

# Safety Data Sheets

## 1. Identification

Product Name : ES3 ink Light Cyan  
Order No. : SPC-0440LC  
General Use : Ink for ink jet printer  
Product Description : Solvent pigment ink  
SDS Number : 037-S042024  
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 Australia  
Company Name : MIMAKI AUSTRALIA PTY LTD.  
Address : Unit 14, 38-46 South Street, Rydalmere, NSW 2116, Australia  
Telephone No. : + 61-2-8036-4500  
Emergency Telephone No. : +81-268-64-2281

## 2. Hazards Identification

### [GHS Classification]

#### Physical Hazards

Flammable Liquids : Category 4

#### Health Hazards

Skin Corrosion / Irritation : Category 2

Eye Damage / Irritation : Category 2

Toxic to Reproduction : Category 1

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

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

### [GHS Label Elements]

#### Symbol



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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.  
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

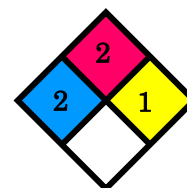
NFPA Rating (scale 0 – 4)

Health = 2

Flammability = 2

Instability = 1

Special = 0



CANADIAN WHMIS SYMBOLS : Not applicable

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### 3. Composition / Information on Ingredients

#### Mixtures

Chemical Name	Wt%	CAS No.	Chemical Formula
Bis(2-ethoxyethyl)ether	55-65	112-36-7	C <sub>8</sub> H <sub>18</sub> O <sub>3</sub>
Bis(2-(2-methoxyethoxy)ethyl) ether	10-20	143-24-8	C <sub>10</sub> H <sub>22</sub> O <sub>5</sub>
gamma-Butyrolactone	<20	96-48-0	C <sub>4</sub> H <sub>6</sub> O <sub>2</sub>
Tetraethylene Glycol Monobuthyl Ether	1-5	1559-34-8	C <sub>12</sub> H <sub>26</sub> O <sub>5</sub>

### 4. First Aid Measures

<p>Skin Contact</p>	<p>: Immediately take off all contaminated clothing.</p> <p>Areas of the body that have - or are only even suspected of having - come into contact with the product must be rinsed immediately with plenty of running water and possibly with soap.</p> <p>Wash thoroughly the body (shower or bath).</p> <p>Remove contaminated clothing immediately and dispose off safely.</p> <p>After contact with skin, wash immediately with soap and plenty of water.</p>
<p>Eye Contact</p>	<p>: In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.</p>
<p>Ingestion</p>	<p>: Do not under any circumstances induce vomiting. OBTAIN A MEDICAL EXAMINATION IMMEDIATELY.</p>
<p>Inhalation</p>	<p>: Remove casualty to fresh air and keep warm and at rest.</p>
<p>Most important symptoms and effects, both acute and delayed</p>	<p>: none</p>
<p>Indication of any immediate medical attention and special treatment needed</p>	<p>: In case of accident or unwellness, seek medical advice immediately (show directions for use or safety data sheet if possible).</p> <p>Treatment: None</p>

### 5. Fire Fighting Measures

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Flammable Properties	: Flash point : 71°C / 160° F
Extinguishing Media	: CO2 or Dry chemical fire extinguisher.
Unsuitable Extinguishing Media	: None in particular.
Special hazards arising from the substance or mixture	: Do not inhale explosion and combustion gases. Burning produces heavy smoke.
Advice for firefighters	: Use suitable breathing apparatus . Collect contaminated fire extinguishing water separately. This must not be discharged into drains. Move undamaged containers from immediate hazard area if it can be done safely.

### 6. Accidental Release Measures

Personal precautions, protective equipment and emergency procedures	: Wear personal protection equipment. Remove persons to safety. See protective measures under point 7 and 8.
Environmental precautions:	: Do not allow to enter into soil/subsoil. Do not allow to enter into surface water or drains. Retain contaminated washing water and dispose it. In case of gas escape or of entry into waterways, soil or drains, inform the responsible authorities. Suitable material for taking up: absorbing material, organic, sand
Methods and material for containment and cleaning up	: Wash with plenty of water.
Reference to other sections	: See also section 8 and 13

### 7. Handling and Storage

Precautions for safe handling	: Avoid contact with skin and eyes, inhalation of vapours and mists. Don't use empty container before they have been cleaned. Before making transfer operations, assure that there aren't any
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	incompatible material residuals in the containers.
	Contaminated clothing should be changed before entering eating areas.
	Do not eat or drink while working.
	See also section 8 for recommended protective equipment.
Conditions for safe storage, including any incompatibilities	: Keep away from food, drink and feed. Incompatible materials: None in particular. Instructions as regards storage premises: Adequately ventilated premises.
Specific end use(s)	: None in particular

