued)

DECOMPOSITION PRODUCTS:

Combustion: If exposed to extremely high temperatures, this product can decompose to generate carbon, copper, metallic, nitrogen, sulfur and titanium oxides, chlorine, formaldehyde, hydrogen chloride. **Hydrolysis:** None known.

MATERIALS WITH WHICH SUBSTANCE IS INCOMPATIBLE: Strong oxidizers, water-reactive materials.

POSSIBILITY OF HAZARDOUS REACTION OR POLYMERIZATION: Will not occur.

CONDITIONS TO AVOID: Exposure to or contact with extreme temperatures and incompatible chemicals.

11. TOXICOLOGICAL INFORMATION

SYMPTOMS OF EXPOSURE BY ROUTE OF EXPOSURE: The most significant routes of occupational exposure are inhalation and contact with skin and eyes. The symptoms of exposure to this material, via route of entry, are as described below.

Inhalation: This product does not normally present a significant inhalation hazard under anticipated circumstances of use. Inhalation of vapors, mists, or sprays of this material may mildly irritate the nose, throat, and other tissues of the respiratory system.

Contact with Eyes: Eye contact with this material can moderately irritate the eyes, causing discomfort, tearing, and redness. Because the eye tissue may be stained, vision may be temporarily blurred.

Contact with Skin: Skin contact may cause mild irritation in sensitive individuals. Repeated or prolonged skin exposure may cause dermatitis (dry, red skin).

Skin Absorption: No component is known to be absorbed via intact skin.

Ingestion: Though not anticipated to be a significant route of occupational exposure, ingestion of large quantities of this material may cause nausea, vomiting, diarrhea, and discoloration of the mouth, teeth, and tissues of the throat.

Injection: Accidental injection of this liquid (as may occur by a puncture with a contaminated object) will cause local pain, irritation, and redness.

HEALTH EFFECTS OR RISKS FROM EXPOSURE: In the event of exposure, the following symptoms may be observed:

Short Term: Eye contact will cause moderate irritation. Ingestion of large amounts may cause nausea, vomiting, diarrhea. Inhalation of vapors may cause adverse symptoms to the central nervous system due to the Isopropyl Alcohol component.

Long Term: Repeated or prolonged skin exposure may cause dermatitis (dry, red skin).

Hazard Scale: 0 = Minimal 1 = Slight 2 = Moderate 3 = Serious 4 = Severe * = Chronic hazard

TARGET ORGANS:

Short Term: Skin, central nervous system, eyes.

Long Term: Skin.

OVERALL ACUTE TOXICITY ESTIMATES (ATE) FOR PRODUCT:

Oral Route: > 3482 mg/kg; Dermal Route: > 4422 mg/kg; Inhalation Route: > 50 mg/L

TOXICITY DATA FOR COMPONENTS: Specific toxicology data currently available for components of this product in greater than 1% concentration are as follows. Due to the large amount of data available, only human data, irritation data, LD50 oral, rat and mouse, skin, rabbit and rat, LC50 inhalation rat and mouse data are included in this SDS. Contact Dynamic Color for information on additional data available.

Proprietary Green Pigment:
LD_{50} (Oral-Rat) > 5000 mg/kg (OECD 401)
LD_{50} (Skin-Rat) > 5000 mg/kg (OECD 402)

C.I. Pigment White 7 (Titanium Dioxide):
LD_{50} (Oral-Rat) > 2000 mg/kg (CLP Guideline Study)
LC_{50} (Inhalation-Rabbit) 4 hr: > 5.09 mg/L (OECD 403)

Proprietary Yellow Pigment:
LD_{50} (Oral-Rat) > 2000 mg/kg (OECD Guideline 401)
LD_{50} (Skin-Rat) > 2000 mg/kg (OECD Guideline 402)
LC_{50} (Inhalation-Rat) 1 hr: > 42 mg/L (No Guideline followed; migrated information used for interpretation of results: expert opinion)

Isopropyl Alcohol:
LDLo (Oral-Man): 5272 mg/kg; Behavioral: coma; Vascular: BP lowering not characterized in autonomic section; Lungs, Thorax, or Respiration: chronic pulmonary edema
LDLo (Oral-Human): 3570 mg/kg; Behavioral: coma; Lungs, Thorax, or Respiration: respiratory depression; Gastrointestinal: nausea or vomiting
LDLo (Unreported-Man) = 2770 mg/kg
TDLo (Oral-Man): 14,432 mg/kg; Behavioral: coma; Vascular: BP lowering not characterized in autonomic section; Lungs, Thorax, or Respiration: dyspnea
TDLo (Oral-Human): 223 mg/kg; Behavioral: hallucinations, distorted perceptions; Cardiac: pulse rate; Vascular: BP lowering not characterized in autonomic section
TDLo (Oral-Infant): 13 gm/kg; Behavioral: somnolence (general depressed activity), irritability; Gastrointestinal: nausea or vomiting
Skin Irritancy (Rabbit): 500 mg; mild
Eye Irritancy (Rabbit): 100 mg; severe
LD_{50} (Oral-Rat) 5840 mg/kg (OECD 401)
LD_{50} (Skin-Rabbit) 16,400 mg/kg (OECD 402)
LD_{50} (Inhalation-Rat) 4 hr: > 10,000 mg/L (OECD 403)

REPEATED DOSE TOXICITY: No component has demonstrated repeated dose toxicity in either animal testing or though workplace data.

CARCINOGENIC POTENTIAL OF COMPONENTS: Components of this product are listed by agencies tracking the carcinogenic potential of chemical compounds, as follows.

Proprietary Green Pigment: For Copper Dusts, Fumes and Mists: EPA-D (Not Classifiable as to Human Carcinogenicity)

11. TOXICOLOGICAL INFORMATION (Continued)

CARCINOGENIC POTENTIAL OF COMPONENTS (continued):

C.I. Pigment White 7 (Titanium Dioxide): ACGIH TLV-A3 (Confirmed Animal Carcinogen with Unknown Relevance to Humans); IARC-2B (Possibly Carcinogenic to Humans); MAK-4 (Substances with carcinogenic potential for which genotoxicity plays no or at most a minor role. No significant contribution to human cancer risk is expected, provided the MAK value is observed.); NIOSH-Ca (Potential Occupational Carcinogen, with No Further Categorization)

Isopropyl Alcohol: ACGIH TLV-A4 (Not Classifiable as a Human Carcinogen); IARC-3 (Not Classifiable as to Carcinogenicity to Humans)

The remaining components of this product are not found on the following lists: U.S. EPA, U.S. NTP, U.S. OSHA, U.S. NIOSH, GERMAN MAK, IARC, and ACGIH, and therefore are neither considered to be nor suspected to be cancer-causing agents by these agencies.

IRRITANCY OF PRODUCT: Acute exposure to this product via eye contact may irritate contaminated eyes. Acute exposure to this product via skin contact and inhalation may mildly irritate contaminated tissue, especially if exposure is prolonged.

ENDOCRINE TOXICITY: No component is known or suspected to be an endocrine disruptor.

SENSITIZATION TO THE PRODUCT: The components of this product are not known to be human skin or respiratory sensitizers.

REPRODUCTIVE TOXICITY INFORMATION: No components of this product are known to have mutagenic, embryotoxic, teratogenic or reproductive toxicity effects in humans.

12. ECOLOGICAL INFORMATION

ALL WORK PRACTICES MUST BE AIMED AT ELIMINATING ENVIRONMENTAL CONTAMINATION.

MOBILITY: This product has not been tested for mobility in soil. It is expected to be somewhat mobile in soil.

PERSISTENCE AND BIODEGRADABILITY: This product has not been tested for persistence or biodegradability. It is expected that some biodegradation will occur to this product; however, no specific information is known. The following information is available for the yellow pigment.

Proprietary Yellow Azo Pigment: Based on the available data, the Monoazo Yellow Pigments are regarded to be not readily and not inherently biodegradable and therefore are considered to fulfill the P (Persistent) criterion. Bioaccumulation assessment of Monoazo Yellow Pigments show a low solubility in octanol and water; therefore, this pigment shows that a reduced uptake in aquatic organisms is expected.

BIO-ACCUMULATION POTENTIAL: There are data for the Proprietary Yellow Azo component that have demonstrated some bioaccumulation potential.

Proprietary Yellow Azo Pigment: The potential to bioaccumulate in air-breathing (terrestrial) organisms was also assessed. The octanol-air partition coefficients were above the trigger value of this pigment is log Koa 10 for C.I. Yellow Pigment 74 and the log Kow is ≥ 2, therefore a potential to bio-magnify is expected. Moreover, data from literature "Metabolism of pigment C.I. Yellow 74 by rat and human microsomal proteins" (Cui et al.2005), are suggestive that this pigments can be metabolized by phase I enzymes (P450s) in metabolites potentially toxic depending on their formulation. In conclusion, new toxicokinetic studies could be needed to further investigate on the B (bioaccumulation)property of this pigment.

Further studies are underway to determine if the Proprietary Yellow Azo Pigment presents a hazard of bioaccumulation.

EFFECT OF MATERIAL ON PLANTS or ANIMALS: This product may be harmful to plant or animal life, especially if large volumes of this product are released.

EFFECT OF CHEMICAL ON AQUATIC LIFE: This product has not been tested for aquatic toxicity. The following are aquatic toxicity data for some components of this product:

Proprietary Green Pigment:
LC_{50} (*Danio reiro* Zebra fish) 96 hrs: > 100 mg/L (OECD 203)
EC_{50} (*Daphnia magna*) 48 hrs: > 500 mg/L (OECD 202)
EC_{50} (*Selenastrum capricornutum* green algae) 72hrs: ≥ 100 mg/L (OECD 201)

C.I. Pigment White 7 (Titanium Dioxide):
LC_{50} (*Pimephales promelas* fathead minnow) 96 hrs: > 100 mg/L (No Guideline info)
EC_{50} (*Daphnia Magna* Giant Water flea) 24 hrs: > 100 mg/L (No Guideline info)
EC_{50} (Skeletonema costatum freshwater algae) 72 hours: > 00 mg/L (No Guideline info)

Proprietary Yellow Azo Pigment:
LC_{50} (*Danio reiro* zebra fish) 96 hrs: >/= 100 mg/L (OECD 203)
EC_{50} (*Daphnia magna*) 48 hrs: No toxicity seen. (OECD 202)
E_rC_{50} (green algae) 72hrs: > 1 mg/L (OECD 201)

Isopropyl Alcohol:
LC_{50} (*Carassius auratus* Goldfish) 96 hrs: 9640 mg/L (US EPA Committee on Methods for Toxicity Tests with Aquatic Organisms)
EC_{50} (*Daphnia Magna* Giant Water flea) 24 hrs: 10,00 mg/L (OECD 202)
EC_{10} (*Scenedesmus quadricauda* freshwater algae) 8 days: 1800 mg/L (No Guideline info)

OTHER ADVERSE EFFECTS: This product does not contain any component with known ozone depletion potential.

RESULTS OF PBT AND vPvB ASSESSMENT: The Proprietary Yellow Pigment component is under assessment to determine if it meets the criteria of a PBT/VPvB compound. See information above under Persistence and Biodegradability and Bioaccumulation. PBT and vPvB assessments are part of the chemical safety report required for some substances in European Union Regulation (EC) 1907/2006, Article 14.

ENDOCRINE DISRUPTORS: No component has been shown to be or is suspected to cause endocrine disruption to terrestrial or aquatic animals.

ENVIRONMENTAL EXPOSURE CONTROLS: Controls should be engineered to prevent release to the environment, including procedures to prevent spills, atmospheric release and release to waterways.

GHS Statements for Environmental Exposure Controls: Not applicable.

13. DISPOSAL CONSIDERATIONS

PRECAUTIONS TO BE FOLLOWED DURING WASTE HANDLING: Wear proper protective equipment when handling waste materials.

GHS Statements for Waste Handling: P501: Dispose of contents/containers in accordance with all local, regional, national and international regulations.

DISPOSAL CONTAINERS: Waste materials must be placed in and shipped in appropriate 5-gallon or 55-gallon poly or metal waste pails or drums. Permeable cardboard containers are not appropriate and should not be used. Ensure that any required marking or labeling of the containers be done to all applicable regulations.

13. DISPOSAL CONSIDERATIONS (Continued)

DISPOSAL METHODS: It is the responsibility of the generator to determine at the time of disposal whether the product meets the criteria of a hazardous waste per regulations of the jurisdiction in which the waste is generated and/or disposed of. Waste disposal must be in accordance with appropriate Federal, State, Provincial and local regulations. This product, if unaltered by use, may be disposed of by treatment at a permitted facility or as advised by your local hazardous waste regulatory authority. Shipment of wastes must be done with appropriately permitted and registered transporters.

U.S. EPA WASTE NUMBER: Not applicable to wastes consisting only of this product.

CANADIAN HAZARDOUS WASTE REGULATIONS: As supplied, this product should be tested to see if it meets the criteria of hazardous wastes per Canadian Environmental Protection Agency) regulations and the Canadian Environmental Protection Act, 1999 (CEPA).

Canadian Environmental Protection Act (CEPA) Priority Substances Lists: The Isopropyl Alcohol component is listed as a Substance With Greatest Potential For Human Exposure Substance on Environment Canada/Health Canada Pilot Project List (CEPA 1999, Section 73). Meets categorization criteria: *may present, to individuals in Canada, the greatest potential for exposure; or *are persistent or bioaccumulative in accordance with the regulations, and inherently toxic to human beings or to non-human organisms, as determined by laboratory or other studies.

EUROPEAN WASTE CODES FOR PRODUCT: Wastes from MFSU and Removal of Printing Inks: 08 03 99: Wastes Not Otherwise Specified

EU WASTE FRAMEWORK DIRECTIVE, ANNEX III - WASTE - HAZARDOUS PROPERTIES: This product does not meet the criteria of any hazardous waste property. The components of this product have designated waste codes as listed below.

Isopropyl Alcohol: HP3 Flammable Waste (FW); HP5 Specific Target Organ Toxicity (STOT)/Aspiration Toxicity

C.I. Pigment White 7 (Titanium Dioxide): HP7 Carcinogenic: Waste which induces cancer or increases it incidence; in powder form containing 1% or more of particles with aerodynamic diameter ≤ 10 µm.

AUSTRALIAN HAZARDOUS WASTE REGULATIONS: As supplied, this product should be tested to see if it meets the criteria of hazardous wastes per Australian Department of Agriculture, Water and the Environment regulations. If wastes are to be exported, they should be tested to see if they have requirements under the Australian Hazardous Waste (Regulation of Exports and Imports) Act 1989 and further of the Basel Convention where the waste has any of the characteristics mentioned in Annex III to the Basel Convention.

14. TRANSPORTATION INFORMATION

U.S. DEPARTMENT OF TRANSPORTATION: This product is not classified as dangerous goods, per U.S. DOT regulations, under 49 CFR 172.101.

TRANSPORT CANADA, TRANSPORTATION OF DANGEROUS GOODS REGULATIONS: This product is NOT classified as dangerous goods, per regulations of Transport Canada.

INTERNATIONAL AIR TRANSPORT ASSOCIATION SHIPPING INFORMATION (IATA): This product is NOT classified as dangerous goods.

INTERNATIONAL MARITIME ORGANIZATION SHIPPING INFORMATION (IMO): This product is NOT classified as dangerous goods.

EUROPEAN AGREEMENT CONCERNING THE INTERNATIONAL CARRIAGE OF DANGEROUS GOODS BY ROAD (ADR): This product is NOT classified by the United Nations Economic Commission for Europe to be dangerous goods.

AUSTRALIAN FEDERAL OFFICE OF ROAD SAFETY CODE FOR THE TRANSPORTATION OF DANGEROUS GOODS BY ROAD OR RAIL: This product is NOT classified as dangerous goods, per regulations of the Australian Federal Office of Road Safety.

TRANSPORT IN BULK ACCORDING TO ANNEX II OF MARPOL 73/78 AND THE IBC CODE: Not applicable.

ENVIRONMENTAL HAZARDS: This product is neither environmentally hazardous according to the criteria of the UN Model Regulations (as reflected in the IMDG Code, ADR, RID, and ADN); no component meets the criteria of environmentally hazardous.

15. REGULATORY INFORMATION

UNITED STATES REGULATIONS:

U.S. SARA Reporting Requirements: The components of this product are subject to the reporting requirements of Sections 302, 304, and 313 of Title III of the Superfund Amendments and Reauthorization Act and are listed as follows:

CHEMICAL NAME	SARA 302 (40 CFR 355, Appendix A)	SARA 304 (40 CFR Table 302.4)	SARA 313 (40 CFR 372.65)
Copper Compounds	No	No	N100
Isopropyl Alcohol (mfg-strong acid process)	No	No	Yes

U.S. SARA Threshold Planning Quantity (TPQ): There are no specific Threshold Planning Quantities for this material. The default Federal SDS submission and inventory requirement filing threshold of 10,000 lb (4,540 kg) may apply, per 40 CFR 370.20.

U.S. CERCLA Reportable Quantity (RQ): Not applicable. Copper compounds do not have a specific assigned CERCLA RQ, but compounds in the broad class are CERCLA hazardous substances. For metals listed under CERCLA (including copper compounds), no reporting of releases of the solid form is required if the mean diameter of the pieces of the solid metal released is greater than 100 micrometers (0.004 inches) (Ref: Footnote after Table 302.4 in 40 CFR 302.4).

U.S. TSCA Inventory Status: The components of this product are listed on the TSCA Inventory.

U.S. Hazardous Air Pollutant (HAPs): The components of this product are not listed by the EPA under section 112(b) of the Clean Air Act as a 'HAP'.

U.S. Clean Air Act (CA 112r) Threshold Quantity (TQ): Not applicable.

California Safe Drinking Water And Toxic Enforcement Act (Proposition 65): The Titanium Dioxide component, (airborne, unbound particles of respirable size) is on the California Proposition 65 Lists. If airborne particles of this product are generated, the following warning must be on

packaging and labeling of this product: WARNING! This product contains a component known to the State of California to cause cancer. As a liquid, this warning is not expected to be required.

15. REGULATORY INFORMATION (Continued)

CANADIAN REGULATIONS:

Canadian DSL/NDSL Inventory Status: Components listed by CAS# in Section 3 (Composition and Information on Ingredients) are listed on the DSL Inventory.

Canadian WHMIS HPR 2015 Classification and Symbols: See Section 2 for classification and symbols under WHMIS GHS 2015.

EUROPEAN UNION REGULATIONS:

Safety, Health, and Environmental Regulations/Legislation Specific for the Product: Currently, there is no specific legislation pertaining to this product.

Chemical Safety Assessment: No data available. The chemical safety assessment is required for some substances according to European Union Regulation (EC) 1907/2006, Article 14.

AUSTRALIAN REGULATIONS:

Australian Inventory Of Chemical Substances (AICS) Status: Components listed by CAS# in Section 3 (Composition and Information on Ingredients) are listed on the AICS.

Hazardous Substances Information System (HSIS): Components listed by CAS# in Section 3 (Composition and Information on Ingredients) are not listed in the HSIS.

Standard for the Uniform Scheduling of Drugs and Poisons: Not applicable.

CHINESE REGULATIONS:

Chinese Inventory of Existing Chemical Substances Status: Components listed by CAS# in Section 3 (Composition and Information on Ingredients) are on the Chinese Inventory of Existing Chemical Substances (IECSC).

JAPANESE REGULATIONS:

Japanese ENCS Inventory: Components listed by CAS# in Section 3 (Composition and Information on Ingredients) are on the ENCS Inventory or are excepted.

Japanese Ministry of Economy, Trade, and Industry (METI) Status: Components listed by CAS# in Section 3 (Composition and Information on Ingredients) are not listed as Class I Specified Chemical Substances, Class II Specified Chemical Substances, or Designated Chemical Substances by the Japanese METI.

Poisonous and Deleterious Substances Control Law: Components listed by CAS# in Section 3 (Composition and Information on Ingredients) are not listed as a Specified Poisonous Substance under the Poisonous and Deleterious Substances Control Law.

KOREAN REGULATIONS:

Korean Existing Chemical Substances Inventory Status: Components are listed on the Korean Existing Chemicals List, as indicated in composition tables in Section 3 (Composition and Information on Ingredients).

NEW ZEALAND REGULATIONS:

New Zealand Inventory of Chemicals (NZIoC): Components listed by CAS# in Section 3 (Composition and Information on Ingredients) are on the NZIoC.

MEXICAN REGULATIONS:

Mexican Workplace Regulations (NOM-018-STPS-2000): This product is classified as hazardous.

TAIWANESE REGULATIONS:

Taiwan Existing Chemical Substances Inventory Status: Components listed by CAS# in Section 3 (Composition and Information on Ingredients) are listed on the Taiwan Existing Chemicals List.

16. OTHER INFORMATION

REVISION DETAILS: May 2017: Conversion of old MSDS to GHS compliant SDS. June 2018: Review and up-date entire SDS for most current regulations. April 2022: Review and revise entire SDS for current compliance of all jurisdictions of the SDS.

REFERENCES AND DATA SOURCES: Contact the supplier for information.

METHODS OF EVALUATING INFORMATION FOR THE PURPOSE OF CLASSIFICATION: Bridging principles were used to classify this product.

PREPARED BY: CHEMICAL SAFETY ASSOCIATES, Inc., PO Box 1961, Hilo, HI 96721, 808/969-4846

DYNAMIC

DEFINITIONS OF TERMS

A large number of abbreviations and acronyms appear on an SDS. Some of these, which are commonly used, include the following:

CAS #: This is the Chemical Abstract Service Number that uniquely identifies each constituent.

EXPOSURE LIMITS IN AIR:

CEILING LEVEL: The concentration that shall not be exceeded during any part of the working exposure.

DFG MAK Germ Cell Mutagen Categories: 1: Germ cell mutagens which have been shown to increase the mutant frequency in the progeny of exposed humans. 2: Germ cell mutagens which have been shown to increase the mutant frequency in the progeny of exposed mammals. 3A: Substances which have been shown to induce genetic damage in germ cells of human of animals, or which produce mutagenic effects in somatic cells of mammals *in vivo* and have been shown to reach the germ cells in an active form. 3B: Substances which are suspected of being germ cell mutagens because of their genotoxic effects in mammalian somatic cell *in vivo*; in exceptional cases, substances for which there are no *in vivo* data, but which are clearly mutagenic *in vitro* and structurally related to known *in vivo* mutagens. 4: Not applicable (Category 4 carcinogenic substances are those with non-genotoxic mechanisms of action. By definition, germ cell mutagens are genotoxic. Therefore, a Category 4 for germ cell mutagens cannot apply. At some time in the future, it is conceivable that a Category 4 could be established for genotoxic substances with primary targets other than DNA [e.g., purely aneugenic substances] if research results make this seem sensible.) 5: Germ cell mutagens, the potency of which is considered to be so low that, provided the MAK value is observed, their contribution to genetic risk for humans is expected not to be significant.

DFG MAK Pregnancy Risk Group Classification: Group A: A risk of damage to the developing embryo or fetus has been unequivocally demonstrated. Exposure of pregnant women can cause damage of the developing organism, even when MAK and BAT (Biological Tolerance Value for Working Materials) values are observed. Group B: Currently available information indicates a risk of damage to the developing embryo or fetus must be considered to be probable. Damage to the developing organism cannot be excluded when pregnant women are exposed, even when MAK and BAT values are observed. Group C: There is no reason to fear a risk of damage to the developing embryo or fetus when MAK and BAT values are observed. Group D: Classification in one of the groups A-C is not yet possible because, although the data available may indicate a trend, they are not sufficient for final evaluation.

IDLH-Immediately Dangerous to Life and Health: This level represents a concentration from which one can escape within 30-minutes without suffering escape-preventing or permanent injury.

LOQ: Limit of Quantitation.

MAK: Federal Republic of Germany Maximum Concentration Values in the workplace.

NE: Not Established. When no exposure guidelines are established, an entry of NE is made for reference.

NIC: Notice of Intended Change.

NIOSH CEILING: The exposure that shall not be exceeded during any part of the workday. If instantaneous monitoring is not feasible, the ceiling shall be assumed as a 15-minute TWA exposure (unless otherwise specified) that shall not be exceeded at any time during a workday.

NIOSH RELs: NIOSH's Recommended Exposure Limits.

PEL-Permissible Exposure Limit: OSHA's Permissible Exposure Limits. This exposure value means exactly the same as a TLV, except that it is enforceable by OSHA. The OSHA Permissible Exposure Limits are based in the 1989 PELs and the June, 1993 Air Contaminants Rule (Federal Register: Sill: 35338-35351 and Sill: 40191). Both the current PELs and the vacated PELs are indicated. The phrase, "Vacated 1989 PEL," is placed next to the PEL that was vacated by Court Order.

SKIN: Used when a there is a danger of cutaneous absorption.

STEL-Short Term Exposure Limit: Short Term Exposure Limit, usually a 15-minute time-weighted average (TWA) exposure that should not be exceeded at any time during a workday, even if the 8-hr TWA is within the TLV-TWA, PEL-TWA or REL-TWA.

TLV-Threshold Limit Value: An airborne concentration of a substance that represents conditions under which it is generally believed that nearly all workers may be repeatedly exposed without adverse effect. The duration must be considered, including the 8-hour.

TWA-Time Weighted Average: Time Weighted Average exposure concentration for a conventional 8-hr (TLV, PEL) or up to a 10-hr (REL) workday and a 40-hr workweek.

HAZARDOUS MATERIALS IDENTIFICATION SYSTEM HAZARD RATINGS:

This rating system was developed by the National Paint and Coating Association and has been adopted by industry to identify the degree of chemical hazards.

HEALTH HAZARDS: 0 (Minimal Hazard: No significant health risk, irritation of skin or eyes not anticipated. *Skin Irritation:* Essentially non-irritating. PII or Draize = "0". *Eye Irritation:* Essentially non-irritating, or minimal effects which clear in < 24 hours [e.g., mechanical irritation]. Draize = "0". *Oral Toxicity LD_{50} Rat:* < 5000 mg/kg. *Dermal Toxicity LD_{50}/Rat or Rabbit:* < 2000 mg/kg. *Inhalation Toxicity 4-hrs LC_{50} Rat:* < 20 mg/L.); 1 (Slight Hazard): Minor reversible injury may occur; slightly or mildly irritating. *Skin Irritation:* Slightly or mildly irritating. *Eye Irritation:* Slightly or mildly irritating. *Oral Toxicity LD_{50} Rat:* > 500-5000 mg/kg. *Dermal Toxicity LD_{50}/Rat or Rabbit:* > 1000-2000 mg/kg. *Inhalation Toxicity LC_{50} 4-hrs Rat:* > 2-20 mg/L); 2 (Moderate Hazard): Temporary or transitory injury may occur. *Skin Irritation:* Moderately irritating; primary irritant; sensitizer. PII or Draize > 0, < 5. *Eye Irritation:* Moderately to severely irritating and/or corrosive; reversible corneal opacity; corneal involvement or irritation clearing in 8-21 days. Draize > 0, ≤ 25. *Oral Toxicity LD_{50} Rat:* > 50-500 mg/kg. *Dermal Toxicity LD_{50}/Rat or Rabbit:* > 200-1000 mg/kg. 3 (Serious Hazard) (continued): 3 (Serious Hazard): Major injury likely unless prompt action is taken and medical treatment is given; high level of toxicity; corrosive. *Skin Irritation:* Severely irritating and/or corrosive; may destroy dermal tissue, cause skin burns, dermal necrosis. PII or Draize > 5-8 with destruction of tissue. *Eye Irritation:* Corrosive, irreversible destruction of ocular tissue; corneal involvement or irritation persisting for more than 21 days. Draize > 80 with effects irreversible in 21 days. *Oral Toxicity LD_{50} Rat:* > 1-50 mg/kg. *Dermal Toxicity LD_{50}/Rat or Rabbit:* > 20-200 mg/kg. *Inhalation Toxicity LC_{50} 4-hrs Rat:* > 0.05-0.5 mg/L.); 4 (Severe Hazard: Life-threatening; major or permanent damage may result from single or repeated exposure. *Skin Irritation:* Not appropriate. Do not rate as a "4", based on skin irritation alone. *Eye Irritation:* Not appropriate. Do not rate as a "4", based on eye irritation alone. *Oral Toxicity LD_{50} Rat:* ≤ 1 mg/kg. *Dermal Toxicity LD_{50}/Rat or Rabbit:* ≤ 20 mg/kg. *Inhalation Toxicity LC_{50} 4-hrs Rat:* ≤ 0.05 mg/L).

