Safety Data Sheets

1. Identification

Product Name	: CS100 ink Black
Order No.	: CS100-K-BB
General Use	: Ink for ink jet printer
Product Description	: Solvent pigment ink
SDS Number	: 037-S151086
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, suite A, Suwanee, Georgia 30024, U.S.A.
Telephone No.	: +1-678-730-0170
Emergency Telephone No.	: +81-268-64-2281

2. Hazards Identification

[GHS Classification]

Physical Hazards

Flammable Liquids	: Category 4

Health Hazards

Eye Damage / Irritation	: Category 1
Carcinogenicity	: Category 2
Toxic to Reproduction	: Category 1B
Specific Target Organ Toxicity (Single Exposure)	: Category 1 (blood, central nervous system, systemic toxicity)
Specific Target Organ Toxicity (Single Exposure)	: Category 2 (kidneys, hematopoietic system)
Specific Target Organ Toxicity (Single Exposure)	: Category 3 (respiratory tract)
Specific Target Organ Toxicity (Repeated Exposure)	: Category 1 (lungs)

Specific Target Organ Toxicity (Repeated Exposure) : Category 2(blood, kidneys)

Environmental Hazards

Hazardous to the Aquatic Environment - Acute Hazard : Category 3

Hazardous to the Aquatic Environment - Long Term Hazard : Category 3

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

[GHS Label Elements]

Symbol

Signal Word

Danger

Hazard Statements

H227 Combustible liquid
H318 Cause serious eye damage
H335 May cause respiratory irritation
H351 Suspected of causing cancer
H360 May damage fertility or the unborn child
H370 Causes damage to blood, central nervous system, central nervous system, systemic toxicity
H371 May cause damage to kidneys and hematopoietic system
H372
H373 May cause damage to blood and kidneys through prolonged or repeated exposure.
H412 Harmful to aquatic life with long lasting effects

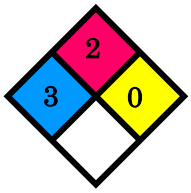
Precautionary Statements

[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 vapor or mist.
P264 Wash hands thoroughly after handling.
P270 Do not eat, drink, or smoke when using this product.
P271 Use only outdoors or in a well-ventilated area.
P273 Avoid release to the environment.
P280 Wear protective gloves/clothing and eye/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.
P308+P311 IF exposed or concerned: Call a POISON CENTER or doctor/physician.
P305+P310 IF IN EYES: Immediately call a POISON CENTER or doctor/physician.
P312 Call a POISON CENTER or doctor/physician if you feel unwell.
P370+P378 In case of fire: Use appropriate media for extinction.
[Storage]
P403+P233+P235 Store in a well-ventilated place. Keep container tightly closed. Keep cool.
P405 Store locked up.
[Disposal]
P501 Dispose of contents and container in accordance with local, regional, national and international regulation.

NFPA Rating (scale 0 – 4)

Health = 3
Flammability = 2
Instability = 0
Special = None



CANADIAN WHMIS SYMBOLS

3. Composition / Information on Ingredients

No	Chemical Name	Wt%	CAS No.
1	Ethylene glycolbuthyl ether acetate	50-60	112-07-2
2	Propylene glycolmethyl ether acetate	15-25	108-65-6
3	Gamma-butyrolactone	15-25	96-48-0
4	Vinyl chloride / Vinyl acetate copolymer resin	1-10	Trade Secret
5	Carbon black	1-10	1333-86-4
6	Additives	0.1-5	Trade Secret

4. First Aid Measures

Inhalation : Remove person to fresh air and keep comfortable for 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. Get immediate medical attention.
Skin Contact	: Wash with plenty of soap and water. Take off contaminated clothing and wash before re-use. Get medical attention if irritation develops.
Ingestion	: If swallowed, get medical attention.
Most Important Symptoms/Effects	
Acute	: eye damage, respiratory tract irritation, blood damage, central nervous system damage, systemic toxicity damage, kidney damage
Delayed	: cancer, reproductive effects, lung damage, blood damage, kidney damage
Indication of Immediate Medical Attention and Special Treatment Needed, If Needed	: Treat symptomatically and supportively.

