

Product Name: Iris® Graphic Arts Cyan Ink

1. Product Name and Company Identification

Product Name: Iris® Graphic Arts Cyan Ink
Chemical Name/Class: Water-Based Ink
Synonyms: Creo part number P/N 405-00019A; 01681-008, 02998-008, 04898-008, 05349-001
Product Use: Printing Applications
UN Number: None Allocated
UN Dangerous Goods Class/Subsidiary Risk: None Allocated
Hazchem Code (Australia): None Allocated
Poisons Schedule Number (Australia): None Allocated
Supplier: Creo Inc.

Emergency Telephone Number: **Infotrac®**
North America: 1-800-535-5053
International: +1-352-323-3500

Supplier Address: Creo Inc.
3700 Gilmore Way
Burnaby, BC
Canada V5G 4M1
24-Hour Telephone For Information: Creo Response Center
North America: 1-800-472-2727
International: +1-604-451-2727
Fax Number: +1-604-437-9891

European Distributor: Creo EMEA S.A.
Address: Waterloo Office Park
Drève Richelle 161
Building E-F
B-1410 Waterloo, Belgium
Business Telephone: + 32-2-352-2511
Fax Number: + 32-2-351-0915

Australian Distributor: Creo Asia Pacific Limited
Address: 3/F King's Road
North Point
Hong Kong
Business Telephone: + 852-2882 1011
Fax Number: + 852-2882 8897

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2. Composition/Information on Ingredients

Hazardous Ingredients	WT %	CAS #	EINECS #	ENCS #	ECL #
TSRN - IGI0002	0-4	Proprietary	Proprietary	Proprietary	Proprietary
TSRN - IGI0001	2-5	Proprietary	Proprietary	Proprietary	Proprietary
1,2,3-Trihydroxy propane	10-17	56-81-5	200-289-65	2-242	KE-29297
Water and other constituents.	Balance	7732-18-5	231-791-2	*NE	*NE

*NE = Not Established.

3. Hazards Identification

Emergency Overview

Appearance:	Cyan/blue liquid with a neutral odor.
Health Hazards:	Moderately irritates contaminated tissues. Inhalation may cause adverse effects on central nervous system. Prolonged or high concentration inhalation or ingestion may be harmful or fatal. May stain contaminated tissue.
Flammability Hazards:	Not flammable.
Reactivity Hazards:	Not reactive.
Environmental Hazards:	Adverse effects can result if released.
Emergency Recommendations:	Responders must wear suitable personal protective equipment.

Potential Health Effects

Route of Entry:	Inhalation: Yes Skin: Yes Ingestion: Yes
Inhalation:	Acute: Inhaling vapors, mists or sprays can moderately irritate respiratory system. Severe overexposure may include headache, nausea, vomiting, dizziness, thirst, and diarrhea. Chronic: No symptoms known.
Eye Contact:	Moderately irritating to eyes, causing pain, tearing, and redness. Due to staining, vision may be temporarily blurred.
Skin Contact:	Acute: Skin contact may cause staining, redness, pain, or itching in sensitive individuals. Chronic: Repeated skin exposure may cause dermatitis (dry, red skin), flaking, or softening of skin. Allergic skin reactions may occur in sensitive individuals.
Skin Absorption:	Absorption of product components through intact skin is unknown.
Sensitization Potential:	The TSRN - IGI0002 component of this product is a skin sensitizer; subsequent exposure to very small amounts may cause allergic reaction.
Ingestion:	If swallowed symptoms may include nausea, vomiting, diarrhea.
Injection:	Not expected to occur under normal use.
Target Organs:	Acute: Skin, eyes, respiratory system. Chronic: Skin.
Carcinogenicity:	NTP: Not listed IARC: Not listed OSHA: Not listed

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4. First Aid Measures

If adverse effect occurs after decontamination, victims must receive medical attention. Rescuers should receive medical attention if necessary. Take a copy of the product label and MSDS to the physician or health professional with the contaminated individual.