HAZARDOUS MATERIALS IDENTIFICATION SYSTEM HAZARD RATINGS (continued):

FLAMMABILITY HAZARD: 0 (Minimal Hazard-Materials that will not burn in air when exposure to a temperature of 815.5°C [1500°F] for a period of 5 minutes.); 1 (Slight Hazard-Materials that must be pre-heated before ignition can occur. Material require considerable pre-heating, under all ambient temperature conditions before ignition and combustion can occur, including: Materials that will burn in air when exposed to a temperature of 815.5°C (1500°F) for a period of 5 minutes or less; Liquids, solids and semisolids having a flash point at or above 93.3°C [200°F] (e.g. OSHA Class IIIB, or; Most ordinary combustible materials [e.g. wood, paper, etc.]); 2 (Moderate Hazard-Materials that must be moderately heated or exposed to relatively high ambient temperatures before ignition can occur. Materials in this degree would not, under normal conditions, form hazardous atmospheres in air, but under high ambient temperatures or moderate heating may release vapor in sufficient quantities to produce hazardous atmospheres in air, including: Liquids having a flash-point at or above 37.8°C [100°F]; Solid materials in the form of course dusts that may burn rapidly but that generally do not form explosive atmospheres; Solid materials in a fibrous or shredded form that may burn rapidly and create flash fire hazards (e.g. cotton, sisal, hemp; Solids and semisolids that readily give off flammable vapors.); 3 (Serious Hazard- Liquids and solids that can be ignited under almost all ambient temperature conditions. Materials in this degree produce hazardous atmospheres with air under almost all ambient temperatures, or, unaffected by ambient temperature, are readily ignited under almost all conditions, including: Liquids having a flash point below 22.8°C [73°F] and having a boiling point at or above 38°C [100°F] and below 37.8°C [100°F] [e.g. OSHA Class IB and IC]; Materials that on account of their physical form or environmental conditions can form explosive mixtures with air and are readily dispersed in air [e.g., dusts of combustible solids, mists or droplets of flammable liquids]; Materials that burn extremely rapidly, usually by reason of self-contained oxygen [e.g. dry nitrocellulose and many organic peroxides]); 4 (Severe Hazard-Materials that will rapidly or completely vaporize at atmospheric pressure and normal ambient temperature or that are readily dispersed in air, and which will burn readily, including: Flammable gases; Flammable cryogenic materials; Any liquid or gaseous material that is liquid while under pressure and has a flash point below 22.8°C [73°F] and a boiling point below 37.8°C [100°F] [e.g. OSHA Class IA; Material that ignite spontaneously when exposed to air at a temperature of 54.4°C [130°F] or below [e.g. pyrophoric]).

PHYSICAL HAZARD: 0 (*Water Reactivity:* Materials that do not react with water. *Organic Peroxides:* Materials that are normally stable, even under fire conditions and will not react with water. *Explosives:* Substances that are Non-Explosive. *Unstable Compressed Gases:* No Rating. *Pyrophorics:* No Rating. *Oxidizers:* No "0" rating allowed. *Unstable Reactives:* Substances that will not polymerize, decompose, condense or self-react.); 1 (*Water Reactivity:* Materials that change or decompose upon exposure to moisture. *Organic Peroxides:* Materials that are normally stable, but can become unstable at high temperatures and pressures. These materials may react with water, but will not release energy. *Explosives:* Division 1.5 & 1.6 substances that are very insensitive explosives or that do not have a mass explosion hazard. *Compressed Gases:* Pressure below OSHA definition. *Pyrophorics:* No Rating. *Oxidizers:* Packaging Group III; Solids: any material that in either concentration tested, exhibits a mean burning time less than or equal to the mean burning time of a 3:7 potassium bromate/cellulose mixture and the criteria for Packing Group I and II are not met. Liquids: any material that exhibits a mean pressure rise time less than or equal to the pressure rise time of a 1:1 nitric acid (65%)/cellulose mixture and the criteria for Packing Group I and II are not met. *Unstable Reactives:* Substances that may decompose, condense or self-react, but only under conditions of high temperature and/or pressure and have little or no potential to cause significant heat generation or explosive hazard. Substances that readily undergo hazardous polymerization in the absence of inhibitors.); 2 (*Water Reactivity:* Materials that may react violently with water. *Organic Peroxides:* Materials that, in themselves, are normally unstable and will readily undergo violent chemical change, but will not detonate. These materials may also react violently with water. *Explosives:* Division 1.4 - Explosive substances where the explosive effect are largely confined to the package and no projection of fragments of appreciable size or range are expected. An external fire must not cause virtually instantaneous explosion of almost the entire contents of the package. *Compressed Gases:* Pressurized and meet OSHA definition but < 514.7 psi absolute at 21.1°C [70°F] [500 psig]. *Pyrophorics:* No Rating. *Oxidizers:* Packing Group II Solids: any material that, either in concentration tested, exhibits a mean burning time of less than or equal to the mean burning time of a 2:3 potassium bromate/cellulose mixture and the criteria for Packing Group I are not met. Liquids: any material that exhibits a mean pressure rise time less than or equal to the pressure rise of a 1:1 aqueous sodium chlorate solution (40%)/cellulose mixture and the criteria for Packing Group I are not met. *Unstable Reactives:* Substances that may polymerize, decompose, condense, or self-react at ambient temperature and/or pressure, but have a low potential for significant heat generation or explosion. Substances that readily form peroxides upon exposure to air or oxygen at room temperature); 3 (*Water Reactivity:* Materials that may form explosive reactions with water. *Organic Peroxides:* Materials that are capable of detonation or explosive reaction, but require a strong initiating source, or must be heated under confinement before initiation; or materials that react explosively with water. *Explosives:* Division 1.2 – Explosive substances that have a fire hazard and either a minor blast hazard or a minor projection hazard or both, but do not have a mass explosion hazard. *Compressed Gases:* Pressure ≥ 514.7 psi absolute at 21.1°C [70°F] [500 psig]. *Pyrophorics:* No Rating. *Oxidizers:* Packing Group I Solids: any material that, in either concentration tested, exhibits a mean burning time less than the mean burning time of a 3:2 potassium bromate/cellulose mixture. Liquids: Any material that spontaneously ignites when mixed with cellulose in a 1:1 ratio, or which exhibits a mean pressure rise time less than the pressure rise time of a 1:1 perchloric acid (50%)/cellulose mixture. *Unstable Reactives:* Substances that may polymerize, decompose, condense or self-react at ambient temperature and/or pressure and have a moderate potential to cause significant heat generation or explosion.); 4 (*Water Reactivity:* Materials that react explosively with water without requiring heat or confinement. *Organic Peroxides:* Materials that are readily capable of detonation or explosive decomposition at normal temperature and pressures. *Explosives:* Division 1.1 & 1.2-explosive substances that have a mass explosion hazard or have a projection hazard. A mass explosion is one that affects almost the entire load instantaneously. *Compressed Gases:* No Rating. *Pyrophorics:* Add to the definition of Flammability "4". *Oxidizers:* No "4" rating. *Unstable Reactives:* Substances that may polymerize, decompose, condense or self-react at ambient temperature and/or pressure and have a high potential to cause significant heat generation or explosion.).

16. OTHER INFORMATION (Continued)

DEFINITIONS OF TERMS (Continued)

HAZARDOUS MATERIALS IDENTIFICATION SYSTEM HAZARD RATINGS (continued):

PHYSICAL HAZARD (continued): 2 (continued):

NATIONAL FIRE PROTECTION ASSOCIATION HAZARD RATINGS:

HEALTH HAZARD: 0 (materials that, under emergency conditions, would offer no hazard beyond that of ordinary combustible materials): Gases and vapors whose LC_{50} for acute inhalation toxicity is greater than 10,000 ppm. Dusts and mists whose LC_{50} for acute inhalation toxicity is greater than 200 mg/L. Materials whose LD_{50} for acute dermal toxicity is greater than 2000 mg/kg. Materials whose LD_{50} for acute oral toxicity is greater than 2000 mg/kg. Materials that are essentially non-irritating to the respiratory tract, eyes and skin. 1 (materials that, under emergency conditions, can cause significant irritation): Gases and vapors whose LC_{50} for acute inhalation toxicity is greater than 5,000 ppm but less than or equal to 10,000 ppm. Dusts and mists whose LC_{50} for acute inhalation toxicity is greater than 10 mg/L but less than or equal to 200 mg/L. Materials whose LD_{50} for acute dermal toxicity is greater than 1000 mg/kg but less than or equal to 2000 mg/kg. Materials whose LD_{50} for acute oral toxicity is greater than 500 mg/kg but less than or equal to 2000 mg/kg. Materials that cause slight to moderate irritation to the respiratory tract, eyes and skin. 3 (materials that, under emergency conditions, can cause serious or permanent injury): Gases and vapors whose LC_{50} for acute inhalation toxicity is greater than 1,000 ppm but less than or equal to 3,000 ppm. Dusts and mists whose LC_{50} for acute inhalation toxicity is greater than 0.5 mg/L but less than or equal to 2 mg/L. Materials whose LD_{50} for acute dermal toxicity is greater than 40 mg/kg but less than or equal to 200 mg/kg. Materials whose LD_{50} for acute oral toxicity is greater than 5 mg/kg but less than or equal to 50 mg/kg. Any liquid whose saturated vapor concentration at 20°C (68°F) is equal to or greater than one-fifth its LC_{50} for acute inhalation toxicity, if its LC_{50} is less than or equal to 3000 ppm and that does not meet the criteria for degree of hazard 4. Compressed liquefied gases with boiling points between -30°C (-22°F) and -55°C (-66.5°F) that cause frostbite and irreversible tissue damage. Materials that are respiratory irritants. Cryogenic gases that cause frostbite and irreversible tissue damage. Materials that are corrosive to the respiratory tract. Materials that are corrosive to the eyes or cause irreversible corneal opacity. Materials that are corrosive to the skin. 4 (materials that, under emergency conditions, can be lethal): Gases and vapors whose LC_{50} for acute inhalation toxicity less than or equal to 1,000 ppm. Dusts and mists whose LC_{50} for acute inhalation toxicity is less than or equal to 0.5 mg/L. Materials whose LD_{50} for acute dermal toxicity is less than or equal to 40 mg/kg. Materials whose LD_{50} for acute oral toxicity is less than or equal to 5 mg/kg. Any liquid whose saturated vapor concentration at 20°C (68°F) is equal to or greater than one-fifth its LC_{50} for acute inhalation toxicity, if its LC_{50} is less than or equal to 1000 ppm.

FLAMMABILITY HAZARD: 0 Materials that will not burn under typical fire conditions, including intrinsically noncombustible materials such as concrete, stone, and sand: Materials that will not burn in air when exposed to a temperature of 816°C (1500°F) for a period of 5 minutes in according with Annex D. 1 Materials that must be preheated before ignition can occur. Materials in this degree require considerable preheating, under all ambient temperature conditions, before ignition and combustion can occur: Materials that will burn in air when exposed to a temperature of 816°C (1500°F) for a period of 5 minutes in accordance with Annex D. Liquids, solids and semisolids having a flash point at or above 93.4°C (200°F) (e.g., Class IIIB liquids). Liquids with a flash point greater than 35°C (95°F) that do not sustain combustion when tested using the Method of Testing for Sustained Combustibility, per 49 CFR 173, Appendix H or the UN Recommendation on the Transport of Dangerous Goods, Model Regulations (current edition) and the related Manual of Tests and Criteria (current edition). Liquids with a flash point greater than 35°C (95°F) in a water-miscible solution or dispersion with a water non-combustible liquid/solid content of more than 85 percent by weight. Liquids that have no fire point when tested by ASTM D 92 Standard Test Method for Flash and Fire Points by Cleveland Open Cup, up to a boiling point of the liquid or up to a temperature at which the sample being tested shows an obvious physical change. Combustible pellets with a representative diameter of greater than 2 mm (10 mesh). Solids containing greater than 0.5 percent by weight of a flammable or combustible solvent are rated by the closed-up flash point of the solvent. Most ordinary combustible materials. 2 Materials that must be moderately heated or exposed to relatively high ambient temperatures before ignition can occur. Materials in this degree would not under normal conditions form hazardous atmospheres with air, but under high ambient temperatures or under moderate heating could release vapor in sufficient quantities to produce hazardous atmospheres with air: Liquids having a flash point at or above 37.8°C (100°F) and below 93.4°C (200°F) (e.g., Class II and Class IIIA liquids.) Solid materials in the form of powders or coarse dusts of representative diameter between 420 microns (40 mesh) and 2 mm (10 mesh) that burn rapidly but that generally do not form explosive mixtures in air. Solid materials in fibrous or shredded form that burn rapidly and create flash fire hazards, such as cotton, sisal and hemp. Solids and semisolids that readily give off flammable vapors. Solids containing greater than 0.5 percent by weight of a flammable or combustible solvent are rated by the closed cup flash point of the solvent. 3 Liquids and solids that can be ignited under almost all ambient temperature conditions. Materials in this degree produce hazardous atmospheres with air under almost all ambient temperatures or, though unaffected by ambient temperatures, are readily ignited under almost all conditions: Liquids having a flash point below 22.8°C (73°F) and having a boiling point at or above 37.8°C (100°F) and those liquids having a flash point at or above 22.8°C (73°F) and below 37.8°C (100°F) and below 37.8°C (100°F) (e.g., Class IB and IC liquids). Materials that, on account of their physical form or environmental conditions, can form explosive mixtures with air and are readily dispersed in air. Flammable or combustible dusts with a representative diameter less than 420 microns (40 mesh). Materials that burn with extreme rapidity, usually by reason of self-contained oxygen (e.g., dry nitrocellulose and many organic peroxides). Solids containing greater than 0.5 percent by weight of a flammable or combustible solvent are rated by the closed cup flash point of the solvent. 4 Materials that will rapidly or completely vaporize at atmospheric pressure and normal ambient temperature or that are readily dispersed in air and will burn readily: Flammable gases. Flammable cryogenic materials. Any liquid or gaseous materials that is liquid while under pressure and has a flash point below 22.8°C (73°F) and a boiling point below 37.8°C (100°F) (e.g., Class IA liquids). Materials that ignite when exposed to air. Solids containing greater than 0.5 percent by weight of a flammable or combustible solvent are rated by the closed cup flash point of the solvent.

NATIONAL FIRE PROTECTION ASSOCIATION HAZARD RATINGS (continued):

INSTABILITY HAZARD: 0 Materials that in themselves are normally stable, even under fire conditions: Materials that have an estimated instantaneous power density (product of heat of reaction and reaction rate) at 250°C (482°F) below 0.01 W/mL. Materials that do not exhibit an exotherm at temperatures less than or equal to 500°C (932°F) when tested by differential scanning calorimetry. 1 Materials that in themselves are normally stable, but that can become unstable at elevated temperatures and pressures: Materials that have an estimated instantaneous power density (product of heat of reaction and reaction rate) at 250°C (482°F) at or above 0.01 W/mL and below 10 W/mL. 2 Materials that readily undergo violent chemical change at elevated temperatures and pressures: Materials that have an estimated instantaneous power density (product of heat of reaction and reaction rate) at 250°C (482°F) at or above 10 W/mL and below 100W/mL. 3 Materials that in themselves are capable of detonation or explosive decomposition or explosive reaction, but that require a strong initiating source or that must be heated under confinement before initiation: Materials that have an estimated instantaneous power density (product of heat of reaction and reaction rate) at 250°C (482°F) at or above 100 W/mL and below 1000 W/mL. Materials that are sensitive to thermal or mechanical shock at elevated temperatures and pressures. 4 Materials that in themselves are readily capable of detonation or explosive decomposition or explosive reaction at normal temperatures and pressures: Materials that have an estimated instantaneous power density (product of heat of reaction and reaction rate) at 250°C (482°F) of 1000 W/mL or greater. Materials that are sensitive to localized thermal or mechanical shock at normal temperatures and pressures.

FLAMMABILITY LIMITS IN AIR:

Much of the information related to fire and explosion is derived from the **National Fire Protection Association (NFPA)**. Flash Point - Minimum temperature at which a liquid gives off sufficient vapors to form an ignitable mixture with air. Autoignition Temperature: The minimum temperature required to initiate combustion in air with no other source of ignition. LFL - the lowest percent of vapor in air, by volume, that will explode or ignite in the presence of an ignition source. UFL - the highest percent of vapor in air, by volume, that will explode or ignite in the presence of an ignition source.

TOXICOLOGICAL INFORMATION:

Human and Animal Toxicology: Possible health hazards as derived from human data, animal studies, or from the results of studies with similar compounds are presented. Definitions of some terms used in this section are: LD_{50} - Lethal Dose (solids & liquids) which kills 50% of the exposed animals; LC_{50} - Lethal Concentration (gases) which kills 50% of the exposed animals; ppm concentration expressed in parts of material per million parts of air or water; mg/m^3 concentration expressed in weight of substance per volume of air; mg/kg quantity of material, by weight, administered to a test subject, based on their body weight in kg. Other measures of toxicity include TD_{Lo}, the lowest dose to cause a symptom and TC_{Lo} the lowest concentration to cause a symptom; TD_{Lo}, LDL_{o}, and LD_{0}, or TC, TC_{0}, LCL_{0}, and LC_{0}, the lowest dose (or concentration) to cause lethal or toxic effects.

Cancer Information: The sources are: **IARC** - the International Agency for Research on Cancer; **NTP** - the National Toxicology Program, **RTECS** - the Registry of Toxic Effects of Chemical Substances, **OSHA** and **CAL/OSHA**. IARC and NTP rate chemicals on a scale of decreasing potential to cause human cancer with rankings from 1 to 4. Subrankings (2A, 2B, etc.) are also used. **Other Information: BEI** - ACGIH Biological Exposure Indices, represent the levels of determinants which are most likely to be observed in specimens collected from a healthy worker who has been exposed to chemicals to the same extent as a worker with inhalation exposure to the TLV.

REPRODUCTIVE TOXICITY INFORMATION:

A mutagen is a chemical that causes permanent changes to genetic material (DNA) such that the changes will propagate through generational lines. An embryotoxin is a chemical that causes damage to a developing embryo (e.g., within the first eight weeks of pregnancy in humans), but the damage does not propagate across generational lines. A teratogen is a chemical that causes damage to a developing fetus, but the damage does not propagate across generational lines. A reproductive toxin is any substance that interferes in any way with the reproductive process.

ECOLOGICAL INFORMATION:

EC is the effect concentration in water. **BCF** = Bioconcentration Factor, which is used to determine if a substance will concentrate in lifeforms which consume contaminated plant or animal matter. TL_m = median threshold limit; Coefficient of Oil/Water Distribution is represented by log K_{ow} or log K_{ow} and is used to assess a substance's behavior in the environment.

REGULATORY INFORMATION:

U.S. and CANADA:

ACGIH: American Conference of Governmental Industrial Hygienists, a professional association which establishes exposure limits.

This section explains the impact of various laws and regulations on the material. **EPA** is the U.S. Environmental Protection Agency. **NIOSH** is the National Institute of Occupational Safety and Health, which is the research arm of the U.S. Occupational Safety and Health Administration (OSHA). **WHMIS** is the Canadian Workplace Hazardous Materials Information System. **DOT** and **TC** are the U.S. Department of Transportation and the Transport Canada, respectively. Superfund Amendments and Reauthorization Act (**SARA**); the Canadian Domestic/Non-Domestic Substances List (**DSL/NDSL**); the U.S. Toxic Substance Control Act (**TSCA**); Marine Pollutant status according to the **DOT**; the Comprehensive Environmental Response, Compensation, and Liability Act (**CERCLA or Superfund**); and various state regulations. This section also includes information on the precautionary warnings which appear on the material's package label. **OSHA** - U.S. Occupational Safety and Health Administration.

EUROPEAN and INTERNATIONAL:

The **DFG:** This is the Federal Republic of Germany's Occupation Health Agency, similar to the U.S. OSHA. **EU** is the European Union (formerly known as the **EEC**, European Economic Community). **EINECS:** This is the European Inventory of Now-Existing Chemical Substances. The **ARD** is the European Agreement Concerning the International Carriage of Dangerous Goods by Road and the **RID** are the International Regulations Concerning the Carriage of Dangerous Goods by Rail. **AICS** is the Australian Inventory of Chemical Substances. **METI** is the Japanese Ministry of Economy, Trade, and Industry.

64503-7011

SAFETY DATA SHEET

Prepared to U.S. OSHA, CMA, ANSI, Canadian WHMIS 2015 GHS, European Union CLP EC 1272/2008 & the 8th ATP 2016/918, the Korean MoEL (Public Notice 2016-19), Singapore SS586 Standard – Parts 2 & 3, Chinese GB/T 16483-2008 & GB/T 17519-2013, New Zealand Hazardous Substances (Hazard Classification) Notice 2020, *Australian WorkSafe* GHS 7, 2022, *Japanese* JIS Z 7252: 2019 (Classification of chemicals) and JIS Z 7253: 2019 (Communication of information on danger of chemicals – labeling and safety data sheets), *and the Global Harmonization Standard*

1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY UNDERTAKING

PRODUCT IDENTIFIER USED ON LABEL:

Product Identifier: **TATTOO PAINT No. GD-1**
TATTOO PAINT No. LFG

Other Means of Identification: Not Applicable

RECOMMENDED USE of the PRODUCT and RESTRICTIONS on USE:

Recommended Use: Tissue Staining Paint

Restrictions on Use: Other than Recommended Use

SHIPPING CLASSIFICATION:

U.N. Number: None Allocated

U.N. Dangerous Goods Class/Subsidiary Risk: None Allocated

HAZCHEM Code (Australia): None Allocated

Poisons Schedule Number (Australia): None Allocated

NAME, ADDRESS and TELEPHONE NUMBER of CHEMICAL MANUFACTURER, IMPORTER or OTHER RESPONSIBLE PARTY:

U.S. Supplier/Manufacturer's Name: **DYNAMIC COLOR COMPANY**

Address: PO Box 21083
Fort Lauderdale, FL, 33335 USA

Information Phone: + 1-954-462-0261 9 a.m. to 4 p.m. (U.S. East Coast Time Zone)

Emergency Phone: 1-800-233-8332 9 a.m. to 4 p.m. (U.S. East Coast Time Zone)
(from U.S., Canada, Puerto Rico, U.S. Virgin Islands)

Email: sales@dynamiccolor.com

Date of Preparation: April 12, 2001

Date of Revision: April 8, 2022

2. HAZARD IDENTIFICATION

GLOBAL HARMONIZATION LABELING AND CLASSIFICATION: Classified in accordance with Global Harmonization Standard under U.S. OSHA Hazard Communication Standard, Canadian *WHMIS 2015 GHS*, European CLP Regulation (EC) 1272/2008, Japanese JIS Z 7252: 2019 (Classification of chemicals) and JIS Z 7253: 2019 (Communication of information on danger of chemicals – labeling and safety data sheets), New Zealand Hazardous Substances (Hazard Classification) Notice 2020, Australian WorkSafe GHS 7, 2022, Singapore SS586, Chinese GHS standard. Korean MoEL classification is given separately.

Classification: Eye Irritation Category 2A, Specific Target Organs Toxicity (Inhalation-Narcotic Effects/Irritation) Single Exposure Category 3

Signal Word: Warning

Hazard Statements: H319: Causes serious eye irritation. H335: May cause respiratory irritation. H336: May cause drowsiness or dizziness.

Other Hazards Not Otherwise Classified: These products contain an azo pigment that is under assessment to determine if it is a PBT/vPvBT (Persistent, Bioaccumulative or Toxic to the Environment compound.

Precautionary Statements:

Prevention: P261: Avoid breathing mists or sprays. P264 + P265: Wash hands and other contamination areas thoroughly after handling. Do not touch eyes.P270: Do not eat, drink or smoke when using these products. P271: Use only outdoors or in a well-ventilated area. P280: Wear protective gloves, protective clothing, eye protection, face protection.

Response: P305 + P351 + P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. P337 + P317: If eye irritation persists: Get medical help. P304 + P340: If inhaled, remove victim to fresh air and keep at rest in a position comfortable for breathing. P319: Get medical help if you feel unwell. P321: Specific treatment (remove from exposure and treat symptoms). Refer to Safety Data Sheet for more information.

Storage: P403 + P233: Store in a well-ventilated place. Keep container tightly closed. P405: Store locked up.

Disposal: P501: Dispose of contents/containers in accordance with all local, regional, national and international regulations.

Hazard Symbols/Pictograms: GHS07

KOREAN MoEL (Notice 2016-19) LABELING AND CLASSIFICATION: Classified in accordance with MoEL Notice 2016-19. Under the MoEL regulation, no differences in classification are applicable.

PERCENT OF UNKNOWN ACUTE TOXICITY: Unknown toxicity by inhalation: For LFG is 80; For GD-1: 85%. Unknown dermal toxicity: For LFG is 80; For GD-1: 0%. Unknown oral toxicity is 70%

2. HAZARD IDENTIFICATION (Continued)

EMERGENCY OVERVIEW: Product Description: These products are green liquids that ha vea mild odor. **Health Hazards:** The primary health hazard associated with these products is the potential for mild irritation of contaminated tissue. Eye contact may cause more serious irritation. Inhalation of fumes or vapors may cause respiratory system irritation or narcotic effects. **Flammability Hazards:** These products are not flammable. If involved in a fire, the product may decompose to produce carbon, copper, metallic, nitrogen and sulfur oxides, ammonia, benzenes, chlorine, formaldehyde, hydrogen chloride and polymers. **Reactivity Hazards:** These products are not reactive. **Environmental Hazards:** Not tested. These products may have adverse effects when released into the environment. These products contain an azo pigment that is under investigation to determine if it is possible persistent, bioaccumulative or toxic to the environment compound. **Emergency Recommendations:** Emergency responders must wear the personal protective equipment suitable for the situation to which they are responding.

3. COMPOSITION and INFORMATION ON INGREDIENTS

Chemical Name	CAS #	European EINECS # / Index #	Japanese MITI/ENC #	Korean ECL #	New Zealand NZIoC #	Chinese IECSC Inventory	Taiwan NESCI ECS Inventory	Australian AICS	% w/w	LABEL ELEMENTS GHS under U.S. OSHA, Canadian WHMIS HPR-GHS & EU Classification (1272/2008), Japanese, New Zealand, Taiwan, Chinese and Korean Regulations Korean ISHA Classification Hazard Statements
Isopropyl Alcohol	67-63-0	200-661-7 603-117-00-0	2-207	KE-29363	HSR001180	Listed	Listed	Listed	10%	GHS Under All Countries Harmonized Classification: Flammable Liquid Cat. 2, Eye Irritation Cat. 2A, Specific Target Organ Toxicity (Inhalation, Ingestion-Narcotic Effects) Single Exposure Cat. 3 Hazard Statements: H226: Flammable liquid and vapor. H319: Causes serious eye irritation. H336: May cause drowsiness or dizziness.
Proprietary Green Pigment					May be used under an appropriate group standard	Listed	Listed	Listed	3-10%	Classification: Not Classified Under U.S. OSHA, Canadian WHMIS HPR-2015 only Classification: Combustible Dust Hazard
Proprietary Yellow Azo Pigment (LFG)					May be used under an appropriate group standard	Listed	Listed	Listed	10%	Classification: Not Classified EU ECHA Properties of Concern: This compound is undergoing assessment as a probable Persistent, Bioaccumulative or Toxic to the Environment
Proprietary Styrene Acrylic Polymer Resin (GD-1)					May be used under an appropriate group standard	Listed	Listed	Listed	0-5%	GHS Under All Countries Harmonized Classification: Skin Irritation Cat. 2, Eye Irritation Cat. 2A, Specific Target Organ Toxicity (Inhalation, Narcotic Effects/Respiratory Irritation) Single Exposure Cat. 3 Hazard Statements: H315: Causes skin irritation. H319: Causes serious eye irritation. H335: May cause respiratory irritation. H336: May cause drowsiness or dizziness.
Water	7732-18-5	231-791-2 No Index #	Not Identified in the Listing	KE-35400	Excepted	Listed	Listed	Listed	Balance	Classification: Not Classified

See Section 15 for information on other country inventory listing of components, as applicable
The specific chemical identity and/or exact percentage (concentration) of composition has been withheld as a trade secret.

4. FIRST-AID MEASURES

PROTECTION OF FIRST AID RESPONDERS: Rescuers should be taken for medical attention, if necessary. Only trained personnel should administer supplemental oxygen and/or cardio-pulmonary resuscitation, if necessary.

DESCRIPTION OF FIRST AID MEASURES: Victim(s) must be taken for medical attention. Take copy of label and MSDS to physician or other health professional with victim(s). Remove victim(s) to fresh air, as quickly as possible.

Skin Exposure: If these products contaminate the skin and adverse effect occurs, begin decontamination with running water. Minimum flushing is for 20 minutes. The contaminated individual must seek medical attention if any adverse effects occur after flushing.

GHS Precautionary Statements for Skin Exposure: None applicable.

Eye Exposure: If these products enter the eyes, open contaminated individual's eyes while under gently running water. Use sufficient force to open eyelids. Have contaminated individual "roll" eyes. Minimum flushing is for 20 minutes. Contaminated individual must seek medical attention if adverse effect continues after flushing.

GHS Precautionary Statements for Eye Exposure: P305 + P351 + P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. P337 + P317: If eye irritation persists: Get medical attention.

4. FIRST-AID MEASURES (Continued)

DESCRIPTION OF FIRST AID MEASURES (continued):

Inhalation: If aerosols are inhaled and adverse effect occurs, remove victim to fresh air. The contaminated individual must seek medical attention if any adverse effects occur.

GHS Precautionary Statements for Inhalation Exposure: P304 + P340: If inhaled, remove victim to fresh air and keep at rest in a position comfortable for breathing. P319: Get medical help if you feel unwell.

Ingestion: If swallowed, CALL PHYSICIAN OR POISON CONTROL CENTER FOR MOST CURRENT INFORMATION. If professional advice is not available, do not induce vomiting. Never induce vomiting or give diluents (milk or water) to someone who is unconscious, having convulsions, or unable to swallow. If victim is convulsing, maintain an open airway and obtain immediate medical attention.

GHS Precautionary Statements for Ingestion Exposure: None applicable.

MOST IMPORTANT SYMPTOMS and EFFECTS, WHETHER ACUTE OR DELAYED: See Sections 2 (Hazard Information) and 11 (Toxicological Information) for information.

Acute:

Symptoms/Effects: May cause irritation by contact with the skin, eyes and respiratory system. All potential effects are dependent on concentration and duration of exposure.

