

## Safety Data Sheets

### 1. Identification

Product Name	: BS4 ink Black
Order No.	: BS4-K-60 / BS4-K-2L
Ink Ver.	:2
General Use	: Ink for ink jet printer
Product Description	: Solvent pigment ink
SDS Number	: 037-S181266
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 USA	
Company Name	: MIMAKI USA, INC.
Address	: 150 Satellite Boulevard NE , suite A, Suwanee, Georgia 30024, U.S.A.
Telephone No.	: +1-678-730-0170
Emergency Telephone No.	: +1 866 928 0789 (within United States only, Toll free) +1 215 207 0061

### 2. Hazards Identification

#### [HCS Classification]

#### Physical Hazards

Flammable Liquids : Category 4

#### Health Hazards

Serious Eye Damage / Irritation : Category 2A

Carcinogenicity : Category 2

Sensitization – Skin : Category 1

Specific Target Organ Toxicity : Category 2(central nervous system)  
(Single Exposure)

Specific Target Organ Toxicity : Category 1 (lungs)

- Repeated Exposure

Hazardous to the aquatic environment : Category 3

- acute hazard

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Hazardous to the Aquatic : Category 2

Environment - Long Term Hazard

The above list does not include category being non-classifiable or not-applicable.

### [HCS Label Elements]

Symbol



Signal Word

DANGER

Hazard Statements

H227 Combustible liquid.

H317 May cause an allergic skin reaction.

H319 Causes serious eye irritation.

H351 Suspected of causing cancer.

H371 May cause damage to organs (central nervous system)

H372 Causes damage to organs through prolonged or repeated exposure (lungs).

H402 Harmful to aquatic life.

H411 Toxic to aquatic life with long lasting effects.

Precautionary Statements

[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 and eyes 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]

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P501 Dispose of contents/container in accordance with local/regional/national/international regulation (to be specified).

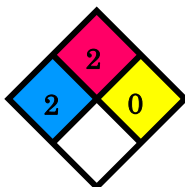
NFPA Rating (scale 0 – 4)

Health = 2

Flammability = 2

Instability = 0

Special =



CANADIAN WHMIS SYMBOLS : B3 , D2A , D2B



### 3. Composition / Information on Ingredients

No	Chemical Name	Wt%	CAS No.
1	Glycol ether solvents	70-80	Trade Secret
2	$\gamma$ -Butyrolactone	10-20	96-48-0
3	Carbon black	1-10	Trade Secret
4	Chlorinated Ethylene-Vinyl Acetate Copolymer (CEVA)	1-10	Trade Secret
5	Acrylic type resine	1-10	Trade Secret
6	Additive 1	0.1-5	Trade Secret
7	Additive 2	0.1-5	Trade Secret
8	Additive 3	0.1-5	Trade Secret

The chemical identity and/or percentage of composition is being withheld as a trade secret.

### 4. First Aid Measures

#### Description of Necessary 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.

**Eye Contact** : 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

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	medical attention.
Skin Contact	: 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.
Ingestion	: If swallowed, get medical attention.
Most Important Symptoms/Effects	
Acute	: eye irritation, central nervous system damage, allergic skin reaction
Delayed	: cancer, lung damage, allergic skin reaction
Indication of Immediate	: Treat symptomatically and supportively.
Medical Attention and	
Special Treatment	
Needed, If Needed	

### 5. Fire Fighting Measures

Flammable Properties	: Flash Point: 70 °C Auto Ignition Temperature: 169 °C (Glycol ether type solvent) Flammable Point: 2.5vol%-33.0Vol% (Glycol ether type solvent)
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	: Combustion: oxides of carbon, oxides of nitrogen
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.

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Special Protective Equipment and Precautions for Firefighters : Wear full protective fire fighting gear including self contained breathing apparatus (SCBA) for protection against possible exposure.

### 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 : 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.

### 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 and handle in accordance with all current regulations and standards. Store in a well-ventilated place. Keep container tightly closed. Keep cool. Grounding and bonding required. Store locked up. Keep separated from incompatible substances. Incompatible materials include acids, bases, oxidizing materials, and halogens.

### 8. Exposure Controls / Personal Protection

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### Exposure Limit Values

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

ACGIH: 3 mg/m<sup>3</sup> TWA (inhalable fraction)

OSHA: 3.5 mg/m<sup>3</sup> TWA

NIOSH: 3.5 mg/m<sup>3</sup> TWA; 0.1 mg/m<sup>3</sup> TWA

(Carbon black in presence of Polycyclic aromatic hydrocarbons, as PAH)

Mexico: 3.5 mg/m<sup>3</sup> TWA LMPE-PPT

7 mg/m<sup>3</sup> STEL [LMPE-CT]

Component Biological Limit Values : There are no biological limit values for the component(s) of this product.