5. Fire Fighting Measures

Flammable Properties	: Flash point 65±1℃ (TCC) Auto Ignition Temperature: Not available Flammable point : Not available
Extinguishing Media	: carbon dioxide, 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.
Hazardous Combustion Products	: oxides of carbon
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.
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. Avoid release to the environment.
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	: Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Keep away from heat, sparks, open flame, and hot surfaces - No smoking. Do not breathe vapor or mist. Use only outdoors or in a well-ventilated area. Avoid contact with eyes, skin and clothing. Do not eat, drink, or smoke when using this product. Wear protective gloves and eye/face protection. Wash thoroughly after handling. Avoid release to the environment.

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.

8. Exposure Controls / Personal Protection

Exposure Limit Values

No	Chemical Name		TWA
1	Ethylene glycol monobuthyl ether acetate (112-07-2)	ACGUH	20 ppm TWA
		NIOSH	5 ppm TWA; 33 mg/m3 TWA
2	Carbon black (1333-86-4)	ACGIH	3 mg/m3 TWA (inhalable fraction)
		OSHA	3.5 mg/m3 TWA
		NIOSH	3.5 mg/m3 TWA; 0.1 mg/m3 TWA (Carbon black in presence of Polycyclic aromatic hydrocarbons, as PAH)
		Mexico	3.5 mg/m3 TWA LMPE-PPT 7 mg/m3 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 Engineering Controls : Ventilation equipment should be explosion-resistant if explosive concentrations of material are present. Provide local exhaust or process enclosure ventilation system. Ensure compliance with applicable exposure limits.

Personal Protection

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

Hand Protection : Wear appropriate chemical resistant gloves.

Eye 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.

OTHER : Overalls. P.V.C. apron. Barrier cream.
Skin cleansing cream.Eye wash unit.

9. Physical and Chemical Properties

Appearance	- Physical State	: Liquid
	- Color	: Black
Odor		: Solvent odor
pH		: Not available
Boiling Point / Boiling Range		: 145~209 ℃
Melting Point / Melting Range		: <-30 ℃
Decomposition Temperature		: Not available
Flash Point		: 65±1 ℃
Auto ignition temperature		: Not available
Flammability (Solid, Gas)		: Not applicable
Explosive Properties		: Not available
Oxidizing Properties		: Not available
Upper / Lower Flammability or Explosive Limits		: Not available
Vapor Pressure		: 0.493kPa (20 ℃)
Specific Gravity		: 0.995±0.01 (25 ℃)
Solubility		: Very small amount
Water Solubility		: Not available
Partition Coefficient (n-octanol / Water)		: Not available

Viscosity	: 4.0±0.3 mPa･s (25 ℃)
Vapor Density	: Not available
Evaporation Rate	: Not available

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. Containers may rupture or explode if exposed to heat. Avoid contact with incompatible materials.
Incompatible Materials	: acids, bases, oxidizing materials, halogens, amines
Hazardous Decomposition	: Combustion: oxides of carbon

11. Toxicological Information

Acute Toxicity Component Analysis - LD50/LC50 : The component(s) of this material have been reviewed in various sources and the following selected endpoints are published:

Ethylene glycol monobutyl ether acetate (112-07-2)
Dermal LD50 Rabbit 1480 mg/kg; Oral LD50 Rat 1600 mg/kg
Propylene glycol monomethyl ether acetate (108-65-6)
Dermal LD50 Rabbit >5 g/kg; Oral LD50 Rat 8532 mg/kg
γ -Butyrolactone (96-48-0)
Inhalation LC50 Rat >5100 mg/m3 4 h; Oral LD50 Rat 1540 mg/kg

