

Material Safety Data Sheets

CONSIDERED A HAZARDOUS SUBSTANCE ACCORDING TO OSHA 29 CFR 1910.1200.

1. Product and Company Identification

Product Name	: ES3 ink Black
Product Code	: SPC-0440K
General Use	: Ink for ink jet plotter
Product Description	: Solvent pigment ink
MSDS Number	:031-34S04KC
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	: Combustible liquid. Ink component is a black liquid that causes eye, nose or throat irritation, and that effects anesthesia, if inhaled. Ink may flash, when under high temperature. Avoid contact with eyes or clothing. In the case of skin contact, wash with soap and water. Keep out of reach of children.
Potential Health Effects	
Inhalation	: Intentional exposure to ink vapors (mist) will cause respiratory irritation and anesthesia.
Eye Contact	: Ink contact with eye will be irritating.
Skin Contact	: Ink contact with skin may cause minimally irritation.
Ingestion	: May cause upset stomach.
Carcinogens	: No ingredients are listed by OSHA, IARC, or NTP as known or suspected carcinogens.
Potential Environmental Effects	: No data available on the adverse effects of this ink on the environment

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3. Composition / Information On Ingredients

No	Chemical Name	Wt%	CAS No.	Chemical Formula
1	Carbon black	1.0-5.0	1333-86-4	-
2	Synthetic polymer	1.0-5.0	Trade Secret	-
3	Bis(2-ethoxyethyl)ether	55-65	112-36-7	C ₈ H ₁₈ O ₃
4	gamma-butyrolactone	10-20	96-48-0	C ₄ H ₆ O ₂
5	Bis(2-(2-methoxyethoxy)ethyl) ether	10-20	143-24-8	C ₁₀ H ₂₂ O ₅
6	3,6,9,12-tetraoxahexadecan-1-ol	1.0-5.0	1559-34-8	C ₁₂ H ₂₆ O ₅
7	Additives	1.0-5.0	Trade Secret	-

OSHA Hazardous : Not hazardous

Components

(29 CFR 1910. 1200)

4. First Aid Measures

- Inhalation : Remove subject to ventilated fresh air. If not breathing, give artificial respiration right away. If breathing is difficult, give oxygen. Seek immediate medical attention.
- Eye Contact : Immediately flush with room temperature, low pressure, clean water for at least 15 minutes. Seek medical attention if eye irritation continues.
- Skin Contact : Wash surface areas with soap and water. Wash soiled clothing before rewearing. Consult a physician if irritation continues.
- Ingestion : Seek medical advice; and attention if stomach continues to be upset.
- Protection To First-Aiders : Wear a tool for appropriate protection. Ventilate.

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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, CO2, alcohol foam
Fire Fighting Instructions	: Extinguish to use fire fighting media or plentiful fog water. Put protection wear without fail in case of fire fighting work; do not work in the leeward.

6. Accidental Release Measures

Personal Precautions	: Extinguish to use fire fighting media or plentiful fog water. Put protection wear without fail in case of fire fighting work; do not work in the leeward.
Methods for cleaning up	: If a spill occurs, use sponges to wipe-up ink, then rinse area with damp cloth. Place waste in closed container for disposal. Do not dispose of waste to the sewer. Wash hands with soap and water.

7. Handling And Storage

Handling	: Use proper ventilation and no fire in work place. Put protection wear that has electrical conductivity in case of work. 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.
Storage	: Do not store the cartridge in high or freezing temperatures. Keep cartridge out of direct sunlight. Do not dismantle cartridge. Do not store cartridges with oxidizing with agents or explosives.

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8. Exposure Controls / Personal Protection

Exposure Limit Values

Not available

Exposure Controls

Occupational Exposure Controls

Engineering Controls : Proper ventilation

Personal Protection

Respiratory Protection : Not required under suitable use as setting the cartridge on the printer; however, self – contained breathing apparatus or organic canister mask is sufficient when used for work.

Hand Protection : Not required under suitable use as setting the cartridge on the printer; however, wearing gloves is sufficient.

Eye Protection : Not required under suitable use as setting the cartridge on the printer; however, wearing safety goggles is sufficient.

Skin Protection : Not required under suitable use as setting the cartridge on the printer; however, wearing protection clothes is sufficient.

Environmental Exposure Controls

: Not established

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9. Physical And Chemical Properties

Appearance	- Physical state	: liquid
	- Colour	: Black
Odour		: Slightly
pH		: Not Applicable
Boiling Point / Boiling Range		: Not available
Melting Point / Mering Range		: Not available
Flash Point		: about 71 degree C (Close cup)
Flammability(solid, gas)		: Not available
Explosive Properties		: 1.4~6.9 v/v % as Gamma-butyrolactone
Specific Gravity		: 0.985 ~ 0.995 (20 degree C)
Solubility		: Not available
Water solubility		: Soluble
Viscosity		: 4.15 ~ 4.65 (20 degree C)
Vapour density		: Greater than 1 (air=1)
VOC		: 735.6 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/	: Not available.
Decomposition Products	

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11. Toxicological Information

*Based on toxicology data of chemically similar material.

Acute Toxicity	: Oral LD ₅₀	Dermal LD ₅₀	Inhalant LC ₅₀
	>2500mg/kg(rats) *	>2000mg/kg(rats) *	Not available.
Eye Irritation	: Overexposure of eye surface to ink may be mildly irritating. Moderate irritant. (rabbit, OECD 405)*		
Skin Irritation	: Overexposure of skin to ink contact may cause irritation and in some people swelling and redness. Mild irritant. (rabbit, OECD 404)*		
Inhalation	: Intentional inhalation overexposure to ink vapors may result in respiratory tract irritation and anesthesia.		
Ingestion	: Intentional or accidental oral ingestion may cause an upset stomach.		
Sensitization	: Non-sensitizer(LLNA, OECD 429)*		
Mutagenicity	: Negative (by Ames Test)*		
Carcinogenicity	: With excessive exposure, carbon black has been listed as a possible human carcinogen. However, as engineered within this ink cartridge, emissions to air of carbon black during normal printing use have not been found. IARC, the International Agency for Research on Cancer, has found printing inks to be not classifiable as human carcinogens as group 3. : IARC gamma-Butyrolactone [96-48-0] (Vol. 11, Suppl. 7, Vol. 71; 1999): 3		

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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 : Not available

Degradability

Bioaccumulative : Octanol/water partition coefficient :

Potential Bis(2-ethoxyethyl) ether; log Pow: 0.39

gamma-butyrolactone; log Pow: -0.57

Other Adverse Effects : Not available

13. Disposal Considerations

Disposal should be in accordance with federal, and local requirement.

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) : No classification assigned.

Air Transport (ICAO/IATA): No classification assigned.

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15. Regulatory Information

TSCA Section 4(a) Final : Not regulated.

Test Rules Regulated

TSCA Section 8(a) : Not regulated.

Preliminary Assessment

Information Rule(PAIR)

TSCA Section12(b) : Not regulated.

One-Time Export

Notification Regulated

California Proposition 65 : Not regulated.

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 dose not relate to use in combination with any other material or process.

Mimaki Engineering Corporation assumes no legal responsibility for use or reliance upon this information.

Revision history

Version	Date	Content
1.0	2008/06/12	First issue