

## Safety Data Sheets

### Section 1 - PRODUCT AND COMPANY IDENTIFICATION

**Material Name**

MUH-100 Silver

**Product Description**

MUH10-Si-B2

**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  
Phone: +81-268-64-2413

**Importer / Distributor Information**

MIMAKI SINGAPORE PTE. LTD.  
31 Kaki Bukit Road 3 Singapore 417818 TechLink #02-03  
Telephone number: +65-6508-2789

**Emergency telephone number**

+65 3165 2217 (within Singapore only)  
+65 3158 1074

### Section 2 - HAZARDS IDENTIFICATION

**Classification of the substance or mixture****Classification**

Skin Corrosion/Irritation	: Category 2
Eye Irritation	: Category 2
Skin Sensitizer	: Category 1

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

WARNING

**Hazard Statement(s)**

H315 Causes skin irritation.  
H319 Causes serious eye irritation.  
H317 May cause an allergic skin reaction.

**Precautionary Statement(s)****Prevention**

P280 Wear protective gloves/protective clothing/eye protection/face protection.  
P261 Avoid breathing mist/vapours/spray.  
P272 Contaminated work clothing should not be allowed out of the workplace.

**Response**

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P302+P352 IF ON SKIN: Wash with plenty of water and soap.

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

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.

### Storage

Not Applicable.

### Disposal

P501 Dispose of contents/container in accordance with local regulations.

## Section 3 - COMPOSITION / INFORMATION ON INGREDIENTS

CAS No	Name	%[weight]
Trade secret	Acrylic esters	80-90
Trade secret	Polymerization initiator	1-10
Trade secret	Polymerization inhibitors	<0.2
Trade secret	Antioxidants	0.1-1
Trade secret	Organic components	1-5
Trade secret	Pigment	0.1-0.8

## Section 4 - FIRST AID MEASURES

### Description of first aid measures

Eye Contact	: If this product comes in contact with the eyes: Wash out immediately with fresh running water. Ensure complete irrigation of the eye by keeping eyelids apart and away from eye and moving the eyelids by occasionally lifting the upper and lower lids. Seek medical attention without delay; if pain persists or recurs seek medical attention. Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.
Skin Contact	: If skin contact occurs: Immediately remove all contaminated clothing, including footwear. Flush skin and hair with running water (and soap if available). Seek medical attention in event of irritation.
Inhalation	: If fumes, aerosols or combustion products are inhaled remove from contaminated area. Other measures are usually unnecessary.
Ingestion	: Immediately give a glass of water. First aid is not generally required. If in doubt, contact a Poisons Information Centre or a doctor.
Indication of any immediate medical attention and special treatment needed	: Treat symptomatically.

## Section 5 - FIRE FIGHTING MEASURES

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Extinguishing media	: There is no restriction on the type of extinguisher which may be used. Use extinguishing media suitable for surrounding area.
Fire Incompatibility	: None known.
Fire Fighting	: Alert Fire Brigade and tell them location and nature of hazard. Wear breathing apparatus plus protective gloves in the event of a fire. Prevent, by any means available, spillage from entering drains or water courses. Use fire fighting procedures suitable for surrounding area. DO NOT approach containers suspected to be hot. Cool fire exposed containers with water spray from a protected location. If safe to do so, remove containers from path of fire. Equipment should be thoroughly decontaminated after use.
Fire/Explosion Hazard	: Non combustible. Not considered a significant fire risk, however containers may burn. May emit poisonous fumes. May emit corrosive fumes.

### Section 6 - ACCIDENTAL RELEASE MEASURES

#### Personal precautions, protective equipment and emergency procedures

See section 8.

#### Environmental precautions

See section 12.

#### Methods and material for containment and cleaning up

Minor Spills	: Clean up all spills immediately. Avoid breathing vapours and contact with skin and eyes. Control personal contact with the substance, by using protective equipment. Contain and absorb spill with sand, earth, inert material or vermiculite. Wipe up. Place in a suitable, labelled container for waste disposal.
Major Spills	: Moderate hazard. Clear area of personnel and move upwind. Alert Fire Brigade and tell them location and nature of hazard. Wear breathing apparatus plus protective gloves. Prevent, by any means available, spillage from entering drains or water course. Stop leak if safe to do so. Contain spill with sand, earth or vermiculite. Collect recoverable product into labelled containers for recycling. Neutralise/decontaminate residue (see Section 13 for specific agent). Collect solid residues and seal in labelled drums for disposal. Wash area and prevent runoff into drains. After clean up operations, decontaminate and launder all protective clothing and equipment before storing and re-using. If contamination of drains or waterways occurs, advise emergency services.

Personal Protective Equipment advice is contained in Section 8 of the SDS.

