



Material Safety Data Sheets

CONSIDERED A HAZARDOUS SUBSTANCE ACCORDING TO OSHA 29 CFR 1910.1200.

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name : Reactive Dye Ink Rc210 Cyan
Product Code : SPC-0702C-1
General Use : Ink Jet Ink
Product Description : Ink Jet Ink
MSDS Number : 031-36W19CP
Manufacture
Company Name : Mimaki Engineering Co., Ltd
Address : 2182-3 Otsu, Shigeno, Tomi-shi, Nagano 389-0512 Japan
Telephone No. : +81-268-64-2413
Importer/Distributor Established in USA
Company Name : MIMAKI USA. INC.
Address : 150 Satellite Boulevard, suite A, Suwanee, Georgia 30024, U.S.A
Telephone No. : 1-678-730-0100
Emergency Telephone No. : +81-268-64-2413

2. HAZARDS IDENTIFICATION

WARNING!

Emergency Overview

Irritating to eyes
May be harmful if swallowed, inhaled, or absorbed through skin
Mist or aerosol may be irritating to eyes, nose, throat, and lungs
May cause central nervous system depression

Appearance Blue

Physical State Liquid.

Odor Specific

Potential Health Effects

Principle Routes of Exposure Inhalation. Skin contact. Eye contact.

Acute Toxicity

Eyes Irritating to eyes.

Material Safety Data Sheets

CONSIDERED A HAZARDOUS SUBSTANCE ACCORDING TO OSHA 29 CFR 1910.1200.

Skin	May cause irritation. May be harmful if absorbed through skin.
Inhalation	May be harmful if inhaled. Inhalation of aerosols: May cause irritation of respiratory tract. May cause central nervous system depression with nausea, headache, dizziness, vomiting, and incoordination.
Ingestion	May be harmful if swallowed. May cause adverse liver effects. May cause adverse kidney effects. May cause additional effects as listed under "Inhalation".

Chronic Effects May cause adverse liver and kidney effects. May cause central nervous system depression. Contains materials which based on animal tests may cause adverse reproductive and birth effects at maternally toxic levels.

Main Symptoms Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting.

Aggravated Medical Conditions Central nervous system. Pre-existing eye disorders. Respiratory disorders.

Interactions with Other Chemicals Use of alcoholic beverages may enhance toxic effects.

Environmental Hazard See Section 12 for additional Ecological Information.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS-No	Weight %
Water	7732-18-5	40-50
Diglycerin	59113-36-9	20-30
Ethylene glycol	107-21-1	15-25
Reactive Dye	Trade Secret	5-15
Additives	Trade Secret	<5



Material Safety Data Sheets

CONSIDERED A HAZARDOUS SUBSTANCE ACCORDING TO OSHA 29 CFR 1910.1200.

4. FIRST AID MEASURES

General Advice	If symptoms persist, call a physician.
Eye Contact	Immediately flush with plenty of water. After initial flushing, remove any contact lenses and continue flushing for at least 15 minutes. Keep eye wide open while rinsing. If symptoms persist, call a physician.
Skin Contact	Wash off immediately with soap and plenty of water. If symptoms persist, call a physician.
Inhalation	IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing. If breathing has stopped, contact emergency medical services immediately.
Ingestion	Call a physician or Poison Control Center immediately. Clean mouth with water and afterwards drink plenty of water. Do not induce vomiting without medical advice.
Notes to Physician	Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Flammable Properties	Combustible material: may burn but does not ignite readily.
Flash Point	Not determined.
Suitable Extinguishing Media	Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
<u>Explosion Data</u>	
Sensitivity to Mechanical Impact	None
Sensitivity to Static Discharge	None



Material Safety Data Sheets

CONSIDERED A HAZARDOUS SUBSTANCE ACCORDING TO OSHA 29 CFR 1910.1200.

Protective Equipment and Precautions for Firefighters As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

NFPA Health Hazard 2 Flammability 1 Instability 0 Physical and Chemical Hazards -

HMIS Health Hazard 2* Flammability 1 Physical Hazard 0 Personal Protection -

**Indicates a chronic health hazard.*

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions Wear protective gloves/clothing and eye/face protection. Ensure adequate ventilation. Avoid contact with the skin and the eyes.

Environmental Precautions Prevent entry into waterways, sewers, basements or confined areas. Do not flush into surface water or sanitary sewer system.