Inhalation:	Remove to fresh air. If necessary, use artificial respiration to support vital functions. Seek medical attention if adverse effects continue.
Eye Contact:	Remove contact lenses at once. Immediately flush eyes with plenty of water for at least 15 minutes. Assure adequate flushing by separating the eyelids with sterile fingers. Have victim "roll" eyes. Seek medical attention if adverse effects continue after rinsing eyes.
Skin Contact:	Remove contaminated clothes and shoes. Rinse skin with plenty of water or shower for at least 15 minutes. Take care not to contaminate eyes. Seek medical attention if adverse effects continue after rinsing.
Ingestion:	If this product is swallowed, CALL PHYSICIAN OR POISON CONTROL CENTER FOR MOST CURRENT INFORMATION. DO NOT INDUCE VOMITING unless directed by medical personnel. Have victim rinse mouth with water. Never induce vomiting or give diluents (milk or water) to someone who is unconscious, having convulsions, or unable to swallow . If vomiting occurs, lean patient forward or place on left side (head-down position, if possible) to maintain an open airway and prevent aspiration. If contaminated individual is convulsing, maintain an open airway and obtain immediate medical attention. Prolonged exposure can aggravate skin disorders.
Medical Conditions Aggravated by Exposure:	
Recommendations to Physicians:	Treat symptoms and eliminate overexposure.

5. Fire Fighting Measures

Flash Point:	Not flammable.
Flammable (Explosive) Limits:	Not applicable.
Extinguishing Media:	Water fog, carbon dioxide, or dry chemical.
Fire & Explosion Hazards:	If involved in fire, can decompose and produce irritating vapors and toxic gases (for example, carbon oxides, nitrogen oxides, sulfur oxides, acrolein, copper oxides, and other toxic fumes).
Special Fire Fighting Instructions:	Incipient fire responders should wear eye protection. Structural firefighters must wear Self-Contained Breathing Apparatus and full protective equipment. Use water spray to cool fire-exposed containers. If possible, prevent runoff water from entering storm drains, bodies of water, or other environmentally sensitive areas.
NFPA Rating:	Health (blue): 2 Flammability (red): 0 Instability (yellow): 0

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6. Accidental Release Measures

Spill and Leak Response:	For incidental spills (for example, less than 1 liter of liquid from a bottle), wear rubber gloves, splash goggles, and appropriate body protection. Trained personnel following pre-planned procedures should handle larger releases (for example, 10 L of liquid leaking from a crate of several containers). For larger spills, clear the area and protect individuals. Minimum personal protective equipment required for larger spills is rubber gloves, rubber boots, face shield, and Tyvek suit. If oxygen level is below 19.5% or unknown, Level B: triple-gloves (rubber gloves and nitrile gloves over latex gloves), chemical resistant suit and boots, hardhat, and Self-Contained Breathing Apparatus are required. Absorb spilled liquid with suitable materials. Decontaminate area thoroughly.
Waste Disposal Method:	Place all spill residue in an appropriate container and seal. Dispose of according to applicable Federal, State, provincial and local regulations or procedures (see <i>Section 13, Disposal Considerations</i>).

7. Handling and Storage

Work and Hygiene Practices:	Wash thoroughly after handling. Do not eat, drink, smoke, or apply cosmetics while handling. Avoid breathing vapors or mists. Use in a well-ventilated area. Remove contaminated clothing immediately. All work practices should minimize product release. Work areas should have eyewash stations and safety showers.
Storage and Handling Practices:	Train all employees how to handle this product safely. Keep container tightly closed when not in use. Store containers in a cool, dry location between 5-40°C (41-74°F), away from direct sunlight and sources of intense heat or cold. Store material in secondary containers or in a diked area as appropriate. Store containers away from incompatible chemicals (see <i>Section 10, Stability and Reactivity</i>). Inspect all incoming containers for proper labeling and damage before storing. Handle empty containers with care because they can contain residual liquid or vapors.
Protective Practices During Maintenance of Contaminated Equipment:	Follow practices indicated in <i>Section 6, Accidental Release Measures</i> . Disconnect all electrical cords during decontamination to avoid electrocution. Collect all rinsates and dispose of according to applicable Federal, State, provincial and local regulations or procedures.

8. Exposure Controls and Personal Protection

Engineering Controls:	Use with adequate ventilation to ensure exposures are below limits in <i>Exposure Guidelines</i> below. If necessary, vent material to outside, taking appropriate precautions to prevent environmental contamination. Ensure eyewash/safety shower stations are available near work areas.
Ventilation:	Local exhaust: Preferable Mechanical: Adequate

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Personal Protection: **Eyes:** Wear splash goggles or safety glasses if exposure to vapors or sprays of liquid can occur. Refer to relevant regional standards for personal protective equipment.
Skin: Wear butyl rubber gloves. Check gloves for leaks. Use body protection appropriate for task (for example, rubber apron when cleaning equipment, Tyvek suit and rubber boots during non-incident spill response). Use foot protection if injury hazard exists due to falling, rolling, sharp, or electrical objects. Refer to relevant regional standards for personal protective equipment.
Respiratory System: Use only authorized and properly maintained equipment. Refer to relevant regional standards for personal protective equipment. Oxygen levels below 19.5% are considered Immediately Dangerous to Life or Health. In such conditions, using a full-facepiece pressure/demand Self Contained Breathing Apparatus, or a full facepiece supplied air respirator with auxiliary self-contained air supply, is required.

