

Safety Data Sheets

1. Identification

Product Name	: ES3 ink Cyan
Order No.	: SPC-0440C
General Use	: Ink for ink jet plotter
Product Description	: Solvent pigment ink
SDS Number	: 037-S040315
Manufacture	
Company Name	: Mimaki Engineering Co., Ltd.
Address	: 2182-3 Shigeno-otsu, 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.	: +1-678-730-0170
Emergency Telephone No.	: +1 866 928 0789 (within United States only, Toll free) +1 215 207 0061

2. Hazards Identification

[GHS Classification]

Physical Hazards

Flammable Liquids : Category 4

Health Hazards

Acute Toxicity – Oral : Not classified

Acute Toxicity – Dermal : Not classified

Acute Toxicity – Inhalation : Not classified

Skin Corrosion / Irritation : Category 2

Eye Damage / Irritation : Category 2

Sensitization – Respiratory : Not classified

Sensitization – Skin : Not classified

Germ Cell Mutagenicity : Not classified

Carcinogenicity : Not classified

Toxic to Reproduction : Category 1

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Specific Target Organ Toxicity (Single Exposure) : Category 2 (central nerve)

Specific Target Organ Toxicity (Repeated Exposure) : Not classified

Aspiration Hazard : Not classified

Environmental Hazards

Hazardous to the Aquatic : Not classified

Environment - Acute Hazard

Hazardous to the Aquatic : Not classified

Environment - Long Term Hazard

Hazardous to the Ozone Layer : Not classified

The above list does not include category being non-classifiable or not-applicable.

[GHS Label Elements]

Symbol



Signal Word

Danger

Hazard Statements

H227 Combustible liquid

H315 Causes skin irritation

H319 Causes serious eye irritation

H360 May damage fertility or the unborn child

H371 May cause damage to organs (central nerve)

Precautionary Statements

[Prevention]

P201 Obtain SDS (Safety Data Sheet) and printer's operation manual before use.

P202 Do not handle until all safety precautions have been read and understood.

P210 Keep away from open flames and other ignition sources. -No smoking.

P260 Do not breathe gas/mist.

P264 Wash hands and eyes thoroughly after handling.

P270 Do not eat, drink or smoke when using this product.

P280 Wear protective gloves/ eye protection/ face protection.

[Response]

P302+P352 IF ON SKIN: Wash with plenty of soap and water.

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes.

Remove contact lenses, if present and easy to do.

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Continue rinsing.

P308+P311 If exposed or concerned: Call a POISON CENTER/ doctor.

P332+P313 If skin irritation occurs: Get medical advice/attention.

P337+P313 If eye irritation persists: Get medical advice/ attention.

P362+P364 Take off contaminated clothing and wash it before reuse.

P370+P378 In case of fire: Use alcohol-resistant-related fire foam, dry chemical, carbon dioxide, water spray, dry sand for extinguish.

[Storage]

P403+P235 Store in a well-ventilated place. Keep cool.

P405 Store locked up.

[Disposal]

P501 Dispose of contents/container in accordance with local/regional/national/
international regulation (to be specified).

HMIS Rating (scale 0 – 4)

Health = 2

Flammability = 2

Reactivity = 1

Protective Equipment = C

②	Health
②	Flammability
①	Reactivity
C	Protective Equipment

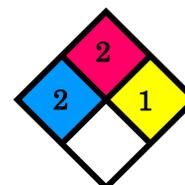
NFPA Rating (scale 0 – 4)

Health = 2

Flammability = 2

Instability = 1

Special = 0



CANADIAN WHMIS SYMBOLS : Not applicable

3. Composition / Information on Ingredients

No	Chemical Name	Wt%	CAS No.	Chemical Formula
1	Diethylene Glycol Diethyl ether	55-65	112-36-7	C ₈ H ₁₈ O ₃
2	Tetraethylene Glycol Dimethyl Ether	10-20	143-24-8	C ₁₀ H ₂₂ O ₅
3	γ -Butyrolactone	10-20	96-48-0	C ₄ H ₆ O ₂
4	Tetraethylene Glycol Monobuthyl Ether	< 5	1559-34-8	C ₁₂ H ₂₆ O ₅

