

## Material Safety Data Sheets

CONSIDERED A HAZARDOUS SUBSTANCE ACCORDING TO OSHA 29 CFR 1910.1200.

### 1. Product and Company Identification

Product Name	: Eco-HS1 Ink Cyan
Product Code	: SPC-0538C
General Use	: Ink for ink jet printer
Product Description	: Solvent pigment ink
MSDS Number	:031-33S10CC
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

Emergency Overview	: Flammable liquid, acute toxic substance. Stagnant vapor may cause organic solvent poisoning. Do not inhale. Inhalation may cause any of the following symptoms: dizziness, headache, the stimulation of eyes, skin and respiratory tract. Carcinogen
Potential Health Effects	
Inhalation	: No adverse effects are anticipated from single exposure to vapor.
Eye Contact	: Risk of serious damage to eyes.
Skin Contact	: Prolonged contact is essentially nonirritating to skin. Repeated contact may cause skin irritation with local redness.
Ingestion	: Very low toxicity if swallowed. Small amounts swallowed incidentally as a result of normal handling operations are not likely to cause injury; however,

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swallowing larger amounts may cause injury.

Potential Environmental Effects : No potential environmental effects are known to be aggravated by exposure to

Eco-HS1 ink.

Medical conditions : No medical conditions are known to be aggravated by exposure to Eco-HS1 ink.

HMIS Rating (scale 0 – 4)

NFPA Rating (scale 0 – 4)

Health = 2

Health = 1

Flammability = 2

Flammability = 2

Reactivity = 1

Instability = 1

Protective Equipment = G

Special = 0

### 3. Composition / Information On Ingredients

No	Chemical Name	Wt%	CAS No.	Chemical Formula
1	Phthalocyanine blue	0.1-5	Registered	Trade secret
2	Vinyl chloride / Vinyl acetate copolymer resin	0.1-5	9003-22-9	Trade secret
3	Dipropylene glycol methyl ether acetate	1-20	88917-22-0	C <sub>8</sub> H <sub>18</sub> O <sub>3</sub>
4	Propylene glycol methyl ether acetate	1-20	108-65-6	C <sub>6</sub> H <sub>12</sub> O <sub>3</sub>
5	Dipropylene glycol dimethyl ether	30-60	111109-77-4	C <sub>7</sub> H <sub>14</sub> O <sub>3</sub>
6	Gamma-Butyrolactone	10-40	96-48-0	C <sub>4</sub> H <sub>6</sub> O <sub>2</sub>
7	Additives	0.1-5	Registered	Trade secret

OSHA Hazardous Components : Components 7 and 8 are hazardous components.

Components

(29 CFR 1910. 1200)

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### 4. First Aid Measures

Inhalation	: If inhaled, immediately remove to fresh air and keep warm and calm. If breathing irregularly or not breathing, give artificial respiration. Keep from swallowing vomit. Consult a doctor immediately. If inhaled and feeling sick, remove to fresh air, keep warm and calm and consult a doctor.
Eye Contact	: Flush eyes with plenty of water for at least 15 minutes. Consult a doctor immediately.
Skin Contact	: Immediately remove from skin with cloth. Flush thoroughly with plenty of water and soap or skin detergent. Do not use solvent or thinner. Consult a doctor in case of change of appearance or ache.
Ingestion	: If swallowed, keep calm and consult a doctor immediately. Keep from swallowing vomit.
Protection To First-Aiders	: Wear a tool for appropriate protection. Ventilate.
Note To Physician	: Treatment may vary with condition of victim and specifics of incident.

### 5. Fire Fighting Measures

Flammable Properties	: The harmful gas such as carbon monoxide or the low molecule monomer occurs by combustion. Flash point: 67±1 degree C Ignition point: Not available Explosion point: 0.85 ~ 15.60 volume %
Extinguishing Media	: Foam, carbon dioxide, dry chemical, water spray. Never splash water.
Fire Fighting	: Use proper protection (heat-resisting clothes, etc.).
Instructions	Promptly remove flammables.

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### 6. Accidental Release Measures

- Personal Precautions** : Avoid contact with eyes.  
Do not rub eyes with hands during cleanup.  
No special precautions for dermal contact are needed.  
Wash hands thoroughly after cleaning up spill or leak.
- Land Spill** : Use proper protection (gloves, masks, aprons, goggles, etc.)  
If Collect spills in a sealing container and remove to safe place.  
Dispose of waste according to legal instructions.  
Promptly remove ignitable, hot, or flammable items.  
Prepare proper fire extinguishers for accidental ignition.  
Use plastic or other equipment to prevent sparks during recovery operation.  
Use dry sand, dirt or other nonflammable absorber.
- Water Spill** : Avoid discharge to rivers and environmental effects.

### 7. Handling And Storage

- Handling** : Use proper protection (gloves, masks, aprons, goggles, etc.)  
Handle in well-ventilated area.  
Prohibit use of fire, sparks or heat source.  
Ground equipment against electrostatics and use explosion-proof electric equipment. Use spark-proof tools.  
Keep used cloths, waste paints or spray dusts in water until disposal.  
Use local exhaust system and proper protection if working in closed area.
- Storage** : Keep from sunlight and store in well-ventilated area.  
Keep from flame or heat source.  
Keep from freezing.  
Store in oxidizer and organic peroxides separately.

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### 8. Exposure Controls / Personal Protection

#### Exposure Controls

##### Occupational Exposure Controls

- Engineering Controls : Use explosion-proof handling equipment.  
Use exhaust system to prevent vapor build-up  
Ground transporting, scooping, agitating or other liquid handling equipment.  
Keep heat or fire sources from handling area.  
If working indoors, use automatic coating machine or other proper equipment to protect workers from direct exposure or use local exhaust system to protect workers from exposure.

