Material Safety Data Sheets

1. Product and Company Identification

Product Name	: HS ink Black
Product Code	: SPC-0473K-5, SPC-0589K-5
General Use	: Ink for ink jet printer
Product Description	: Solvent pigment ink
MSDS Number	: 031-37S06KC
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

〔GHS Classification〕

Physical Hazards

Explosives	: Not applicable
Flammable Gases	: Not applicable
Flammable Aerosols	: Not applicable
Oxidizing Gases	: Not applicable
Gases under Pressure	: Not applicable
Flammable Liquids	: Category 4
Flammable Solids	: Not applicable
Self-reactive Substances and mixtures	: Not applicable
Pyrophoric Liquids	: Not applicable
Pyrophoric Solids	: Not applicable
Self-heating Substances and Mixtures	: Classification not possible
Substances and Mixtures, which in Contact with Water, Emit Flammable Gases	: Not applicable

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Oxidizing Liquids	: Not applicable
Oxidizing Solids	: Not applicable
Organic Peroxides	: Not applicable
Corrosive to Metals	: Classification not possible

Health Hazards

Acute Toxicity – Oral	: Category 5
Acute Toxicity – Dermal	: Category 5
Acute Toxicity – Inhalation (Steam)	: Category 4
Skin Corrosion / Irritation	: Category 3
Eye Damage / Irritation	: Category 2A
Sensitization – Respiratory	: Classification not possible
Sensitization – Skin	: Classification not possible
Germ cell Mutagenicity	: Classification not possible
Carcinogenicity	: Classification not possible
Toxic to Reproduction	: Classification not possible
Specific Target Organ Toxicity (Single Exposure)	: Classification not possible
Specific Target Organ Toxicity (Repeated Exposure)	: Classification not possible
Aspiration Hazard	: Classification not possible

Environmental Hazards

Hazardous to the Aquatic Environment - Acute Hazard	: Not classified for acute
Hazardous to the Aquatic Environment - Long Term Hazard	: Not classified for chronic
Hazardous to the Ozone Layer	: Classification not possible

〔GHS Label Elements〕

Symbol

Signal Word

Warning

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Hazard Statements

H227 Combustible liquid

H303 May be harmful if swallowed

H313 May be harmful in contact with skin

H316 Causes mild skin irritation

H319 Causes serious eye irritation

H332 Harmful if inhaled

Precautionary Statements

[Prevention]

P210 Keep away from flames and hot surfaces. - No smoking.

P261 Avoid breathing gas, mist and vapours.

P264 Wash hands thoroughly after handling.

P271 Use only outdoors or in well-ventilated area.

P280 Wear protective gloves, protective clothing, eye protection and face protection.

[Response]

P304 + P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P312 Call a doctor if you feel unwell.

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

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

P370 + P378 In case of fire, use foam, carbon dioxide, dry chemical and water spray.

[Storage]

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

[Disposal]

P501 Dispose of contents and container in accordance with local, regional, national and international regulation.

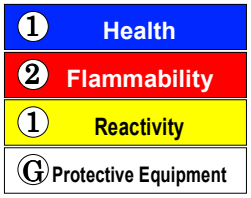
HMIS Rating (scale 0 – 4)

Health = 1

Flammability= 2

Reactivity = 1

Protective Equipment = G



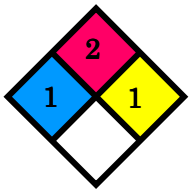
NFPA Rating (scale 0 – 4)

Health = 1

Flammability = 2

Instability = 1

Special = None



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3. Composition / Information on Ingredients

No	Chemical Name	Wt%	CAS No.	Chemical Formula
1	Carbon black	0.1-5	Registered	Trade secret
2	Cupper compound	0.1-5	Registered	Trade secret
3	Vinyl chloride / Vinyl acetate copolymer resin	0.1-5	Registered	Trade secret
4	Polyester resin	0.1-5	Registered	Trade secret
5	Dipropylene glycol methyl ether acetate	10-20	88917-22-0	$C_9H_{18}O_4$
6	Dipropylene glycol dimethyl ether	30-60	111109-77-4	$C_8H_{18}O_3$
7	Gamma-Butyrolactone	10-40	96-48-0	$C_4H_6O_2$
8	Additives	0.1-5	Registered	Trade secret

4. First Aid Measures

Inhalation : If inhaled, immediately remove to fresh air and keep warm and calm.
If breathing irregularly or not breathing, give artificial respiration and consult a doctor immediately.

Eye Contact : Flush eyes thoroughly with water for at least 15 minutes.
Remove contact lenses, if present and easy to do.
Consult an ophthalmologist immediately.

Skin Contact : Wash skin thoroughly with plenty of water.
If on clothing, remove immediately contaminated clothing.

Ingestion : Do not induce vomiting.
If swallowed, keep calm and consult a doctor immediately.
Keep from swallowing vomit.

Protection to First-Aiders : Wear tools for appropriate protection.
Ventilate.
See section 7 and 8.

Note to Physician : See section 7 and 8.

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5. Fire Fighting Measures

Flammable Properties	: Avoid breathing combustion products. Flash point : 74 degree C Ignition point : Not available Explosion point : 15.60～0.85 vol%
Extinguishing Media	: Foam, carbon dioxide, dry chemical, water spray. Never splash water.
Fire Fighting Instructions	: Wear tools for appropriate protection. Eliminate ignition sources. Stay upwind. Keep people away. Keep wetted with water surrounding equipment. Avoid discharge chemical substances to rivers and sewers.