Symptoms/Effects After Inhalation: EXPOSURE TO HIGH CONCENTRATIONS: Coughing, or respiratory irritation.

Symptoms/Effects After Skin Contact: Mild irritation.

Symptoms/Effects After Eye Contact: Moderate irritation of eye tissue.

Symptoms/Effects After Ingestion: Irritation of digestive system.

Chronic:

Symptoms/Effects After Skin Contact: Dermatitis (dry, red skin).

Symptoms/Effects After Eye Contact: None known.

Symptoms/Effects After Accidental Injection: None known.

Symptoms/Effects After Inhalation: None known.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: Skin or respiratory conditions may be aggravated by exposure to these products.

INDICATION OF IMMEDIATE MEDICAL ATTENTION AND SPECIAL TREATMENT IF NEEDED: Treat symptoms and eliminate exposure.

COMPLIANCE WITH SAFE WORK AUSTRALIA MODEL CODE FIRST AID IN THE WORKPLACE CODE OF PRACTICE: Compliance with all requirements should be in place under Section 3 (First Aid Equipment, Facilities and Training) should be in place.

5. FIRE-FIGHTING MEASURES

FLASH POINT: Not flammable. **AUTOIGNITION TEMPERATURE:** Not applicable.

FLAMMABLE LIMITS (in air by volume, %): Not applicable.

FIRE EXTINGUISHING MEDIA: Unless incompatibilities exist for surrounding materials, carbon dioxide, water spray, 'ABC' type chemical extinguishers, foam, dry chemical and halon extinguishers can be used to fight fires involving these products.

UNSUITABLE FIRE EXTINGUISHING MEDIA: None known.

SPECIAL HAZARDS ARISING FROM THE SUBSTANCE: When involved in a fire, this material may decompose and produce irritating vapors and toxic gases (e.g., carbon, copper, metallic, nitrogen and sulfur oxides, ammonia, benzenes, chlorine, formaldehyde, hydrogen chloride and polymers).

Explosion Sensitivity to Mechanical Impact or Static Discharge: Not sensitive.

SPECIAL PROTECTIVE ACTIONS FOR FIRE-FIGHTERS: Incipient fire responders should wear eye protection. Structural firefighters must wear Self-Contained Breathing Apparatus and full protective equipment. Due to the presence of pigment, the runoff water from these products can discolor contaminated objects. If possible, prevent runoff water from entering storm drains, bodies of water, or other environmentally sensitive areas. If necessary, rinse fire-response equipment with soapy water before returning it to service.

GHS Statements for Fire Response: None applicable.

Australian HazChem Code: Not applicable.

6. ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS AND EMERGENCY PROCEDURES: Uncontrolled releases should be responded to by trained personnel using pre-planned procedures. Proper protective equipment should be used. Call CHEMTREC (1-800-424-9300) for emergency assistance. Or if in Canada, call CANUTEC (613-996-6666). The atmosphere must at least 19.5 percent Oxygen before non-emergency personnel can be allowed in the area without Self-Contained Breathing Apparatus and fire protection.

PERSONAL PROTECTIVE EQUIPMENT: Proper protective equipment should be used.

Small Spills: Wear rubber gloves, splash goggles, and appropriate body protection.

Large Spills: Minimum Personal Protective Equipment should be rubber gloves, rubber boots, face shield, and Tyvek suit. Minimum level of personal protective equipment for releases in which the level of oxygen is less than 19.5% or is unknown must be **Level B: triple-gloves (rubber gloves and nitrile gloves over latex gloves), chemical resistant suit and boots, hard hat, and Self-Contained Breathing Apparatus.**

METHODS FOR CLEAN-UP AND CONTAINMENT:

Small Spills: Carefully absorb spill using polypads or other non-reactive absorbent. Place spilled material in appropriate container for disposal, sealing tightly. Remove all residue before decontamination of spill area.

6. ACCIDENTAL RELEASE MEASURES (Continued)

METHODS FOR CLEAN-UP AND CONTAINMENT (continued):

Large Spills: Access to the spill area should be restricted. For large spills, dike or otherwise contain spill and absorb spill with polypads or other non-reactive absorbent material.

All Spills: Place all spill residue in a double plastic bag or other containment and seal. Decontaminate the area thoroughly. Do not mix with wastes from other materials. Dispose of in accordance with applicable Federal, State, and local procedures (see Section 13, Disposal Considerations). For spills on water, contain, minimize dispersion and collect. Dispose of recovered material and report spill per regulatory requirements.

ENVIRONMENTAL PRECAUTIONS: Avoid release to the environment. Run-off water may be contaminated by other materials and should be contained to prevent possible environmental damage.

REFERENCE TO OTHER SECTIONS: See information in Section 8 (Exposure Controls – Personal Protection) and Section 13 (Disposal Considerations) for additional information.

7. HANDLING and STORAGE

PRECAUTIONS FOR SAFE HANDLING: As with all chemicals, avoid getting these products ON YOU or IN YOU. Wash thoroughly after handling these products. Do not eat, drink, smoke, or apply cosmetics while handling these products. Avoid breathing aerosols from the product. Keep away from incompatible materials (see Section 10, Stability and Reactivity). Containers of these products must be properly labeled. Use in a well-ventilated location. Remove contaminated clothing.

GHS Statements for Safe Handling: P261: Avoid breathing mists or sprays. P264 + P265: Wash hands and other contamination areas thoroughly after handling. Do not touch eyes.P270: Do not eat, drink or smoke when using these products. P271: Use only outdoors or in a well-ventilated area. P280: Wear protective gloves, protective clothing, eye protection, face protection.

CONDITIONS FOR SAFE STORAGE and INCOMPATIBILITIES: Keep container tightly closed when not in use. Store containers in a cool, dry location, away from direct sunlight, sources of intense heat, or where freezing is possible. Material should be stored in secondary containers or in a diked area, as appropriate. Inspect all incoming containers before storage, to ensure containers are properly labeled and not damaged. Have appropriate extinguishing equipment in the storage area (such as sprinkler systems or portable fire extinguishers). Empty containers may contain residual product; therefore, empty containers should be handled with care. May be incompatible with water reactive materials and strong oxidizers.

GHS Statements for Safe Storage: P403 + P233: Store in a well-ventilated place. Keep container tightly closed. P405: Store locked up.

SPECIFIC USE(S): These products are for use as a skin staining paint. Follow all industry standards for use of these products.

PROTECTIVE PRACTICES DURING MAINTENANCE OF CONTAMINATED EQUIPMENT: Follow practices indicated in Section 6 (Accidental Release Measures). Make certain that application equipment is locked and tagged-out safely. Always use these products in areas where adequate ventilation is provided. Decontaminate equipment thoroughly, before maintenance begins. Collect all rinsates and dispose of according to applicable Federal, State, or local procedures, or applicable standards.

8. EXPOSURE CONTROLS - PERSONAL PROTECTION

EXPOSURE LIMITS/CONTROL PARAMETERS:

Ventilation and Engineering Controls: Use with adequate ventilation to ensure exposure levels are maintained below the limits provided in this section. Use local exhaust ventilation. Normal office ventilation conforming to the American Society of Heating, Refrigerating, and Air Conditioning Engineers (ASHRAE) Standards is adequate under normal circumstances of use. Persons using this material should consult a qualified Ventilation Engineer and/or Industrial Hygienist if concerns about exposure arise. If necessary, refer to Australian National Code of Practice for the Control of Workplace Hazardous Substances [NOHSC: 2007 (1994)] for further information.

U.S. Workplace Exposure Limits/Control Parameters:

CHEMICAL NAME	CAS #	EXPOSURE LIMITS IN AIR							
		ACGIH-TLVs		OSHA-PELs		NIOSH-RELs		NIOSH	OTHER
		TWA mg/m³	STEL mg/m³	TWA mg/m³	STEL mg/m³	TWA mg/m³	STEL mg/m³	IDLH mg/m³	mg/m³
Proprietary Green Pigment Exposure limits given are for Copper dusts, fumes & mists as Cu)		1 (dusts, mists) 0.2 (fume)	NE	1 (dusts, mists) 0.1 (fume)	NE	1 (dusts, mists) 0.1 (fume)	NE	100 (as Cu)	NE
Isopropyl Alcohol	67-63-0	492	984	980	500 ppm (vacated 1989 PEL)	980	1225	2000 ppm (based on LEL)	DFG MAK: TWA = 500 ppm PEAK = 2•MAK, 15 min., average value, 1-hr interval, 4 per shift DFG MAK Pregnancy Risk Classification: C

NE = Not Established.

8. EXPOSURE CONTROLS - PERSONAL PROTECTION (Continued)

EXPOSURE LIMITS/CONTROL PARAMETERS (continued):

Australian Hazardous Chemical Information System (HMIS) Exposure Standards:

CHEMICAL NAME	CAS #	EXPOSURE STANDARDS				
		TWA ppm	TWA mg/m^3	STEL ppm	STEL mg/m^3	Notes
Proprietary Green Pigment Exposure limits given are for Copper dusts, fumes & mists as Cu)		NE	1 (dusts & mists) 0.2 (fume)	NE	NE	Not Applicable
Isopropyl Alcohol	67-63-0	400	983	500	1230	Not Applicable

NE = Not Established.

UK Minimum Exposure Limits:

CHEMICAL NAME	CAS #	WORKPLACE EXPOSURE LIMIT				
		Long-Term Exposure Limit (8-Hrs TWA Reference Period)		Short-Term Exposure Limit (15-minute Reference Period)		Comments
		ppm	$mg.m^{-3}$	ppm	$mg.m^{-3}$	The Carcin, Sen and Skin notations are not exhaustive. Notations have been applied to substances identified in IOELV Directives
Proprietary Green Pigment Exposure limits given are for Copper dusts, fumes & mists as Cu)		NE	0.2 1	NE	NE 2	NE
Isopropyl Alcohol	67-63-0	400	999	500	1250	NE

NE = Not Established.

Workplace Exposure Standards (New Zealand): Refer to the Hazardous Substances (Classes 6, 8, and 9 Controls) Regulations 2001 (Regulations 29-30).

CHEMICAL NAME	CAS #	WORKPLACE EXPOSURE STANDARDS				
		TWA ppm	TWA mg/m^{-3}	STEL ppm	STEL mg/m^{-3}	Notes
Proprietary Green Pigment copper dust & mists, as Cu copper fume, as Cu		NE	0.01 0.01	NE	NE 2	NE
Isopropyl Alcohol	67-63-0	400	983	500	1230	Not Applicable

Exposure Standards Outside the Workplace (New Zealand): Currently, there are no other exposure limits, such as TELS and EELS (See Section 12 [Ecological Information] for EEL information) established for components of this product.

Other International Occupational Exposure Limits: Currently, the following international limits established for components of this product.

Proprietary Green Pigment:

	Limit Value - Eight Hours	Limit Value - Short Term
Austria	1 mg/m^3 (inhalable aerosol) (dusts & mists); 0.1 mg/m^3 (fume, respirable fraction)	0.4 mg/m^3
Belgium	1 mg/m^3 (dusts & mists); 0.2 mg/m^3 (fume, respirable fraction)	
Canada (Ontario)	1 mg/m^3 (dusts & mists); 0.2 mg/m^3 (fume, respirable fraction)	
Canada (Quebec)	1 mg/m^3 (dusts & mists); 0.2 mg/m^3 (fume, respirable fraction)	
Denmark	1 mg/m^3 (dusts & mists); 0.1 mg/m^3 (fume, respirable fraction)	2 mg/m^3 (dusts & mists); 0.2 mg/m^3 (fume, respirable fraction)
Finland	0.02 mg/m^3 (dusts & mists) (1)(2)	
France	1 mg/m^3 (dusts & mists); 0.2 mg/m^3 (fume, respirable fraction)	2 mg/m^3 (dusts & mists)
Germany (DFG)	0.01 mg/m^3 (dusts & mists)(1); 0.01 mg/m^3 (fume, respirable fraction)	0.02 mg/m^3 (dusts & mists)(1)(2); 0.02 mg/m^3 (fume, respirable fraction)(1)
Hungary	1 mg/m^3 (dusts & mists); 0.1 mg/m^3 (fume, respirable fraction)	4 mg/m^3 (dusts & mists); 0.4 mg/m^3 (fume, respirable fraction)
Ireland	1 mg/m^3; 0.2 mg/m^3 (fume, respirable fraction)(1) 1 mg/m^3 (fume, respirable fraction)(2)	
Norway	0.1 mg/m^3 (fume, respirable fraction)(1) 1 mg/m^3 (fume, respirable fraction)(2)	
People's Republic of China	1 mg/m^3 (dusts & mists); 0.2 mg/m^3 (fume, respirable fraction)	
Poland	1 mg/m^3 (dusts & mists); 0.1 mg/m^3 (fume, respirable fraction)	2 mg/m^3 (dusts & mists); 0.3 mg/m^3 (fume, respirable fraction)
Romania	0.5 mg/m^3 (dusts & mists); 0.1 mg/m^3 (fume, respirable fraction)	1.5 mg/m^3 (dusts & mists)(1); 0.3 mg/m^3 (fume, respirable fraction)
Singapore	1 mg/m^3 (dusts & mists); 0.2 mg/m^3 (fume, respirable fraction)	
South Korea	1 mg/m^3 (dusts & mists); 0.2 mg/m^3 (fume, respirable fraction)	2 mg/m^3 (dusts & mists)
Spain	1 mg/m^3 (dusts & mists); 0.1 mg/m^3 (fume, respirable fraction)	
Sweden	1 mg/m^3 (dusts & mists); 0.2 mg/m^3 (fume, respirable fraction)	
Switzerland	0.1 mg/m^3 (dusts & mists)(inhalable aerosol)	0.2 mg/m^3 (dusts & mists)(inhalable aerosol)
The Netherlands	0.1 mg/m^3 (dusts & mists)(inhalable aerosol)	
	Remarks	
Finland	Dusts & Mists:(1) Calculated as Cu. (2) Respirable fraction.	
Germany (DFG)	Dusts & Mists: (1) 15 minutes average value. Fume: (1) Respirable fraction. (2) 15minutes average value.	
Ireland	Dusts & Mists: (1) Fume. (2) Inhalable fraction and vapor.	
Norway	Dusts & Mists: (1) Fume. (2) Dust	
Romania	Dusts & Mists: (1) 15 minutes average value. Fume: (1) 15 minutes average value.	

8. EXPOSURE CONTROLS - PERSONAL PROTECTION (Continued)

EXPOSURE LIMITS/CONTROL PARAMETERS (continued):

Other International Occupational Exposure Limits (continued):

Isopropyl Alcohol

	Limit Value - Eight Hours	Limit Value - Short Term
Austria	200 ppm; 500 mg/m³	800 ppm; 2000 mg/m³
Belgium	200 ppm; 500 mg/m³	400 ppm (1); 1000 mg/m³ (1)
Canada (Ontario)	200 ppm	400 ppm
Canada (Québec)	400 ppm; 983 mg/m³	500 ppm; 1230 mg/m³
Denmark	200 ppm; 490 mg/m³	400 ppm; 980 mg/m³
Finland	200 ppm; 500 mg/m³	250 ppm (1); 620 mg/m³ (1)
France		400 ppm; 980 mg/m³
Germany (AGS)	200 ppm; 500 mg/m³	400 ppm (1); 1000 mg/m³ (1)
Germany (DFG)	200 ppm; 500 mg/m³	400 ppm (1); 1000 mg/m³ (1)
Hungary	500 mg/m³	2000 mg/m³
Ireland	200 ppm	400 ppm (1)
Japan (MHLW)	200 ppm	
Japan JSOH	400 ppm (1); 980 mg/m³ (1)	
Latvia	350 mg/m³	600 mg/m³ (1)
Norway	100 ppm; 245 mg/m³	
People's Republic of China	350 mg/m³	700 mg/m³ (1)
Poland	900 mg/m³	1200 mg/m³
Romania	81 ppm; 200 mg/m³	203 ppm (1); 500 mg/m³ (1)
Singapore	400 ppm; 983 mg/m³	500 ppm; 1230 mg/m³
South Korea	200 ppm; 480 mg/m³	400 ppm; 980 mg/m³
Spain	200 ppm; 500 mg/m³	400 ppm; 1000 mg/m³
Sweden	150 ppm; 350 mg/m³	250 ppm (1); 600 mg/m³ (1)
Switzerland	200 ppm; 500 mg/m³	400 ppm; 1000 mg/m³

	Remarks
Belgium	(1) 15 minutes average value.
Finland	(1) 15 minutes average value.
Germany (AGS)	(1) 15 minutes average value.
Germany (DFG)	(1) 15 minutes average value.
Ireland	(1) 15 minutes average value.
Japan - JSOH	(1) Occupational exposure limit ceiling: Reference value to the maximal exposure concentration of the substance during a working day.
Latvia	(1) 15 minutes average value.
People's Republic of China	(1) 15 minutes average value.
Romania	(1) 15 minutes average value.
Sweden	(1) 15 minutes average value.

BIOLOGICAL MONITORING AND THE SOURCE OF THOSE VALUES:

U.S. ACGIH Biological Exposure Indices (BEIs): Currently, the following Biological Exposure Indices (BEIs) have been established for the Isopropyl Alcohol component of these products.

CHEMICAL: DETERMINANT	SAMPLING TIME	BEI
Isopropyl Alcohol (listed as 2-propanol) • Acetone in Urine	• End of Shift at End of Workweek	• 40 mg/L

UK Biological Monitoring Guidance Values (BMGVs): Currently, no BMGVs have been established for the components of these products.

Appendix E-Schedule 14 (Requirements for Health Monitoring) per Australia Safe Work Code of Practice Managing Risks and Hazardous Chemicals in the Workplace: Currently, no component of these products has an established monitoring requirement value.

PROTECTIVE EQUIPMENT: The following information on appropriate Personal Protective Equipment is provided to assist employers in complying with OSHA regulations found in 29 CFR Subpart I (beginning at 1910.132, including U.S. Federal OSHA Respiratory Protection (29 CFR 1910.134), OSHA Eye Protection 29 CFR 1910.133, OSHA Hard Protection 29 CFR 1910.138, OSHA Foot Protection 29 CFR 1910.136 and OSHA Body Protection 29 CFR1910.132), equivalent standards of Canada (including CSA Respiratory Standard Z94.4-02, Z94.3-M1982, *Industrial Eye and Face Protectors* and CSA Standard Z195-02, *Protective Footwear*), standards of EU member states (including EN 529:2005 for respiratory PPE, CEN/TR 15419:2006 for hand/body protection, and CR 13464:1999 for face/eye protection), standards of Australia (including AS/NZS 1715:1994 for respiratory PPE, AS/NZS 4501.2:2006 for protective clothing, AS/NZS 2161.1:2000 for glove selection, and AS/NZS 1336:1997 for eye protection), or standards of Japan (including JIS T 8116:2005 for glove selection, JIS T 8150:2006 for respiratory PPE, JIS T 8147:2003 for eye protectors, and JIS T 8030:2005 for protective clothing). Please reference applicable regulations and standards for relevant details.

Respiratory Protection: Maintain airborne contaminant concentrations below exposure limits listed in this section, if applicable. If respiratory protection is needed, use only protection authorized in applicable regulations. Oxygen levels below 19.5% are considered IDLH by U.S. OSHA. In such atmospheres, use of a full-facepiece pressure/demand SCBA or a full facepiece, supplied air respirator with auxiliary self-contained air supply is required under OSHA's Respiratory Protection Standard (1910.134-1998). The following are U.S. NIOSH Respiratory Equipment Guidelines for Isopropyl Alcohol and the Green Pigment & (as a copper compound); provided to assist in selection of respiratory PPE in event of presence of aerosols.

Copper Dusts and Mists, as Cu

Concentration	Respiratory Protection
Up to 5 mg/m³:	Any Quarter-Mask Respirator.
Up to 10 mg/m³:	Any Particulate Respirator equipped with an N95, R95, or P95 filter (including N95, R95, and P95 filtering facepieces) except quarter-mask respirators. The following filters may also be used: N99, R99, P99, N100, R100, P100, or Any Supplied-Air Respirator (SAR).
Up to 25 mg/m³:	Any SAR operated in a continuous-flow mode, or any powered air-purifying respirator with a high-efficiency particulate filter.

8. EXPOSURE CONTROLS - PERSONAL PROTECTION (Continued)

PROTECTIVE EQUIPMENT (continued):

Copper Dusts and Mists, as Cu (continued):

Concentration	Respiratory Protection
Up to 50 mg/m³:	Any Air-Purifying, Full-Facepiece Respirator with an N100, R100, or P100 filter, or any Powered Air-Purifying Respirator (PAPR) with a tight-fitting facepiece and a high-efficiency particulate filter, or any Self-Contained Breathing Apparatus (SCBA) with a full facepiece, or any SAR with a full facepiece.
to 100 mg/m³:	Any SAR that has a full facepiece and is operated in a pressure-demand or other positive pressure mode.
Emergency or Planned Entry into Unknown Concentrations or IDLH Conditions:	Any SCBA that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode, or any SAR that has a full-facepiece and is operated in a pressure-demand or other positive-pressure mode in combination with an auxiliary SCBA operated in pressure-demand or other positive-pressure mode.
Escape:	Any Air-Purifying, Full-Facepiece Respirator with an N100, R100, or P100 filter, or any appropriate escape-type, SCBA.

Isopropyl Alcohol

Concentration	Respiratory Protection
Up to 2000 ppm:	Any Supplied-Air Respirator (SAR) operated in a continuous-flow mode, or any Chemical Cartridge Respirator with a full facepiece and organic vapor cartridge(s), or any Air-Purifying, Full-Facepiece Respirator (gas mask) with a chin-style, front- or back-mounted organic vapor canister, or any Powered, Air-Purifying Respirator (PAPR) with organic vapor cartridge(s), or any Self-Contained Breathing Apparatus (SCBA) with a full facepiece, or any SAR with a full facepiece.
Emergency or Planned Entry into Unknown Concentrations or IDLH Conditions:	Any SCBA that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode, or any SAR that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode in combination with an auxiliary SCBA operated in pressure-demand or other positive-pressure mode.
Escape:	Any Air-Purifying, Full-Facepiece Respirator (gas mask) with a chin-style, front- or back-mounted organic vapor canister, or any appropriate escape-type, SCBA.

Eye Protection: Depending on the use of these products, splash goggles or safety glasses may be worn. Use goggles or safety glasses for spill response, as stated in Section 6 (Accidental Release Measures) of this SDS. If necessary, refer to appropriate regulations when selecting eye protection.

Hand Protection: Wear butyl rubber, neoprene, or nitrile rubber or latex gloves for routine use. If necessary, refer to appropriate regulations for further information.

Body Protection: Use body protection appropriate for task, such as a lab coat. If necessary, use body protection appropriate for task (e.g., Tyvek suit, rubber apron). If a hazard of injury to the feet exists due to falling objects, rolling objects, where objects may pierce the soles of the feet or where employee's feet may be exposed to electrical hazards, use foot protection, as described in appropriate regulations.

9. PHYSICAL and CHEMICAL PROPERTIES

FORM: Liquid.
COLOR: Green.
MOLECULAR FORMULA: Mixture.
MOLECULAR WEIGHT: Mixture.
ODOR: Mild.
ODOR THRESHOLD: Not established.
VAPOR DENSITY (air = 1): 2 (calc.)
VAPOR PRESSURE: 50 mmHg
SPECIFIC GRAVITY (water = 1): LFG: 1.07; GD-1: 1.14
MELTING/FREEZING POINT: ~0°C (~32°F)
SOLUBILITY IN WATER: Soluble
BOILING POINT: 92°C (197.6°F)
EVAPORATION RATE (*n*-BuAc = 1): < 1
pH: GD-1 8.58; LFG: 1.056
OXIDIZING PROPERTIES: Not applicable.
PERCENT SOLIDS: LFG: 15%; FG: 20%
FLAMMABILITY: Not flammable.
FLASH POINT: Not applicable.
AUTOIGNITION TEMPERATURE: Not applicable.
EXPLOSIVE PROPERTIES: Not applicable.

COEFFICIENT OF OIL/WATER DISTRIBUTION (PARTITION COEFFICIENT): Not established.

HOW TO DETECT THIS SUBSTANCE (identification properties): The odor and color of these products may be distinguishing characteristics to identify it event of a spill.

10. STABILITY and REACTIVITY

CHEMICAL STABILITY: Stable under conditions of normal temperature and pressure.

DECOMPOSITION PRODUCTS:

Combustion: If exposed to extremely high temperatures, these products can decompose to generate carbon, copper, metallic, nitrogen and sulfur oxides, ammonia, benzenes, chlorine, formaldehyde, hydrogen chloride and polymers. **Hydrolysis:** None known.

MATERIALS WITH WHICH SUBSTANCE IS INCOMPATIBLE: Strong oxidizers, water-reactive materials.

POSSIBILITY OF HAZARDOUS REACTION OR POLYMERIZATION: Will not occur.

CONDITIONS TO AVOID: Exposure to or contact with extreme temperatures and incompatible chemicals.

11. TOXICOLOGICAL INFORMATION

SYMPTOMS OF EXPOSURE BY ROUTE OF EXPOSURE: The most significant routes of occupational exposure are inhalation and contact with skin and eyes. The symptoms of exposure to this material, via route of entry, are as described below.

Inhalation: These products do not normally present a significant inhalation hazard under anticipated circumstances of use. Inhalation of vapors, mists, or sprays of this material may mildly irritate the nose, throat, and other tissues of the respiratory system.

Contact with Eyes: Eye contact with this material can moderately irritate the eyes, causing discomfort, tearing, and redness. Because the eye tissue may be stained, vision may be temporarily blurred.

Contact with Skin: Skin contact may cause mild irritation in sensitive individuals. Repeated or prolonged skin exposure may cause dermatitis (dry, red skin).

Skin Absorption: No component is known to be absorbed via intact skin.

11. TOXICOLOGICAL INFORMATION (Continued)

SYMPTOMS OF EXPOSURE BY ROUTE OF EXPOSURE (continued):

Ingestion: Though not anticipated to be a significant route of occupational exposure, ingestion of large quantities of this material may cause nausea, vomiting, diarrhea, and discoloration of the mouth, teeth, and tissues of the throat.

Injection: Accidental injection of this liquid (as may occur by a puncture with a contaminated object) will cause local pain, irritation, and redness.

HEALTH EFFECTS OR RISKS FROM EXPOSURE: In the event of exposure, the following symptoms may be observed:

Short Term: Eye contact will cause moderate irritation. Ingestion of large amounts may cause nausea, vomiting, diarrhea. Inhalation of vapors may cause adverse symptoms to the central nervous system due to the Isopropyl Alcohol component.

Long Term: Repeated or prolonged skin exposure may cause dermatitis (dry, red skin).

TARGET ORGANS:

Short Term: Skin, central nervous system, eyes. **Long Term:** Skin.

OVERALL ACUTE TOXICITY ESTIMATES (ATE) FOR PRODUCT:

Oral Route: For GD-1: > 43,246 mg/kg; For LFG: > 11,477 mg/kg; Dermal Route: For GD-1: > 16,100 mg/kg; For LFG:> 13,141 mg/kg; Inhalation Route: For GD-1: > 1613 mg/L; For LFG: > 100,000 mg/L

TOXICITY DATA FOR COMPONENTS: Specific toxicology data currently available for components of these products in greater than 1% concentration are as follows. Due to the large amount of data available, only human data, irritation data, LD50 oral, rat and mouse, skin, rabbit and rat, LC50 inhalation rat and mouse data are included in this SDS. Contact Dynamic Color for information on additional data available.

Hazard Scale: 0 = Minimal 1 = Slight 2 = Moderate 3 = Serious 4 = Severe * = Chronic hazard

Proprietary Green Pigment:
LD_{50} (Oral-Rat) > 5000 mg/kg (OECD 401)
LD_{50} (Skin-Rat) > 5000 mg/kg (OECD 402)

Proprietary Yellow Pigment:
LD_{50} (Oral-Rat) > 2000 mg/kg (OECD Guideline 401)
LD_{50} (Skin-Rat) > 2000 mg/kg (OECD Guideline 402)
LC_{50} (Inhalation-Rat) 1 hr: > 42 mg/L (No Guideline followed; migrated information used for interpretation of results: expert opinion)

Isopropyl Alcohol:
LDLo (Oral-Man): 5272 mg/kg; Behavioral: coma; Vascular: BP lowering not characterized in autonomic section; Lungs, Thorax, or Respiration: chronic pulmonary edema
LDLo (Oral-Human): 3570 mg/kg; Behavioral: coma; Lungs, Thorax, or Respiration: respiratory depression; Gastrointestinal: nausea or vomiting
LDLo (Unreported-Man) = 2770 mg/kg
TDLo (Oral-Man): 14,432 mg/kg; Behavioral: coma; Vascular: BP lowering not characterized in autonomic section; Lungs, Thorax, or Respiration: dyspnea
TDLo (Oral-Human): 223 mg/kg; Behavioral: hallucinations, distorted perceptions; Cardiac: pulse rate; Vascular: BP lowering not characterized in autonomic section
TDLo (Oral-Infant): 13 gm/kg; Behavioral: somnolence (general depressed activity), irritability; Gastrointestinal: nausea or vomiting
Skin Irritancy (Rabbit): 500 mg; mild
Eye Irritancy (Rabbit): 100 mg; severe
LD_{50} (Oral-Rat) 5840 mg/kg (OECD 401)
LD_{50} (Skin-Rabbit) 16,400 mg/kg (OECD 402)
LD_{50} (Inhalation-Rat) 4 hr: > 10,000 mg/L (OECD 403)

REPEATED DOSE TOXICITY: No component has demonstrated repeated dose toxicity in either animal testing or though workplace data.