### 8. Exposure Controls / Personal Protection

Control parameters	: No occupational exposure limit available
DNEL Exposure Limit Values	: <b>Bis(2-ethoxyethyl) ether - CAS: 112-36-7</b> Worker Industry: 5.96 mg/m <sup>3</sup> - Exposure: Human Inhalation Worker Industry: 1.71 mg/kg/day - Exposure: Human Oral Worker Professional: 50.05 mg/m <sup>3</sup> - Exposure: Human Inhalation - Frequency: Long Term, systemic effects Worker Professional: 3.43 mg/kg/day - Exposure: Human Dermal - Frequency: Long Term, systemic effects : <b>Bis(2-(2-methoxyethoxy)ethyl) ether - CAS: 143-24-8</b> Worker Professional: 22 mg/m <sup>3</sup> - Exposure: Human Inhalation - Frequency: Long Term, systemic effects Worker Professional: 3 mg/kg/day - Exposure: Human Dermal - Frequency: Long Term, systemic effects
PNEC Exposure Limit Values	: <b>Bis(2-ethoxyethyl) ether - CAS: 112-36-7</b> Target: Fresh Water - Value: 0.001 mg/l Target: Freshwater sediments - Value: 0.007 mg/kg Target: Marine water - Value: 0.0001397 mg/l Target: Marine water sediments - Value: 0.0006778 mg/kg Target: Air - Value: 0.000001105 mg/m <sup>3</sup> : <b>Bis(2-(2-methoxyethoxy)ethyl) ether - CAS: 143-24-8</b> Target: Fresh Water - Value: 32 mg/l Target: Freshwater sediments - Value: 127 mg/kg Target: Marine water - Value: 3.2 mg/l Target: Marine water sediments - Value: 12.7 mg/kg

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Target: Microorganisms in sewage treatments - Value: 500 mg/l

Legend:

DNEL: Derived No Effect Level, PNEC: Predicted No Effect Concentration

## Exposure Controls

### Occupational Exposure Controls

- Engineering Controls : Use exhaust ventilation to avoid from exposure.
- Eye protection : Not needed for normal use. Anyway, operate according good working practices.
- Protection for skin : Use clothing that provides comprehensive protection to the skin, e.g. cotton, rubber, PVC or viton.
- Protection for hands : Use protective gloves that provides comprehensive protection, e.g. P.V.C., neoprene or rubber.
- Respiratory protection : Not needed for normal use.
- Thermal Hazards : none
- Environmental exposure controls : none

## 9. Physical and Chemical Properties

[Information on basic physical and chemical properties]

Appearance	- Physical State	: liquid
	- Color	: Light Cyan
Odor		: Slightly
Odour threshold		: No data available
pH		: Not Relevant
Melting point / freezing point		: No data available
Initial boiling point and boiling range		: No data available
Solid/gas flammability		: No data available
Upper/lower flammability or explosive limits		: No data available
Vapour density		: No data available
Flash point		: 71 °C / 160 ° F (Cleveland open cup method, JIS K2265-4)
Evaporation rate		: No data available
Vapour pressure		: No data available
Relative density		: No data available
Solubility in water		: Slightly soluble

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Solubility in oil	: No data available
Partition coefficient (n-octanol/water)	: No data available
Auto-ignition temperature	: No data available
Decomposition temperature	: No data available
Viscosity	: < 5 mPa s
Explosive properties	: No data available
Oxidizing properties	: No data available
[Other information]	
Miscibility	: No data available
Fat Solubility	: No data available
Conductivity	: No data available

### 10. Stability and Reactivity

Reactivity	: Stable under normal conditions.
Chemical stability	: Stable under normal conditions.
Possibility of hazardous reactions	: none
Conditions to avoid	: Stable under normal conditions.
Incompatible materials	: None in particular.
Hazardous decomposition products	: none

### 11. Toxicological Information

#### [Information on toxicological effects]

##### Toxicological information of the mixture

acute toxicity	: Test: LD50 - Route: Oral - Species: Rat > 2500 mg/kg Test: LD50 - Route: Dermal - Species: Rat > 2000 mg/kg
skin corrosion/irritation	: Test: Skin Irritant - Species: Rabbit Mild irritant
serious eye damage/irritation	: Test: Eye Irritant - Species: Rabbit Mild irritant
respiratory or skin sensitisation	: Test: Skin Sensitisation - Route: LLNA - Species: Mouse Negative
germ cell mutagenicity	: Test: Mutagenesis - Species: Salmonella Typhimurium and Escherichia coli Negative

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Toxicological information of the main substances found in the mixture

**Bis(2-ethoxyethyl) ether - CAS: 112-36-7**

acute toxicity : Test: LD50 - Route: Oral - Species: Rat = 4970 mg/kg - Notes: OECD TG No.401

serious eye : Test: Eye Irritant - Species: Rabbit Non-irritant - Notes: OECD TG  
damage/irritation No.405