### Section 7 - HANDLING AND STORAGE

Precautions for safe handling	: Avoid all personal contact, including inhalation. Wear protective clothing when risk of exposure occurs.
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Use in a well-ventilated area.  
Prevent concentration in hollows and sumps.  
DO NOT enter confined spaces until atmosphere has been checked.  
DO NOT allow material to contact humans, exposed food or food utensils.  
Avoid contact with incompatible materials.  
When handling, DO NOT eat, drink or smoke.  
Keep containers securely sealed when not in use.  
Avoid physical damage to containers.  
Always wash hands with soap and water after handling.  
Work clothes should be laundered separately. Launder contaminated clothing before re-use.  
Use good occupational work practice.  
Observe manufacturer's storage and handling recommendations contained within this SDS.  
Atmosphere should be regularly checked against established exposure standards to ensure safe working conditions are maintained.  
DO NOT allow clothing wet with material to stay in contact with skin

Conditions for safe storage : Store in original containers.  
Keep containers securely sealed.  
No smoking, naked lights or ignition sources.  
Store in a cool, dry, well-ventilated area.  
Store away from incompatible materials and foodstuff containers.  
Protect containers against physical damage and check regularly for leaks.  
Observe manufacturer's storage and handling recommendations contained within this SDS.

Storage : None known  
incompatibility

### Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

#### Control parameters

#### OCCUPATIONAL EXPOSURE LIMITS (OEL)

#### INGREDIENT DATA

Ingredient	Material name	TWA	STEL	Peak	Notes
Pigment	Trade secret	10 mg/m <sup>3</sup>	Not Available	Not Available	Not Available
Polymerization inhibitors	Trade secret	5 mg/m <sup>3</sup>	Not Available	Not Available	Not Available

Source: Singapore Permissible Exposure Limits of Toxic Substances

#### EMERGENCY LIMITS

Ingredient	Material name	TEEL-1	TEEL-2	TEEL-3
Acrylic esters	Trade secret	3 mg/m <sup>3</sup>	170 mg/m <sup>3</sup>	990 mg/m <sup>3</sup>
Polymerization inhibitors	Trade secret	15 mg/m <sup>3</sup>	49 mg/m <sup>3</sup>	320 mg/m <sup>3</sup>

Ingredient	Original IDLH	Revised IDLH
Acrylic esters	Not Available	Not Available
Polymerization initiator	Not Available	Not Available

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Polymerization initiators	Not Available	Not Available
Antioxidants	Not Available	Not Available
Organic components	Not Available	Not Available
Pigment	Not Available	Not Available

### Exposure controls

Appropriate Engineering Controls : General exhaust is adequate under normal operating conditions. Local exhaust ventilation may be required in specific circumstances. If risk of overexposure exists, wear approved respirator. Correct fit is essential to obtain adequate protection. Provide adequate ventilation in warehouse or closed storage areas.

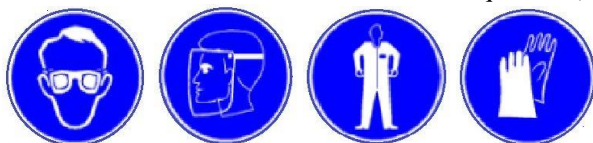
### Personal protection

Eye and face protection : Safety glasses with side shields.  
Chemical goggles.  
Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants.

Hands/feet protection : Wear chemical protective gloves, e.g. PVC.  
Wear safety footwear or safety gumboots, e.g. Rubber

Body protection : Overalls.  
P.V.C. apron.

Respiratory Protection : Particulate. (AS/NZS 1716 & 1715, EN 143:2000 & 149:001, ANSI Z88 or national equivalent)



## Section 9 - PHYSICAL AND CHEMICAL PROPERTIES

### Information on basic physical and chemical properties

Appearance: Silver liquid

Physical state	Liquid	Relative density (Water = 1)	1.092
Odour	Slight	Partition coefficient n-octanol / water	Not Available
Odour threshold	Not Available	Auto-ignition temperature (°C)	380
pH (as supplied)	Not Available	Decomposition temperature	Not Available
Melting point / freezing point (°C)	Not Available	Viscosity (cSt)	Not Available
Initial boiling point and boiling range (°C)	102-200	Molecular weight (g/mol)	Not Available
Flash point (°C)	131	Taste	Not Available
Evaporation rate	Not Available	Explosive properties	Not Available
Flammability	Not Applicable	Oxidising properties	Not Available
Upper Explosive Limit (%)	11.5	Surface Tension (dyn/cm or mN/m)	Not Available
Lower Explosive Limit (%)	2.2	Volatile Component (% vol)	Not Available
Vapour pressure (kPa)	1.33	Gas group	Not Available
Solubility in water (g/L)	Immiscible	pH as a solution (1%)	Not Available
Vapour density (Air = 1)	Not Available	VOC g/L	Not Available

## Section 10 - STABILITY AND REACTIVITY

Reactivity : Stable under normal conditions of use.

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Chemical Stability : Unstable in the presence of incompatible materials.  
Product is considered stable.

Possibility of Hazardous Reactions : Hazardous polymerisation will not occur.

Conditions to Avoid : See section 7.