Methods for Containment Prevent further leakage or spillage if safe to do so.

Methods for Cleaning Up For spills: Absorb with inert absorbent materials such as: Dry sand. Vermiculite. Activated charcoal. Place in appropriate chemical waste container.

7. HANDLING AND STORAGE

Handling Handle in accordance with good industrial hygiene and safety practice. Wear personal protective equipment. Avoid breathing vapors or mists. Avoid contact with skin, eyes and clothing.

Storage Keep containers tightly closed in a dry, cool and well-ventilated place.



Material Safety Data Sheets

CONSIDERED A HAZARDOUS SUBSTANCE ACCORDING TO OSHA 29 CFR 1910.1200.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure Guidelines

Chemical Name	ACGIH TLV	OSHA PEL	NIOSH IDLH
Ethylene glycol 107-21-1	Ceiling: 100 mg/m ³ aerosol only	(vacated) Ceiling: 50 ppm (vacated) Ceiling: 125 mg/m ³	-

OSHA PEL: Occupational Safety and Health Administration - Permissible Exposure Limits. ACGIH TLV: American Conference of Governmental Industrial Hygienists - Threshold Limit Value.

Other Exposure Guidelines Vacated limits revoked by the Court of Appeals decision in AFL-CIO v. OSHA, 965 F.2d 962 (11th Cir., 1992).

Engineering Measures Showers
Eyewash stations
Ventilation systems

Personal Protective Equipment

Eye/Face Protection Safety glasses with side-shields.

Skin and Body Protection Wear protective gloves/clothing.

Respiratory Protection If exposure limits are exceeded or irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn. Positive-pressure supplied air respirators may be required for high airborne contaminant concentrations. Respiratory protection must be provided in accordance with current local regulations.

Hygiene Measures Handle in accordance with good industrial hygiene and safety practice.



Material Safety Data Sheets

CONSIDERED A HAZARDOUS SUBSTANCE ACCORDING TO OSHA 29 CFR 1910.1200.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	Blue.	Odor	Specific.
Odor Threshold	No information available.	Physical State	Liquid
pH	No information available.		
Flash Point	No information available.	Autoignition Temperature	No information available.
Decomposition Temperature	No information available.	Boiling Point/Range	No information available
Melting Point/Range	No information available		
Flammability Limits in Air	No information available.	Explosion Limits	No information available.
Solubility	No information available	Evaporation Rate	No information available
Vapor Pressure	No data available	Vapor Density	No data available
VOC Content (%)	15-25		

10. STABILITY AND REACTIVITY

Stability	Stable under recommended storage conditions.
Incompatible Products	Strong oxidizing agents. Chlorosulfonic acid, oleum, sulfuric acid, perchloric acid, chromium trioxide, potassium permanganate and sodium peroxide.
Conditions to Avoid	Heat, flames and sparks.
Hazardous Decomposition Products	Sulfur oxides. Nitrogen oxides (NOx). Carbon dioxide (CO ₂) Carbon monoxide (CO).
Hazardous Polymerization	Hazardous polymerization does not occur.



Material Safety Data Sheets

CONSIDERED A HAZARDOUS SUBSTANCE ACCORDING TO OSHA 29 CFR 1910.1200.

11. TOXICOLOGICAL INFORMATION

Acute Toxicity

Product Information

May be harmful by inhalation, ingestion, or skin absorption. Irritating to eyes: Mist or aerosol may be irritating to eyes, nose, throat, and lungs.

Component Information

Chemical Name	LD50 Oral	LD50 Dermal	LC50 Inhalation
Ethylene glycol	4000 mg/kg (Rat)	9530 μ L/kg (Rabbit)	-

Chronic Toxicity

Chronic Toxicity

May cause adverse liver and kidney effects. May cause central nervous system depression. Contains materials which based on animal tests may cause adverse reproductive and birth effects at maternally toxic levels.

Carcinogenicity

Contains no ingredients above reportable quantities listed as a carcinogen.

Target Organ Effects

Central nervous system (CNS). Liver, kidney, and respiratory system. Reproductive system. Contains material that may adversely affect the developing fetus.



Material Safety Data Sheets

CONSIDERED A HAZARDOUS SUBSTANCE ACCORDING TO OSHA 29 CFR 1910.1200.

12. ECOLOGICAL INFORMATION

Ecotoxicity

The environmental impact of this product has not been fully investigated.