CARCINOGENIC POTENTIAL OF COMPONENTS: Components of these products are listed by agencies tracking the carcinogenic potential of chemical compounds, as follows.

Proprietary Green Pigment: For Copper Dusts, Fumes and Mists: EPA-D (Not Classifiable as to Human Carcinogenicity)

Isopropyl Alcohol: ACGIH TLV-A4 (Not Classifiable as a Human Carcinogen); IARC-3 (Not Classifiable as to Carcinogenicity to Humans)

The remaining components of these products are not found on the following lists: U.S. EPA, U.S. NTP, U.S. OSHA, U.S. NIOSH, GERMAN MAK, IARC, and ACGIH, and therefore are neither considered to be nor suspected to be cancer-causing agents by these agencies.

IRRITANCY OF PRODUCT: Acute exposure to these products via eye contact may irritate contaminated eyes. Acute exposure to these products via skin contact and inhalation may mildly irritate contaminated tissue, especially if exposure is prolonged.

ENDOCRINE TOXICITY: No component is known or suspected to be an endocrine disruptor.

SENSITIZATION TO THE PRODUCT: The components of these products are not known to be human skin or respiratory sensitizers.

REPRODUCTIVE TOXICITY INFORMATION: No components of these products are known to have mutagenic, embryotoxic, teratogenic or reproductive toxicity effects in humans.

12. ECOLOGICAL INFORMATION

ALL WORK PRACTICES MUST BE AIMED AT ELIMINATING ENVIRONMENTAL CONTAMINATION.

MOBILITY: These products have not been tested for mobility in soil. It is expected to be somewhat mobile in soil.

PERSISTENCE AND BIODEGRADABILITY: These products have not been tested for persistence or biodegradability. It is expected that some biodegradation will occur to these products; however, no specific information is known. The following information is available for the yellow pigment.

Proprietary Yellow Pigment: Based on the available data, the Monoazo Yellow Pigments are regarded to be not readily and not inherently biodegradable and therefore are considered to fulfill the P (Persistent) criterion. Bioaccumulation assessment of Monoazo Yellow Pigments show a low solubility in octanol and

water; therefore, this pigment shows that a reduced uptake in aquatic organisms is expected.

12. ECOLOGICAL INFORMATION (Continued)

BIO-ACCUMULATION POTENTIAL: There are data for the Yellow Pigment component that have demonstrated some bioaccumulation potential.

Proprietary Yellow Pigment: The potential to bioaccumulate in air-breathing (terrestrial) organisms was also assessed. The octanol-air partition coefficients were above the trigger value of this pigment is log Koa 10 and the log Kow is ≥ 2, therefore a potential to bio-magnify is expected. Moreover, data from literature "Metabolism of the pigment, rat and human microsomal proteins" (Cui et al.2005), are suggestive that this pigments can be metabolized by phase I enzymes (P450s) in metabolites potentially toxic depending on their formulation. In conclusion, new toxicokinetic studies could be needed to further investigate on the B (bioaccumulation)property of this pigment.

Further studies are underway to determine if this pigment presents a hazard of bioaccumulation.

EFFECT OF MATERIAL ON PLANTS or ANIMALS: This product may be harmful to plant or animal life, especially if large volumes of these products are released.

EFFECT OF CHEMICAL ON AQUATIC LIFE: These products have not been tested for aquatic toxicity. The following are aquatic toxicity data for some components of these products:

Proprietary Green Pigment:
LC_{50} (*Danio reiro* Zebra fish) 96 hrs: > 100 mg/L (OECD 203)
EC_{50} (*Daphnia magna*) 48 hrs: > 500 mg/L (OECD 202)
EC_{50} (*Selenastrum capricornutum* green algae) 72hrs: ≥ 100 mg/L (OECD 201)

Proprietary Yellow Pigment:
LC_{50} (*Danio reiro* zebra fish) 96 hrs: >/= 100 mg/L (OECD 203)
EC_{50} (*Daphnia magna*) 48 hrs: No toxicity seen. (OECD 202)

Proprietary Yellow Pigment (continued):
E_rC_{50} (green algae) 72hrs: > 1 mg/L (OECD 201)

Isopropyl Alcohol:
LC_{50} (*Carassius auratus* Goldfish) 96 hrs: 9640 mg/L (US EPA Committee on Methods for Toxicity Tests with Aquatic Organisms)
EC_{50} (*Daphnia Magna* Giant Water flea) 24 hrs: 10,00 mg/L (OECD 202)
EC_{10} (*Scenedesmus quadricauda* freshwater algae) 8 days: 1800 mg/L (No Guideline info)

OTHER ADVERSE EFFECTS: These products do not contain any component with known ozone depletion potential.

RESULTS OF PBT AND vPvB ASSESSMENT: The Yellow Pigment component is under assessment to determine if it meets the criteria of a PBT/VPvB compound. See information above under Persistence and Biodegradability and Bioaccumulation. PBT and vPvB assessments are part of the chemical safety report required for some substances in European Union Regulation (EC) 1907/2006, Article 14.

ENDOCRINE DISRUPTORS: No component has been shown to be or is suspected to cause endocrine disruption to terrestrial or aquatic animals.

ENVIRONMENTAL EXPOSURE CONTROLS: Controls should be engineered to prevent release to the environment, including procedures to prevent spills, atmospheric release and release to waterways.

GHS Statements for Environmental Exposure Controls: Not applicable.

13. DISPOSAL CONSIDERATIONS

PRECAUTIONS TO BE FOLLOWED DURING WASTE HANDLING: Wear proper protective equipment when handling waste materials.

GHS Statements for Waste Handling: P501: Dispose of contents/containers in accordance with all local, regional, national and international regulations.

DISPOSAL CONTAINERS: Waste materials must be placed in and shipped in appropriate 5-gallon or 55-gallon poly or metal waste pails or drums. Permeable cardboard containers are not appropriate and should not be used. Ensure that any required marking or labeling of the containers be done to all applicable regulations.

DISPOSAL METHODS: It is the responsibility of the generator to determine at the time of disposal whether the product meets the criteria of a hazardous waste per regulations of the jurisdiction in which the waste is generated and/or disposed of. Waste disposal must be in accordance with appropriate Federal, State, Provincial and local regulations. This product, if unaltered by use, may be disposed of by treatment at a permitted facility or as advised by your local hazardous waste regulatory authority. Shipment of wastes must be done with appropriately permitted and registered transporters.

U.S. EPA WASTE NUMBER: Not applicable to wastes consisting only of these products.

CANADIAN HAZARDOUS WASTE REGULATIONS: As supplied, these products should be tested to see if it meets the criteria of hazardous wastes per Canadian Environmental Protection Agency) regulations and the Canadian Environmental Protection Act, 1999 (CEPA).

Canadian Environmental Protection Act (CEPA) Priority Substances Lists: The Isopropyl Alcohol component is listed as a Substance With Greatest Potential For Human Exposure Substance on Environment Canada/Health Canada Pilot Project List (CEPA 1999, Section 73). Meets categorization criteria: *may present, to individuals in Canada, the greatest potential for exposure; or *are persistent or bioaccumulative in accordance with the regulations, and inherently toxic to human beings or to non-human organisms, as determined by laboratory or other studies.

EUROPEAN WASTE CODES FOR PRODUCT: Wastes from MFSU and Removal of Printing Inks: 08 03 99: Wastes Not Otherwise Specified

EU WASTE FRAMEWORK DIRECTIVE, ANNEX III - WASTE - HAZARDOUS PROPERTIES: These products do not meet the criteria of any hazardous waste property. The components of these products have designated waste codes as listed below.

Isopropyl Alcohol: HP3 Flammable Waste (FW); HP5 Specific Target Organ Toxicity (STOT)/Aspiration Toxicity

AUSTRALIAN HAZARDOUS WASTE REGULATIONS: As supplied, these products should be tested to see if it meets the criteria of hazardous wastes per Australian Department of Agriculture, Water and the Environment regulations. If wastes are to be exported, they should be tested to see if they have requirements under the Australian Hazardous Waste (Regulation of Exports and Imports) Act 1989 and further of the Basel Convention where the waste has any of the characteristics mentioned in Annex III to the Basel Convention.

14. TRANSPORTATION INFORMATION

U.S. DEPARTMENT OF TRANSPORTATION: These products are not classified as dangerous goods, per U.S. DOT regulations, under 49 CFR 172.101.

14. TRANSPORTATION INFORMATION (Continued)

TRANSPORT CANADA, TRANSPORTATION OF DANGEROUS GOODS REGULATIONS: These products are NOT classified as dangerous goods, per regulations of Transport Canada.

INTERNATIONAL AIR TRANSPORT ASSOCIATION SHIPPING INFORMATION (IATA): These products are NOT classified as dangerous goods.

INTERNATIONAL MARITIME ORGANIZATION SHIPPING INFORMATION (IMO): These products are NOT classified as dangerous goods.

EUROPEAN AGREEMENT CONCERNING THE INTERNATIONAL CARRIAGE OF DANGEROUS GOODS BY ROAD (ADR): These products are NOT classified by the United Nations Economic Commission for Europe to be dangerous goods.

AUSTRALIAN FEDERAL OFFICE OF ROAD SAFETY CODE FOR THE TRANSPORTATION OF DANGEROUS GOODS BY ROAD OR RAIL: These products are NOT classified as dangerous goods, per regulations of the Australian Federal Office of Road Safety.

TRANSPORT IN BULK ACCORDING TO ANNEX II OF MARPOL 73/78 AND THE IBC CODE: Not applicable.

ENVIRONMENTAL HAZARDS: These products are neither environmentally hazardous according to the criteria of the UN Model Regulations (as reflected in the IMDG Code, ADR, RID, and ADN); no component meets the criteria of environmentally hazardous.

15. REGULATORY INFORMATION

UNITED STATES REGULATIONS:

U.S. SARA Reporting Requirements: The components of these products are subject to the reporting requirements of Sections 302, 304, and 313 of Title III of the Superfund Amendments and Reauthorization Act and are listed as follows:

CHEMICAL NAME	SARA 302 (40 CFR 355, Appendix A)	SARA 304 (40 CFR Table 302.4)	SARA 313 (40 CFR 372.65)
Copper Compounds	No	No	N100
Isopropyl Alcohol (mfg-strong acid process)	No	No	Yes

U.S. SARA Threshold Planning Quantity (TPQ): There are no specific Threshold Planning Quantities for this material. The default Federal SDS submission and inventory requirement filing threshold of 10,000 lb (4,540 kg) may apply, per 40 CFR 370.20.

U.S. CERCLA Reportable Quantity (RQ): Not applicable. Copper compounds do not have a specific assigned CERCLA RQ, but compounds in the broad class are CERCLA hazardous substances. For metals listed under CERCLA (including copper compounds), no reporting of releases of the solid form is required if the mean diameter of the pieces of the solid metal released is greater than 100 micrometers (0.004 inches) (Ref: Footnote after Table 302.4 in 40 CFR 302.4).

U.S. TSCA Inventory Status: The components of these products are listed on the TSCA Inventory.

U.S. Hazardous Air Pollutant (HAPs): The components of these products are not listed by the EPA under section 112(b) of the Clean Air Act as a 'HAP'.

U.S. Clean Air Act (CA 112r) Threshold Quantity (TQ): Not applicable.

California Safe Drinking Water And Toxic Enforcement Act (Proposition 65): No component is on the California Proposition 65 Lists. No Proposition 65 warning is required.

CANADIAN REGULATIONS:

Canadian DSL/NDSL Inventory Status: Components listed by CAS# in Section 3 (Composition and Information on Ingredients) are listed on the DSL Inventory.

Canadian WHMIS HPR 2015 Classification and Symbols: See Section 2 for classification and symbols under WHMIS GHS 2015.

EUROPEAN UNION REGULATIONS:

Safety, Health, and Environmental Regulations/Legislation Specific for the Product: Currently, there is no specific legislation pertaining to these products.

Chemical Safety Assessment: No data available. The chemical safety assessment is required for some substances according to European Union Regulation (EC) 1907/2006, Article 14.

AUSTRALIAN REGULATIONS:

Australian Inventory Of Chemical Substances (AICS) Status: Components listed by CAS# in Section 3 (Composition and Information on Ingredients) are listed on the AICS.

Hazardous Substances Information System (HSIS): Components listed by CAS# in Section 3 (Composition and Information on Ingredients) are not listed in the HSIS.

Standard for the Uniform Scheduling of Drugs and Poisons: Not applicable.

CHINESE REGULATIONS:

Chinese Inventory of Existing Chemical Substances Status: Components listed by CAS# in Section 3 (Composition and Information on Ingredients) are on the Chinese Inventory of Existing Chemical Substances (IECSC).

JAPANESE REGULATIONS:

Japanese ENCS Inventory: Components listed by CAS# in Section 3 (Composition and Information on Ingredients) are on the ENCS Inventory or are excepted.

Japanese Ministry of Economy, Trade, and Industry (METI) Status: Components listed by CAS# in Section 3 (Composition and Information on Ingredients) are not listed as Class I Specified Chemical Substances, Class II Specified Chemical Substances, or Designated Chemical Substances by the Japanese METI.

Poisonous and Deleterious Substances Control Law: Components listed by CAS# in Section 3 (Composition and Information on Ingredients) are not listed as a Specified Poisonous Substance under the Poisonous and Deleterious Substances Control Law.

KOREAN REGULATIONS:

Korean Existing Chemical Substances Inventory Status: Components are listed on the Korean Existing Chemicals List, as indicated in composition tables in Section 3 (Composition and Information on Ingredients).

NEW ZEALAND REGULATIONS:

New Zealand Inventory of Chemicals (NZIoC): Components listed by CAS# in Section 3 (Composition and Information on Ingredients) are on the NZIoC.

15. REGULATORY INFORMATION (Continued)

MEXICAN REGULATIONS:

Mexican Workplace Regulations (NOM-018-STPS-2000): These products are classified as hazardous.

TAIWANESE REGULATIONS:

Taiwan Existing Chemical Substances Inventory Status: Components listed by CAS# in Section 3 (Composition and Information on Ingredients) are listed on the Taiwan Existing Chemicals List.

16. OTHER INFORMATION

REVISION DETAILS: May 2017: Conversion of old MSDS to GHS compliant SDS. June 2018: Review and up-date entire SDS for most current regulations. April 2022: Review and revise entire SDS for current compliance of all jurisdictions of the SDS.

REFERENCES AND DATA SOURCES: Contact the supplier for information.

METHODS OF EVALUATING INFORMATION FOR THE PURPOSE OF CLASSIFICATION: Bridging principles were used to classify these products.

PREPARED BY: CHEMICAL SAFETY ASSOCIATES, Inc., PO Box 1961, Hilo, HI 96721, 808/969-4846

DYNAMIC

The data in this Safety Data Sheet is true and accurate to the best of Dynamic Color Company's knowledge. However, since data, safety standards, and government regulations are subject to change conditions of handling, use, or misuse are beyond the control of Dynamic Color, Dynamic Color Company MAKES NO WARRANTY, EITHER EXPRESSED OR IMPLIED, WITH RESPECT TO THE COMPLETENESS OR CONTINUING ACCURACY OF THE INFORMATION CONTAINED HEREIN AND DISCLAIMS ALL LIABILITY FOR RELIANCE THEREON. The user is required to comply with all laws and regulations relating to the purchase, use, storage, and disposal of the product. User must be familiar with and follow generally accepted safe handling procedures of chemicals, and is solely responsible for any effects caused by its misuse or mixing of this chemical with any other substance.

DEFINITIONS OF TERMS

A large number of abbreviations and acronyms appear on an SDS. Some of these, which are commonly used, include the following:

CAS #: This is the Chemical Abstract Service Number that uniquely identifies each constituent.

EXPOSURE LIMITS IN AIR:

CEILING LEVEL: The concentration that shall not be exceeded during any part of the working exposure.

DFG MAK Germ Cell Mutagen Categories: 1: Germ cell mutagens which have been shown to increase the mutant frequency in the progeny of exposed humans. 2: Germ cell mutagens which have been shown to increase the mutant frequency in the progeny of exposed mammals. 3A: Substances which have been shown to induce genetic damage in germ cells of human of animals, or which produce mutagenic effects in somatic cells of mammals *in vivo* and have been shown to reach the germ cells in an active form. 3B: Substances which are suspected of being germ cell mutagens because of their genotoxic effects in mammalian somatic cell *in vivo*, in exceptional cases, substances for which there are no *in vivo* data, but which are clearly mutagenic *in vitro* and structurally related to known *in vivo* mutagens. 4: Not applicable (Category 4 carcinogenic substances are those with non-genotoxic mechanisms of action. By definition, germ cell mutagens are genotoxic. Therefore, a Category 4 for germ cell mutagens cannot apply. At some time in the future, it is conceivable that a Category 4 could be established for genotoxic substances with primary targets other than DNA [e.g., purely aneugenic substances] if research results make this seem sensible.) 5: Germ cell mutagens, the potency of which is considered to be so low that, provided the MAK value is observed, their contribution to genetic risk for humans is expected not to be significant.

DFG MAK Pregnancy Risk Group Classification: Group A: A risk of damage to the developing embryo or fetus has been unequivocally demonstrated. Exposure of pregnant women can cause damage of the developing organism, even when MAK and BAT (Biological Tolerance Value for Working Materials) values are observed. Group B: Currently available information indicates a risk of damage to the developing embryo or fetus must be considered to be probable. Damage to the developing organism cannot be excluded when pregnant women are exposed, even when MAK and BAT values are observed. Group C: There is no reason to fear a risk of damage to the developing embryo or fetus when MAK and BAT values are observed. Group D: Classification in one of the groups A-C is not yet possible because, although the data available may indicate a trend, they are not sufficient for final evaluation.

IDLH-Immediately Dangerous to Life and Health: This level represents a concentration from which one can escape within 30-minutes without suffering escape-preventing or permanent injury.

LOQ: Limit of Quantitation.

MAK: Federal Republic of Germany Maximum Concentration Values in the workplace.

NE: Not Established. When no exposure guidelines are established, an entry of NE is made for reference.

NIC: Notice of Intended Change.

NIOSH CEILING: The exposure that shall not be exceeded during any part of the workday. If instantaneous monitoring is not feasible, the ceiling shall be assumed as a 15-minute TWA exposure (unless otherwise specified) that shall not be exceeded at any time during a workday.

NIOSH RELs: NIOSH's Recommended Exposure Limits.

PEL-Permissible Exposure Limit: OSHA's Permissible Exposure Limits. This exposure value means exactly the same as a TLV, except that it is enforceable by OSHA. The OSHA Permissible Exposure Limits are based in the 1989 PELs and the June, 1993 Air Contaminants Rule (Federal Register: 58: 35338-35351 and 58: 40191). Both the current PELs and the vacated PELs are indicated. The phrase, "Vacated 1989 PEL," is placed next to the PEL that was vacated by Court Order.

SKIN: Used when a there is a danger of cutaneous absorption.

STEL-Short Term Exposure Limit: Short Term Exposure Limit, usually a 15-minute time-weighted average (TWA) exposure that should not be exceeded at any time during a workday, even if the 8-hr TWA is within the TLV-TWA, PEL-TWA or REL-TWA.

TLV-Threshold Limit Value: An airborne concentration of a substance that represents conditions under which it is generally believed that nearly all workers may be repeatedly exposed without adverse effect. The duration must be considered, including the 8-hour.

TWA-Time Weighted Average: Time Weighted Average exposure concentration for a conventional 8-hr (TLV, PEL) or up to a 10-hr (REL) workday and a 40-hr workweek.

HAZARDOUS MATERIALS IDENTIFICATION SYSTEM HAZARD RATINGS:

This rating system was developed by the National Paint and Coating Association and has been adopted by industry to identify the degree of chemical hazards.

HEALTH HAZARDS: 0 (Minimal Hazard): No significant health risk, irritation of skin or eyes not anticipated. *Skin Irritation:* Essentially non-irritating. *PII or Draize* = "0". *Eye Irritation:* Essentially non-irritating, or minimal effects which clear in < 24 hours [e.g., mechanical irritation]. Draize = "0". *Oral Toxicity* LD_{50} *Rat:* < 5000 mg/kg. *Dermal Toxicity* LD_{50}*/Rat or Rabbit:* < 2000 mg/kg. *Inhalation Toxicity 4-hrs* LC_{50} *Rat:* < 20 mg/L); **1** (Slight Hazard): Minor reversible injury may occur; slightly or mildly irritating. *Skin Irritation:* Slightly or mildly irritating. *Eye Irritation:* Slightly or mildly irritating. *Oral Toxicity* LD_{50} *Rat:* > 500-5000 mg/kg. *Dermal Toxicity* LD_{50}*/Rat or Rabbit:* > 1000-2000 mg/kg. *Inhalation Toxicity* LC_{50} *4-hrs Rat:* > 2-20 mg/L). **2** (Moderate Hazard): Temporary or transitory injury may occur. *Skin Irritation:* Moderately irritating, primary irritant; sensitizer. PII or Draize > 0, < 5.

HAZARDOUS MATERIALS IDENTIFICATION SYSTEM HAZARD RATINGS (continued):

HEALTH HAZARDS (continued): 2 (continued): *Eye Irritation:* Moderately to severely irritating and/or corrosive; reversible corneal opacity; corneal involvement or irritation clearing in 8-21 days. Draize > 0, ≤ 25. *Oral Toxicity* LD_{50} *Rat:* > 50-500 mg/kg. *Dermal Toxicity* LD_{50}*/Rat or Rabbit:* > 200-1000 mg/kg. **3** (Serious Hazard): Major injury likely unless prompt action is taken and medical treatment is given; high level of toxicity; corrosive. *Skin Irritation:* Severely irritating and/or corrosive; may destroy dermal tissue, cause skin burns, dermal necrosis. PII or Draize > 5-8 with destruction of tissue. *Eye Irritation:* Corrosive, irreversible destruction of ocular tissue; corneal involvement or irritation persisting for more than 21 days. Draize > 80 with effects irreversible in 21 days. *Oral Toxicity* LD_{50} *Rat:* > 1-50 mg/kg. *Dermal Toxicity* LD_{50}*/Rat or Rabbit:* > 20-200 mg/kg. *Inhalation Toxicity* LC_{50} *4-hrs Rat:* > 0.05-0.5 mg/L); **4** (Severe Hazard: Life-threatening; major or permanent damage may result from single or repeated exposure. *Skin Irritation:* Not appropriate. Do not rate as a "4", based on skin irritation alone. *Eye Irritation:* Not appropriate. Do not rate as a "4", based on eye irritation alone. *Oral Toxicity* LD_{50} *Rat:* ≤ 1 mg/kg. *Dermal Toxicity* LD_{50}*/Rat or Rabbit:* ≤ 20 mg/kg. *Inhalation Toxicity* LC_{50} *4-hrs Rat:* ≤ 0.05 mg/L).

FLAMMABILITY HAZARD: 0 (Minimal Hazard-Materials that will not burn in air when exposure to a temperature of 815.5°C [1500°F] for a period of 5 minutes.); **1** (Slight Hazard-Materials that must be pre-heated before ignition can occur. Material require considerable pre-heating, under all ambient temperature conditions before ignition and combustion can occur, including: Materials that will burn in air when exposed to a temperature of 815.5°C (1500°F) for a period of 5 minutes or less; Liquids, solids and semisolids having a flash point at or above 93.3°C [200°F] (e.g. OSHA Class IIIB, or; Most ordinary combustible materials [e.g. wood, paper, etc.]); **2** (Moderate Hazard-Materials that must be moderately heated or exposed to relatively high ambient temperatures before ignition can occur. Materials in this degree would not, under normal conditions, form hazardous atmospheres in air, but under high ambient temperatures or moderate heating may release vapor in sufficient quantities to produce hazardous atmospheres in air, including: Liquids having a flash-point at or above 37.8°C [100°F]; Solid materials in the form of course dusts that may burn rapidly but that generally do not form explosive atmospheres; Solid materials in a fibrous or shredded form that may burn rapidly and create flash fire hazards (e.g. cotton, sisal, hemp; Solids and semisolids that readily give off flammable vapors.); **3** (Serious Hazard- Liquids and solids that can be ignited under almost all ambient temperature conditions. Materials in this degree produce hazardous atmospheres with air under almost all ambient temperatures, or, unaffected by ambient temperature, are readily ignited under almost all conditions, including: Liquids having a flash point below 22.8°C [73°F] and having a boiling point at or above 38°C [100°F] and below 37.8°C [100°F] [e.g. OSHA Class IB and IC]; Materials that on account of their physical form or environmental conditions can form explosive mixtures with air and are readily dispersed in air [e.g., dusts of combustible solids, mists or droplets of flammable liquids]; Materials that burn extremely rapidly, usually by reason of self-contained oxygen [e.g. dry nitrocellulose and many organic peroxides]); **4** (Severe Hazard-Materials that will rapidly or completely vaporize at atmospheric pressure and normal ambient temperature or that are readily dispersed in air, and which will burn readily, including: Flammable gases; Flammable cryogenic materials; Any liquid or gaseous material that is liquid while under pressure and has a flash point below 22.8°C [73°F] and a boiling point below 37.8°C [100°F] [e.g. OSHA Class IA; Material that ignite spontaneously when exposed to air at a temperature of 54.4°C [130°F] or below [e.g. pyrophoric]).

PHYSICAL HAZARD: 0 (*Water Reactivity:* Materials that do not react with water. *Organic Peroxides:* Materials that are normally stable, even under fire conditions and will not react with water. *Explosives:* Substances that are Non-Explosive. *Unstable Compressed Gases:* No Rating. *Pyrophorics:* No Rating. *Oxidizers:* No "0" rating allowed. *Unstable Reactives:* Substances that will not polymerize, decompose, condense or self-react.); **1** (*Water Reactivity:* Materials that change or decompose upon exposure to moisture. *Organic Peroxides:* Materials that are normally stable, but can become unstable at high temperatures and pressures. These materials may react with water, but will not release energy. *Explosives:* Division 1.5 & 1.6 substances that are very insensitive explosives or that do not have a mass explosion hazard. *Compressed Gases:* Pressure below OSHA definition. *Pyrophorics:* No Rating. *Oxidizers:* Packaging Group III; Solids: any material that in either concentration tested, exhibits a mean burning time less than or equal to the mean burning time of a 3:7 potassium bromate/cellulose mixture and the criteria for Packing Group I and II are not met. Liquids: any material that exhibits a mean pressure rise time less than or equal to the pressure rise time of a 1:1 nitric acid (65%)/cellulose mixture and the criteria for Packing Group I and II are not met. *Unstable Reactives:* Substances that may decompose, condense or self-react, but only under conditions of high temperature and/or pressure and have little or no potential to cause significant heat generation or explosive hazard. Substances that readily undergo hazardous polymerization in the absence of inhibitors.); **2** (*Water Reactivity:* Materials that may react violently with water. *Organic Peroxides:* Materials that, in themselves, are normally unstable and will readily undergo violent chemical change, but will not detonate. These materials may also react violently with water. *Explosives:* Division 1.4 – Explosive substances where the explosive effect are largely confined to the package and no projection of fragments of appreciable size or range are expected. An external fire must not cause virtually instantaneous explosion of almost the entire contents of the package. *Compressed Gases:* Pressurized and meet OSHA definition but < 514.7 psi absolute at 21.1°C [70°F] [500 psig]. *Pyrophorics:* No Rating.

16. OTHER INFORMATION (Continued)

DEFINITIONS OF TERMS (Continued)

HAZARDOUS MATERIALS IDENTIFICATION SYSTEM HAZARD RATINGS (continued):

PHYSICAL HAZARD (continued):2 (continued): *Oxidizers:* Packing Group II Solids: any material that, either in concentration tested, exhibits a mean burning time of less than or equal to the mean burning time of a 2:3 potassium bromate/cellulose mixture and the criteria for Packing Group I are not met. Liquids: any material that exhibits a mean pressure rise time less than or equal to the pressure rise of a 1:1 aqueous sodium chlorate solution (40%)/cellulose mixture and the criteria for Packing Group I are not met. *Unstable Reactives:* Substances that may polymerize, decompose, condense, or self-react at ambient temperature and/or pressure, but have a low potential for significant heat generation or explosion. Substances that readily form peroxides upon exposure to air or oxygen at room temperature); 3 (*Water Reactivity:* Materials that may form explosive reactions with water. *Organic Peroxides:* Materials that are capable of detonation or explosive reaction, but require a strong initiating source, or must be heated under confinement before initiation; or materials that react explosively with water. *Explosives:* Division 1.2 – Explosive substances that have a fire hazard and either a minor blast hazard or a minor projection hazard or both, but do not have a mass explosion hazard. *Compressed Gases:* Pressure ≥ 514.7 psi absolute at 21.1°C (70°F) [500 psig]. *Pyrophorics:* No Rating. *Oxidizers:* Packing Group I Solids: any material that, in either concentration tested, exhibits a mean burning time less than the mean burning time of a 3:2 potassium bromate/cellulose mixture. Liquids: Any material that spontaneously ignites when mixed with cellulose in a 1:1 ratio, or which exhibits a mean pressure rise time less than the pressure rise time of a 1:1 perchloric acid (50%)/cellulose mixture. *Unstable Reactives:* Substances that may polymerize, decompose, condense or self-react at ambient temperature and/or pressure and have a moderate potential to cause significant heat generation or explosion.); 4 (*Water Reactivity:* Materials that react explosively with water without requiring heat or confinement. *Organic Peroxides:* Materials that are readily capable of detonation or explosive decomposition at normal temperature and pressures. *Explosives:* Division 1.1 & 1.2-explosive substances that have a mass explosion hazard or have a projection hazard. A mass explosion is one that affects almost the entire load instantaneously. *Compressed Gases:* No Rating. *Pyrophorics:* Add to the definition of Flammability "4". *Oxidizers:* No "4" rating. *Unstable Reactives:* Substances that may polymerize, decompose, condense or self-react at ambient temperature and/or pressure and have a high potential to cause significant heat generation or explosion.).

