

Safety Data Sheets

Section 1 - PRODUCT AND COMPANY IDENTIFICATION

Material Name

BS4 ink Black

Product Description

BS4-K-60 / BS4-K-2L

Ink Ver 2

Product Use

INK JET Ink

Restrictions on Use

None known.

Manufacturer Information

Mimaki Engineering Co., Ltd
2182-3 Shigeno-otsu, Tomi-shi, Nagano
389-0512 Japan

Telephone number: +81-268-64-2413

Emergency telephone number: +81-268-64-2281

Importer / Distributor Information

MIMAKI AUSTRALIA PTY LTD.
Unit 14, 38-46 South Street, Rydalmere, NSW 2116, Australia

Telephone number: + 61-2-8036-4500

Section 2 - HAZARDS IDENTIFICATION

Classified to Globally Harmonised System of Classification and Labelling of Chemicals, Third revised edition, published by the United Nations as modified under Schedule 6 of the Work Health and Safety Regulation.

GHS Classification

Flammable Liquids - Category 4

Eye Damage / Irritation - Category 2A

Skin Sensitization - Category 1

Carcinogenicity - Category 2

Toxic to Reproduction – Category 2

Specific Target Organ Toxicity (Single Exposure) - Category 2 (Central Nervous System)

Specific Target Organ Toxicity (Repeated Exposure) - Category 1 (lungs)

Hazardous to the Aquatic Environment - Long Term Hazard - Category 2

GHS Label Elements**Symbol(s)****Signal Word**

Danger

Hazard Statement(s)

H227 Combustible liquid.

H317 May cause allergic skin reaction.

H319 Cause serious eye irritation.



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- H351 Suspected of causing cancer.
- H361 Suspected of damaging fertility or the unborn child.
- H371 May cause damage to organs (central nervous system)
- H372 Causes damage to organs through prolonged or repeated exposure (lungs).
- H411 Toxic to aquatic life with long lasting effects.

Precautionary Statement(s)

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 heat/sparks/open flames/hot surfaces.-No smoking.
- P260 Do not breathe gas/mist.
- P264 Wash hands thoroughly after handling.
- P270 Do not eat, drink or smoke when using this product.
- P272 Contaminated work clothing should not be allowed out of the workplace.
- P273 Avoid release to the environment.
- P280 Wear protective gloves/protective clothing/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+P313 IF exposed or concerned: Get medical advice/attention.
- P314 Get medical advice/attention if you feel unwell.
- P333+P313 If skin irritation or rash 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 appropriate media for extinction.
- P391 Collect spillage.

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).

Other Hazards Which Do Not Result in Classification

None known.

Main Symptoms and Emergency Overview

Black liquid. Combustible liquid. Causes serious eye irritation. Suspected of causing cancer. May cause damage to organs. Causes damage to organs through prolonged or repeated exposure. Harmful to aquatic life with long lasting effects.

Section 3 - COMPOSITION / INFORMATION ON INGREDIENTS

CAS	Component Name	Percent
Trade Secret	Glycol ether solvents	70-80
96-48-0	.gamma.-Butyrolactone	10-20
1333-86-4	Carbon black	1-10
Trade Secret	Chlorinated Ethylene-Vinyl Acetate Copolymer (CEVA)	1-10
Trade Secret	Acrylic type resin	1-10
Trade Secret	Additive 1	0.1-5
Trade Secret	Additive 2	0.1-5
Trade Secret	Additive 3	0.1-5



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Section 4 - FIRST AID MEASURES

Inhalation

Remove person to fresh air and keep comfortable for breathing. Give artificial respiration if not breathing. Call a POISON CENTER or doctor/physician.

Skin

Gently wash with plenty of soap and water. If skin irritation or rash occurs: Get medical advice/attention. Take off contaminated clothing and wash before re-use.

Eyes

Flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If irritation or pain persists after fifteen minutes of eye irrigation, seek medical attention.

Ingestion

If swallowed, get medical attention.

Most Important Symptoms/Effects

Symptoms: Immediate

eye irritation, central nervous system damage, allergic skin reaction

Symptoms: Delayed

cancer, lung damage, allergic skin reaction

Indication of any immediate medical attention and special treatment needed

Treat symptomatically and supportively.

Section 5 - FIRE FIGHTING MEASURES

Extinguishing Media

Suitable Extinguishing Media

carbon dioxide, regular dry powder, regular dry chemical, water spray, alcohol resistant foam

Unsuitable Extinguishing Media

Do not scatter spilled material with high-pressure water streams.

Special Hazards Arising from the Chemical

Combustible liquid and vapor. Irritating fumes and gases may be released upon thermal processing or during combustion.