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4. First Aid Measures

Inhalation	: IF exposed or concerned: Get medical advice/attention. Remove subject to ventilated fresh air. If not breathing, give artificial respiration right away. If breathing is difficult, give oxygen.
Eye Contact	: Immediately flush with room temperature, low pressure and clean water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Seek medical attention if eye irritation continues. If eye irritation persists, Get medical advice/ attention.
Skin Contact	: IF ON SKIN: Wash with plenty of soap and water. Take off contaminated clothing and wash before reuse. If skin irritation occurs: Get medical advice/attention.
Ingestion	: IF exposed or concerned: Call a POISON CENTER/ doctor. IF SWALLOWED: Do not induce vomiting.
Most important symptoms and effects, both acute and delayed	: Skin: Ink contact with skin may cause irritation, swelling or redness.
Note To Physician	: Not necessary

5. Fire Fighting Measures

Flammable Properties	: Combustible liquid under Hazard Communication Standard (HCS, U.S.A). Flash point : about 71°C (Closed cup) Autoflammability: None Explosive properties: 1.4~6.9v/v% as dipropylene glycol mono-methyl ether
Extinguishing Media	: Water spray, dry chemical, carbon dioxide or, alcohol foam
Unsuitable Extinguishing Media	: None
Fire Fighting Instructions	: Extinguish to use fire fighting media or plentiful fog water. Put protection wear without fail in case of firefighting work. Wear full fire-fighting turn-out gear (full bunker gear) and respiratory protection (self-contained breathing apparatus). Do not work in the leeward.

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6. Accidental Release Measures

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel : Eye or Skin protection required during clean-up. Use proper ventilation.

For emergency responders : None

Environmental precautions: : Do not release to sewer, surface- or ground-water.

Methods and material for containment and cleaning up

Advice on how to contain a spill : Use sponges to wipe-up ink.

Advice how to clean-up a spill : Rinse area with damp cloth. Place waste in closed container for disposal.
Wash hands with soap and water.

Any other information: : Do not dispose of waste to the sewer.

Reference to other sections : Please refer SECTION 13 for disposal.

7. Handling and Storage

Handling : Obtain SDS (Safety Data Sheet) and printer's manual instructions before use. Do not handle until all safety precautions have been read and understood. Wear protective equipment (see 8-section). Use proper ventilation and no fire in work place. Keep out of reach of children and do not drink ink. Do not dismantle cartridge. Make sure cartridge is dry before insertion into printer housing. Avoid contact with skin, eyes or clothing. In the case of skin contact, wash with soap and water.

Storage : Store locked up. Do not store the cartridge in high or freezing temperatures. Keep cartridge out of direct sunlight. Do not store the cartridge with oxidizing agents or explosives.

SPECIFIC USES : Not specified

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8. Exposure Controls / Personal Protection

Exposure Limit Values

No	Chemical Name		The 8-Hour TWA Exposure Value
1	Diethylene glycol diethyl ether (CAS No. 112-36-7)	California OELs	5 ppm 33mg/m ³

California OELs : California Code of Regulations, Title 8, Section 5155. Airborne Contaminants

Exposure Controls

Occupational Exposure Controls

Engineering Controls : Use exhaust ventilation to avoid from exposure.

Personal Protection

Respiratory Protection



: 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. Use a positive-pressure, air-supplied respirator if there is any potential for uncontrolled release, exposure levels are unknown, or in any other circumstances where air-purifying respirators may not provide adequate protection.

Hand Protection



Gloves

: Wear gloves that resist organic solvents and chemicals.