Exposure Guidelines: **1,2,3-Trihydroxy propane CAS # 56-81-5**

Jurisdiction	Limit	Value	Year
Australia		TWA = 10 mg/m ³	JAN 1993
Belgium		TWA = 10 mg/m ³	JAN 1993
Finland		TWA = 20 mg/m ³	JAN 1999
France		VME = 10 mg/m ³	JAN 1999
The Netherlands		MAC-TGG = 10 mg/m ³	JAN 1999
United Kingdom		TWA = 10 mg/m ³	SEP 2000
U.S.A.	ACGIH® TLV®	10 ppm	2003
U.S.A.	OSHA PEL	15 mg/m ³ total dust; 5 mg/m ³ respirable fraction	2003
U.S.A.	NIOSH-REL	*NE	

In Argentina, Bulgaria, Colombia, Jordan, Korea, New Zealand, Singapore, Vietnam check ACGIH TLV
*NE = Not Established.

9. Physical and Chemical Properties

Appearance and Odor: Cyan/blue liquid, odorless.
Physical State: Liquid
Freezing Point: < 0°C (< 32°F)
Boiling Point: > 100°C (> 212°F)
Specific Gravity: 1.04
Odour Threshold: N/E
Vapour Density: N/E
Vapor Pressure: N/E
Evaporation Rate: N/E
pH: N/E
Solubility in Water: Soluble
Coefficient of water/oil distribution: N/E

10. Stability and Reactivity

Chemical Stability: Stable
Conditions to Avoid: Extremely high temperatures, incompatible chemicals.
Incompatibility (Materials to Avoid): Strong oxidizers, strong bases, acetic anhydride, potassium chlorates, isocyanates, aliphatic amines, hydrogen peroxide, potassium permanganate, and water reactive materials.
Hazardous Decomposition Products: If exposed to extremely high temperatures, this product can decompose to generate carbon oxides, nitrogen oxides, sulfur oxides, acrolein, and other toxic fumes.
Hazardous Polymerization: Will not occur

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11. Toxicology Information

Where available, this MSDS provides human toxicological data, LD50 oral-rat and LC50 inhalation-rat for the components of this product present in greater than 1% concentration. Additional toxicological data for the components of this product are available if needed. Please contact Creo for further information.

RTECS number: 1,2,3-Trihydroxy propane: MA8050000

Acute toxicity Data:

1,2,3-Trihydroxy propane:

LD₅₀ (oral, rat) = 12600 mg/kg; general anesthetic, muscle weakness, Liver: other changes

LC₅₀ (inhalation, rat) > 570 mg/m³/1 hour

LD₅₀ (skin, rabbit) > 10 g/kg

TSRN - IGI0002:

LD₅₀ (skin, rabbit) > 20 mL/kg

Irritation Data:

TSRN - IGI0002:

Skin Irritancy (human) = 15 mg/3 days/intermittent; mild

Animal data available, but not listed in this MSDS.

Mutation Data:

1,2,3-Trihydroxy propane:

DNA Inhibition (human, lymphocyte) = 200 mmol/L

TSRN - IGI0002:

Cytogenetic Analysis (lymphocyte, human) = 100 μmol/L

Sister Chromatid Exchange (lymphocyte, human) = 1 mmol/L

Animal data available, but not listed in this MSDS.

Reproductive Effects Data:

Animal data available, but not listed in this MSDS.

Carcinogenicity Data:

TSRN - IGI0002: IARC-3, Unclassifiable as to Carcinogenicity in Humans:

The remaining components of this product are not found on the following lists: FEDERAL OSHA Z LIST, NTP, CAL/OSHA, and therefore are neither considered to be nor suspected to be cancer causing agents by these agencies.

Biological Exposure Indices:

Currently, there are no Biological Exposure Indices (BEIs) established for components of this product.

12. Ecological Information

Environmental Stability:

This product is expected to degrade over time. Limited information is available on the environmental fate and effects of releasing this material into the environment. The following is information on the main component.

1,2,3-Trihydroxy propane: Solubility: Miscible

TSRN - IGI0002: Solubility: Miscible

Effect of Material on Plants or Animals:

Harmful or fatal to contaminated plant and animal life, especially if released in large quantities.

Effect of Material on Aquatic Life:

Harmful or fatal to contaminated aquatic plant and animal life, especially if released in large quantities. The following aquatic toxicity data is available for this product:

Ink: LC₅₀ (*Lepomis macrochirus*, bluegill) > 3000 mg/L/96 hours
EC₅₀ (*Daphnia magna*, water flea) > 10,000 mg/L/48 hours

Degradability:

No data available. This product is expected to degrade over time in atmospheric, aquatic and terrestrial environments.