Hazardous Combustion Products

oxides of carbon, oxides of nitrogen

Special Protective Equipment and Precautions for Firefighters

Wear full protective fire fighting gear including self contained breathing apparatus (SCBA) for protection against possible exposure.

Fire Fighting Measures

Move container from fire area if it can be done without risk. Do not scatter spilled material with high-pressure water streams. Cool containers with water spray until well after the fire is out. Stay away from the ends of tanks. Avoid inhalation of material or combustion by-products. For fires in cargo or storage area: Cool containers with water from unmanned hose holder or monitor nozzles until well after fire is out. If this is impossible then take the following precautions: Keep unnecessary people away, isolate hazard area and deny entry. Let the fire burn. Withdraw immediately in case of rising sound from venting safety device or any discoloration of tanks due to fire.

Hazchem/Emergency Action Code

No data available

Section 6 - ACCIDENTAL RELEASE MEASURES

Personal Precautions, Protective Equipment and Emergency Procedures

Wear personal protective clothing and equipment, see Section 8.

Methods and Materials for Containment and Cleaning Up



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Eliminate all ignition sources if safe to do so. Stop leak if possible without personal risk. Reduce vapors with water spray.
 Small spills: Absorb with sand or other non-combustible material. Collect spilled material in appropriate container for disposal.
 Large spills: Dike for later disposal. Keep unnecessary people away, isolate hazard area and deny entry. Stay upwind and keep out of low areas.

Section 7 - HANDLING AND STORAGE

Precautions for Safe Handling

Keep away from heat, sparks, open flame, and hot surfaces - No smoking. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not breathe vapor or mist. Avoid contact with eyes, skin and clothing. Do not eat, drink, or smoke when using this product. Wear protective gloves/clothing and eye/face protection. Wash thoroughly after handling.

Conditions for Safe Storage, Including any Incompatibilities

Store in a well-ventilated place. Keep cool.

Store locked up.

Store and handle in accordance with all current regulations and standards. Keep container tightly closed. Grounding and bonding required. Keep separated from incompatible substances.

Incompatible Materials

acids, bases, oxidizing materials, halogens

Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

Component Exposure Limits

Carbon black	1333-86-4
Australia:	3 mg/m ³ TWA
ACGIH:	3 mg/m ³ TWA inhalable fraction

EU - Occupational Exposure (98/24/EC) - Binding Biological Limit Values and Health Surveillance Measures

There are no biological limit values for any of this product's components.

Engineering Controls

Provide local exhaust or process enclosure ventilation system. Ensure compliance with applicable exposure limits.

Individual Protection Measures, such as Personal Protective Equipment

Eye/face protection

Wear splash resistant safety goggles with a faceshield. Provide an emergency eye wash fountain and quick drench shower in the immediate work area.

Skin Protection

Wear appropriate chemical resistant clothing.

Respiratory Protection

Consult with a health and safety professional for specific respirators appropriate for your use.

Glove Recommendations

Wear appropriate chemical resistant gloves.

Section 9 - PHYSICAL AND CHEMICAL PROPERTIES

Appearance	black liquid	Physical State	liquid
Odor	solvent odor	Color	black
Odor Threshold	Not available	pH	Not available
Melting Point	Not available	Boiling Point	Not available
Freezing point	Not available	Evaporation Rate	Not available
Boiling Point Range	Not available	Flammability (solid, gas)	Not available



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Autoignition	169 °C (Glycol ether type solvent)	Flash Point	70 °C (158 °F)
Lower Explosive Limit	2.5 vol% (Glycol ether type solvent)	Decomposition temperature	Not available
Upper Explosive Limit	33 vol% (Glycol ether type solvent)	Vapor Pressure	<=0.1 kPa at 20 °C (Glycol ether type solvent)
Vapor Density (air=1)	Not available	Specific Gravity (water=1)	Not available
Water Solubility	Not available	Partition coefficient: n-octanol/water	Not available
Viscosity	4 - 4.5 mPa-s 25 °C	Solubility (Other)	Not available
Density	0.977 g/cm ³	Physical Form	liquid
Molecular Weight	Not available		

Section 10 - STABILITY AND REACTIVITY

Reactivity

No reactivity hazard is expected.

Chemical Stability

Stable under normal conditions of use.

Possibility of Hazardous Reactions

Will not polymerize.

Conditions to Avoid

Avoid flames, sparks, and other sources of ignition. Avoid contact with incompatible materials.

Incompatible Materials

acids, bases, oxidizing materials, halogens

Hazardous decomposition products

oxides of carbon, oxides of nitrogen

Section 11 - TOXICOLOGICAL INFORMATION

Information on Likely Routes of Exposure

Inhalation

irritation, headache, cancer, dizziness, drowsiness, lung damage

Skin Contact

irritation, skin disorders, allergic skin reaction.