### Exposure Controls

#### Occupational Exposure Controls

Appropriate : Provide local exhaust or process enclosure ventilation system.

Engineering Controls : Ensure compliance with applicable exposure limits.

#### Individual Protection Measures, such as Personal Protective Equipment

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



Glove : Wear appropriate chemical resistant gloves.

#### Recommendations



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.



#### Environmental Exposure Controls

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### 9. Physical and Chemical Properties

Appearance	- Physical State	: liquid
	- Color	: black
Odor		: solvent odor
pH		: Not Applicable
Boiling Point / Boiling Range		: Not available
Melting Point / Melting Range		: Not available
Flash Point		: 70°C
Auto ignition temperature		: 169 °C (Glycol ether type solvent)
Flammability (Solid, Gas)		: Not available
Upper / Lower Flammability or Explosive Limits		: 2.5 vol %-33.0 vol % (Glycol ether type solvent)
Vapor Pressure		: <=0.1 kPa (20°C) (Glycol ether type solvent)
Density		: 0.977 g/cm <sup>3</sup>
Water Solubility		: Not available
Viscosity		: 4.0-4.5 mPa/s @25 °C
Vapor Density		: Not available
Evaporation Rate		: Not available

### 10. Stability and Reactivity

Reactivity	: No reactivity hazard is expected.
Conditions to Avoid	: Avoid flames, sparks, and other sources of ignition. Avoid contact with incompatible materials.
Stability	: Stable under normal conditions of use.
Materials to Avoid	: acids, bases, oxidizing materials, halogens
Hazardous Reactions / Decomposition Products	: Combustion: oxides of carbon, oxides of nitrogen

### 11. Toxicological Information

Acute Toxicity	
Component Analysis - LD50/LC50	

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The component(s) 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

γ-Butyrolactone (96-48-0)

Oral LD50 Rat 1540 mg/kg Inhalation LC50 Rat >5100 mg/m<sup>3</sup> 4 h

Additive 2 (Trade Secret)

Oral LD50 Rat 40 g/kg Dermal LD50 Rabbit >20 mL/kg

Carbon black (1333-86-4)

Oral LD50 Rat >15400 mg/kg

### Information on Likely Routes of Exposure

Inhalation : irritation, headache, cancer, dizziness, drowsiness, lung damage.

Ingestion : vomiting, nausea.

Skin Contact : irritation, skin disorders, allergic reactions.

Eye Contact : irritation.

Immediate Effects : eye irritation, central nervous system damage, allergic skin reaction.

Delayed Effects : lung damage, cancer, allergic skin reaction.

Medical Conditions Aggravated by Exposure : No information available for the product.

Irritation/Corrosivity Data : eye irritation.

Respiratory Sensitization : No information available for the product.

Dermal Sensitization : May cause an allergic skin reaction.

Germ Cell Mutagenicity : No information available for the product.

### Carcinogenicity

#### Component Carcinogenicity

##### γ-Butyrolactone (96-48-0)

IARC: Monograph 71 [1999]; Supplement 7 [1987]; Monograph 11 [1976] (Group 3 (not classifiable))

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

IARC: Supplement 7 [1987]; Monograph 19 [1979] (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)



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OSHA: Present

Reproductive Toxicity

No information available for the product.

Specific Target Organ Toxicity - Single Exposure

central nervous system.

Specific Target Organ Toxicity - Repeated Exposure

Lungs.

Aspiration Hazard

No information available for the product.

### 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 : Harmful to aquatic life.

Toxic to aquatic life with long lasting effects.

Component Analysis - Aquatic Toxicity

**$\gamma$ -Butyrolactone (96-48-0)**

Algae: 72 Hr EC50 *Desmodesmus subspicatus*: 360 mg/L;

96 Hr EC50 *Desmodesmus subspicatus*: 79 mg/L

Invertebrate: 48 Hr EC50 *Daphnia magna* Straus: >500 mg/L

**Additive 2 (Trade Secret)**

Algae: 72 Hr EC50 *Desmodesmus subspicatus*: 8 mg/L

Mobility : No information available for the product.

Persistence and : No information available for the product.

Degradability

Bioaccumulative : No information available for the product.

Potential

Other Adverse Effects : No additional information is available.

### 13. Disposal Considerations

Disposal Methods : Dispose in accordance with all applicable regulations.

Component Waste : The U.S. EPA has not published waste numbers for this product's  
Numbers components.

Disposal of : Empty containers may contain product residue. Dispose in

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Contaminated accordance with all applicable regulations.

Packaging

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)

Shipping Name : Environmentally hazardous substance, liquid, n.o.s.