NATIONAL FIRE PROTECTION ASSOCIATION HAZARD RATINGS:

HEALTH HAZARD: 0 (materials that, under emergency conditions, would offer no hazard beyond that of ordinary combustible materials): Gases and vapors whose LC_{50} for acute inhalation toxicity is greater than 10,000 ppm. Dusts and mists whose LC_{50} for acute inhalation toxicity is greater than 200 mg/L. Materials whose LD_{50} for acute dermal toxicity is greater than 2000 mg/kg. Materials whose LD_{50} for acute oral toxicity is greater than 2000 mg/kg. Materials that are essentially non-irritating to the respiratory tract, eyes and skin. 1 (materials that, under emergency conditions, can cause significant irritation): Gases and vapors whose LC_{50} for acute inhalation toxicity is greater than 5,000 ppm but less than or equal to 10,000 ppm. Dusts and mists whose LC_{50} for acute inhalation toxicity is greater than 10 mg/l. but less than or equal to 200 mg/L. Materials whose LD_{50} for acute dermal toxicity is greater than 1000 mg/kg but less than or equal to 2000 mg/kg. Materials whose LD_{50} for acute oral toxicity is greater than 500 mg/kg but less than or equal to 2000 mg/kg. Materials that cause slight to moderate irritation to the respiratory tract, eyes and skin. 3 (materials that, under emergency conditions, can cause serious or permanent injury): Gases and vapors whose LC_{50} for acute inhalation toxicity is greater than 1,000 ppm but less than or equal to 3,000 ppm. Dusts and mists whose LC_{50} for acute inhalation toxicity is greater than 0.5 mg/L but less than or equal to 2 mg/L. Materials whose LD_{50} for acute dermal toxicity is greater than 40 mg/kg but less than or equal to 200 mg/kg. Materials whose LD_{50} for acute oral toxicity is greater than 5 mg/kg but less than or equal to 50 mg/kg. Any liquid whose saturated vapor concentration at 20°C (68°F) is equal to or greater than one-fifth its LC_{50} for acute inhalation toxicity, if its LC_{50} is less than or equal to 3000 ppm and that does not meet the criteria for degree of hazard 4. Compressed liquefied gases with boiling points between -30°C (-22°F) and -55°C (-66.5°F) that cause frostbite and irreversible tissue damage. Materials that are respiratory irritants. Cryogenic gases that cause frostbite and irreversible tissue damage. Materials that are corrosive to the respiratory tract. Materials that are corrosive to the eyes or cause irreversible corneal opacity. Materials that are corrosive to the skin. 4 (materials that, under emergency conditions, can be lethal): Gases and vapors whose LC_{50} for acute inhalation toxicity less than or equal to 1,000 ppm. Dusts and mists whose LC_{50} for acute inhalation toxicity is less than or equal to 0.5 mg/L. Materials whose LD_{50} for acute dermal toxicity is less than or equal to 40 mg/kg. Materials whose LD_{50} for acute oral toxicity is less than or equal to 5 mg/kg. Any liquid whose saturated vapor concentration at 20°C (68°F) is equal to or greater than one-fifth its LC_{50} for acute inhalation toxicity, if its LC_{50} is less than or equal to 1000 ppm.

FLAMMABILITY HAZARD: 0 Materials that will not burn under typical fire conditions, including intrinsically noncombustible materials such as concrete, stone, and sand: Materials that will not burn in air when exposed to a temperature of 816°C (1500°F) for a period of 5 minutes in according with Annex D. 1 Materials that must be preheated before ignition can occur. Materials in this degree require considerable preheating, under all ambient temperature conditions, before ignition and combustion can occur: Materials that will burn in air when exposed to a temperature of 816°C (1500°F) for a period of 5 minutes in accordance with Annex D. Liquids, solids and semisolids having a flash point at or above 93.4°C (200°F) (e.g., Class IIIB liquids). Liquids with a flash point greater than 35°C (95°F) that do not sustain combustion when tested using the Method of Testing for Sustained Combustibility, per 49 CFR 173, Appendix H or the UN Recommendation on the Transport of Dangerous Goods, Model Regulations (current edition) and the related Manual of Tests and Criteria (current edition). Liquids with a flash point greater than 35°C (95°F) in a water-miscible solution or dispersion with a water non-combustible liquid/solid content of more than 85 percent by weight. Liquids that have no fire point when tested by ASTM D 92 Standard Test Method for Flash and Fire Points by Cleveland Open Cup, up to a boiling point of the liquid or up to a temperature at which the sample being tested shows an obvious physical change. Combustible pellets with a representative diameter of greater than 2 mm (10 mesh). Solids containing greater than 0.5 percent by weight of a flammable or combustible solvent are rated by the closed-up flash point of the solvent. Most ordinary combustible materials. 2 Materials that must be moderately heated or exposed to relatively high ambient temperatures before ignition can occur. Materials in this degree would not under normal conditions form hazardous atmospheres with air, but under high ambient temperatures or under moderate heating could release vapor in sufficient quantities to produce hazardous atmospheres with air: Liquids having a flash point at or above 37.8°C (100°F) and below 93.4°C (200°F) (e.g., Class II and Class IIIA liquids.) Solid materials in the form of powders or coarse dusts of representative diameter between 420 microns (40 mesh) and 2 mm (10 mesh) that burn rapidly but that generally do not form explosive mixtures in air. Solid materials in fibrous or shredded form that burn rapidly and create flash fire hazards, such as cotton, sisal and hemp. Solids and semisolids that readily give off flammable vapors. Solids containing greater than 0.5 percent by weight of a flammable or combustible solvent are rated by the closed cup flash point of the solvent. 3 Liquids and solids that can be ignited under almost all ambient temperature conditions. Materials in this degree produce hazardous atmospheres with air under almost all ambient temperatures or, though unaffected by ambient temperatures, are readily ignited under almost all conditions: Liquids having a flash point below 22.8°C (73°F) and having a boiling point at or above 37.8°C (100°F) and those liquids having a flash point at or above 22.8°C (73°F) and below 37.8°C (100°F) and below 37.8°C (100°F) (e.g., Class IB and IC liquids).

NATIONAL FIRE PROTECTION ASSOCIATION HAZARD RATINGS (continued):

FLAMMABILITY HAZARD (continued): 3 (continued): Materials that, on account of their physical form or environmental conditions, can form explosive mixtures with air and are readily dispersed in air. Flammable or combustible dusts with a representative diameter less than 420 microns (40 mesh). Materials that burn with extreme rapidity, usually by reason of self-contained oxygen (e.g., dry nitrocellulose and many organic peroxides). Solids containing greater than 0.5 percent by weight of a flammable or combustible solvent are rated by the closed cup flash point of the solvent. 4 Materials that will rapidly or completely vaporize at atmospheric pressure and normal ambient temperature or that are readily dispersed in air and will burn readily: Flammable gases. Flammable cryogenic materials. Any liquid or gaseous materials that is liquid while under pressure and has a flash point below 22.8°C (73°F) and a boiling point below 37.8°C (100°F) (e.g., Class IA liquids). Materials that ignite when exposed to air, Solids containing greater than 0.5 percent by weight of a flammable or combustible solvent are rated by the closed cup flash point of the solvent.

INSTABILITY HAZARD: 0 Materials that in themselves are normally stable, even under fire conditions: Materials that have an estimated instantaneous power density (product of heat of reaction and reaction rate) at 250°C (482°F) below 0.01 W/mL. Materials that do not exhibit an exotherm at temperatures less than or equal to 500°C (932°F) when tested by differential scanning calorimetry. 1 Materials that in themselves are normally stable, but that can become unstable at elevated temperatures and pressures: Materials that have an estimated instantaneous power density (product of heat of reaction and reaction rate) at 250°C (482°F) at or above 0.01 W/mL and below 10 W/mL. 2 Materials that readily undergo violent chemical change at elevated temperatures and pressures: Materials that have an estimated instantaneous power density (product of heat of reaction and reaction rate) at 250°C (482°F) at or above 10 W/mL and below 100W/mL. 3 Materials that in themselves are capable of detonation or explosive decomposition or explosive reaction, but that require a strong initiating source or that must be heated under confinement before initiation: Materials that have an estimated instantaneous power density (product of heat of reaction and reaction rate) at 250°C (482°F) at or above 100 W/mL and below 1000 W/mL. Materials that are sensitive to thermal or mechanical shock at elevated temperatures and pressures. 4 Materials that in themselves are readily capable of detonation or explosive decomposition or explosive reaction at normal temperatures and pressures: Materials that have an estimated instantaneous power density (product of heat of reaction and reaction rate) at 250°C (482°F) of 1000 W/mL or greater. Materials that are sensitive to localized thermal or mechanical shock at normal temperatures and pressures.

FLAMMABILITY LIMITS IN AIR:

Much of the information related to fire and explosion is derived from the National Fire Protection Association (NFPA). Flash Point - Minimum temperature at which a liquid gives off sufficient vapors to form an ignitable mixture with air. Autoignition Temperature: The minimum temperature required to initiate combustion in air with no other source of ignition. LEL - the lowest percent of vapor in air, by volume, that will explode or ignite in the presence of an ignition source. UEL - the highest percent of vapor in air, by volume, that will explode or ignite in the presence of an ignition source.

TOXICOLOGICAL INFORMATION:

Human and Animal Toxicology: Possible health hazards as derived from human data, animal studies, or from the results of studies with similar compounds are presented. Definitions of some terms used in this section are: LD_{50} - Lethal Dose (solids & liquids) which kills 50% of the exposed animals; LC_{50} - Lethal Concentration (gases) which kills 50% of the exposed animals; ppm concentration expressed in parts of material per million parts of air or water; mg/m^3 concentration expressed in weight of substance per volume of air; mg/kg quantity of material, by weight, administered to a test subject, based on their body weight in kg. Other measures of toxicity include TDLo, the lowest dose to cause a symptom and TCLo the lowest concentration to cause a symptom; TDo, LDLo, and LDo, or TC, TCo, LCLo, and LCo, the lowest dose (or concentration) to cause lethal or toxic effects.

Cancer Information: The sources are: IARC - the International Agency for Research on Cancer; NTP - the National Toxicology Program, RTECS - the Registry of Toxic Effects of Chemical Substances, OSHA and CAL/OSHA. IARC and NTP rate chemicals on a scale of decreasing potential to cause human cancer with rankings from 1 to 4. Subrankings (2A, 2B, etc.) are also used. **Other Information:** BEI - ACGIH Biological Exposure Indices, represent the levels of determinants which are most likely to be observed in specimens collected from a healthy worker who has been exposed to chemicals to the same extent as a worker with inhalation exposure to the TLV.

REPRODUCTIVE TOXICITY INFORMATION:

A mutagen is a chemical that causes permanent changes to genetic material (DNA) such that the changes will propagate through generational lines. An embryotoxin is a chemical that causes damage to a developing embryo (e.g., within the first eight weeks of pregnancy in humans), but the damage does not propagate across generational lines. A teratogen is a chemical that causes damage to a developing fetus, but the damage does not propagate across generational lines. A reproductive toxin is any substance that interferes in any way with the reproductive process.

ECOLOGICAL INFORMATION:

EC is the effect concentration in water. BCF = Bioconcentration Factor, which is used to determine if a substance will concentrate in lifeforms which consume contaminated plant or animal matter. TL_m = median threshold limit; Coefficient of Oil/Water Distribution is represented by log K_{ow} or log K_{oc} and is used to assess a substance's behavior in the environment.

REGULATORY INFORMATION:

U.S. and CANADA:

ACGIH: American Conference of Governmental Industrial Hygienists, a professional association which establishes exposure limits.

This section explains the impact of various laws and regulations on the material. **EPA** is the U.S. Environmental Protection Agency. **NIOSH** is the National Institute of Occupational Safety and Health, which is the research arm of the U.S. Occupational Safety and Health Administration (OSHA). **WHMIS** is the Canadian Workplace Hazardous Materials Information System. DOT and TC are the U.S. Department of Transportation and the Transport Canada, respectively. Superfund Amendments and Reauthorization Act (SARA); the Canadian Domestic/Non-Domestic Substances List (DSL/NDSL); the U.S. Toxic Substance Control Act (TSCA); Marine Pollutant status according to the DOT; the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA or Superfund); and various state regulations. This section also includes information on the precautionary warnings which appear on the material's package label. OSHA - U.S. Occupational Safety and Health Administration.

EUROPEAN and INTERNATIONAL:

The DFG: This is the Federal Republic of Germany's Occupation Health Agency, similar to the U.S. OSHA. EU is the European Union (formerly known as the EEC, European Economic Community). EINECS: This is the European Inventory of Now-Existing Chemical Substances. The ARD is the European Agreement Concerning the International Carriage of Dangerous Goods by Road and the RID are the International Regulations Concerning the Carriage of Dangerous Goods by Rail. AICS is the Australian Inventory of Chemical Substances. METI is the Japanese Ministry of Economy, Trade, and Industry.

DYNAMIC
Color Co.

64503-6301

SAFETY DATA SHEET

Prepared to U.S. OSHA, CMA, ANSI, Canadian WHMIS 2015 GHS, European Union CLP EC 1272/2008 & the 8th ATP 2016/918, the Korean MoEL (Public Notice 2016-19), Singapore SS586 Standard – Parts 2 & 3, Chinese GB/T 16483-2008 & GB/T 17519-2013, New Zealand Hazardous Substances (Hazard Classification) Notice 2020, *Australian WorkSafe* GHS 7, 2022, *Japanese* JIS Z 7252: 2019 (Classification of chemicals) and JIS Z 7253: 2019 (Communication of information on danger of chemicals – labeling and safety data sheets), *and the Global Harmonization Standard*

1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY UNDERTAKING

PRODUCT IDENTIFIER USED ON LABEL:

Product Identifier: **TATTOO PAINT No. LAV**
TATTOO PAINT No. TRP

Other Means of Identification: Not Applicable

RECOMMENDED USE of the PRODUCT and RESTRICTIONS on USE:

Recommended Use: Tissue Staining Paint

Restrictions on Use: Other than Recommended Use

SHIPPING CLASSIFICATION:

U.N. Number: None Allocated

U.N. Dangerous Goods Class/Subsidiary Risk: None Allocated

HAZCHEM Code (Australia): None Allocated

Poisons Schedule Number (Australia): None Allocated

NAME, ADDRESS and TELEPHONE NUMBER of CHEMICAL MANUFACTURER, IMPORTER or OTHER RESPONSIBLE PARTY:

U.S. Supplier/Manufacturer's Name: **DYNAMIC COLOR COMPANY**

Address: PO Box 21083
Fort Lauderdale, FL, 33335 USA

Information Phone: + 1-954-462-0261 9 a.m. to 4 p.m. (U.S. East Coast Time Zone)

Emergency Phone: 1-800-233-8332 9 a.m. to 4 p.m. (U.S. East Coast Time Zone)
(from U.S., Canada, Puerto Rico, U.S. Virgin Islands)

Email: sales@dynamiccolor.com

Date of Preparation: April 12, 2001

Date of Revision: April 10, 2022

2. HAZARD IDENTIFICATION

GLOBAL HARMONIZATION LABELING AND CLASSIFICATION: Classified in accordance with Global Harmonization Standard under U.S. OSHA Hazard Communication Standard, Canadian *WHMIS 2015 GHS*, European CLP Regulation (EC) 1272/2008, Japanese JIS Z 7252: 2019 (Classification of chemicals) and JIS Z 7253: 2019 (Communication of information on danger of chemicals – labeling and safety data sheets), New Zealand Hazardous Substances (Hazard Classification) Notice 2020, Australian WorkSafe GHS 7, 2022, Singapore SS586, Chinese GHS standard. Korean MoEL classification is given separately.

Classification: Eye Irritation Category 2A, Specific Target Organs Toxicity (Inhalation-Irritation) Single Exposure Category 3

Signal Word: Warning

Hazard Statements: H319: Causes serious eye irritation. H335: May cause respiratory irritation.

Precautionary Statements:

Prevention: P261: Avoid breathing mists or sprays. P264 + P265: Wash hands and other contamination areas thoroughly after handling. Do not touch eyes.P270: Do not eat, drink or smoke when using these products. P271: Use only outdoors or in a well-ventilated area. P280: Wear protective gloves, protective clothing, eye protection, face protection.

Response: P305 + P351 + P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. P337 + P317: If eye irritation persists: Get medical help. P304 + P340: If inhaled, remove victim to fresh air and keep at rest in a position comfortable for breathing. P319: Get medical help if you feel unwell. P321: Specific treatment (remove from exposure and treat symptoms). Refer to Safety Data Sheet for more information.

Storage: P403 + P233: Store in a well-ventilated place. Keep container tightly closed. P405: Store locked up.

Disposal: P501: Dispose of contents/containers in accordance with all local, regional, national and international regulations.

Hazard Symbols/Pictograms: GHS07

KOREAN MoEL (Notice 2016-19) LABELING AND CLASSIFICATION: Classified in accordance with MoEL Notice 2016-19. Under the MoEL regulation, no differences in classification are applicable.

PERCENT OF UNKNOWN ACUTE TOXICITY: Unknown toxicity by inhalation is 78-80%. Unknown dermal toxicity is 90%. Unknown oral toxicity is 78-80%

2. HAZARD IDENTIFICATION (Continued)

EMERGENCY OVERVIEW: Product Description: These products are lavender-colored liquids that have a mild odor. **Health Hazards:** The primary health hazard associated with these products is the potential for mild irritation of contaminated tissue. Eye contact may cause more serious irritation. The Titanium Dioxide component is a suspect carcinogen by inhalation of respirable particles. Due to the liquid form of these products, this hazard is not expected to be significant. **Flammability Hazards:** These products are not flammable. If involved in a fire, the product may decompose to produce carbon, metallic, nitrogen and titanium oxides, chlorine, formaldehyde, hydrogen chloride. **Reactivity Hazards:** These products are not reactive. **Environmental Hazards:** Not tested. These products may have adverse effects when released into the environment. **Emergency Recommendations:** Emergency responders must wear the personal protective equipment suitable for the situation to which they are responding.

3. COMPOSITION and INFORMATION ON INGREDIENTS

Chemical Name	CAS #	European EINECS # / Index #	Japanese MITI/ENC #	Korean ECL #	New Zealand NZIoC #	Chinese IECSC Inventory	Taiwan NESCI ECS Inventory	Australian AICS	% w/w	LABEL ELEMENTS GHS under U.S. OSHA, Canadian WHMIS HPR-GHS & EU Classification (1272/2008), Japanese, New Zealand, Taiwan, Chinese and Korean Regulations Korean ISHA Classification Hazard Statements
Titanium Dioxide (C.I. White 7)	13463-67-7	236-675-7 No Index #	1-558	KE-33900	May be used under an appropriate group standard	Listed	Listed	Listed	10%	GHS Under All Countries Classification: Not classified Self-Classification Classification: Carcinogenic Cat. 2 Hazard Statements: H351: Suspected of causing cancer. Under U.S. OSHA, Canadian WHMIS HPR-2015 only Classification: Combustible Dust Hazard
Isopropyl Alcohol	67-63-0	200-661-7 603-117-00-0	2-207	KE-29363	HSR001180	Listed	Listed	Listed	10%	GHS Under All Countries Harmonized Classification: Flammable Liquid Cat. 2, Eye Irritation Cat. 2A, Specific Target Organ Toxicity (Inhalation, Ingestion-Narcotic Effects) Single Exposure Cat. 3 Hazard Statements: H226: Flammable liquid and vapor. H319: Causes serious eye irritation. H336: May cause drowsiness or dizziness.
Proprietary Violet Pigment					May be used under an appropriate group standard	Listed	Listed	Listed	0.5-2%	Classification: Not Classified
Water	7732-18-5	231-791-2 No Index #	Not Identified in the Listing	KE-35400	Excepted	Listed	Listed	Listed	Balance	Classification: Not Classified

See Section 15 for information on other country inventory listing of components, as applicable
The specific chemical identity and/or exact percentage (concentration) of composition has been withheld as a trade secret.

4. FIRST-AID MEASURES

PROTECTION OF FIRST AID RESPONDERS: Rescuers should be taken for medical attention, if necessary. Only trained personnel should administer supplemental oxygen and/or cardio-pulmonary resuscitation, if necessary.

DESCRIPTION OF FIRST AID MEASURES: Victim(s) must be taken for medical attention. Take copy of label and MSDS to physician or other health professional with victim(s). Remove victim(s) to fresh air, as quickly as possible.

Skin Exposure: If these products contaminate the skin and adverse effect occurs, begin decontamination with running water. Minimum flushing is for 20 minutes. The contaminated individual must seek medical attention if any adverse effects occur after flushing.

GHS Precautionary Statements for Skin Exposure: None applicable.

Eye Exposure: If these products enter the eyes, open contaminated individual's eyes while under gently running water. Use sufficient force to open eyelids. Have contaminated individual "roll" eyes. Minimum flushing is for 20 minutes. Contaminated individual must seek medical attention if adverse effect continues after flushing.

GHS Precautionary Statements for Eye Exposure: P305 + P351 + P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. P337 + P317: If eye irritation persists: Get medical attention.

Inhalation: If aerosols are inhaled and adverse effect occurs, remove victim to fresh air. The contaminated individual must seek medical attention if any adverse effects occur.

GHS Precautionary Statements for Inhalation Exposure: P304 + P340: If inhaled, remove victim to fresh air and keep at rest in a position comfortable for breathing. P319: Get medical help if you feel unwell.

Ingestion: If swallowed, CALL PHYSICIAN OR POISON CONTROL CENTER FOR MOST CURRENT INFORMATION. If professional advice is not available, do not induce vomiting. Never induce vomiting or give diluents (milk or water) to someone who is unconscious, having convulsions, or unable to swallow. If victim is convulsing, maintain an open airway and obtain immediate medical attention.

GHS Precautionary Statements for Ingestion Exposure: None applicable.

4. FIRST-AID MEASURES (Continued)

MOST IMPORTANT SYMPTOMS and EFFECTS, WHETHER ACUTE OR DELAYED: See Sections 2 (Hazard Information) and 11 (Toxicological Information) for information.

Acute:

Symptoms/Effects: May cause irritation by contact with the skin, eyes and respiratory system. All potential effects are dependent on concentration and duration of exposure.

Symptoms/Effects After Inhalation: EXPOSURE TO HIGH CONCENTRATIONS: Coughing, or respiratory irritation.

Symptoms/Effects After Skin Contact: Mild irritation.

Symptoms/Effects After Eye Contact: Moderate irritation of eye tissue.

Symptoms/Effects After Ingestion: Irritation of digestive system.

Chronic:

Symptoms/Effects After Skin Contact: Dermatitis (dry, red skin).

Symptoms/Effects After Eye Contact: None known.

Symptoms/Effects After Accidental Injection: None known.

Symptoms/Effects After Inhalation: None known.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: Skin or respiratory conditions may be aggravated by exposure to these products.

INDICATION OF IMMEDIATE MEDICAL ATTENTION AND SPECIAL TREATMENT IF NEEDED: Treat symptoms and eliminate exposure.

COMPLIANCE WITH SAFE WORK AUSTRALIA MODEL CODE FIRST AID IN THE WORKPLACE CODE OF PRACTICE: Compliance with all requirements should be in place under Section 3 (First Aid Equipment, Facilities and Training) should be in place.

5. FIRE-FIGHTING MEASURES

FLASH POINT: Not flammable. **AUTOIGNITION TEMPERATURE:** Not applicable.

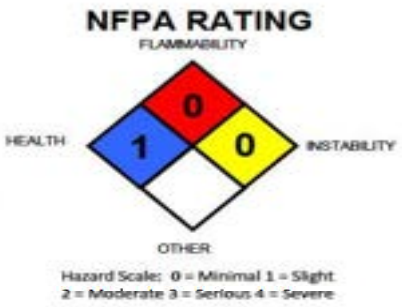
FLAMMABLE LIMITS (in air by volume, %): Not applicable.

FIRE EXTINGUISHING MEDIA: Unless incompatibilities exist for surrounding materials, carbon dioxide, water spray, 'ABC' type chemical extinguishers, foam, dry chemical and halon extinguishers can be used to fight fires involving these products.

UNSUITABLE FIRE EXTINGUISHING MEDIA: None known.

SPECIAL HAZARDS ARISING FROM THE SUBSTANCE: When involved in a fire, this material may decompose and produce irritating vapors and toxic gases (e.g., carbon, metallic, nitrogen and titanium oxides, chlorine, formaldehyde, hydrogen chloride).

Explosion Sensitivity to Mechanical Impact or Static Discharge: Not sensitive.



SPECIAL PROTECTIVE ACTIONS FOR FIRE-FIGHTERS: Incipient fire responders should wear eye protection. Structural firefighters must wear Self-Contained Breathing Apparatus and full protective equipment. Due to the presence of pigment, the runoff water from these products can discolor contaminated objects. If possible, prevent runoff water from entering storm drains, bodies of water, or other environmentally sensitive areas. If necessary, rinse fire-response equipment with soapy water before returning it to service.

GHS Statements for Fire Response: None applicable.

Australian HazChem Code: Not applicable.

6. ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS AND EMERGENCY PROCEDURES: Uncontrolled releases should be responded to by trained personnel using pre-planned procedures. Proper protective equipment should be used. Call CHEMTREC (1-800-424-9300) for emergency assistance. Or if in Canada, call CANUTEC (613-996-6666). The atmosphere must at least 19.5 percent Oxygen before non-emergency personnel can be allowed in the area without Self-Contained Breathing Apparatus and fire protection.

PERSONAL PROTECTIVE EQUIPMENT: Proper protective equipment should be used.

Small Spills: Wear rubber gloves, splash goggles, and appropriate body protection.

Large Spills: Minimum Personal Protective Equipment should be rubber gloves, rubber boots, face shield, and Tyvek suit. Minimum level of personal protective equipment for releases in which the level of oxygen is less than 19.5% or is unknown must be **Level B: triple-gloves (rubber gloves and nitrile gloves over latex gloves), chemical resistant suit and boots, hard hat, and Self-Contained Breathing Apparatus.**

METHODS FOR CLEAN-UP AND CONTAINMENT:

Small Spills: Carefully absorb spill using polypads or other non-reactive absorbent. Place spilled material in appropriate container for disposal, sealing tightly. Remove all residue before decontamination of spill area.

Large Spills: Access to the spill area should be restricted. For large spills, dike or otherwise contain spill and absorb spill with polypads or other non-reactive absorbent material.

All Spills: Place all spill residue in a double plastic bag or other containment and seal. Decontaminate the area thoroughly. Do not mix with wastes from other materials. Dispose of in accordance with applicable Federal, State, and local procedures (see Section 13, Disposal Considerations). For spills on water, contain, minimize dispersion and collect. Dispose of recovered material and report spill per regulatory requirements.

ENVIRONMENTAL PRECAUTIONS: Avoid release to the environment. Run-off water may be contaminated by other materials and should be contained to prevent possible environmental damage.

REFERENCE TO OTHER SECTIONS: See information in Section 8 (Exposure Controls – Personal Protection) and Section 13 (Disposal Considerations) for additional information.

7. HANDLING and STORAGE

PRECAUTIONS FOR SAFE HANDLING: As with all chemicals, avoid getting these products ON YOU or IN YOU. Wash thoroughly after handling these products. Do not eat, drink, smoke, or apply cosmetics while handling these products. Avoid breathing aerosols from the product. Keep away from incompatible materials (see Section 10, Stability and Reactivity). Containers of these products must be properly labeled. Use in a well-ventilated location. Remove contaminated clothing.

GHS Statements for Safe Handling: P261: Avoid breathing mists or sprays. P264 + P265: Wash hands and other contamination areas thoroughly after handling. Do not touch eyes.P270: Do not eat, drink or smoke when using these products. P271: Use only outdoors or in a well-ventilated area. P280: Wear protective gloves, protective clothing, eye protection, face protection.

CONDITIONS FOR SAFE STORAGE and INCOMPATIBILITIES: Keep container tightly closed when not in use. Store containers in a cool, dry location, away from direct sunlight, sources of intense heat, or where freezing is possible. Material should be stored in secondary containers or in a diked area, as appropriate. Inspect all incoming containers before storage, to ensure containers are properly labeled and not damaged. Have appropriate extinguishing equipment in the storage area (such as sprinkler systems or portable fire extinguishers). Empty containers may contain residual product; therefore, empty containers should be handled with care. May be incompatible with water reactive materials and strong oxidizers.

GHS Statements for Safe Storage: P403 + P233: Store in a well-ventilated place. Keep container tightly closed. P405: Store locked up.

SPECIFIC USE(S): These products are for use as a skin staining paint. Follow all industry standards for use of these products.

PROTECTIVE PRACTICES DURING MAINTENANCE OF CONTAMINATED EQUIPMENT: Follow practices indicated in Section 6 (Accidental Release Measures). Make certain that application equipment is locked and tagged-out safely. Always use these products in areas where adequate ventilation is provided. Decontaminate equipment thoroughly, before maintenance begins. Collect all rinsates and dispose of according to applicable Federal, State, or local procedures, or applicable standards.