Information on Likely Routes of Exposure

Inhalation	: irritation, lack of sense of smell, chest pain, difficulty breathing, headache, hearing loss, nausea, drowsiness, dizziness, loss of coordination, unconsciousness, cough, lung damage, cancer, reproductive effects, kidney damage, liver damage, systemic toxicity damage
Ingestion	: irritation, nausea, headache, drowsiness, dizziness, loss of coordination, unconsciousness, coma, sore throat, vomiting, stomach

pain

Skin Contact : irritation, nausea, headache, drowsiness, dizziness, unconsciousness, coma

Eye Contact : eye damage

Immediate Effects : eye damage, respiratory tract irritation, blood damage, central nervous system damage, systemic toxicity damage, kidney damage

Delayed Effects : cancer, reproductive effects, lung damage, blood damage, kidney damage

Medical Conditions Aggravated by Exposure : respiratory disorders

Irritation/Corrosivity Data : eye damage, respiratory tract irritation

Respiratory Sensitization : No information available for the product.

Dermal Sensitization : No information available for the product.

Germ Cell Mutagenicity : No information available for the product.

Carcinogenicity : Component Carcinogenicity

Ethylene glycol monobutyl ether acetate (112-07-2)

ACGIH:	A3 - Confirmed Animal Carcinogen with Unknown Relevance to Humans
DFG:	Category 4 (no significant contribution to human cancer)

γ -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

Vinyl chloride / Vinyl acetate copolymer resin(Proprietary)

IARC:	Supplement 7 [1987]; Monograph 19 [1979] (Group 3 (not classifiable))

Reproductive Toxicity	: Available data characterizes components of this product as reproductive hazards.
Specific Target Organ Toxicity - Single Exposure	: blood, central nervous system, systemic toxicity, kidneys, hematopoietic system, respiratory tract
Specific Target Organ Toxicity - Repeated Exposure	: lungs, blood, kidneys
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 with long lasting effects

Component Analysis - Aquatic Toxicity : Ethylene glycol monobutyl ether acetate (112-07-2)

Algae:	72 Hr EC50 Desmodesmus subspicatus: >500 mg/L
Invertebrate:	48 Hr EC50 Daphnia magna: 37 mg/L

Propylene glycol monomethyl ether acetate (108-65-6)

Fish:	96 Hr LC50 Pimephales promelas: 161 mg/L [static]
Invertebrate:	48 Hr EC50 Daphnia magna: >500 mg/L

γ -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

Persistence and Degradability	: Not available
Bioaccumulation	: Not available
Mobility	: Not available
Other Toxicity	: Not available

13. Disposal Considerations

	: Comply with all USA, national and local regulations. Do not dump this product into sewers, on the ground or into any body of water.
Disposal Methods	: Dispose in accordance with all applicable regulations.
Component Waste Numbers	: The U.S. EPA has not published waste numbers for this product's components.
Disposal of Contaminated Packaging	: Empty containers may contain product residue. Dispose in accordance with all applicable regulations.

14. Transport Information

	Check a thing without a leak in a container. Perform prevention of collapse of cargo surely.
IATA Information	: Not regulated as dangerous goods for transport.
ICAO Information	: Not regulated as dangerous goods for transport.
IMDG Information	: Not regulated as dangerous goods for transport.
Marine Pollutant	: Ethylene glycol monobutyl ether acetate (112-07-2) IBC Code: Category Y Propylene glycol monomethyl ether acetate (108-65-6) IBC Code: Category Z γ -Butyrolactone (96-48-0) IBC Code: Category Y
TDG Information	: Not regulated as dangerous goods for transport.
US DOT Information	: Not regulated as dangerous goods for transport. *1

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

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 TitleⅢ Section 311/312 : Acute Health: Yes
Chronic Health: Yes
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 No.	CA	MA	MN	NJ	PA
Ethylene glycol monobutyl ether acetate	112-07-2	No	No	No	Yes	No
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.

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.
Carbon black (1333-86-4) : 1%

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; 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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