Eye Contact

irritation

Ingestion

vomiting, nausea

Acute and Chronic Toxicity

Component Analysis - LD50/LC50

The components of this material have been reviewed in various sources and the following selected endpoints are published:

Glycol ether solvents (**Trade Secret**)

Oral LD50 Rat 6500 µL/kg

.gamma.-Butyrolactone (**96-48-0**)

Oral LD50 Rat 1540 mg/kg

Inhalation LC50 Rat >5100 mg/m³ 4 h (no deaths occurred)

Carbon black (**1333-86-4**)



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Oral LD50 Rat >15400 mg/kg
 Additive 2 (**Trade Secret**)
 Oral LD50 Rat 40 g/kg
 Dermal LD50 Rabbit >20 mL/kg (no deaths occurred)

Immediate Effects

eye irritation, central nervous system damage, allergic skin reaction.

Delayed Effects

lung damage, cancer, allergic skin reaction.

Irritation/Corrosivity Data

eye irritation.

Respiratory Sensitization

No information available for the product.

Dermal Sensitization

May cause an allergic skin reaction.

Component Carcinogenicity

.gamma.-Butyrolactone	96-48-0
IARC:	Monograph 71 [1999]; Supplement 7 [1987]; Monograph 11 [1976] (Group 3 (not classifiable))
Carbon black	1333-86-4
ACGIH:	A3 - Confirmed Animal Carcinogen with Unknown Relevance to Humans
IARC:	Monograph 93 [2010]; Monograph 65 [1996] (Group 2B (possibly carcinogenic to humans))
DFG:	Category 3B (could be carcinogenic for man, inhalable fraction)
OSHA:	Present
NIOSH:	potential occupational carcinogen
Chlorinated Ethylene-Vinyl Acetate Copolymer (CEVA)	Trade Secret
IARC:	Supplement 7 [1987]; Monograph 19 [1979] (Group 3 (not classifiable))

Germ Cell Mutagenicity

No information available for the product.

Reproductive Effects Data

Available data characterizes components of this product as reproductive hazards.

Specific Target Organ Toxicity - Single Exposure

central nervous system

Specific Target Organ Toxicity - Repeated Exposure

lungs

Aspiration hazard

No information available for the product.

Medical Conditions Aggravated by Exposure

No information available for the product.

Section 12 - ECOLOGICAL INFORMATION

Ecotoxicity

Toxic to aquatic life with long lasting effects.

Component Analysis - Aquatic Toxicity

.gamma.-Butyrolactone	96-48-0
Algae:	EC50 72 h Desmodesmus subspicatus 360 mg/L IUCLID; EC50 96 h Desmodesmus subspicatus 79



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	mg/L IUCLID
Invertebrate:	EC50 48 h Daphnia magna Straus >500 mg/L IUCLID
Additive 2	Trade Secret
Algae:	EC50 72 h Desmodesmus subspicatus 8 mg/L IUCLID

Persistence and Degradability

No information available for the product.

Bioaccumulative Potential

No information available for the product.

Mobility in soil

No information available for the product.

Other adverse effects

No additional information is available.

Section 13 - DISPOSAL CONSIDERATIONS

Disposal Methods

Dispose in accordance with all applicable regulations. Empty containers may contain product residue.

Section 14 - TRANSPORT INFORMATION

ADG Information:

Shipping Name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.

Hazard Class: 9

UN#: UN3082

Packing Group: III

Required Label(s): 9

IATA Information:

Shipping Name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.

Hazard Class: 9

UN#: UN3082

Packing Group: III

Required Label(s): 9

Special Provision : A197 *1

ICAO Information:

Shipping Name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.

Hazard Class: 9

UN#: UN3082

Packing Group: III

Required Label(s): 9

IMDG Information:

Shipping Name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.

Hazard Class: 9

UN#: UN3082

Packing Group: III

Required Label(s): 9

Special Provision : 2.10.2.7 *1



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Component Marine Pollutants (IMDG)

Not regulated as dangerous goods.

This material contains one or more of the following chemicals required by the IBC Code to be identified as dangerous chemicals in bulk.

.gamma.-Butyrolactone	96-48-0
IBC Code:	Category Y

Transportation Special Precautions

No information available for product.

Hazchem/Emergency Action Code

No data available

*1 Single or inner packaging less than 5 L (liquid) or 5 kg net (solids) is excepted from Dangerous Goods regulations
 -- see UN Special Provision.

Section 15 - REGULATORY INFORMATION

Australia Regulations

Work Health and Safety Regulations - Prohibited Carcinogens

No component(s) are listed on the Prohibited Carcinogens list.