Log Octanol/Water Partition Coefficient:

No data available for product. The following are data available for the main component.

1,2,3-Trihydroxy propane: Log K_{ow} = -1.76

TSRN - IGI0002: Log K_{ow} = -1.00

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13. Disposal Considerations

Preparing Wastes For Disposal: Waste disposal must be in accordance with appropriate Federal, State, provincial and local regulations or procedures. 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.

EWC Code: 080303

U.S. EPA Waste Number: Not Applicable

14. Transport Information

	U.S. DOT	Canadian TC	IATA	IMDG	Australia Road/Rail*	UN ADR/RID
Goods Class:	Not Hazardous	Not Dangerous Goods				

* Australian Federal Office of Road Safety Code For The Transportation of Dangerous Goods by Road or Rail

15. Regulatory Information

United States

Product components are not subject to the reporting requirements of:

SARA 302 (40 CFR 355, Appendix A): Sections 302 of Title III of the Superfund Amendments and Reauthorization Act.

EPA - CERCLA/Superfund, 40CFR 302.4: Sections 304 of Title III of the Superfund Amendments and Reauthorization Act.

SARA Title III, 313 Chemicals: Sections 313 of Title III of the Superfund Amendments and Reauthorization Act.

EPA TSCA Inventory: One of the components of this product is not listed on the TSCA Inventory. It cannot be used for any commercial purposes except as a bonafide cosmetic or cosmetic adjuvant, additive, or ingredient or for research and development under the supervision of an individual technically qualified to understand its potential hazards.

California Proposition 65: Product components are not on the State of California Proposition 65 lists of chemicals known to cause cancer, birth defects, or other reproductive harm.

Canada

DSL/NDSL Inventory: Product components are listed on the Canadian DSL or NDSL inventory.

WHMIS Classification: D2B (Poisonous and infectious material-Contains a sensitizer)

CPR Statement: This product has been classified in accordance with the hazard criteria of the Canadian Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR.

Australia

Inventory of Chemical Substances (AICS): The TSRN – IGI0002 and 1,2,3- Trihydroxy propane components of this product are listed on the AICS. Other components are not listed.

List of Designated Substances: Not applicable.

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

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Europe

EINECS/ELINCS Inventory: Product components are listed on the European EINECS/ELINCS inventory.
EINECS Number: TSRN – IGI0001: Proprietary
TSRN – IGI0002: Proprietary
1,2,3- Trihydroxy propane: 200-289-65
EU Classification and Labeling: This product meets the criteria of Irritant [Xi], according to current European Community Guidelines.

Japan

ENCS Numbers: TSRN – IGI0001: Proprietary
TSRN – IGI0002: Proprietary
1,2,3- Trihydroxy propane: 2-242
Poisonous and Deleterious Substances Control Law: No product component is specified as a Poisonous Substance.

Korea

ECL Numbers: TSRN – IGI0001: Proprietary
TSRN – IGI0002: Proprietary
1,2,3- Trihydroxy propane: KE-29297

Harmonized Labeling, Risk Phrases, and Safety Phrases

Region:	Europe	Australia	Korea	Japan
Guideline/Regulation:	2001/59/EC	NOHSC: 10005 (1994)		
Symbol:				

Classification:	Irritant [Xi].		
Risk Phrases:	R 43	May cause sensitization by skin contact.	
Safety Phrases:	S 2	Keep out of reach of children.	
	S 24	Avoid contact with skin.	
	S 28	After contact with skin, wash immediately with plenty of soap and water.	

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16. Other Information

HMIS RATING: Health Hazard: 2 Flammability Hazard: 0 Physical Hazard: 0

MSDS Creation Date: 2004/04/14

Last Revision:

This MSDS has been prepared in accordance with the criteria set out in U.S. Federal OSHA Hazard Communication Standard 29 CFR 1910.1200, Canadian Controlled Products Regulations (CPR), European Community Directives, and the Japanese Industrial Standard JIS Z 7250:2000. The product described in this MSDS should not be used for purposes other than those described in Section 1. As the specific conditions of use of the product described in this MSDS are outside of our control, you are solely responsible for ensuring that you comply with the requirements of all relevant legislation.

The information contained in this MSDS is based on the present state of knowledge and current legislation. Its sole purpose is to provide guidance on health, safety and environmental aspects of the product described in this MSDS and should not be construed as any guarantee of technical performance or suitability for particular applications.

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