Incompatible Materials : See section 7.

Hazardous decomposition products : See section 5.

### Section 11 - TOXICOLOGICAL INFORMATION

#### Acute Toxicity

Ingredient name	Oral	Dermal
As a Product	Not classified	Not classified

Inhalation : No information available for the product.

Ingestion : No information available for the product.

Skin Contact : irritation, allergic skin reaction

Eye Contact : Causes serious eye irritation

Immediate Effects : skin irritation, serious eye irritation, allergic skin reaction

Delayed Effects : allergic skin reaction

Irritation/Corrosivity Data : skin irritation, eye irritation

Respiratory Sensitization : No information available for the product.

Dermal Sensitization : Available data characterizes components of this product as dermal sensitization hazards.

Germ Cell Mutagenicity : No information available for the product.

Carcinogenicity : No information available for the product.

Reproductive Toxicity : No information available for the product.

Specific Target Organ Toxicity - Single Exposure : No information available for the product.

Specific Target Organ Toxicity - Repeated Exposure : No information available for the product.

Aspiration Hazard : Not expected to be an aspiration hazard.

### Section 12 - ECOLOGICAL INFORMATION

#### Ecotoxicity

Ingredient	Endpoint	Test Duration (hr)	Species	Value	Source
Pigment	LC50	96	Fish	0.078-0.108mg/L	2
	EC50	48	Crustacea	0.7364mg/L	2
	EC50	96	Algae or other aquatic plants	0.0054mg/L	2
	BCF	360	Algae or other aquatic plants	9mg/L	4
	NOEC	72	Algae or other aquatic plants	>=0.004mg/L	2
Polymerization initiator	EC50	48	Crustacea	3.53mg/L	2
	EC50	72	Algae or other aquatic plants	>2.01mg/L	2
Polymerization inhibitors	LC50	96	Fish	28.5mg/L	2
	EC50	48	Crustacea	3mg/L	2
	EC50	72	Algae or other aquatic plants	19mg/L	2

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	NOEC	504	Crustacea	0.68mg/L	2
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Legend: Extracted from 1. IUCLID Toxicity Data 2. Europe ECHA Registered Substances – Ecotoxicological Information - Aquatic Toxicity 3. EPIWIN Suite V3.12 (QSAR) - Aquatic Toxicity Data (Estimated) 4. US EPA, Ecotox database - Aquatic Toxicity Data

### 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.

## Section 13 - DISPOSAL CONSIDERATIONS

Disposal Methods : Dispose in accordance with all applicable regulations.  
 Empty containers may contain product residue. Dispose in accordance with all applicable regulations.  
 DO NOT allow wash water from cleaning or process equipment to enter drains.  
 In all cases disposal to sewer may be subject to local laws and regulations and these should be considered first.

## Section 14 - TRANSPORT INFORMATION

Marine Pollutant : NO.  
 Land transport (UN) : NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS.  
 Air transport (ICAO-IATA / DGR) : NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS.  
 Sea transport (IMDG-Code / GGVSee) : NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS.  
 Transport in bulk according to Annex II of MARPOL and the IBC code : Not Applicable.

## Section 15 - REGULATORY INFORMATION

**Safety, health and environmental regulations / legislation specific for the substance or mixture**

### PIGMENT IS FOUND ON THE FOLLOWING REGULATORY LISTS

Singapore Permissible Exposure Limits of Toxic Substances

### POLYMERIZATION INHIBITORS IS FOUND ON THE FOLLOWING REGULATORY LISTS

Singapore Permissible Exposure Limits of Toxic Substances

### ACRYLIC ESTERS IS FOUND ON THE FOLLOWING REGULATORY LISTS

International Agency for Research on Cancer (IARC) – Agents Classified by the IARC Monographs

### POLYMERIZATION INITIATOR IS FOUND ON THE FOLLOWING REGULATORY LISTS

Not Applicable

### ANTIOXIDANT A IS FOUND ON THE FOLLOWING REGULATORY LISTS

Not Applicable

### ANTIOXIDANT B IS FOUND ON THE FOLLOWING REGULATORY LISTS

Not Applicable



Product Name: MUH-100 Silver  
SDS No. 037-U164304  
First issue: 2018/09/20  
Revised: 2019/11/28

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### Inventory

National Inventory	Status
Australia - AICS	Y
Canada - DSL	N (Acrylic esters、 Organic component)
Canada - NDSL	Y(Acrylic esters、 Organic component)
China - IECSC	Y
Europe - EINEC / ELINCS / NLP	Y
Japan - ENCS	Y
Korea - KECI	Y
New Zealand - NZIoC	N (Organic component)
Philippines - PICCS	N (Antioxidants)
USA - TSCA	Y

Legend: Y = All ingredients are on the inventory.

N = Not determined or one or more ingredients are not on the inventory and are not exempt from listing (see specific ingredients in brackets).

### Section 16 - OTHER INFORMATION

#### 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.