Chemical Name	Toxicity to Algae	Toxicity to Fish	Toxicity to Microorganisms	Daphnia Magna (Water Flea)
Ethylene glycol	EC50: 6500 - 13000 mg/L Pseudokirchneriella subcapitata 96 h	LC50: 41000 mg/L Oncorhynchus mykiss 96 h LC50: 14-18 ml/L Oncorhynchus mykiss 96 h static LC50: 27540 mg/L Lepomis macrochirus 96 h static LC50: 40761 mg/L Oncorhynchus mykiss 96 h static LC50: 40000-60000 mg/L Pimephales promelas 96 h static LC50: 16000 mg/L Poecilia reticulata 96 h static	EC50 = 10000 mg/L 16 h EC50 = 620 mg/L 30 min EC50 = 620.0 mg/L 30 min	EC50: 46300 mg/L Daphnia magna 48 h

Chemical Name	Log Pow
Ethylene glycol	-1.93



Material Safety Data Sheets

CONSIDERED A HAZARDOUS SUBSTANCE ACCORDING TO OSHA 29 CFR 1910.1200.

13. DISPOSAL CONSIDERATIONS

Waste Disposal Methods

This material, as supplied, is not a hazardous waste according to Federal regulations (40 CFR 261). This material could become a hazardous waste if it is mixed with or otherwise comes in contact with a hazardous waste, if chemical additions are made to this material, or if the material is processed or otherwise altered. Consult 40 CFR 261 to determine whether the altered material is a hazardous waste. Consult the appropriate state, regional, or local regulations for additional requirements.

Contaminated Packaging

Do not re-use empty containers.

14. TRANSPORT INFORMATION

<u>DOT</u>	Not regulated
<u>TDG</u>	Not regulated
<u>MEX</u>	Not regulated
<u>ICAO</u>	Not regulated
<u>IATA</u>	Not regulated
<u>IMDG/IMO</u>	Not regulated
<u>RID</u>	Not regulated
<u>ADR</u>	Not regulated
<u>ADN</u>	Not regulated



Material Safety Data Sheets

CONSIDERED A HAZARDOUS SUBSTANCE ACCORDING TO OSHA 29 CFR 1910.1200.

15. REGULATORY INFORMATION

International Inventories

TSCA All components are listed on the TSCA Inventory.

DSL All components are listed either on the DSL or NDSL.

Legend

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory

DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List

U.S. Federal Regulations

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372:

Chemical Name	CAS-No	Weight %	SARA 313 - Threshold Values %
Ethylene glycol	107-21-1	15-25	1.0

SARA 311/312 Hazard Categories

Acute Health Hazard	Yes
Chronic Health Hazard	Yes
Fire Hazard	No
Sudden Release of Pressure Hazard	No
Reactive Hazard	No

Clean Water Act

This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42).

CERCLA

This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302):



Material Safety Data Sheets

CONSIDERED A HAZARDOUS SUBSTANCE ACCORDING TO OSHA 29 CFR 1910.1200.

Chemical Name	Hazardous Substances RQs	Extremely Hazardous Substances RQs	RQ
Ethylene glycol	5000 lb		RQ 5000 lb final RQ RQ 2270 kg final RQ

U.S. State Regulations

California Proposition 65

This product does not contain any Proposition 65 chemicals.

U.S. State Right-to-Know Regulations

Chemical Name	New Jersey	Massachusetts	Pennsylvania	Illinois	Rhode Island
Ethylene glycol	X	X	X	X	X

International Regulations

Chemical Name	Carcinogen Status	Exposure Limits
Ethylene glycol		Mexico: Ceiling= 100 mg/m ³

Canada

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

WHMIS Hazard Class

D2B Toxic materials





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MSDS No. 031-36W19CP
First issue: 2011/01/26
Revised:
Page 12 of 12

Material Safety Data Sheets

CONSIDERED A HAZARDOUS SUBSTANCE ACCORDING TO OSHA 29 CFR 1910.1200.

Chemical Name	NPRI
Ethylene glycol	X

Legend

NPRI - National Pollutant Release Inventory

16. OTHER INFORMATION

General Disclaimer

The information provided on this MSDS is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guide for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered as a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other material or in any process, unless specified in the text.

Revision history

Version	Date	Content
1.0	2011/01/26	First Issue