8. EXPOSURE CONTROLS - PERSONAL PROTECTION

EXPOSURE LIMITS/CONTROL PARAMETERS:

Ventilation and Engineering Controls: Use with adequate ventilation to ensure exposure levels are maintained below the limits provided in this section. Use local exhaust ventilation. Normal office ventilation conforming to the American Society of Heating, Refrigerating, and Air Conditioning Engineers (ASHRAE) Standards is adequate under normal circumstances of use. Persons using this material should consult a qualified Ventilation Engineer and/or Industrial Hygienist if concerns about exposure arise. If necessary, refer to Australian National Code of Practice for the Control of Workplace Hazardous Substances [NOHSC: 2007 (1994)] for further information.

U.S. Workplace Exposure Limits/Control Parameters:

CHEMICAL NAME	CAS #	EXPOSURE LIMITS IN AIR							
		ACGIH-TLVs		OSHA-PELs		NIOSH-RELs		NIOSH	OTHER
		TWA mg/m^3	STEL mg/m^3	TWA mg/m^3	STEL mg/m^3	TWA mg/m^3	STEL mg/m^3	IDLH mg/m^3	mg/m^3
C.I. White 7 (Titanium Dioxide)	13463-67-7	0.2 (resp. fract.) finescale particles	NE	15 (total dust); 10 (vacated 1989 PEL)	NE	See Pocket Guide App. A		5000	DFG MAK Pregnancy Risk Classification: C
Isopropyl Alcohol	67-63-0	492	984	980	500 ppm (vacated 1989 PEL)	980	1225	2000 ppm (based on LEL)	DFG MAK: TWA = 500 ppm PEAK = 2•MAK, 15 min., average value, 1-hr interval, 4 per shift DFG MAK Pregnancy Risk Classification: C

NE = Not Established.

Australian Hazardous Chemical Information System (HMIS) Exposure Standards:

CHEMICAL NAME	CAS #	EXPOSURE STANDARDS				
		TWA ppm	TWA mg/m^3	STEL ppm	STEL mg/m^3	Notes
C.I. White 7 (Titanium Dioxide)	13463-67-7	NE	10	NE	NE	(1) This value is for inhalable dust containing no asbestos and < 1% crystalline silica.
Isopropyl Alcohol	67-63-0	400	983	500	1230	Not Applicable

NE = Not Established.

UK Minimum Exposure Limits:

CHEMICAL NAME	CAS #	WORKPLACE EXPOSURE LIMIT				
		Long-Term Exposure Limit (8-Hrs TWA Reference Period)		Short-Term Exposure Limit (15-minute Reference Period)		Comments
		ppm	$mg.m^{-3}$	ppm	$mg.m^{-3}$	The Carcin, Sen and Skin notations are not exhaustive. Notations have been applied to substances identified in IOELV Directives
C.I. Pigment White 7 (Titanium Dioxide)	14363-67-7	NE	10 (total inhalable) 4 (respirable)	NE	7	NE
Isopropyl Alcohol	67-63-0	400	999	500	1250	NE

NE = Not Established.

8. EXPOSURE CONTROLS - PERSONAL PROTECTION (Continued)

EXPOSURE LIMITS/CONTROL PARAMETERS (continued):

Workplace Exposure Standards (New Zealand): Refer to the Hazardous Substances (Classes 6, 8, and 9 Controls) Regulations 2001 (Regulations 29-30).

CHEMICAL NAME	CAS #	WORKPLACE EXPOSURE STANDARDS				
		TWA ppm	TWA mg/m^3	STEL ppm	STEL mg/m^3	Notes
C.I. Pigment White 7 (Titanium Dioxide)	14363-67-7	NE	10	NE	NE	Not Applicable
Isopropyl Alcohol	67-63-0	400	983	500	1230	Not Applicable

Exposure Standards Outside the Workplace (New Zealand): Currently, there are no other exposure limits, such as TELS and EELS (See Section 12 [Ecological Information] for EEL information) established for components of these products.

Other International Occupational Exposure Limits: Currently, the following international limits established for components of these products.

C.I. Pigment White 7 (Titanium Dioxide):

	Limit Value - Eight Hours	Limit Value - Short Term
Belgium	10 mg/m^3 (1)	
Canada (Ontario)	10 mg/m^3	
Canada (Québec)	10 mg/m^3 (1)	
Denmark	6 mg/m^3 (total dust)	12 mg/m^3 (total dust)
France	11 mg/m^3 (inhalable aerosol)	
Germany (DFG)	0.3 mg/m^3 (1)(2)	2.4mg/m^3 (1)(2)(3)
Ireland	10 mg/m^3 (1) 4 mg/m^3 (2)	
Japan (JSOH)	0.3 mg/m^3 (1)	
Latvia	10 mg/m^3	
Norway	5 mg/m^3	
People's Republic of China	8 mg/m^3 (1)	
Poland	10 mg/m^3 (1)	
Romania	10 mg/m^3	15 mg/m^3 (1)
Singapore	10 mg/m^3	
South Korea	10 mg/m^3	
Spain	10 mg/m^3 (1)	
Sweden	5 mg/m^3 (inhalable aerosol)	
Switzerland	3 mg/m^3 (respirable aerosol)	
	Remarks	
Canada (Québec)	(1) Total dust.	
Germany (DFG)	(1) Respirable fraction, except ultrafine particles. (2) Multiplied by the material density. (3) 15 minutes average value.	
Ireland	(1) Inhalable fraction. (2) Respirable fraction.	
Japan - JSOH	(1) Nanoparticle, as Ti.	
Poland	(1) Inhalable fraction.	
People's Republic of China	(1) Inhalable fraction.	
Romania	(1) 15 minutes average value.	

Isopropyl Alcohol

	Limit Value - Eight Hours	Limit Value - Short Term
Austria	200 ppm; 500 mg/m^3	800 ppm; 2000 mg/m^3
Belgium	200 ppm; 500 mg/m^3	400 ppm (1); 1000 mg/m^3 (1)
Canada (Ontario)	200 ppm	400 ppm
Canada (Québec)	400 ppm; 983 mg/m^3	500 ppm; 1230 mg/m^3
Denmark	200 ppm; 490 mg/m^3	400 ppm; 980 mg/m^3
Finland	200 ppm; 500 mg/m^3	250 ppm (1); 620 mg/m^3 (1)
France		400 ppm; 980 mg/m^3
Germany (AGS)	200 ppm; 500 mg/m^3	400 ppm (1); 1000 mg/m^3 (1)
Germany (DFG)	200 ppm; 500 mg/m^3	400 ppm (1); 1000 mg/m^3 (1)
Hungary	500 mg/m^3	2000 mg/m^3
Ireland	200 ppm	400 ppm (1)
Japan (MHLW)	200 ppm	
Japan JSOH	400 ppm (1); 980 mg/m^3 (1)	
Latvia	350 mg/m^3	600 mg/m^3 (1)
Norway	100 ppm; 245 mg/m^3	
People's Republic of China	350 mg/m^3	700 mg/m^3 (1)
Poland	900 mg/m^3	1200 mg/m^3
Romania	81 ppm; 200 mg/m^3	203 ppm (1); 500 mg/m^3 (1)
Singapore	400 ppm; 983 mg/m^3	500 ppm; 1230 mg/m^3
South Korea	200 ppm; 480 mg/m^3	400 ppm; 980 mg/m^3
Spain	200 ppm; 500 mg/m^3	400 ppm; 1000 mg/m^3
Sweden	150 ppm; 350 mg/m^3	250 ppm (1); 600 mg/m^3 (1)
Switzerland	200 ppm; 500 mg/m^3	400 ppm; 1000 mg/m^3
	Remarks	
Belgium	(1) 15 minutes average value.	
Finland	(1) 15 minutes average value.	
Germany (AGS)	(1) 15 minutes average value.	
Germany (DFG)	(1) 15 minutes average value.	
Ireland	(1) 15 minutes average value.	
Japan - JSOH	(1) Occupational exposure limit ceiling: Reference value to the maximal exposure concentration of the substance during a working day.	
Latvia	(1) 15 minutes average value.	
People's Republic of China	(1) 15 minutes average value.	
Romania	(1) 15 minutes average value.	
Sweden	(1) 15 minutes average value.	

8. EXPOSURE CONTROLS - PERSONAL PROTECTION (Continued)

BIOLOGICAL MONITORING AND THE SOURCE OF THOSE VALUES:

U.S. ACGIH Biological Exposure Indices (BEIs): Currently, the following Biological Exposure Indices (BEIs) have been established for the Isopropyl Alcohol component of these products.

CHEMICAL: DETERMINANT	SAMPLING TIME	BEI
Isopropyl Alcohol (listed as 2-propanol) • Acetone in Urine	• End of Shift at End of Workweek	• 40 mg/L

UK Biological Monitoring Guidance Values (BMGVs): Currently, no BMGVs have been established for the components of these products.

Appendix E-Schedule 14 (Requirements for Health Monitoring) per Australia Safe Work Code of Practice Managing Risks and Hazardous Chemicals in the Workplace: Currently, no component of these products has an established monitoring requirement value.

PROTECTIVE EQUIPMENT: The following information on appropriate Personal Protective Equipment is provided to assist employers in complying with OSHA regulations found in 29 CFR Subpart I (beginning at 1910.132, including U.S. Federal OSHA Respiratory Protection (29 CFR 1910.134), OSHA Eye Protection 29 CFR 1910.133, OSHA Hard Protection 29 CFR 1910.138, OSHA Foot Protection 29 CFR 1910.136 and OSHA Body Protection 29 CFR1910.132), equivalent standards of Canada (including CSA Respiratory Standard Z94.4-02, Z94.3-M1982, *Industrial Eye and Face Protectors* and CSA Standard Z195-02, *Protective Footwear*), standards of EU member states (including EN 529:2005 for respiratory PPE, CEN/TR 15419:2006 for hand/body protection, and CR 13464:1999 for face/eye protection), standards of Australia (including AS/NZS 1715:1994 for respiratory PPE, AS/NZS 4501.2:2006 for protective clothing, AS/NZS 2161.1:2000 for glove selection, and AS/NZS 1336:1997 for eye protection), or standards of Japan (including JIS T 8116:2005 for glove selection, JIS T 8150:2006 for respiratory PPE, JIS T 8147:2003 for eye protectors, and JIS T 8030:2005 for protective clothing). Please reference applicable regulations and standards for relevant details.

Respiratory Protection: Maintain airborne contaminant concentrations below exposure limits listed in this section, if applicable. If respiratory protection is needed, use only protection authorized in applicable regulations. Oxygen levels below 19.5% are considered IDLH by U.S. OSHA. In such atmospheres, use of a full-facepiece pressure/demand SCBA or a full facepiece, supplied air respirator with auxiliary self-contained air supply is required under OSHA's Respiratory Protection Standard (1910.134-1998). The following are U.S. NIOSH Respiratory Equipment Guidelines for Isopropyl Alcohol are provided to assist in selection of respiratory PPE in event of presence of aerosols.

Isopropyl Alcohol

Concentration	Respiratory Protection
Up to 2000 ppm:	Any Supplied-Air Respirator (SAR) operated in a continuous-flow mode, or any Chemical Cartridge Respirator with a full facepiece and organic vapor cartridge(s), or any Air-Purifying, Full-Facepiece Respirator (gas mask) with a chin-style, front- or back-mounted organic vapor canister, or any Powered, Air-Purifying Respirator (PAPR) with organic vapor cartridge(s), or any Self-Contained Breathing Apparatus (SCBA) with a full facepiece, or any SAR with a full facepiece.

Eye Protection: Depending on the use of these products, splash goggles or safety glasses may be worn. Use goggles or safety glasses for spill response, as stated in Section 6 (Accidental Release Measures) of this SDS. If necessary, refer to appropriate regulations when selecting eye protection.

Hand Protection: Wear butyl rubber, neoprene, or nitrile rubber or latex gloves for routine use. If necessary, refer to appropriate regulations for further information.

Body Protection: Use body protection appropriate for task, such as a lab coat. If necessary, use body protection appropriate for task (e.g., Tyvek suit, rubber apron). If a hazard of injury to the feet exists due to falling objects, rolling objects, where objects may pierce the soles of the feet or where employee's feet may be exposed to electrical hazards, use foot protection, as described in appropriate regulations.

9. PHYSICAL and CHEMICAL PROPERTIES

FORM: Liquid.
COLOR: Lavender.
MOLECULAR FORMULA: Mixture.
MOLECULAR WEIGHT: Mixture.
ODOR: Mild.
ODOR THRESHOLD: Not established.
VAPOR DENSITY (air = 1): 2 (calc.)
VAPOR PRESSURE: 50 mmHg
SPECIFIC GRAVITY (water = 1): LAV: 1.3; TRP: 1.2
MELTING/FREEZING POINT: ~0°C (~32°F)
SOLUBILITY IN WATER: Dispersible in all proportions.
BOILING POINT: 92°C (197.6°F)
EVAPORATION RATE (*n*-BuAc = 1): < 1
pH: 8.46
OXIDIZING PROPERTIES: Not applicable.
PERCENT SOLIDS: 10-12%
FLAMMABILITY: Not flammable.
FLASH POINT: Not applicable.
AUTOIGNITION TEMPERATURE: Not applicable.
EXPLOSIVE PROPERTIES: Not applicable.
COEFFICIENT OF OIL/WATER DISTRIBUTION (PARTITION COEFFICIENT): Not established.
HOW TO DETECT THIS SUBSTANCE (identification properties): The odor and color of these products may be distinguishing characteristics to identify it event of a spill.

10. STABILITY and REACTIVITY

CHEMICAL STABILITY: Stable under conditions of normal temperature and pressure.
DECOMPOSITION PRODUCTS:
Combustion: If exposed to extremely high temperatures, these products can decompose to generate carbon, metallic, nitrogen and titanium oxides, chlorine, formaldehyde, hydrogen chloride. **Hydrolysis:** None known.
MATERIALS WITH WHICH SUBSTANCE IS INCOMPATIBLE: Strong oxidizers, water-reactive materials.

10. STABILITY and REACTIVITY (Continued)

POSSIBILITY OF HAZARDOUS REACTION OR POLYMERIZATION: Will not occur.

CONDITIONS TO AVOID: Exposure to or contact with extreme temperatures and incompatible chemicals.

11. TOXICOLOGICAL INFORMATION

SYMPTOMS OF EXPOSURE BY ROUTE OF EXPOSURE: The most significant routes of occupational exposure are inhalation and contact with skin and eyes. The symptoms of exposure to this material, via route of entry, are as described below.

Inhalation: These products do not normally present a significant inhalation hazard under anticipated circumstances of use. Inhalation of vapors, mists, or sprays of this material may mildly irritate the nose, throat, and other tissues of the respiratory system.

Contact with Eyes: Eye contact with this material can moderately irritate the eyes, causing discomfort, tearing, and redness. Because the eye tissue may be stained, vision may be temporarily blurred.

Contact with Skin: Skin contact may cause mild irritation in sensitive individuals. Repeated or prolonged skin exposure may cause dermatitis (dry, red skin).

Skin Absorption: No component is known to be absorbed via intact skin.

Ingestion: Though not anticipated to be a significant route of occupational exposure, ingestion of large quantities of this material may cause nausea, vomiting, diarrhea, and discoloration of the mouth, teeth, and tissues of the throat.

Injection: Accidental injection of this liquid (as may occur by a puncture with a contaminated object) will cause local pain, irritation, and redness.

HEALTH EFFECTS OR RISKS FROM EXPOSURE: In the event of exposure, the following symptoms may be observed:

Short Term: Eye contact will cause moderate irritation. Ingestion of large amounts may cause nausea, vomiting, diarrhea. Inhalation of vapors may cause adverse symptoms to the central nervous system due to the Isopropyl Alcohol component.

Long Term: Repeated or prolonged skin exposure may cause dermatitis (dry, red skin).

Hazard Scale: 0 = Minimal 1 = Slight 2 = Moderate 3 = Serious 4 = Severe * = Chronic hazard

TARGET ORGANS:

Short Term: Skin, central nervous system, eyes. **Long Term:** Skin.

OVERALL ACUTE TOXICITY ESTIMATES (ATE) FOR PRODUCT:

Oral Route: > 14,890 mg/kg; Dermal Route: > 163,998 mg/kg; Inhalation Route: > 50 mg/L

TOXICITY DATA FOR COMPONENTS: Specific toxicology data currently available for components of these products in greater than 1% concentration are as follows. Due to the large amount of data available, only human data, irritation data, LD50 oral, rat and mouse, skin, rabbit and rat, LC50 inhalation rat and mouse data are included in this SDS. Contact Dynamic Color for information on additional data available.

C.I. Pigment White 7 (Titanium Dioxide):
LD_{50} (Oral-Rat) > 2000 mg/kg (CLP Guideline Study)
LC_{50} (Inhalation-Rabbit) 4 hr: > 5.09 mg/L (OECD 403)

Isopropyl Alcohol:
LDLo (Oral-Man): 5272 mg/kg; Behavioral: coma; Vascular: BP lowering not characterized in autonomic section; Lungs, Thorax, or Respiration: chronic pulmonary edema
LDLo (Oral-Human): 3570 mg/kg; Behavioral: coma; Lungs, Thorax, or Respiration: respiratory depression; Gastrointestinal: nausea or vomiting
LDLo (Unreported-Man) = 2770 mg/kg
TDLo (Oral-Man): 14,432 mg/kg; Behavioral: coma; Vascular: BP lowering not characterized in autonomic section; Lungs, Thorax, or Respiration: dyspnea
TDLo (Oral-Human): 223 mg/kg; Behavioral: hallucinations, distorted perceptions; Cardiac: pulse rate; Vascular: BP lowering not characterized in autonomic section
TDLo (Oral-Infant): 13 gm/kg; Behavioral: somnolence (general depressed activity), irritability; Gastrointestinal: nausea or vomiting
Skin Irritancy (Rabbit): 500 mg; mild
Eye Irritancy (Rabbit): 100 mg; severe
LD_{50} (Oral-Rat) 5840 mg/kg (OECD 401)
LD_{50} (Skin-Rabbit) 16,400 mg/kg (OECD 402)
LD_{50} (Inhalation-Rat) 4 hr: > 10,000 mg/L (OECD 403)

REPEATED DOSE TOXICITY: No component has demonstrated repeated dose toxicity in either animal testing or though workplace data.

CARCINOGENIC POTENTIAL OF COMPONENTS: Components of these products are listed by agencies tracking the carcinogenic potential of chemical compounds, as follows.

C.I. Pigment White 7 (Titanium Dioxide): ACGIH TLV-A3 (Confirmed Animal Carcinogen with Unknown Relevance to Humans); IARC-2B (Possibly Carcinogenic to Humans); MAK-4 (Substances with carcinogenic potential for which genotoxicity plays no or at most a minor role. No significant contribution to human cancer risk is expected, provided the MAK value is observed.); NIOSH-Ca (Potential Occupational Carcinogen, with No Further Categorization)

Isopropyl Alcohol: ACGIH TLV-A4 (Not Classifiable as a Human Carcinogen); IARC-3 (Not Classifiable as to Carcinogenicity to Humans)

The remaining components of these products are not found on the following lists: U.S. EPA, U.S. NTP, U.S. OSHA, U.S. NIOSH, GERMAN MAK, IARC, and ACGIH, and therefore are neither considered to be nor suspected to be cancer-causing agents by these agencies.

IRRITANCY OF PRODUCT: Acute exposure to these products via eye contact may irritate contaminated eyes. Acute exposure to these products via skin contact and inhalation may mildly irritate contaminated tissue, especially if exposure is prolonged.

ENDOCRINE TOXICITY: No component is known or suspected to be an endocrine disruptor.

SENSITIZATION TO THE PRODUCT: The components of these products are not known to be human skin or respiratory sensitizers.

11. TOXICOLOGICAL INFORMATION (Continued)

REPRODUCTIVE TOXICITY INFORMATION: No components of these products are known to have mutagenic, embryotoxic, teratogenic or reproductive toxicity effects in humans.

12. ECOLOGICAL INFORMATION

ALL WORK PRACTICES MUST BE AIMED AT ELIMINATING ENVIRONMENTAL CONTAMINATION.

MOBILITY: These products have not been tested for mobility in soil. It is expected to be somewhat mobile in soil.

PERSISTENCE AND BIODEGRADABILITY: These products have not been tested for persistence or biodegradability. It is expected that some biodegradation will occur to these products; however, no specific information is known.

BIO-ACCUMULATION POTENTIAL: No component of these products presents a bio-accumulation potential.

EFFECT OF MATERIAL ON PLANTS or ANIMALS: These products may be harmful to plant or animal life, especially if large volumes of these products are released.

EFFECT OF CHEMICAL ON AQUATIC LIFE: These products have not been tested for aquatic toxicity. The following are aquatic toxicity data for some components of these products:

C.I. Pigment White 7 (Titanium Dioxide):
LC_{50} (*Pimephales promelas* fathead minnow) 96 hrs: > 100 mg/L (No Guideline info)
EC_{50} (*Daphnia Magna* Giant Water flea) 24 hrs: > 100 mg/L (No Guideline info)
EC_{50} (Skeletonema costatum freshwater algae) 72 hours: > 00 mg/L (No Guideline info)

Isopropyl Alcohol:
LC_{50} (*Carassius auratus* Goldfish) 96 hrs: 9640 mg/L (US EPA Committee on Methods for Toxicity Tests with Aquatic Organisms)
EC_{50} (*Daphnia Magna* Giant Water flea) 24 hrs: 10,00 mg/L (OECD 202)
EC_{10} (*Scenedesmus quadricauda* freshwater algae) 8 days: 1800 mg/L (No Guideline info)

OTHER ADVERSE EFFECTS: These products do not contain any component with known ozone depletion potential.

RESULTS OF PBT AND vPvB ASSESSMENT: No Data Available. PBT and vPvB assessments are part of the chemical safety report required for some substances in European Union Regulation (EC) 1907/2006, Article 14.

ENDOCRINE DISRUPTORS: No component has been shown to be or is suspected to cause endocrine disruption to terrestrial or aquatic animals.

ENVIRONMENTAL EXPOSURE CONTROLS: Controls should be engineered to prevent release to the environment, including procedures to prevent spills, atmospheric release and release to waterways.

GHS Statements for Environmental Exposure Controls: Not applicable.

13. DISPOSAL CONSIDERATIONS

PRECAUTIONS TO BE FOLLOWED DURING WASTE HANDLING: Wear proper protective equipment when handling waste materials.

GHS Statements for Waste Handling: P501: Dispose of contents/containers in accordance with all local, regional, national and international regulations.

DISPOSAL CONTAINERS: Waste materials must be placed in and shipped in appropriate 5-gallon or 55-gallon poly or metal waste pails or drums. Permeable cardboard containers are not appropriate and should not be used. Ensure that any required marking or labeling of the containers be done to all applicable regulations.

DISPOSAL METHODS: It is the responsibility of the generator to determine at the time of disposal whether the product meets the criteria of a hazardous waste per regulations of the jurisdiction in which the waste is generated and/or disposed of. Waste disposal must be in accordance with appropriate Federal, State, Provincial and local regulations. These products, if unaltered by use, may be disposed of by treatment at a permitted facility or as advised by your local hazardous waste regulatory authority. Shipment of wastes must be done with appropriately permitted and registered transporters.

U.S. EPA WASTE NUMBER: Not applicable to wastes consisting only of these products.

CANADIAN HAZARDOUS WASTE REGULATIONS: As supplied, these products should be tested to see if it meets the criteria of hazardous wastes per Canadian Environmental Protection Agency) regulations and the Canadian Environmental Protection Act, 1999 (CEPA).

Canadian Environmental Protection Act (CEPA) Priority Substances Lists: The Isopropyl Alcohol component is listed as a Substance With Greatest Potential For Human Exposure Substance on Environment Canada/Health Canada Pilot Project List (CEPA 1999, Section 73). Meets categorization criteria: *may present, to individuals in Canada, the greatest potential for exposure; or *are persistent or bioaccumulative in accordance with the regulations, and inherently toxic to human beings or to non-human organisms, as determined by laboratory or other studies.

EUROPEAN WASTE CODES FOR PRODUCT: Wastes from MFSU and Removal of Printing Inks: 08 03 99: Wastes Not Otherwise Specified

EU WASTE FRAMEWORK DIRECTIVE, ANNEX III - WASTE - HAZARDOUS PROPERTIES: These products do not meet the criteria of any hazardous waste property. The components of these products have designated waste codes as listed below.

Isopropyl Alcohol: HP3 Flammable Waste (FW); HP5 Specific Target Organ Toxicity (STOT)/Aspiration Toxicity

C.I. Pigment White 7 (Titanium Dioxide): HP7 Carcinogenic: Waste which induces cancer or increases it incidence; in powder form containing 1% or more of particles with aerodynamic diameter ≤ 10 µm.

AUSTRALIAN HAZARDOUS WASTE REGULATIONS: As supplied, these products should be tested to see if it meets the criteria of hazardous wastes per Australian Department of Agriculture, Water and the Environment regulations. If wastes are to be exported, they should be tested to see if they have requirements under the Australian Hazardous Waste (Regulation of Exports and Imports) Act 1989 and further of the Basel Convention where the waste has any of the characteristics mentioned in Annex III to the Basel Convention.

14. TRANSPORTATION INFORMATION

U.S. DEPARTMENT OF TRANSPORTATION: These products are not classified as dangerous goods, per U.S. DOT regulations, under 49 CFR 172.101.

14. TRANSPORTATION INFORMATION (Continue)

TRANSPORT CANADA, TRANSPORTATION OF DANGEROUS GOODS REGULATIONS: These products are NOT classified as dangerous goods, per regulations of Transport Canada.

INTERNATIONAL AIR TRANSPORT ASSOCIATION SHIPPING INFORMATION (IATA): These products are NOT classified as dangerous goods.

INTERNATIONAL MARITIME ORGANIZATION SHIPPING INFORMATION (IMO): These products are NOT classified as dangerous goods.

EUROPEAN AGREEMENT CONCERNING THE INTERNATIONAL CARRIAGE OF DANGEROUS GOODS BY ROAD (ADR): These products are NOT classified by the United Nations Economic Commission for Europe to be dangerous goods.

AUSTRALIAN FEDERAL OFFICE OF ROAD SAFETY CODE FOR THE TRANSPORTATION OF DANGEROUS GOODS BY ROAD OR RAIL: These products are NOT classified as dangerous goods, per regulations of the Australian Federal Office of Road Safety.

TRANSPORT IN BULK ACCORDING TO ANNEX II OF MARPOL 73/78 AND THE IBC CODE: Not applicable.

ENVIRONMENTAL HAZARDS: These products are neither environmentally hazardous according to the criteria of the UN Model Regulations (as reflected in the IMDG Code, ADR, RID, and ADN); no component meets the criteria of environmentally hazardous.

15. REGULATORY INFORMATION

UNITED STATES REGULATIONS:

U.S. SARA Reporting Requirements: The components of these products are subject to the reporting requirements of Sections 302, 304, and 313 of Title III of the Superfund Amendments and Reauthorization Act and are listed as follows:

CHEMICAL NAME	SARA 302 (40 CFR 355, Appendix A)	SARA 304 (40 CFR Table 302.4)	SARA 313 (40 CFR 372.65)
Isopropyl Alcohol (mfg-strong acid process)	No	No	Yes

U.S. SARA Threshold Planning Quantity (TPQ): There are no specific Threshold Planning Quantities for this material. The default Federal SDS submission and inventory requirement filing threshold of 10,000 lb (4,540 kg) may apply, per 40 CFR 370.20.

U.S. CERCLA Reportable Quantity (RQ): Not applicable.

U.S. TSCA Inventory Status: The components of these products are listed on the TSCA Inventory.

U.S. Hazardous Air Pollutant (HAPs): The components of these products are not listed by the EPA under section 112(b) of the Clean Air Act as a 'HAP'.

U.S. Clean Air Act (CA 112r) Threshold Quantity (TQ): Not applicable.

California Safe Drinking Water And Toxic Enforcement Act (Proposition 65): The Titanium Dioxide component, (airborne, unbound particles of respirable size) is on the California Proposition 65 Lists. If airborne particles of these products are generated, the following warning must be on packaging and labeling of these products: WARNING! These products contain a component known to the State of California to cause cancer. As a liquid, this warning is not expected to be required.

CANADIAN REGULATIONS:

Canadian DSL/NDSL Inventory Status: Components listed by CAS# in Section 3 (Composition and Information on Ingredients) are listed on the DSL Inventory.

Canadian WHMIS HPR 2015 Classification and Symbols: See Section 2 for classification and symbols under WHMIS GHS 2015.

EUROPEAN UNION REGULATIONS:

Safety, Health, and Environmental Regulations/Legislation Specific for the Product: Currently, there is no specific legislation pertaining to these products.

Chemical Safety Assessment: No data available. The chemical safety assessment is required for some substances according to European Union Regulation (EC) 1907/2006, Article 14.

AUSTRALIAN REGULATIONS:

Australian Inventory Of Chemical Substances (AICS) Status: Components listed by CAS# in Section 3 (Composition and Information on Ingredients) are listed on the AICS.

Hazardous Substances Information System (HSIS): Components listed by CAS# in Section 3 (Composition and Information on Ingredients) are not listed in the HSIS.

Standard for the Uniform Scheduling of Drugs and Poisons: Not applicable.

CHINESE REGULATIONS:

Chinese Inventory of Existing Chemical Substances Status: Components listed by CAS# in Section 3 (Composition and Information on Ingredients) are on the Chinese Inventory of Existing Chemical Substances (IECSC).

