Material Safety Data Sheet

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name: ES3 ink in cartridge, SPC-0433K, SPC-0440K
Company Identification
Manufacturer's Name / Supplier Address: Mimaki Engineering Co., Ltd.
1333-3 Kazawa Oaza Tomishi,
Nagano 389-0514 Japan
Phone Number / Fax: 81-268-64-2413 / 81-268-62-3996
Contact Person: Masaru ohnishi (Inks & Media Dept.)

2. COMPOSITION / INFORMATION ON INGREDIENTS

This is ES3 ink formulation.
Ink Composition(% by weight)

Material	CAS NO.	Concentration (%)	Risk Phurases
Carbon black	1333-86-4	1-5%	-
Synthetic polymer	-	1-5%	-
Dipropylene glycol diethyl ether	112-36-7	55-65%	-
Gamma-butyrolactone	96-48-0	10-20%	-
Tetraethylene glycol, dimethyl ether	143-24-8	10-20%	-
Tetraethylene glycol, monobutyl ether	1559-34-8	1-5%	-
Additives	-	1-5%	-

3. HAZARDS IDENTIFICATION

3.1 Emergency Overview:

Ink component is a black liquid that cause eye, nose or throat irritation, and that effects anesthesia, if inhales. Ink may flash, when under higt temperature. Avoid contact with eyes or clothing. In the case of skin contact, wash with soap and water. Keep out of reach of children.

3.2 Potential Health Effect:

Eyes: Ink contact with eye will be irritating. See Section 11 for Toxicology.
Skin: Ink contact with skin may cause minimally irritation. See Section 11 for Toxicology.
Inhalation: Intentional exposure to ink vapors(mist) will cause respiratory irritation and anesthesia. See Section 11 for Toxicology.
Ingestion: May cause upset stomach. See Section 11 for Toxicology.

4. FIRST AID MEASURE

Eye:	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 reweaving. Consult a physician if irritation continues.
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.
Ingestion:	Seek medical advice; and attention if stomach continues to be upset.

5. FIRE FIGHTING MEASURES

5.1 Flammability:	Combustible liquid. See Section 9 for Flash Point.
5.2 Extinguishers:	Water spray, dry chemical, CO_2, alcohol foam
5.3 Method:	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

Removed the person of the leeward. Keep away the person from periphery of the place of the leakage. Remove the ignition promptly. Put protection wear without fail in case of work; do not work in the leeward. Ventilate sufficiently during clean-up in case of inside of a house.
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

Keep out of reach of children and do not drink ink. Use proper ventilation and so fire in work place. 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. Make sure cartridge is dry before insertion into printer housing.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 Engineering Controls: Proper ventilation
8.2 Exposure Controls:
8.2.1 Occupational exposure controls: Not established

8.2.1.1 Respiratory protection:	Not required under suitable use as setting the cartride on the printer; however, ventilation is sufficient during works in a room.
8.2.1.2 Hand protection:	Not required under suitable use as setting the cartride on the printer; however, wearing glolves is sufficient.
8.2.1.3 Eye protection:	Not required under suitable use as setting the cartride on the printer; however, wearing glolves is sufficient.
8.2.1.4 Skin protection:	Not required under suitable use as setting the cartride on the printer; however, wearing glolves is sufficient.
8.2.2 Environmental exposure controls:	Not established

9. PHYSICAL AND CHEMICAL PROPERTIES

Apperranse:	Black Liquid
Odor:	Slightly
pH:	Not applicable
Boiling point:	Not data available
Melting point:	Not data available
Flash point:	about 71°C(Close cup)
Autoflammability:	None
Exolsive properties:	1.4~6.9v/v% as Gamma-butyrolactone
Oxidizing properties:	None
Vapor density:	Greater than 1 (air=1)
Relative density:	Not data available
Solubility in water:	Soluble
Solubility in fat:	Not data available
Partition coefficient:	Not data available
Viscosity:	Not data available

10. STABILITY AND REACTIVITY

Stability:	Stable under normal temperature
Hazardous polymerization:	No data avaible
10.1 Condition to avoid:	High and freezing temperatures
10.2 Materials to avoid:	Oxidizers and explosives
10.3 Hazardous secomposition products:	Not data available

11. TOXICOLOGICAL INFORMATION

Based on toxicology date chemically similar material

Routes Of Overexposure: Eye, skin, inhalation, and oral

Acute Health Hazards:

・Overexposure of eye surface to ink may be mildly irritating

・Overexposure of skin to ink contact may cause irritation and in some people swelling and redness

・Intentional inhalation overexposure to ink vapors may result in respiratory tract irritation and anesthesia

・Intentional or accidental oral ingestion may cause an upset stomach

Chronic Health Hazards: None known

Mugtagenicity: No date available

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.

Toxicity Data:	Oral LD50	Dermal LD50	Inhalant LC50
	No date available	No data available	No data available

Eye irritating: No date available

Skin irritating: No date available

Skin sensitizing: No date available

12. BIOLOGICAL INFORMATION

12.1 Ecotoxicity:	No data available on the adverse effects of this material.
12.2 Mobility:	No data available on the adverse effects of this material.
12.3 Persistence and degradability:	No data available on the adverse effects of this material.
12.4 Bioaccumulative potential:	No data available on the adverse effects of this material.
12.5 Other adverse effects:	No date available

13. DISPOSAL CONSIDERATIONS

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

14. TRANSPORT INFORMATION

UN Class / UN Number : Not applicable

15. REGULATORY INFORMATION

UN Regulation :

TSCA Section 4(a) Final Test Rules Regulated	Not regulated
TSCA Section 8(a) Preliminary Assessment Information Rule(PAIR)	Not regulated
TSCA Section 8(a) Inventory Update Rule	Not regulated
TSCA Section 12(b) One-Time Export Notification Regulated?	Not regulated
California Proposition 65:	

16. EU REGULATORY INFORMATION

EU Information
Symbols and indication according to 1999/45/EC:
This ink dose not meet the criteria for classification as dangerous.

17. OTHER INFORMATION

Use application: Ink for MIMAKI ink jet plotter

Caution: This MSDS is a concise assortment of information necessary for proper use of the Mimaki products. The MSDS reflects the latest documents, information and data available at the time of publication. However, assessment on risks and hazards may not be complete and extra precaution on use is highly recommendable. The MSDS is subject to change without notice due to revision of laws and/or new knowledge.

End of MSDS