6. Accidental Release Measures

Personal Precautions	: Wear tools for appropriate protection. Keep unnecessary and unprotected personnel from entering in vicinity of spill. Ventilate. See section 8.
Environmental Precautions	: Avoid discharge to rivers and environmental effects.
Steps to be Taken if Material is Spilled	: Small spills: Absorb with nonflammable absorbent such as dry sand and dirt. Large spills: Pump spills into a sealing container and remove to safe place. Use non-sparking equipment during recovery operation and ground equipment. See section 13, Disposal Considerations, for disposing of waste.
Second-Accident Precautions	: Prepare proper fire extinguishers and eliminate all sources of ignition in vicinity of spill. Avoid walking on the spills. Use safety tools to prevent sparks.

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7. Handling and Storage

Handling : Handle in well-ventilated area.
Prohibit use of fire, sparks and heat source.
Use antistatic clothing and shoes.
Ground equipment against electrostatics and use spark-proof tools.
Keep from increasing of temperature for flammable substance.
Use local exhaust system and proper protection if working in closed area.
Use proper protection (gloves, masks, aprons, goggles, etc.)

Storage : Keep from sunlight and store in well-ventilated area.
Keep from flame or heat source.
Keep from freezing.
Store in oxidizer and organic peroxides separately.

8. Exposure Controls / Personal Protection

Exposure Limit Values

No	Chemical Name		TWA	STEL	Ceiling	Skin	SEN
1	Carbon Black	OSHA PEL	3.5mg/m3	N.E.	N.E.	N.E.	N.E.
		ACGIH TLV	3.5mg/m3	N.E.	N.E.	N.E.	N.E.

Exposure Controls

Occupational Exposure Controls

Engineering Controls : Use explosion-proof equipment if handle in volume.
Use exhaust system to prevent vapor build-up.
Keep heat or fire sources from handling area.
If working indoors, use proper equipment to protect workers from direct exposure or use local exhaust system to protect workers from exposure.

Personal Protection

Respiratory Protection : Wear protective masks for hazardous materials.

Hand Protection : Wear gloves resistant to organic solvents and chemicals.

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Eye Protection	: Wear chemical goggles.
Skin Protection	: Wear clothing to protect skin from direct exposure. Wear protective clothing resistant to chemicals.
Environmental Exposure Controls	: Not available

9. Physical and Chemical Properties

Appearance	- Physical State	: Liquid (25 degree C)
	- Color	: Black
Odor		: Solvent odor
pH		: Not available
Boiling Point / Boiling Range		: 175 degree C～209 degree C
Melting Point / Melting Range		: <－30 degree C
Flash Point		: 74 degree C
Flammability (Solid, Gas)		: Not Applicable
Upper / Lower Flammability or Explosive Limits		: 15.60～0.85 vol%
Vapor Pressure		: 257 Pa (20 degree C)
Vapour Density		: 6.6
Relative Density		: 1.00 (25 degree C)
Solubility (Ies)		: Very small amount
Partition Coefficient (n-octanol / Water)		: Not available
Viscosity		: 4.0 mPa･s (25 degree C)

10. Stability and Reactivity

Conditions to Avoid	: Excessive heat and cold, sparks, ignition sources, direct sunlight and high humidity.
Stability	: Stable
Materials to Avoid	: Oxidant, explosive substance
Hazardous Reactions / Decomposition Products	: To burn this product may be produce toxic gases such as CO and low-molecular-weight monomers.
Other	: Plastic and rubbers might be melted.

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11. Toxicological Information

Acute Toxicity	: Rats LD50 >2,000mg/kg: Category 5
	: Rabbit LD50 >2,000mg/kg: Category 5
	: Rats LC50 >10mg/L (4h) : Category 4
Carcinogenicity	: Carbon Black
	IARC category 2B
	(Not possible to classify as a printing ink)
Others	: Not available

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	: Rainbow trout LC50 (96h) 111mg/L (Dipropylene glycol methyl ether acetate)
	: Guppy LC50 (96h) 1000mg/L (Dipropylene glycol dimethyl ether)
	: Leucious idus LC50 (96h) 220－＜460mg/L (Gamma-Butyrolactone)
	It was thought that the ecology toxicity was lower than the above-mentioned data, and made it outside division
	: Not classified for acute
Persistence And Degradability	: Not available
Bioaccumulative Potential	: logKow = 0.61 (Dipropylene glycol methyl ether acetate)
	logKow = 0.42 (Dipropylene glycol dimethyl ether)
	logKow = 0.556 (Gamma-Butyrolactone)
	It was thought that the ecology toxicity was lower than the above-mentioned data, and made it outside division
	: Not classified for chronic

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13. Disposal Considerations

: Have waste inks, containers and other materials disposed by licensed industrial waste disposer.
Adsorb to diatom earth and others to dispose waste inks, and use open incinerator.
Dispose of wastes by licensed industrial waste disposer to comply with the local laws and regulations.
Empty inks and other materials out of containers if disposed.
Comply with all USA, national and local regulations.
Do not dump this product into sewers, on the ground or into any body 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

15. Regulatory Information

TSCA Status	: All components on TSCA INVENTORY.
SARA TitleⅢ	
Section 311/312	: Fire Hazard: Yes
(40 CFR 370)	Pressure Hazard: No
	Reactivity Hazard: No
	Immediate Hazard: Yes
	Delayed Hazard: Yes
California Proposition 65	: This product contains, or may contain, trace quantities of a substance(s) known to the state of California to cause cancer and / or reproductive toxicity.

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16. Other Information

References : International Chemical Safety Cards (ICSC)

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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Revision history

Version	Date	Content
1.0	2011/09/30	First issue