JAPANESE REGULATIONS:

Japanese ENCS Inventory: Components listed by CAS# in Section 3 (Composition and Information on Ingredients) are on the ENCS Inventory or are excepted.

Japanese Ministry of Economy, Trade, and Industry (METI) Status: Components listed by CAS# in Section 3 (Composition and Information on Ingredients) are not listed as Class I Specified Chemical Substances, Class II Specified Chemical Substances, or Designated Chemical Substances by the Japanese METI.

Poisonous and Deleterious Substances Control Law: Components listed by CAS# in Section 3 (Composition and Information on Ingredients) are not listed as a Specified Poisonous Substance under the Poisonous and Deleterious Substances Control Law.

KOREAN REGULATIONS:

Korean Existing Chemical Substances Inventory Status: Components are listed on the Korean Existing Chemicals List, as indicated in composition tables in Section 3 (Composition and Information on Ingredients).

15. REGULATORY INFORMATION (Continued)

NEW ZEALAND REGULATIONS:

New Zealand Inventory of Chemicals (NZIoC): Components listed by CAS# in Section 3 (Composition and Information on Ingredients) are on the NZIoC.

MEXICAN REGULATIONS:

Mexican Workplace Regulations (NOM-018-STPS-2000): These products are classified as hazardous.

TAIWANESE REGULATIONS:

Taiwan Existing Chemical Substances Inventory Status: Components listed by CAS# in Section 3 (Composition and Information on Ingredients) are listed on the Taiwan Existing Chemicals List.

16. OTHER INFORMATION

REVISION DETAILS: May 2017: Conversion of old MSDS to GHS compliant SDS. June 2018: Review and up-date entire SDS for most current regulations. April 2022: Review and revise entire SDS for current compliance of all jurisdictions of the SDS.

REFERENCES AND DATA SOURCES: Contact the supplier for information.

METHODS OF EVALUATING INFORMATION FOR THE PURPOSE OF CLASSIFICATION: Bridging principles were used to classify these products.

PREPARED BY: CHEMICAL SAFETY ASSOCIATES, Inc., PO Box 1961, Hilo, HI 96721, 808/969-4846

DYNAMIC

The data in this Safety Data Sheet is true and accurate to the best of Dynamic Color Company's knowledge. However, since data, safety standards, and government regulations are subject to change conditions of handling, use, or misuse are beyond the control of Dynamic Color, Dynamic Color Company MAKES NO WARRANTY, EITHER EXPRESSED OR IMPLIED, WITH RESPECT TO THE COMPLETENESS OR CONTINUING ACCURACY OF THE INFORMATION CONTAINED HEREIN AND DISCLAIMS ALL LIABILITY FOR RELIANCE THEREON. The user is required to comply with all laws and regulations relating to the purchase, use, storage, and disposal of the product. User must be familiar with and follow generally accepted safe handling procedures of chemicals, and is solely responsible for any effects caused by its misuse or mixing of this chemical with any other substance.

DEFINITIONS OF TERMS

A large number of abbreviations and acronyms appear on an SDS. Some of these, which are commonly used, include the following:

CAS #: This is the Chemical Abstract Service Number that uniquely identifies each constituent.

EXPOSURE LIMITS IN AIR:

CEILING LEVEL: The concentration that shall not be exceeded during any part of the working exposure.

DFG MAK Germ Cell Mutagen Categories: 1: Germ cell mutagens which have been shown to increase the mutant frequency in the progeny of exposed humans. 2: Germ cell mutagens which have been shown to increase the mutant frequency in the progeny of exposed mammals. 3A: Substances which have been shown to induce genetic damage in germ cells of human of animals, or which produce mutagenic effects in somatic cells of mammals *in vivo* and have been shown to reach the germ cells in an active form. 3B: Substances which are suspected of being germ cell mutagens because of their genotoxic effects in mammalian somatic cell *in vivo*; in exceptional cases, substances for which there are no *in vivo* data, but which are clearly mutagenic *in vitro* and structurally related to known *in vivo* mutagens. 4: Not applicable (Category 4 carcinogenic substances are those with non-genotoxic mechanisms of action. By definition, germ cell mutagens are genotoxic. Therefore, a Category 4 for germ cell mutagens cannot apply. At some time in the future, it is conceivable that a Category 4 could be established for genotoxic substances with primary targets other than DNA [e.g., purely aneugenic substances] if research results make this seem sensible.) 5: Germ cell mutagens, the potency of which is considered to be so low that, provided the MAK value is observed, their contribution to genetic risk for humans is expected not to be significant.

DFG MAK Pregnancy Risk Group Classification: Group A: A risk of damage to the developing embryo or fetus has been unequivocally demonstrated. Exposure of pregnant women can cause damage of the developing organism, even when MAK and BAT (Biological Tolerance Value for Working Materials) values are observed. Group B: Currently available information indicates a risk of damage to the developing embryo or fetus must be considered to be probable. Damage to the developing organism cannot be excluded when pregnant women are exposed, even when MAK and BAT values are observed. Group C: There is no reason to fear a risk of damage to the developing embryo or fetus when MAK and BAT values are observed. Group D: Classification in one of the groups A-C is not yet possible because, although the data available may indicate a trend, they are not sufficient for final evaluation.

IDLH-Immediately Dangerous to Life and Health: This level represents a concentration from which one can escape within 30-minutes without suffering escape-preventing or permanent injury.

LOQ: Limit of Quantitation.

MAK: Federal Republic of Germany Maximum Concentration Values in the workplace.

NE: Not Established. When no exposure guidelines are established, an entry of NE is made for reference.

NIC: Notice of Intended Change.

NIOSH CEILING: The exposure that shall not be exceeded during any part of the workday. If instantaneous monitoring is not feasible, the ceiling shall be assumed as a 15-minute TWA exposure (unless otherwise specified) that shall not be exceeded at any time during a workday.

NIOSH RELs: NIOSH's Recommended Exposure Limits.

PEL-Permissible Exposure Limit: OSHA's Permissible Exposure Limits. This exposure value means exactly the same as a TLV, except that it is enforceable by OSHA. The OSHA Permissible Exposure Limits are based in the 1989 PELs and the June, 1993 Air Contaminants Rule (Federal Register: 58: 35338-35351 and 58: 40191). Both the current PELs and the vacated PELs are indicated. The phrase, "Vacated 1989 PEL," is placed next to the PEL that was vacated by Court Order.

SKIN: Used when a there is a danger of cutaneous absorption.

STEL-Short Term Exposure Limit: Short Term Exposure Limit, usually a 15-minute time-weighted average (TWA) exposure that should not be exceeded at any time during a workday, even if the 8-hr TWA is within the TLV-TWA, PEL-TWA or REL-TWA.

TLV-Threshold Limit Value: An airborne concentration of a substance that represents conditions under which it is generally believed that nearly all workers may be repeatedly exposed without adverse effect. The duration must be considered, including the 8-hour.

TWA-Time Weighted Average: Time Weighted Average exposure concentration for a conventional 8-hr (TLV, PEL) or up to a 10-hr (REL) workday and a 40-hr workweek.

HAZARDOUS MATERIALS IDENTIFICATION SYSTEM HAZARD RATINGS: This rating system was developed by the National Paint and Coating Association and has been adopted by industry to identify the degree of chemical hazards.

HEALTH HAZARDS: 0 (Minimal Hazard: No significant health risk, irritation of skin or eyes not anticipated. *Skin Irritation:* Essentially non-irritating. PII or Draize = "0". *Eye Irritation:* Essentially non-irritating, or minimal effects which clear in < 24 hours [e.g., mechanical irritation]. Draize = "0". *Oral Toxicity LD_{50} Rat:* < 5000 mg/kg. *Dermal Toxicity LD_{50}/Rat or Rabbit:* < 2000 mg/kg. *Inhalation Toxicity 4-hrs LC_{50} Rat:* < 20 mg/L);

HAZARDOUS MATERIALS IDENTIFICATION SYSTEM HAZARD RATINGS (continued):

HEALTH HAZARDS (continued): 1 (Slight Hazard): Minor reversible injury may occur; slightly or mildly irritating. *Skin Irritation:* Slightly or mildly irritating. *Eye Irritation:* Slightly or mildly irritating. *Oral Toxicity LD_{50} Rat:* > 500-5000 mg/kg. *Dermal Toxicity LD_{50}/Rat or Rabbit:* > 1000-2000 mg/kg. *Inhalation Toxicity LC_{50} 4-hrs Rat:* > 2-20 mg/L); 2 (Moderate Hazard): Temporary or transitory injury may occur. *Skin Irritation:* Moderately irritating; primary irritant; sensitizer. PII or Draize > 0, < 5. *Eye Irritation:* Moderately to severely irritating and/or corrosive; reversible corneal opacity; corneal involvement or irritation clearing in 8-21 days. Draize > 0, ≤ 25. *Oral Toxicity LD_{50} Rat:* > 50-500 mg/kg. *Dermal Toxicity LD_{50}/Rat or Rabbit:* > 200-1000 mg/kg. 3 (Serious Hazard) [continued]: 3 (Serious Hazard): Major injury likely unless prompt action is taken and medical treatment is given; high level of toxicity; corrosive. *Skin Irritation:* Severely irritating and/or corrosive; may destroy dermal tissue, cause skin burns, dermal necrosis. PII or Draize > 5-8 with destruction of tissue. *Eye Irritation:* Corrosive, irreversible destruction of ocular tissue; corneal involvement or irritation persisting for more than 21 days. Draize > 80 with effects irreversible in 21 days. *Oral Toxicity LD_{50} Rat:* > 1-50 mg/kg. *Dermal Toxicity LD_{50}/Rat or Rabbit:* > 20-200 mg/kg. *Inhalation Toxicity LC_{50} 4-hrs Rat:* > 0.05-0.5 mg/L); 4 (Severe Hazard: Life-threatening; major or permanent damage may result from single or repeated exposure. *Skin Irritation:* Not appropriate. Do not rate as a "4", based on skin irritation alone. *Eye Irritation:* Not appropriate. Do not rate as a "4", based on eye irritation alone. *Oral Toxicity LD_{50} Rat:* ≤ 1 mg/kg. *Dermal Toxicity LD_{50}/Rat or Rabbit:* ≤ 20 mg/kg. *Inhalation Toxicity LC_{50} 4-hrs Rat:* ≤ 0.05 mg/L).

FLAMMABILITY HAZARD: 0 (Minimal Hazard-Materials that will not burn in air when exposure to a temperature of 815.5°C [1500°F] for a period of 5 minutes.); 1 (Slight Hazard-Materials that must be pre-heated before ignition can occur. Material require considerable pre-heating, under all ambient temperature conditions before ignition and combustion can occur, including: Materials that will burn in air when exposed to a temperature of 815.5°C (1500°F) for a period of 5 minutes or less; Liquids, solids and semisolids having a flash point at or above 93.3°C [200°F] (e.g. OSHA Class IIIB, or; Most ordinary combustible materials [e.g. wood, paper, etc.]; 2 (Moderate Hazard-Materials that must be moderately heated or exposed to relatively high ambient temperatures before ignition can occur. Materials in this degree would not, under normal conditions, form hazardous atmospheres in air, but under high ambient temperatures or moderate heating may release vapor in sufficient quantities to produce hazardous atmospheres in air, including: Liquids having a flash point at or above 37.8°C [100°F]; Solid materials in the form of course dusts that may burn rapidly but that generally do not form explosive atmospheres; Solid materials in a fibrous or shredded form that may burn rapidly and create flash fire hazards (e.g. cotton, sisal, hemp; Solids and semisolids that readily give off flammable vapors.); 3 (Serious Hazard- Liquids and solids that can be ignited under almost all ambient temperature conditions. Materials in this degree produce hazardous atmospheres with air under almost all ambient temperatures, or, unaffected by ambient temperature, are readily ignited under almost all conditions, including: Liquids having a flash point below 22.8°C [73°F] and having a boiling point at or above 38°C [100°F] and below 37.8°C [100°F] [e.g. OSHA Class IB and IC]; Materials that on account of their physical form or environmental conditions can form explosive mixtures with air and are readily dispersed in air [e.g., dusts of combustible solids, mists or droplets of flammable liquids]; Materials that burn extremely rapidly, usually by reason of self-contained oxygen [e.g. dry nitrocellulose and many organic peroxides]); 4 (Severe Hazard-Materials that will rapidly or completely vaporize at atmospheric pressure and normal ambient temperature or that are readily dispersed in air, and which will burn readily, including: Flammable gases; Flammable cryogenic materials; Any liquid or gaseous material that is liquid while under pressure and has a flash point below 22.8°C [73°F] and a boiling point below 37.8°C [100°F] [e.g. OSHA Class IA; Material that ignite spontaneously when exposed to air at a temperature of 54.4°C [130°F] or below [e.g. pyrophoric]).

PHYSICAL HAZARD: 0 (*Water Reactivity:* Materials that do not react with water. *Organic Peroxides:* Materials that are normally stable, even under fire conditions and will not react with water. *Explosives:* Substances that are Non-Explosive. *Unstable Compressed Gases:* No Rating. *Pyrophorics:* No Rating. *Oxidizers:* No "0" rating allowed. *Unstable Reactives:* Substances that will not polymerize, decompose, condense or self-react.); 1 (*Water Reactivity:* Materials that change or decompose upon exposure to moisture. *Organic Peroxides:* Materials that are normally stable, but can become unstable at high temperatures and pressures. These materials may react with water, but will not release energy. *Explosives:* Division 1.5 & 1.6 substances that are very insensitive explosives or that do not have a mass explosion hazard. *Compressed Gases:* Pressure below OSHA definition. *Pyrophorics:* No Rating. *Oxidizers:* Packaging Group III; Solids: any material that in either concentration tested, exhibits a mean burning time less than or equal to the mean burning time of a 3:7 potassium bromate/cellulose mixture and the criteria for Packing Group I and II are not met. Liquids: any material that exhibits a mean pressure rise time less than or equal to the pressure rise time of a 1:1 nitric acid (65%)/cellulose mixture and the criteria for Packing Group I and II are not met.

16. OTHER INFORMATION (Continued)

DEFINITIONS OF TERMS (Continued)

HAZARDOUS MATERIALS IDENTIFICATION SYSTEM HAZARD RATINGS (continued):

PHYSICAL HAZARD (continued): 2 (continued): *Unstable Reactives*: Substances that may decompose, condense or self-react, but only under conditions of high temperature and/or pressure and have little or no potential to cause significant heat generation or explosive hazard. Substances that readily undergo hazardous polymerization in the absence of inhibitors.); 2 (*Water Reactivity*: Materials that may react violently with water. *Organic Peroxides*: Materials that, in themselves, are normally unstable and will readily undergo violent chemical change, but will not detonate. These materials may also react violently with water. *Explosives*: Division 1.4 – Explosive substances where the explosive effect are largely confined to the package and no projection of fragments of appreciable size or range are expected. An external fire must not cause virtually instantaneous explosion of almost the entire contents of the package. *Compressed Gases*: Pressurized and meet OSHA definition but < 514.7 psi absolute at 21.1°C (70°F) [500 psig]. *Pyrophorics*: No Rating. *Oxidizers*: Packing Group II Solids: any material that, either in concentration tested, exhibits a mean burning time of less than or equal to the mean burning time of a 2:3 potassium bromate/cellulose mixture and the criteria for Packing Group I are not met. Liquids: any material that exhibits a mean pressure rise time less than or equal to the pressure rise of a 1:1 aqueous sodium chlorate solution (40%)/cellulose mixture and the criteria for Packing Group I are not met. *Unstable Reactives*: Substances that may polymerize, decompose, condense, or self-react at ambient temperature and/or pressure, but have a low potential for significant heat generation or explosion. Substances that readily form peroxides upon exposure to air or oxygen at room temperature); 3 (*Water Reactivity*: Materials that may form explosive reactions with water. *Organic Peroxides*: Materials that are capable of detonation or explosive reaction, but require a strong initiating source, or must be heated under confinement before initiation; or materials that react explosively with water. *Explosives*: Division 1.2 – Explosive substances that have a fire hazard and either a minor blast hazard or a minor projection hazard or both, but do not have a mass explosion hazard. *Compressed Gases*: Pressure ≥ 514.7 psi absolute at 21.1°C (70°F) [500 psig]. *Pyrophorics*: No Rating. *Oxidizers*: Packing Group I Solids: any material that, in either concentration tested, exhibits a mean burning time less than the mean burning time of a 3:.2 potassium bromate/cellulose mixture. Liquids: Any material that spontaneously ignites when mixed with cellulose in a 1:1 ratio, or which exhibits a mean pressure rise time less than the pressure rise time of a 1:1 perchloric acid (50%)/cellulose mixture. *Unstable Reactives*: Substances that may polymerize, decompose, condense or self-react at ambient temperature and/or pressure and have a moderate potential to cause significant heat generation or explosion.); 4 (*Water Reactivity*: Materials that react explosively with water without requiring heat or confinement. *Organic Peroxides*: Materials that are readily capable of detonation or explosive decomposition at normal temperature and pressures. *Explosives*: Division 1.1 & 1.2-explosive substances that have a mass explosion hazard or have a projection hazard. A mass explosion is one that affects almost the entire load instantaneously. *Compressed Gases*: No Rating. *Pyrophorics*: Add to the definition of Flammability "4". *Oxidizers*: No "4" rating. *Unstable Reactives*: Substances that may polymerize, decompose, condense or self-react at ambient temperature and/or pressure and have a high potential to cause significant heat generation or explosion.).

NATIONAL FIRE PROTECTION ASSOCIATION HAZARD RATINGS:

HEALTH HAZARD: 0 (materials that, under emergency conditions, would offer no hazard beyond that of ordinary combustible materials): Gases and vapors whose LC_{50} for acute inhalation toxicity is greater than 10,000 ppm. Dusts and mists whose LC_{50} for acute inhalation toxicity is greater than 200 mg/L. Materials whose LD_{50} for acute dermal toxicity is greater than 2000 mg/kg. Materials whose LD_{50} for acute oral toxicity is greater than 2000 mg/kg. Materials that are essentially non-irritating to the respiratory tract, eyes and skin. 1 (materials that, under emergency conditions, can cause significant irritation): Gases and vapors whose LC_{50} for acute inhalation toxicity is greater than 5,000 ppm but less than or equal to 10,000 ppm. Dusts and mists whose LC_{50} for acute inhalation toxicity is greater than 10 mg/L but less than or equal to 200 mg/L. Materials whose LD_{50} for acute dermal toxicity is greater than 1000 mg/kg but less than or equal to 2000 mg/kg. Materials whose LD_{50} for acute oral toxicity is greater than 500 mg/kg but less than or equal to 2000 mg/kg. Materials that cause slight to moderate irritation to the respiratory tract, eyes and skin. 3 (materials that, under emergency conditions, can cause serious or permanent injury): Gases and vapors whose LC_{50} for acute inhalation toxicity is greater than 1,000 ppm but less than or equal to 3,000 ppm. Dusts and mists whose LC_{50} for acute inhalation toxicity is greater than 0.5 mg/L but less than or equal to 2 mg/L. Materials whose LD_{50} for acute dermal toxicity is greater than 40 mg/kg but less than or equal to 200 mg/kg. Materials whose LD_{50} for acute oral toxicity is greater than 5 mg/kg but less than or equal to 50 mg/kg. Any liquid whose saturated vapor concentration at 20°C (68°F) is equal to or greater than one-fifth its LC_{50} for acute inhalation toxicity, if its LC_{50} is less than or equal to 3000 ppm and that does not meet the criteria for degree of hazard 4. Compressed liquefied gases with boiling points between -30°C (-22°F) and -55°C (-66.5°F) that cause frostbite and irreversible tissue damage. Materials that are respiratory irritants. Cryogenic gases that cause frostbite and irreversible tissue damage. Materials that are corrosive to the respiratory tract. Materials that are corrosive to the eyes or cause irreversible corneal opacity. Materials that are corrosive to the skin. 4 (materials that, under emergency conditions, can be lethal): Gases and vapors whose LC_{50} for acute inhalation toxicity less than or equal to 1,000 ppm. Dusts and mists whose LC_{50} for acute inhalation toxicity is less than or equal to 0.5 mg/L. Materials whose LD_{50} for acute dermal toxicity is less than or equal to 40 mg/kg. Materials whose LD_{50} for acute oral toxicity is less than or equal to 5 mg/kg. Any liquid whose saturated vapor concentration at 20°C (68°F) is equal to or greater than one-fifth its LC_{50} for acute inhalation toxicity, if its LC_{50} is less than or equal to 1000 ppm.

FLAMMABILITY HAZARD: 0 Materials that will not burn under typical fire conditions, including intrinsically noncombustible materials such as concrete, stone, and sand: Materials that will not burn in air when exposed to a temperature of 816°C (1500°F) for a period of 5 minutes in according with Annex D. 1 Materials that must be preheated before ignition can occur. Materials in this degree require considerable preheating, under all ambient temperature conditions, before ignition and combustion can occur: Materials that will burn in air when exposed to a temperature of 816°C (1500°F) for a period of 5 minutes in accordance with Annex D. Liquids, solids and semisolids having a flash point at or above 93.4°C (200°F) (e.g., Class IIIB liquids). Liquids with a flash point greater than 35°C (95°F) that do not sustain combustion when tested using the Method of Testing for Sustained Combustibility, per 49 CFR 173, Appendix H or the UN Recommendation on the Transport of Dangerous Goods, Model Regulations (current edition) and the related Manual of Tests and Criteria (current edition). Liquids with a flash point greater than 35°C (95°F) in a water-miscible solution or dispersion with a water non-combustible liquid/solid content of more than 85 percent by weight. Liquids that have no fire point when tested by ASTM D 92 Standard Test Method for Flash and Fire Points by Cleveland Open Cup, up to a boiling point of the liquid or up to a temperature at which the sample being tested shows an obvious physical change. Combustible pellets with a representative diameter of greater than 2 mm (10 mesh). Solids containing greater than 0.5 percent by weight of a flammable or combustible solvent are rated by the closed-up flash point of the solvent. Most ordinary combustible materials. 2 Materials that must be moderately heated or exposed to relatively high ambient temperatures before ignition can occur. Materials in this degree would not under normal conditions form hazardous atmospheres with air, but under high ambient temperatures or under moderate heating could release vapor in sufficient quantities to produce hazardous atmospheres with air: Liquids having a flash point at or above 37.8°C (100°F) and below 93.4°C (200°F) (e.g., Class II and Class IIIA liquids.) Solid materials in the form of powders or coarse dusts of representative diameter between 420 microns (40 mesh) and 2 mm (10 mesh) that burn rapidly but that generally do not form explosive mixtures in air. Solid materials in fibrous or shredded form that burn rapidly and create flash fire hazards, such as cotton, sisal and hemp. Solids and semisolids that readily give off flammable vapors. Solids containing greater than 0.5 percent by weight of a flammable or combustible solvent are rated by the closed cup flash point of the solvent.

NATIONAL FIRE PROTECTION ASSOCIATION HAZARD RATINGS (continued):

FLAMMABILITY HAZARD (continued): 3 Liquids and solids that can be ignited under almost all ambient temperature conditions. Materials in this degree produce hazardous atmospheres with air under almost all ambient temperatures or, though unaffected by ambient temperatures, are readily ignited under almost all conditions: Liquids having a flash point below 22.8°C (73°F) and having a boiling point at or above 37.8°C (100°F) and those liquids having a flash point at or above 22.8°C (73°F) and below 37.8°C (100°F) and below 37.8°C (100°F) (e.g., Class IB and IC liquids). Materials that, on account of their physical form or environmental conditions, can form explosive mixtures with air and are readily dispersed in air. Flammable or combustible dusts with a representative diameter less than 420 microns (40 mesh). Materials that burn with extreme rapidity, usually by reason of self-contained oxygen (e.g., dry nitrocellulose and many organic peroxides). Solids containing greater than 0.5 percent by weight of a flammable or combustible solvent are rated by the closed cup flash point of the solvent. 4 Materials that will rapidly or completely vaporize at atmospheric pressure and normal ambient temperature or that are readily dispersed in air and will burn readily: Flammable gases. Flammable cryogenic materials. Any liquid or gaseous materials that is liquid while under pressure and has a flash point below 22.8°C (73°F) and a boiling point below 37.8°C (100°F) (e.g., Class IA liquids). Materials that ignite when exposed to air, Solids containing greater than 0.5 percent by weight of a flammable or combustible solvent are rated by the closed cup flash point of the solvent.

INSTABILITY HAZARD: 0 Materials that in themselves are normally stable, even under fire conditions: Materials that have an estimated instantaneous power density (product of heat of reaction and reaction rate) at 250°C (482°F) below 0.01 W/mL. Materials that do not exhibit an exotherm at temperatures less than or equal to 500°C (932°F) when tested by differential scanning calorimetry. 1 Materials that in themselves are normally stable, but that can become unstable at elevated temperatures and pressures: Materials that have an estimated instantaneous power density (product of heat of reaction and reaction rate) at 250°C (482°F) at or above 0.01 W/mL and below 10 W/mL. 2 Materials that readily undergo violent chemical change at elevated temperatures and pressures: Materials that have an estimated instantaneous power density (product of heat of reaction and reaction rate) at 250°C (482°F) at or above 10 W/mL and below 100W/mL. 3 Materials that in themselves are capable of detonation or explosive decomposition or explosive reaction, but that require a strong initiating source or that must be heated under confinement before initiation: Materials that have an estimated instantaneous power density (product of heat of reaction and reaction rate) at 250°C (482°F) at or above 100 W/mL and below 1000 W/mL. Materials that are sensitive to thermal or mechanical shock at elevated temperatures and pressures. 4 Materials that in themselves are readily capable of detonation or explosive decomposition or explosive reaction at normal temperatures and pressures: Materials that have an estimated instantaneous power density (product of heat of reaction and reaction rate) at 250°C (482°F) of 1000 W/mL or greater. Materials that are sensitive to localized thermal or mechanical shock at normal temperatures and pressures.

FLAMMABILITY LIMITS IN AIR:

Much of the information related to fire and explosion is derived from the National Fire Protection Association (NFPA). Flash Point - Minimum temperature at which a liquid gives off sufficient vapors to form an ignitable mixture with air. Autoignition Temperature: The minimum temperature required to initiate combustion in air with no other source of ignition. LEL - the lowest percent of vapor in air, by volume, that will explode or ignite in the presence of an ignition source. UEL - the highest percent of vapor in air, by volume, that will explode or ignite in the presence of an ignition source.

TOXICOLOGICAL INFORMATION:

Human and Animal Toxicology: Possible health hazards as derived from human data, animal studies, or from the results of studies with similar compounds are presented. Definitions of some terms used in this section are: LD_{50} - Lethal Dose (solids & liquids) which kills 50% of the exposed animals; LC_{50} - Lethal Concentration (gases) which kills 50% of the exposed animals; ppm concentration expressed in parts of material per million parts of air or water; mg/m^3 concentration expressed in weight of substance per volume of air; mg/kg quantity of material, by weight, administered to a test subject, based on their body weight in kg. Other measures of toxicity include TD_{Lo}, the lowest dose to cause a symptom and TC_{Lo} the lowest concentration to cause a symptom; TD_{50}, LD_{Lo}, and LD_{50}, or TC, TC_{50}, LC_{Lo}, and LC_{50}, the lowest dose (or concentration) to cause lethal or toxic effects.

Cancer Information: The sources are: IARC - the International Agency for Research on Cancer; NTP - the National Toxicology Program, RTECS - the Registry of Toxic Effects of Chemical Substances, OSHA and CAL/OSHA. IARC and NTP rate chemicals on a scale of decreasing potential to cause human cancer with rankings from 1 to 4. Subrankings (2A, 2B, etc.) are also used. **Other Information:** BEI - ACGIH Biological Exposure Indices, represent the levels of determinants which are most likely to be observed in specimens collected from a healthy worker who has been exposed to chemicals to the same extent as a worker with inhalation exposure to the TLV.

REPRODUCTIVE TOXICITY INFORMATION:

A mutagen is a chemical that causes permanent changes to genetic material (DNA) such that the changes will propagate through generational lines. An embryotoxin is a chemical that causes damage to a developing embryo (e.g., within the first eight weeks of pregnancy in humans), but the damage does not propagate across generational lines. A teratogen is a chemical that causes damage to a developing fetus, but the damage does not propagate across generational lines. A reproductive toxin is any substance that interferes in any way with the reproductive process.

ECOLOGICAL INFORMATION:

EC is the effect concentration in water. BCF = Bioconcentration Factor, which is used to determine if a substance will concentrate in lifeforms which consume contaminated plant or animal matter. TL_m = median threshold limit; Coefficient of Oil/Water Distribution is represented by log K_{ow} or log K_{oc} and is used to assess a substance's behavior in the environment.

REGULATORY INFORMATION:

U.S. and CANADA:

ACGIH: American Conference of Governmental Industrial Hygienists, a professional association which establishes exposure limits.

This section explains the impact of various laws and regulations on the material. **EPA** is the U.S. Environmental Protection Agency. **NIOSH** is the National Institute of Occupational Safety and Health, which is the research arm of the U.S. Occupational Safety and Health Administration (OSHA). **WHMIS** is the Canadian Workplace Hazardous Materials Information System. **DOT** and **TC** are the U.S. Department of Transportation and the Transport Canada, respectively. Superfund Amendments and Reauthorization Act (**SARA**); the Canadian Domestic/Non-Domestic Substances List (**DSL/NDSL**); the U.S. Toxic Substance Control Act (**TSCA**); Marine Pollutant status according to the **DOT**; the Comprehensive Environmental Response, Compensation, and Liability Act (**CERCLA or Superfund**); and various state regulations. This section also includes information on the precautionary warnings which appear on the material's package label. **OSHA** - U.S. Occupational Safety and Health Administration.