UN/NA Number : UN3082 / NA1993 \*1

Hazardous Class : 9

Packing Group (PG) : III

Label(s) Required : 9

\*1 Class combustible liquid (NA1993), Packing group III for quantities of 450 liters (119 gallons) or more; not regulated for smaller quantities.

TDG Information

Shipping Name : Environmentally hazardous substance, liquid, n.o.s.

UN Number : UN3082

Hazardous Class : 9

Packing Group (PG) : III

Label(s) Required : 9

IATA Information

Shipping Name : Environmentally hazardous substance, liquid, n.o.s.

UN Number : UN3082

Hazardous Class : 9

Packing Group (PG) : III

Label(s) Required : 9

ICAO Information

Shipping Name : Environmentally hazardous substance, liquid, n.o.s.

UN Number : UN3082

Hazardous Class : 9

Packing Group (PG) : III

Label(s) Required : 9

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### IMDG Information

Shipping Name : Environmentally hazardous substance, liquid, n.o.s.  
 UN Number : UN3082  
 Hazardous Class : 9  
 Packing Group (PG) : III  
 Label(s) Required : 9  
 Marine Pollutant :  $\gamma$ -Butyrolactone (96-48-0)  
 IBC Code: Category Y  
 Remarks : Single or inner packaging less than 5 L (liquid) or 5 kg net (solids) is  
 excepted from Dangerous Goods regulations.  
 Refer to ICAO/IATAA197, IMDG 2.10.2.7, ADR SP 375.

### 15. Regulatory Information

U.S. Federal Regulations : None of this products components are listed under SARA Sections 302/304 (40 CFR 355 Appendix A), SARA Section 311/312 (40 CFR 370.21), SARA Section 313 (40 CFR 372.65), CERCLA (40 CFR 302.4), TSCA 12(b), or require an OSHA process safety plan.

SARA 311/312 : Acute Health: Yes Chronic Health: No Fire: Yes Pressure: No  
 Reactive: No

U.S. State Regulations : The following components appear on one or more of the following state hazardous substances lists:

Component	CAS	CA	MA	MN	NJ	PA
Carbon black	1333-86-4	Yes	Yes	Yes	Yes	Yes

California Proposition 65



#### WARNING:

This product can expose you to chemicals including Carbon black, which is known to the State of California to cause cancer. For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).

Canada : WHMIS CLASSIFICATION: B3, D2A, D2B.

Canadian WHMIS Ingredient Disclosure List (IDL)

: Components of this material have been checked against the Canadian WHMIS Ingredients Disclosure List. The List is composed of chemicals which must be identified on MSDSs if they are included in products which fall under WHMIS criteria specified in the Controlled Products Regulations and present above the threshold limits listed on the IDL.

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## Carbon black (1333-86-4)

1 %

Chemical Inventory Listings

Component Analysis - Inventory

Component	CAS	US	CA	EU	AU	PHIL	JP	KR	CN	NZ
Glycol ether solvents	Trade Secret	Yes	NSL	EIN	No	No	Yes	No	Yes	Yes
$\gamma$ -Butyrolactone	96-48-0	Yes	DSL	EIN	Yes	Yes	Yes	Yes	Yes	Yes
Additive 2	Trade Secret	Yes	DSL	EIN	Yes	Yes	Yes	Yes	Yes	Yes
Additive 3	Trade Secret	Yes	DSL	EIN	Yes	Yes	Yes	Yes	Yes	Yes
Carbon black	1333-86-4	Yes	DSL	EIN	Yes	Yes	Yes	Yes	Yes	Yes
Chlorinated Ethylene-Vinyl Acetate Copolymer (CEVA)	Trade Secret	Yes	DSL	No	Yes	Yes	Yes	Yes	Yes	Yes

## 16. Other Information

### Key / Legend

ACGIH - American Conference of Governmental Industrial Hygienists; ADR - European Road Transport; CAS - Chemical Abstracts Service; CLP - Classification, Labelling and Packaging; EEC - European Economic Community; EIN (EINECS) - European Inventory of Existing Commercial Chemical Substances; ELN (ELINCS) - European List of Notified Chemical Substances; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IMDG - International Maritime Dangerous Goods; IBC Code - International Bulk Chemical Code; Kow - Octanol/water partition coefficient; LC50 - Lethal Concentration, 50%; LD50 - Lethal Dose, 50%; LEL - Lower Explosive Limit; LOLI - List Of LIsts™ - ChemADVISOR's Regulatory Database; MAK - Maximum Concentration Value in the Workplace; MEL - Maximum Exposure Limits; NTP = National Toxicology Program; REACH - Registration, Evaluation, Authorisation and Restriction of Chemicals; RID - European Rail Transport; STEL - Short-term Exposure Limit; TWA - Time Weighted Average; UEL - Upper Explosive Limit

### Other Information

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