**Bis(2-(2-methoxyethoxy)ethyl) ether - CAS: 143-24-8**

acute toxicity : Test: LD50 - Route: Oral - Species: Rat = 3850 mg/kg - Notes: OECD  
Guideline 401 (Acute Oral Toxicity)

skin : Test: Skin Irritant - Species: Rabbit Non-irritant - Notes: OECD  
corrosion/irritation Guideline 404 (Acute Dermal Irritation / Corrosion)

serious eye : Test: Eye Irritant - Species: Rabbit Non-irritant - Notes: OECD  
damage/irritation Guideline 405 (Acute Eye Irritation / Corrosion)

germ cell : Test: Mutagenesis - Species: Salmonella Typhimurium and  
mutagenicity Escherichia coli Negative - Notes: OECD Guideline 471 (Bacterial  
Reverse Mutation Assay)

reproductive toxicity : Test: Reproductive Toxicity - Route: Oral - Species: Rat reprotoxic  
category 3 -Notes: OECD Guideline 421 (Reproduction / Developmental  
Toxicity Screening Test)

Substance(s) listed on the IARC Monographs

: gamma-Butyrolactone - Group 3.

## 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.

Toxicity : **Bis(2-ethoxyethyl) ether - CAS: 112-36-7**

Aquatic acute toxicity

Endpoint: LC50 - Species: Fish > 10000 mg/l - Duration h: 96

Endpoint: LC50 - Species: Daphnia = 6600 mg/l - Duration h: 96

: **Bis(2-(2-methoxyethoxy)ethyl) ether - CAS: 143-24-8**

Aquatic acute toxicity

Endpoint: EC50 - Species: Daphnia = 7467 mg/l - Duration h: 48 -

Notes: OECD

Guideline 202 (Daphnia sp. Acute Immobilisation Test)

Endpoint: ErC50 - Species: Algae = 8996 mg/l - Duration h: 72 -



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Notes: OECD

Guideline 201 (Alga, Growth Inhibition Test)

Persistence and Degradability	: No data available
Bioaccumulative Potential	: No data available
Mobility in soil	: No data available
Results of PBT and vPvB assessment	: vPvB Substances: None - PBT Substances: None
Other Adverse Effects	: none.

### 13. Disposal Considerations

Waste treatment methods	: Recover if possible. In so doing, comply with the local and national regulations currently in force.
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### 14. Transport Information

Check a thing without a leak in a container.

Perform prevention of collapse of cargo surely.

UN number : Not classified as dangerous in the meaning of transport regulations.

UN proper shipping name : No data available.

Transport hazard class(es) : No data available.

Packing group : No data available.

Environmental hazards : No data available.

Special precautions for user : No data available.

Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code : No data available.

### 15. Regulatory Information

[EU Information]

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: Dir. 98/24/EC (Risks related to chemical agents at work)  
 Dir. 2000/39/EC (Occupational exposure limit values)  
 Regulation (EC) n. 1907/2006 (REACH)  
 Regulation (EC) n. 1272/2008 (CLP)  
 Regulation (EC) n. 790/2009 (ATP 1 CLP) and (EU) n. 758/2013  
 Regulation (EU) 2015/830  
 Regulation (EU) n. 286/2011 (ATP 2 CLP)  
 Regulation (EU) n. 618/2012 (ATP 3 CLP)  
 Regulation (EU) n. 487/2013 (ATP 4 CLP)  
 Regulation (EU) n. 944/2013 (ATP 5 CLP)  
 Regulation (EU) n. 605/2014 (ATP 6 CLP)

Restrictions related to the product or the substances contained according to Annex XVII  
 Regulation (EC) 1907/2006 (REACH) and subsequent modifications

Restrictions related to the product : Restriction 3

Restrictions related to the substances contained : No restriction

Where applicable, refer to the following regulatory provisions : Directive 2003/105/CE ('Activities linked to risks of serious accidents') and subsequent amendments.  
 Regulation (EC) nr 648/2004 (detergents).  
 1999/13/EC (VOC directive)

:  
 Provisions related to directives : No data available  
 82/501/EC(Seveso),  
 96/82/EC(Seveso II)

### [USA Information]

TSCA - Toxic Substances Control Act : TSCA inventory: all the components are listed on the TSCA inventory.  
 TSCA listed substances: Bis(2-ethoxyethyl) ether is listed in TSCA Section 5a - SNUR, Section 12b.

SARA - Superfund Amendments and Reauthorization Act : Section 302 – Extremely Hazardous Substances: no substances listed.

Section 304 – Hazardous substances: no substances listed.  
 Section 313 – Toxic chemical list: Bis(2-ethoxyethyl) ether.

CAA - Clean Air Act : CAA listed substances:

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Bis(2-ethoxyethyl) ether is listed in CAA Section 111, Section 112.

California Proposition : Substance(s) listed under California Proposition 65: None.

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### [Canada Information]

WHMIS Controlled : Not applicable (Manufactured article)

Product

### [Australia Information]

Statement of : Classified as Toxic and Irritant according to criteria of NOHSC

Hazardous Nature

### [New Zealand Information]

Hazardous Substances : Not regulated

and New Organisms

Act 1996

Chemical safety : No.

assessment

## 16. Other Information

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