Eye Protection



Safety Glasses

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

Skin Protection



Protective Apron

: 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
	- Color	: Cyan
Odor		: Slightly
pH		: Not Applicable
Boiling Point / Boiling Range		: Not available
Melting Point / Melting Range		: Not available
Decomposition Temperature		: Not available
Flash Point		: 71°C (Closed cup method, ASTM D 3278)
Auto ignition temperature		: Not available
Explosive Properties		: Not available
Relative Density		: 0.9-1.1
Solubility in water		: Slightly soluble
Solubility in oil		: Not available
Viscosity		: < 5 mPa·s
Vapor Density		: Not available
Evaporation Rate		: Not available
VOC		: 740.9 g/L

10. Stability and Reactivity

Conditions to Avoid	: High and freezing temperatures
Stability	: Stable under normal temperature
Materials to Avoid	: Oxidizers and explosives
Hazardous Reactions / Decomposition Products	: To burn this product may be produce toxic gases.

11. Toxicological Information

Acute Toxicity	: Oral LD ₅₀	Dermal LD ₅₀
	>2500mg/kg(rats)	>2000mg/kg(rats)
Eye Irritation	: Mild irritant. (rabbit, OECD 405)	
	Diethylene Glycol Diethyl ether : Category 2A (GHS Classification)	
	γ -Butyrolactone : Category 2A (GHS Classification)	

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Skin Irritation	: Mild irritant. (rabbit, OECD 404) Diethylene Glycol Diethyl ether : Category 2 (GHS Classification)
Skin Sensitization	: Non-sensitizer(LLNA, OECD 429)
Mutagenicity	: Negative (by Ames Test)
Carcinogenicity	: Not meet the criteria for classification according to EU Directive 1999/45/EC Not contain any substances listed in IARC Monographs (1,2A and 2B)
Reproductive Toxicity	: Tetraethylene Glycol Dimethyl Ether : Category 1B (GHS Classification)
Specific Target Organ Toxicity (Single Exposure)	: γ -Butyrolactone : Category 2 (central nerve) (GHS Classification) Category 3 (drowsiness or dizziness) (GHS Classification)

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
Results of PBT and vPvB assessment	: Has not carried out PBT and vPvB assessment
Other Adverse Effects	: Not available

13. Disposal Considerations

: Dispose of contents/container to an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal.

Comply with all USA, national and local regulations.

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

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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 : Not Applicable

Sea Transport (IMDG)

Class : Not Applicable

Packing Group (PG) : Not Applicable

UN Number : Not Applicable

Proper Shipping Name : Not Applicable

Marine Pollutant : Not Applicable

Air Transport (ICAO/IATA)

Class : Not Applicable

Packing Group(PG) : Not Applicable

UN Number : Not Applicable

Proper Shipping Name : Not Applicable

15. Regulatory Information

TSCA Section 4(a) : Not regulated

Final Test Rules

Regulated

TSCA Section 5 : Ingredient : Diethylene glycol diethyl ether (CAS No. 112-36-7)

Significant New Use Reference: 76FR40850

Rule Regulation Ingredient : Tetraethylene glycol dimethyl ether (CAS No. 143-24-8)

proposed Reference: 76FR40850

TSCA Section 8(a) : Not regulated

Preliminary Assessment

Information Rule (PAIR)

TSCA Section 12(b) Ingredient : Diethylene glycol diethyl ether (CAS No. 112-36-7)

One-Time Export Reference: TSCA 5 Proposed SNUR

Notification Regulated Ingredient : Tetraethylene glycol dimethyl ether (CAS No. 143-24-8)

Reference: TSCA 5 Proposed SNUR

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Clean Air Act Section 112, Hazardous Air Pollutants	: Diethylene glycol diethyl ether (CAS No. 112-36-7)
EPCRA (SARA Title III) Section 313	: Diethylene glycol diethyl ether (CAS No. 112-36-7)
California Proposition 65	: Not regulated
Canada Information	: WHMIS Controlled Product: Not applicable (Manufactured article)
Australia Information	: Statement of Hazardous Nature: Classified as Toxic and Irritant according to criteria of NOHSC
New Zealand Information	: Hazardous Substances and New Organisms Act 1996: Not regulated
Others	: Please refer to any other federal, state and local regulations.

16. Other Information

This information is furnished without warranty, express or implied, except that it is accurate to the best knowledge of Mimaki Engineering Corporation.

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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