Work Health and Safety Regulations - Restricted Carcinogens

No component(s) are listed on the Restricted Carcinogens list.

Work Health and Safety Regulations - Restricted Hazardous Chemicals

No component(s) are listed on the Restricted Hazardous Chemicals list:

Work Health and Safety Regulations - Hazardous Substances Requiring Health Monitoring

Component Analysis - Inventory

Glycol ether solvents (**Trade Secret**)

US	CA	EU	AU	PH	JP - ENCS	JP - ISHL	KR - KECI/KECL	KR - TCCA	CN	NZ	MX	TW
Yes	NSL	EIN	Yes	No	Yes	No	No	No	Yes	Yes	No	Yes

.gamma.-Butyrolactone (96-48-0)

US	CA	EU	AU	PH	JP - ENCS	JP - ISHL	KR - KECI/KECL	KR - TCCA	CN	NZ	MX	TW
Yes	DSL	EIN	Yes	Yes	Yes	No	Yes	No	Yes	Yes	Yes	Yes

Carbon black (1333-86-4)

US	CA	EU	AU	PH	JP - ENCS	JP - ISHL	KR - KECI/KECL	KR - TCCA	CN	NZ	MX	TW
Yes	DSL	EIN	Yes	Yes	Yes	No	Yes	No	Yes	Yes	Yes	Yes

Chlorinated Ethylene-Vinyl Acetate Copolymer (CEVA) (**Trade Secret**)

US	CA	EU	AU	PH	JP - ENCS	JP - ISHL	KR - KECI/KECL	KR - TCCA	CN	NZ	MX	TW
Yes	DSL	No	Yes	Yes	Yes	No	Yes	No	Yes	Yes	Yes	Yes

Additive 2 (**Trade Secret**)

US	CA	EU	AU	PH	JP - ENCS	JP - ISHL	KR - KECI/KECL	KR - TCCA	CN	NZ	MX	TW
Yes	DSL	EIN	Yes	Yes	No	No	Yes	No	Yes	Yes	Yes	Yes

Additive 3 (**Trade Secret**)

US	CA	EU	AU	PH	JP - ENCS	JP - ISHL	KR - KECI/KECL	KR - TCCA	CN	NZ	MX	TW
Yes	DSL	EIN	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes



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Section 16 - OTHER INFORMATION

Key / Legend

ACGIH - American Conference of Governmental Industrial Hygienists; ADR - European Road Transport; AU - Australia; BOD - Biochemical Oxygen Demand; C - Celsius; CA - Canada; CAS - Chemical Abstracts Service; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CLP - Classification, Labelling, and Packaging; CN - China; CPR - Controlled Products Regulations; DFG - Deutsche Forschungsgemeinschaft; DOT - Department of Transportation; DSD - Dangerous Substance Directive; DSL - Domestic Substances List; EEC - European Economic Community; EINECS - European Inventory of Existing Commercial Chemical Substances; ENCS - Japan Existing and New Chemical Substance Inventory, EPA - Environmental Protection Agency; EU - European Union; F - Fahrenheit; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; ICAO - International Civil Aviation Organization; IDL - Ingredient Disclosure List; IDLH - Immediately Dangerous to Life and Health; IMDG - International Maritime Dangerous Goods; ISHL - Japan Industrial Safety and Health Law, JP - Japan; Kow - Octanol/water partition coefficient; KECI - Korea Existing Chemicals Inventory, KECL - Korea Existing Chemicals List, KR - Korea; LEL - Lower Explosive Limit; LLV - Level Limit Value; LOLI - List Of Lists™ - ChemADVISOR's Regulatory Database; MAK - Maximum Concentration Value in the Workplace; MEL - Maximum Exposure Limits; NFPA - National Fire Protection Agency; NIOSH - National Institute for Occupational Safety and Health; NJTSR - New Jersey Trade Secret Registry; NTP - National Toxicology Program; NZ - New Zealand; OSHA - Occupational Safety and Health Administration; PH - Philippines; RCRA - Resource Conservation and Recovery Act; REACH- Registration, Evaluation, Authorisation, and restriction of Chemicals; RID - European Rail Transport; SARA - Superfund Amendments and Reauthorization Act; STEL - Short-term Exposure Limit; TCCA - Korea Toxic Chemicals Control Act, TDG - Transportation of Dangerous Goods; TSCA - Toxic Substances Control Act; TWA - Time Weighted Average; UEL - Upper Explosive Limit; US - United States.

Other Information

Disclaimer:

The information set forth in this Safety Data Sheet does not purport to be all-inclusive and should be used only as a guide. While the information and recommendations set forth herein are believed to be accurate, the company makes no warranty regarding such information and recommendations and disclaims all liability from reliance thereon.