EUROPEAN and INTERNATIONAL:

The DFG: This is the Federal Republic of Germany's Occupation Health Agency, similar to the U.S. OSHA. **EU** is the European Union (formerly known as the **EEC**, European Economic Community). **EINECS:** This is the European Inventory of Now-Existing Chemical Substances. The **ARD** is the European Agreement Concerning the International Carriage of Dangerous Goods by Road and the **RID** are the International Regulations Concerning the Carriage of Dangerous Goods by Rail. **AICS** is the Australian Inventory of Chemical Substances. **METI** is the Japanese Ministry of Economy, Trade, and Industry.

DYNAMIC PLATINUM. Lavender.

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SECTION 1: Identification of the substance or mixture and of the company or firm

1.1. Product identification.

Product form: Mixture
Product name: Lavender
Trademark: DYNAMIC PLATINUM

1.2. Identified relevant uses of the substance or mixture and uses advised against.

1.2.1. Identified relevant uses

Main category of use: Professional use for tattoo or micropigmentation.

1.2.2. Uses advised against

No additional information available.

1.3. Supplier details for safety data sheet.

Maimi Paint, SL
Address: C/ Ciudad de Sevilla, number 5, 46988
Paterna, Valencia, Spain.
+34 648 61 81 88

1.4. Emergency telephone numbers.

SPAIN

Entity/Company: Information Service - Toxicological Institute of Toxicology and Forensic Sciences, Madrid Department.
Address: C/ José Echegaray, No.4, 28232 Las Rozas de Madrid.
Emergency telephone number: +34 91 562 04 20.
Comment: Toxicological information only, Information in Spanish (24h/365 days).

BPR Assistance Service:
Ministry of Health, Social Services and Equality Paseo del Prado 18-20, 28071 Madrid.
Email: biocidas-helpdesk@mscbs.es

CLP and REACH Assistance:
REACH and CLP Information Portal C/ Julián Camarillo.
6B, 4th Floor, 28037 Madrid
Email: info@reach-pir.es

AUSTRIA

BPR, REACH, and CLP Assistance:
Federal Ministry for Climate Action, Environment, Energy, Mobility, Innovation, and Technology, Div. VI/7 Stubenbastei 5, A, 1010 Vienna.
Phone: +43 1 31 00 472
Email BPR: biozide@umweltbundesamt.at
Email CLP and REACH: oficina@reachhelpdesk.at

CROATIA

BPR and REACH Assistance:
Ministry of Health, Ksaver 200a - 10000 Zagreb
Phone: +385 1 4607 555

Fax: +385 1 4607 631
Email BPR: biocidi@miz.hr
Email REACH: helpdesk-reach@miz.hr

DENMARK

REACH, CLP, and BPR Assistance:
Danish Environmental Protection Agency Tolderlundsvej 5, 5000 Odense C
Phone: +45 72 54 44 66
Email CLP: clphelpdesk@mst.dk
Email REACH: reachspm@mst.dk
Email BPR: biocideshelpdesk@mst.dk

FRANCE

BPR and CLP Assistance:
ANSES - National Agency for Food, Environmental and Occupational Health and Safety. 253 Avenue du General Leclerc, 94701 Maisons-Alfort Cedex
Email: helpdesk-biocides@anses.fr

REACH Assistance:
INERIS RDC/VIVA/EVEC Parque Tecnológico Alata BP2 - F-60550 Verneuil en Halatte
Phone: +33 8 20 20 18 16
Fax: +33 3 44 55 55 67 67

HUNGARY

BPR, CLP, and REACH Assistance:
National Public Health Center Budapest, Albert Flórián Street, 2-6
Phone: BPR: +36 1 476 1100/2960; CLP: +36 1 476 1135; REACH: +36 1 476 1134
Emails:
BPR: biocide.helpdesk (at) nnk.gov.hu
CLP: clp.helpdesk (at) nnk.gov.hu
REACH: reach.helpdesk (at) nnk.gov.hu

ITALY

BPR Assistance:
Ministry of Health: Directorate General of Medical Devices, Pharmaceutical Service and Healthcare Safety - Office VII Viale Giorgio Ribotta, 5 00144 Rome
Phone (for technical and scientific questions):
Dott.ssa Emanuela Fabbri +39 06 59 94 37 33 33
Dott.ssa Daniela Gigante +39 06 59 94 38 49
Email: Biocidi@sanita.it

CLP Assistance:
Istituto Superiore di Sanità National Center for Chemicals, Cosmetics, and Consumer Protection Viale Regina Elena 299, 00161 Rome.
Email: helpdesk.clp@iss.it

REACH Assistance:
Ministry of Economic Development Via Molise 2, 00187 Rome
Email: helpdesk tecnica@mise.gov.it

LITHUANIA

BPR Assistance:
National Public Health Center of the Ministry of Health, Vilnius Department Kalvariju St. 153, LT-08221 Vilnius,

Phone: +370 5 264 9678
Fax: +370 5 264 9664
Email: vilnius@nvsc.lt

CLP and REACH Assistance:
Environmental Protection Agency A. Juozapaviciaus str. 9, LT-09311 Vilnius
Email: reachclp@aaa.am.lt

MONTENEGRO

REACH, CLP, and BPR Assistance:
Ministry of Sustainable Development and Tourism, Agency for Nature and Environmental Protection IV Proleterske 19, 81000 Podgorica.
Email: asistencia@epa.org.me

POLAND

BPR Assistance:
Office for Registration of Medicinal Products, Medical Devices, and Biocidal Products al. Jerozolimskie 181c 02-222 Warsaw
Phone: +48 22 492 11 00
Fax: +48 22 492 11 09
Email: pb@urpl.gov.pl

CLP and REACH Assistance: Chemical Substances Office ul. Dowborczykow 30/34 90-019 Lodz
Phone: +48 42 2538 424; +48 42 2538 427
Fax: +48 42 2538 444

SERBIA

REACH, CLP, and BPR Assistance:
Ministry of Environmental Protection Address: 1, Youth Brigade Street 11070 Belgrade
Phone: +381 11 7155 225
Fax: +381 11 3132 574
Email: info.hemikalije@ekologija.gov.rs

TURKEY

REACH and CLP Assistance:
Ministry of Environment and Urbanization General Directorate of Environmental Management Department of Chemicals Management Mustafa Kemal Mahallesi Eskiÿehir Devlet Yolu (Dumlupÿnar Bulvarÿ) 9. km. No: 278 Çankaya / Ankara
Phone: +90 (312) 586 -31 87/31 88/ 31 89/ 31 90

BPR Helpdesk:
Ministry of Health Üniversiteler Mah. Dumlupÿnar Bulv. 6001. Cad. No:9 06800 Bilkent - Çankaya / Ankara-TURKEY
Phone: +90 312 565 5212 / 5218 / 5222 / 5222
E-mail: thsk.cevre@saglik.gov.tr

BELGIUM

BPR and CLP Helpdesk:
Federal Public Service (FPS) Health, Food Chain Safety and Environment Place Victor Horta 40/10, 1060 Brussels
Email BPR: info.biocides@environment.belgium.be

REACH Helpdesk:
FPS Economy, Rue du Progrès, 50, B-1210 Brussels
Phone: +32 (0) 800 120 33

Fax: +32 (0) 2 277 53 04
Email: reachinfo@economie.fgov.be

CYPRUS

BPR Assistance:
Department of Agriculture Louki Akrita 1412, Nicosia
Phone: +357 22 408 636; +357 22 408 669
Email: ahadjigeorgiou@da.moa.gov.cy; alegavriel@da.moa.gov.cy

CLP and REACH Helpdesk:
Department of Labour Inspection CY-1493, Nicosia
Phone CLP: +357 22405611; +357 22 40 56 08
Fax: +357 22663788
Email CLP: CLP@dli.mlsi.gov.cy

Phone REACH: +357 22 40 56 09; +357 22 40 56 08
Email REACH: REACH@dli.mlsi.gov.cy

ESTONIA

BPR, CLP, and REACH Helpdesk:
Health Board/Health Board of Estonia; Chemical Safety Department Paldiski mnt 81, 10617 Tallinn
Email BPR: bpr@terviseamet.ee
Email CLP: clp@terviseamet.ee
Email REACH: reach@terviseamet.ee

GERMANY

BPR, CLP, and REACH Helpdesk:
BAuA - Federal Institute for Occupational Safety and Health Friedrich-Henkel-Weg 1 - 25 D-44149 Dortmund
Phone: + 49 (0) 231 9071 2971
Fax: +49 (0) 231 9071 2679
Email: reach-clp-biozid@baua.bund.de

ICELAND

BPR, CLP, and REACH Helpdesk:
Environment Agency Iceland Suðurlandsbraut 24, 108 Reykjavik
Phone: +354 591 2000
Fax: +354 591 2010
Email: ust@ust.is

LATVIA

BPR, CLP, and REACH Helpdesk:
Latvian Environment, Geology and Meteorology Centre (LEGMC) Chemicals and Hazardous Waste Department
Maskavas iela 165, Riga, LV-1019
Phone: +371 6703 2027
Fax: +371 6714 5154
Email BPR: biocidas@lvgmc.lv
Email CLP and REACH: reach@lvgmc.lv

LUXEMBOURG

Competent Authority BPR:
Environment Administration Chemicals and Dangerous Substances Service 1, avenue du Rock'n'Roll, L-4361 Esch-

sur-Alzette, Luxembourg
Email: biocides@aev.etat.lu

NETHERLANDS

BPR Helpdesk:
CtGB - Board for the Authorization of Plant Protection Products and Biocides Bennekomseweg 41, 6717 LL Ede
Phone: +31 0 317 47 47 18 10
Email: servicedesk@ctgb.nl

CLP and REACH Helpdesk:
National Institute for Public Health and the Environment (RIVM) Antonie van Leeuwenhoeklaan 9, P.O. Box 1 - 3720 BA Bilthoven.

PORTUGAL

BPR Helpdesk:
Directorate-General of Health (DGS) Alameda D. Afonso Henriques, 45 - 1049 005 Lisbon
Phone: +351 218 430 500
Fax: +351 218 430 742
Email: geral@dgs.pt

CLP and REACH Helpdesk:
Agency for Competitiveness and Innovation, IP (Portuguese Agency for Competitiveness and Innovation) Estrada do Paço do Lumiar, Campus do Lumiar, Building A 1649 - 038 Lisbon

SLOVAKIA

BPR, CLP, and REACH Helpdesk:
Ministry of Economy of the Slovak Republic Chemicals and Preparations Division Mlynske nivy 44/a, 827 15 Bratislava
Phone: +421 2 4854 4511

SWEDEN

BPR, CLP, and REACH Helpdesk:
Swedish Chemicals Agency P.O. Box 2, SE 172 13 Sundbyberg
Phone: +46 8 5194 1100; +46 8 519 41 111

BULGARIA

Competent Authority BPR:
Ministry of Health, 5, “Sveta Nedelya” Square, Sofia-1000
Phone: +359 2 9301 214
Fax: +359 2 9883413
Email: amaslarska@mh.government.bg; vhristova@mh.government.bg
CLP and REACH Helpdesk:
Ministry of Environment and Water 67, R. W. Gladstone / 22, Maria Luisa Blvd Sofia 1000
Fax: + 359 2 980 33 17

CZECH REPUBLIC

Competent Authority BPR:
Ministry of Health of the Czech Republic Palackeho namesti 4 CZ - 128 01 Prague 2
Phone: +420 267 082 305
Fax: +420 267 082 228
Email: biocidy@mzcr.cz

CLP and REACH Helpdesk:

CENIA Vrsovicka 1442/65, 100 10 Prague 10
Phone: +420 267 125 323
Email CLP: clp@cenia.cz
Email REACH: reach@cenia.cz

FINLAND

REACH, CLP, and BPR Helpdesk:
Finnish Safety and Chemicals Agency (Tukes) P.O. Box 66, 00521 Helsinki
Phone: +358 400 393 033 (REACH/CLP); +358 50 597 6338 (BPR)

GREECE

CLP and REACH Helpdesk:
Energy, Industrial Products, and Chemicals Directorate - DG of the State General Laboratory of Chemicals under the Independent Authority for Public Revenue (IAPR) 16, An. Tsocha St. GR-11521 Athens
Phone: +30 210 64 79 286; +30 210 64 79 287
Fax: +30 210 64 66 917
Email: elhelpdesk@gcsl.gr

BPR Helpdesk:
Energy, Industrial Products, and Chemicals Directorate - DG of the State General Laboratory of Chemicals under the Independent Authority for Public Revenue (IAPR) 16, An. Tsocha St. GR-11521 Athens
Phone: +30 210 64 79 286; +30 210 64 79 287
Fax: +30 210 64 66 917
Email: elhelpdesk@gcsl.gr

IRELAND

Competent Authority BPR:
Pesticides Registration and Control Division - Department of Agriculture, Food and the Marine, Back Weston Laboratories Complex, Backweston, Celbridge, Co Kildare.
Phone: +353 1 615 7552
Email: biocides@Agriculture.gov.ie

CLP and REACH Helpdesk:
Health and Safety Authority - The Metropolitan Building, James Joyce St, Dublin 1
Phone: +353 1 614 7000
Fax: +353 1 614 7120
Email: Chemicals@hsa.ie

LIECHTENSTEIN

CLP and REACH Helpdesk:
Environment Office - Dr. Grass-Str. 12 / P.O. Box 684, Vaduz FL-9490
Phone: +423 236 64 00
Fax: +423 236 64 11
Email BPR: biocide@llv.li
Email CLP: clp@llv.li
Email REACH: reach@llv.li

MALTA

BPR, CLP, and REACH Helpdesk:
Malta Competition and Consumer Affairs Authority (MCCAA) Directorate for Technical Regulation, Technical Regulation Division, Mizzi House, National Road, Blata l-Bajda, HMR9010
Phone: +356 2395 2000
Fax: +356 2124 2406

DYNAMIC PLATINUM: Lavender.

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In accordance with Regulation (EC) No 1907/2006 (REACH), as amended by Regulation (EU) Date of issue: 16/01/2022 Date of revision: 29/01/2022

Email BPR: biocidas@mccaa.org.mt
Email REACH and CLP: helpdesk.mccaa@mccaa.org.mt

NORWAY

BPR, CLP, and REACH Helpdesk:
Norwegian Environment Agency P.O. Box 5672 Torgarden, 7485 Trondheim
Phone: +47 73 58 05 00
Email BPR: biocides@miljodir.no
Email CLP and REACH: kjemikalier@miljodir.no

ROMANIA

Competent Authority BPR:
Ministry of Health, National Committee of Biocidal Products R. Dr. A. Leonte, Nr 1-3, 050463 Bucharest
Phone: +40 21 311 86 20
Fax +40 21 311 86 20
Email: helpdesk.biocide@insp.gov.ro

CLP and REACH Helpdesk:
National Environmental Protection Agency (NEPA). Splaiul Independentei Street 294, 1st Floor, District 6 - 060031, Bucharest
Phone: +40 21 207 11 06
Fax: +40 21 207 11 16

SLOVENIA

BPR, CLP, and REACH Helpdesk:
Chemicals Office of the Republic of Slovenia Ajdovščina 4, SI-1000 Ljubljana
Phone: + 386 14 00 60 51
Email BPR: biocidi.uzk@gov.si
Email CLP and REACH: reach.mz@gov.si

SWITZERLAND

REACH Helpdesk:
Common Notification Authority for Chemicals - FOPH - SECO 3003 Bern
Phone: +41 (0)58 465 12 53
Email: reachhelpdesk@bag.admin.ch

BPR Helpdesk:
Common Notification Authority for Chemicals FOEN - FOPH - SECO 3003 Bern
Phone: +41 (0)58 462 73 05
Email: cheminfo@bag.admin.ch

DYNAMIC PLATINUM: Lavender.

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SECTION 2: Hazards identification

2.1. Classification of the substance or mixture.

Classification according to Regulation (EU) No. 1272/2008 [CLP]: Not classified

Adverse physicochemical effects on human health and the environment: As far as is known, the product does not present any particular hazards if the general rules of industrial hygiene.

2.2. Label elements.

Labeling according to Regulation (EC) No. 1272/2008 [CLP].
May contain traces of nickel and/or chromium. May cause allergic reactions; allergy testing is recommended.
Allergy testing is recommended. Product irradiated with gamma rays for sterilization.
Read instructions for use before using the product.

2.3. Other hazards.

Does not contain PBT/vPvB substances evaluated in accordance with Regulation (EC) No. 1907/2006 with Annex XIII of REACH.

SECTION 3: Information on composition/components

3.1. Substances.

Not applicable.

3.2 Mixtures.

Name	Product identifier	(%)
CI(77891) CI(16255) CI(19140) CI(42090) CI(77266)	CAS: 13463-67-7 CAS: 2611-82-7 CAS:1934-21-0 CAS: 3844-45-9 CAS: 1333-86-4	10-15 0-5 0 0-5 0
GLYCERIN	CAS: 56-81-5 CE: 200-289-5	15-20
BUTYLENE GLYCOL	CAS: 107-88-0 CE: 203-529-7	0-5
AQUA	CAS: 7732-18-5 CE: 231-791-2	60-65
HAMAMELIS VIRGINIANA WATER	CAS: 84696-19-5 CE: 283-637-9	0-5

There are no additional ingredients present that, to the best knowledge of the manufacturer and in the applicable concentrations, are classified as hazardous to health or the environment.
The specific percentage of the composition may not be disclosed as a trade secret.

Full text of H and EUH phrases: see section 16.

DYNAMIC PLATINUM: Lavender.

Safety Data Sheets

In accordance with Regulation (EC) No 1907/2006 (REACH), as amended by Regulation (EU) Date of issue: 16/01/2022 Date of revision: 29/01/2022

SECTION 4: First Aid

4.1. Description of first aid.

First aid measures in case of inhalation:
Remove person to fresh air and keep in a position that facilitates breathing. Consult a doctor if you feel unwell.

First-aid measures after skin contact:
Wash skin with plenty of water. If you feel unwell, seek medical advice.

First-aid measures after eye contact:
Flush eyes with water as a precaution. Consult a physician if you feel unwell.

First-aid measures after ingestion:
Call a poison control center or doctor if you feel unwell.

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

No further information available.

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

Symptomatic treatment.

SECTION 5: Fire-fighting measures

5.1. Extinguishing media.

Suitable extinguishing media:
Water spray. Dry powder. Foam. Carbon dioxide.

5.2 . Specific hazards arising from the substance or mixture.

Hazardous decomposition products in case of fire:
Possible emission of toxic fumes.

5.3. Recommendations for fire-fighting personnel.

Protection during fire fighting:
Do not intervene without appropriate protective equipment. Self-contained and insulated breathing apparatus. Full body protection.

DYNAMIC PLATINUM. Lavender.

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In accordance with Regulation (EC) No 1907/2006 (REACH), as amended by Regulation (EU) Date of issue: 16/01/2022 Date of revision: 29/01/2022

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures.

6.1.1. For non-emergency services personnel.

Emergency procedures:

Ventilate the spill area.

6.1.2. For emergency personnel.

Protective equipment:

Do not intervene without appropriate protective equipment. For further information see section 8: “Exposure control/ personal protection”.

6.2. Environmental precautions.

Avoid release to the environment.

6.3. Containment and containment methods and material.

Clean-up procedures:

Absorb spilled liquid with an absorbent product.

Other information:

Dispose of materials or solid waste at an authorized authorized facility.

6.4. Reference to other sections.

For further information, see section 13.

SECTION 7: Handling and Storage

7.1. Precautions for Safe Handling.

Precautions for safe handling:

The workstation should be well-ventilated. Wear personal protective equipment.

Hygienic measures:

Do not eat, drink or smoke during use. Wash hands after handling.

7.2 Safe storage conditions including possible incompatibility.

Storage conditions:

Keep locked and padlocked. Store in a well-ventilated place. Storage recommended at a maximum temperature of 32ºC.

7.3. Specific end uses.

No further information available.

DYNAMIC PLATINUM: Lavender.

Safety Data Sheets

In accordance with Regulation (EC) No 1907/2006 (REACH), as amended by Regulation (EU) Date of issue: 16/01/2022 Date of revision: 29/01/2022

SECTION 8: Exposure controls/personal protection

8.1. Control parameters.

8.1.1. National occupational and biological exposure limit values :

This mixture as supplied does not contain any hazardous materials with occupational exposure limits or biological limits established by specific regulatory agencies.

8.1.2. Recommended Monitoring Methods

No further information available.

8.1.3. Air contaminants formed

No further information available

8.1.4. DNEL and PNECs

No further information available.

8.1.5. Control Bands

No further information available.

8.2. Exposure Controls.

8.2.1. Appropriate engineering controls

Appropriate engineering controls:
The workplace should be well ventilated.

8.2.2. Personal Protective Equipment

Symbols for personal protective equipment:

8.2.2.1. Eye and face protection

Eye protection: Safety glasses.

8.2.2.2. Skin protection

Skin and body protection: Wear suitable protective clothing Hand protection: Protective gloves.

8.2.2.3. Respiratory tract protection

Respiratory protection: In case of insufficient ventilation, use suitable respiratory system.

8.2.2.4. Thermal hazards

No further information available

8.2.3. Control of environmental exposure

Control of environmental exposure: Avoid release to the environment.

DYNAMIC PLATINUM. Lavender.

Safety Data Sheets

In accordance with Regulation (EC) No 1907/2006 (REACH), as amended by Regulation (EU) Date of issue: 16/01/2022 Date of revision: 29/01/2022

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties.

Form/State:	Liquid
Appearance:	Liquid
Color:	Purple
Odor:	Characteristic odor
Olfactory Threshold:	Data not available
PH:	Liquid
Relative evaporation rate (butyl acetate=1):	Data not available
Melting point:	Not applicable
Solidification point:	Data not available
Boiling point:	> 100 ºC
Flammability point:	
Autoignition temperature:	Data not available
Decomposition temperature:	Data not available
Flammability (solid, gas):	Data not available
Vapor pressure:	Data not available
Relative vapor density at 20 ºC:	Data not available
Relative density:	Data not available
Solubility:	Data not available
Partition coefficient N-octanol/water (Log Pow):	Data not available
Viscosity, kinematic:	Data not available
Viscosity, dynamic:	Data not available
Explosive properties:	Data not available
Oxidizing properties:	Data not available
Explosion limits:	Data not available
Particle size:	< 15 microns

9.2. Other information.

No information available.

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SECTION 10: Stability and reactivity

10.1. Reactivity.

The product is not reactive under normal conditions of use, storage and transport.

10.2. Chemical stability.

Stable under normal conditions.

10.3. Possibility of hazardous reactions.

No dangerous reactions are known under normal conditions of use.

10.4. Conditions to avoid.

None under recommended storage and handling conditions (see section 7).

10.5. Incompatible materials.

No further information available.

10.6. Hazardous decomposition products.

SECTION 11: Toxicological information

11.1. Information on toxicological effects.

Acute toxicity (oral):	Declassified
Acute toxicity (dermal):	Declassified
Acute toxicity (inhalation):	Declassified
Skin corrosion or irritation:	Declassified
Serious eye damage or eye irritation:	Declassified
Respiratory or skin sensitization:	Declassified
Germ cell mutagenicity:	Declassified
Carcinogenicity:	Declassified

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SECTION 12: Ecological information

12.1. Toxicity.

Ecology - general:

This product is not considered harmful to aquatic organisms and does not cause long-term adverse effects in the environment.

Short-term (acute) hazard to the aquatic environment:

Unclassified.

Long-term (acute) hazard to the aquatic environment:

Unclassified.

12.2. Persistence and degradability.

Readily biodegradable.

12.3. Bioaccumulative potential.

Bioaccumulation is unlikely.

12.4. Mobility in soil.

The product is soluble in water. Absorbed in soil.

12.5. PBT and vPvB assay results.

No PBT/vPvB ingredients are present.

12.6. Endocrine disrupting properties.

No further information available.

12.7. Other side effects.

No further information available.

SECTION 13: Disposal considerations

13.1. Waste Treatment Methods.

Approved waste treatment methods:

Remove contents/container in accordance with the collector’s recycling instructions.

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SECTION 14: Transport information

According to ADR / IMDG / IATA / DNA / RID

	ADR	IMDG	IATA	AND	RID
14.1. ONU Number	Not regulated	Not regulated	Not regulated	Not regulated	Not regulated
14.2.Official United Nations transport designation	Not regulated	Not regulated	Not regulated	Not regulated	Not regulated
14.3. Transport hazard classes	Not regulated	Not regulated	Not regulated	Not regulated	Not regulated
14.4.Packaging group	Not regulated	Not regulated	Not regulated	Not regulated	Not regulated
14.5. Dangers to the enviroment	Not regulated	Not regulated	Not regulated	Not regulated	Not regulated

No additional information is available.

14.6. Special precautions for users.

Transport by land
Not regulated

Sea transport
Not regulated

Air transport
Not regulated

Inland waterway transport
Not regulated

Rail transport
Not regulated

14.7. Bulk transport in accordance with MARPOL Annex II and the IBC Code.

Not applicable.

SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations and legislation specific to the substance or mixture.

15.1.1. EU Regulations

Contains no substances subject to restrictions according to REACH Annex XVII.
Does not contain any substance included in the REACH candidate list.
Does not contain any substances listed in Annex XIV of REACH.
Does not contain any substances subject to Regulation (EU) No. 649/2012 of the European Parliament and of the Council of 4 July 2012 concerning the export and import of dangerous chemicals.
It does not contain any substances subject to Regulation (EU) No 2019/1021 of the European Parliament and of the Council of 20 June 2019 on persistent organic pollutants.
Does not contain any substances subject to REGULATION (EC) No. 1005/2009 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 16 September 2009 on substances that deplete the ozone layer.
Does not contain any substances subject to Regulation (EU) 2019/1148 of the European Parliament and of the Council of 20 June 2019 on the placing on the market and use of explosives precursors.

Respect the regulations in force:

Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006, concerning the Registration, Evaluation, Authorization and Restriction of Chemicals (REACH), establishing a European Chemicals Agency, amending Directive 1999/45/EC and repealing Council Regulation (EEC) No. 793/93 and Commission Regulation (EC) No. 1488/94, as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC. COMMISSION REGULATION (EU) 2020/2081 of 14 December 2020 amending Annex XVII to Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorization and Restriction of Chemicals (REACH) as regards substances in tattoo or permanent makeup inks, Official Journal of the European Union of 15 December 2020, L 423/6. Commission Regulation (EU) 2015/830 of 28 May 2015 amending Regulation (EC) No 1907/2006. Not classified as hazardous according to Directives 67/548/EEC and/or 1999/45/EC. Regulation (EC) No 1272/2008 on classification, labeling and packaging. Official Journal of the European Union Union 27.7.2012, No. L 201/60. EC 67/548 or EC 1999/45 classification.Does not contain substances subject to Regulation (EC) 273/2004 of the European Parliament and of the Council of 11 February 2004 on the manufacture and placing on the market of certain substances used in the illicit manufacture of narcotic drugs and psychotropic substances.

15.1.2. National regulations

No further information available

15.2. Chemical safety assessment.

A chemical safety assessment has not been carried out.

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SECTION 16: Other information

Abbreviations and acronyms:

ADN	European Agreement on the International Carriage of Dangerous Goods by Inland Waterways
ADR	European Agreement concerning the International Carriage of Dangerous Goods by Road
ATE	Estimation of Acute Toxicity
FBC	Bioconcentration factor
VLB	Biological limit value
DBO	Biochemical oxygen demand
DQO	Chemical oxygen demand
DMEL	Derived level with minimal effect
DNEL	Level without derivative effect
CE NO.	EC Number
CE50	Average effective concentration
EN	European standard
IARC	International Agency for Research on Cancer
IATA	International Air Transport Association
IMDG	International Maritime Dangerous Goods Code
CL50	Lethal concentration for 50% of a population of Tests
LD50	Lethal dose for 50% of a test population (Mean lethal dose)
LOAEL	Lower level with observed adverse effect
NOAEC	Concentration with no observed adverse effect
NOAEL	Level with no observed adverse effect
NOEC	Concentration with no observed effect
OCDE	Organization for Economic Cooperation and Development
VLA	Occupational exposure limit
PBT	Persistent, bioaccumulative and toxic substance
PNEC	Expected concentration without effect
RID	Regulation on the international carriage of dangerous goods by rail
FDS	Safety Data Sheets
STP	Treatment plant
DTO	Theoretical oxygen need (BThO)
TLM	Average tolerance limit
COV	Volatile organic compounds
CAS NO.	CAS number
N.E.P	Not specified elsewhere
vPvB	Very persistent and very bioaccumulative
ED	Endocrine disrupting properties

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Full text of H and EUH phrases:

Acute Tox. 4 (Cutaneous)	Acute toxicity (dermal), category 4.
Acute Tox. 4 (Inhalation: dust, fog)	Acute toxicity (inhalation: dust, mist) Category 4.
Aquatic Chronic 3	Hazardous to the aquatic environment Chronic hazard, category 3.
H312	Harmful in contact with skin.
H332	Harmful if inhaled.
H412	Harmful to aquatic organisms with long lasting effects.

Classification complies with: ATP 12

Safety Data Sheet (SDS), EU

This information is based on our present knowledge and is intended to describe the product for the protection of health, safety and the environment. Therefore, it should not be construed as a guarantee of any specific product characteristics.