



Product Name: ES3 ink Cyan

SDS No. 037-S042020

First issue: 2017/04/13

Revised: 2024/06/27

Safety Data Sheets

1. Identification

Product Name : ES3 ink Cyan
Order No. : SPC-0440C
General Use : Ink for ink jet Printer
Product Description : Solvent pigment ink
SDS Number : 037-S042020
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. : +61 2 8014 4558 (within Australia only)
18000 74234 (within Australia only)
+65 3158 1074

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]

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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

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

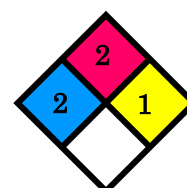
NFPA Rating (scale 0 – 4)

Health = 2

Flammability = 2

Instability = 1

Special = 0



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CANADIAN WHMIS SYMBOLS : Not applicable

3. Composition / Information on Ingredients

Mixtures

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

4. First Aid Measures

Skin Contact

: Immediately take off all contaminated clothing.

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.

Wash thoroughly the body (shower or bath).

Remove contaminated clothing immediately and dispose off safely.

After contact with skin, wash immediately with soap and plenty of water.

Eye Contact

: In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

Ingestion

: Do not under any circumstances induce vomiting. OBTAIN A MEDICAL EXAMINATION IMMEDIATELY.

Inhalation

: Remove casualty to fresh air and keep warm and at rest.

Most important

: none

symptoms and effects,
both acute and delayed

Indication of any

: In case of accident or unwellness, seek medical advice immediately (show directions for use or safety data sheet if possible).

immediate medical

attention and special

Treatment: None

treatment needed

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.
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	Before making transfer operations, assure that there aren't any 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	: Bis(2-ethoxyethyl) ether - CAS: 112-36-7 Worker Industry: 5.96 mg/m3 - Exposure: Human Inhalation Worker Industry: 1.71 mg/kg/day - Exposure: Human Oral Worker Professional: 50.05 mg/m3 - Exposure: Human Inhalation - Frequency: Long Term, systemic effects Worker Professional: 3.43 mg/kg/day - Exposure: Human Dermal - Frequency: Long Term, systemic effects : Bis(2-(2-methoxyethoxy)ethyl) ether - CAS: 143-24-8 Worker Professional: 22 mg/m3 - 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	: Bis(2-ethoxyethyl) ether - CAS: 112-36-7 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/m3 : Bis(2-(2-methoxyethoxy)ethyl) ether - CAS: 143-24-8 Target: Fresh Water - Value: 32 mg/l Target: Freshwater sediments - Value: 127 mg/kg Target: Marine water - Value: 3.2 mg/l

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Target: Marine water sediments - Value: 12.7 mg/kg

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 : 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 (closed cup method, ASTM D 3278)

Evaporation rate : No data available

Vapour pressure : No data available

Relative density : 0.9 - 1.1

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Solubility in water	: Slightly soluble
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	: Test: Mutagenesis - Species: Salmonella Typhimurium and

Safety Data Sheets

mutagenicity Escherichia coli Negative

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)

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

Notes: OECD

Guideline 201 (Alga, Growth Inhibition Test)

Persistence and : No data available

Degradability

Bioaccumulative : No data available

Potential

Mobility in soil : No data available

Results of PBT and : vPvB Substances: None - PBT Substances: None

vPvB assessment

Other Adverse Effects : none.

13. Disposal Considerations

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

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 : No data available.
nameTransport hazard : No data available.
class(es)

Packing group : No data available.

Environmental hazards : No data available.

Special precautions for : No data available.
user

Transport in bulk : No data available.

according to Annex II of

MARPOL73/78 and the

IBC Code

15. Regulatory Information

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[EU Information]

: 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.



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CAA - Clean Air Act : CAA listed substances:
Bis(2-ethoxyethyl) ether is listed in CAA Section 111, Section 112.
California Proposition : Substance(s) listed under California Proposition 65: None.
65

[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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