##### Personal Protection

- Respiratory Protection : Wear gas masks for organic gases.  
Wear ventilation masks when working in closed area.  
An air purifying respirator with organic vapor cartridge or canister may be permissible under certain circumstances where air-borne concentrations are expected to exceed exposure limits.  
Protection provided by air purifying respirators is limited.



- Hand Protection : Wear gloves that resist organic solvents and chemicals.



- Eye Protection : Wear coverall, chemical goggles and face shield when handling.



- Skin Protection : To prevent any contact, wear impervious clothing such as gloves, apron, boots, or whole body suits made from neoprene, as appropriate.



##### Environmental Exposure Controls

- : Not available

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### 9. Physical And Chemical Properties

Appearance	- Physical state	: liquid(25 degree C)
	- Color	: Cyan
Odor		: Solvent odor
pH		: Not available
Boiling Point / Boiling Range		: 145 degree C ~ 209 degree C
Melting Point / Merging Range		: < - 30 degree C
Decomposition Temperature		: Not available
Flash Point		: 67±1 degree C
Auto-Ignition Temperature		: Not available
Flammability(solid, gas)		: Not available
Explosive Properties		: Explosion point:0.85 ~ 15.60 volume %
Oxidizing Properties		: Not available
Vapour Pressure		: 0.493kPa (20 degree C)
Relative density		: 0.995±0.01 (25 degree C)
Solubility		: Not available
Water solubility		: Very small amount
Partition Coefficient(n-octanol / water)		: Not available
Viscosity		: 4.0±0.3 mPa·s (25 degree C)
Vapour density		: 6.6
VOC		:929.9 g/L

### 10. Stability And Reactivity

Conditions To Avoid	: Excessive heat and cold. Sparks. Ignition sources. Direct sunlight. High humidity.
Stability	: Stable
Materials To Avoid	: Oxidant, explosive substance
Hazardous Reactions/	: Will not occur.
Decomposition Products	To burn this product may be produce toxic gases such as CO and low-molecular-weight monomers.

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### 11. Toxicological Information

Acute Toxicity	Oral: Rats LD50 2,674mg/kg Dermal: Rabbit LD50 2,845mg/kg Inhalation: Rats LC50 14mg/L (4h)
Eye Irritation	: Lactone compound Irritating to eyes. (rabbit eyes, OECD Guideline 405)
Skin Irritation	: Not available
Sensitization	: Not available

### 12. Ecological Information

Handling is noted because it might influence the environment when leaking and abandoning it.

Especially, note that the product doesn't flow directly to ground, the river, and the drain ditch.

Ecotoxicity	: Not available
Persistence And Degradability	: Not available
Bioaccumulative Potential	: Not available
Other Adverse Effects	: Not available

### 13. Disposal Considerations

: Have waste liquids, containers and other materials disposed of by licensed industrial waste contractors.

Keep waste liquids from flushing containers, machines or other equipment from flowing directly to the ground or drainage.

Dispose of wastes from drainage, combustion, etc, in compliance with laws and regulations on waste disposal or cleaning, or have them disposed of by contractors.

To avoid harmful gases, do not use incinerators without flushing systems to burn wastes and other materials.

Comply with all EU, national and local regulations.

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Do not dump this product into sewers, on the ground or into any body of water.

### 14. Transport Information

Check a thing without a leak in a container.

Perform prevention of collapse of cargo surely.

Us Department of Transportation (DOT)

Hazardous Materials :

Hazardous Materials :

Description and

Proper Shipping

Name

Hazardous Class or :

Division

Identification Number :

Packing Group (PG) :

Label(s) Required :

Sea Transport (IMDG)

Class : Not applicable

Packing Group (PG) :

UN Number :

Proper Shipping Name :

Marine Pollutant :

Air Transport (ICAO/IATA)

Class : Not applicable

Packing Group(PG) :

UN Number :

Proper Shipping Name :



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### 15. Regulatory Information

OSHA Status	: Vinyl chloride / Vinyl acetate copolymer resin is hazardous under 29 CFR 1910. 1200. Propylene glycol methyl ether acetate is hazardous under 29 CFR 1910. 1200. Dipropylene glycol dimethyl ether is hazardous under 29 CFR 1910. 1200. Gamma-Butyrolactone is hazardous under 29 CFR 1910. 1200.
TSCA Status	: All components on TSCA INVENTORY.
Cercla Reportable Quantity (40 CFR 117, 302)	: Not Applicable
SARA Title	
Section 302 (40 CFR 355)	: Not Applicable
Section 311/312 (40 CFR 370)	: Phthalocyanine blue Immediate (Acute) Health: Yes : Vinyl chloride / Vinyl acetate copolymer resin Delayed (Chronic) Health Hazard: Yes : Propylene glycol methyl ether acetate Delayed (Chronic) Health Hazard: Yes Fire Hazard: Yes : Dipropylene glycol dimethyl ether Fire Hazard: Yes : Gamma-Butyrolactone Delayed (Chronic) Health Hazard: Yes
Section 313 (40 CFR 372)	: Phthalocyanine blue (Copper Compound)

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### 16. Other Information

#### References

1) International Chemical Safety Cards (ICSC)

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It relates only to the specific material designated herein, and does not relate to use in combination with any other material or process.

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#### Revision history

Version	Date	Content
1.00	Apr 22,2008	First issue