

Safety Data Sheets

1. IDENTIFICATION

Product Identifier	MH-100 ink Black
Product Description	MH100-K-BA
Recommended use and restriction use	UV curable 3D model ink
Supplier name	MIMAKI ENGINEERING CO., LTD.
Address	2182-3 Shigeno-otsu, Tomi-shi, Nagano 389-0512 Japan
Telephone number	+81-268-64-2413
Importer / Distributor Information	MIMAKI SINGAPORE PTE. LTD. 31 Kaki Bukit Road 3 Singapore 417818 TechLink #02-03 +65-6508-2789
Emergency telephone number	+65 3165 2217 (within Singapore only) +65 3158 1074

2. HAZARDS IDENTIFICATION

GHS CLASSIFICATION

Health hazards	Acute toxicity – oral Category 4 Skin corrosion/irritation Category 2 Serious eye damage/eye irritation Category 1 Sensitization – skin Category 1 Reproductive toxicity Category 2 Specific target organ toxicity (single exposure) Category 3 (respiratory tract irritation) Specific target organ toxicity (repeated exposure) Category 2 Hazard to the aquatic environment (long-term hazard) Category 2
Environmental Hazards	

GHS LABEL ELEMENTS

Pictograms



Signal Word	Danger
Hazard Statements	H302 Harmful if swallowed H315 Causes skin irritation H318 Causes serious eye damage H317 May cause an allergic skin reaction H361 Suspected of damaging fertility or the unborn child (state specific effect if known) H335 May cause respiratory irritation H373 May cause damage to organs through prolonged or repeated exposure H411 Toxic to aquatic life with long lasting effects

Precautionary Statements

Safety Data Sheets

Prevention	Obtain special instructions before use(P201) Do not handle until all safety precautions have been read and understood(P202) Do not breathe mist, vapours and spray.(P260) Wash thoroughly after handling.(P264) Do not eat, drink or smoke when using this product(P270) Use only outdoors or in a well-ventilated area(P271) Contaminated work clothing should not be allowed out of the workplace.(P272) Avoid release to the environment(P273) Wear protective gloves.(P280) Wear eye protection and face protection.(P280)
Response	IF ON SKIN: Wash with plenty of soap and water(P302+P352) IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing.(P304+P340) IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing(P305+P351+P338) IF exposed or concerned: Get medical advice/attention(P308+P313) Immediately call a POISON CENTER/doctor(P310) Call a POISON CENTER/doctor. If you feel unwell.(P312) Specific treatment.(P321) Rinse mouth(P330) If skin irritation or rash occurs: Get medical advice/attention(P333+P313) Take off contaminated clothing and wash it before reuse.(P362+P364) Collect spillage(P391)
Storage	Store in a well-ventilated place. Keep container tightly closed.(P403+P233) Store locked up(P405)
Disposal	Dispose of contents/ container to an approved landfill.(P501)

3. COMPOSITION / INFORMATION ON INGREDIENTS

Substances or mixtures	Mixtures		
Chemical name	Contents	Chemical Formula	CAS RN
Tripropylene glycol diacrylate	25-35%	Unknown	42978-66-5
Acrylic monomer	20-25%	Unknown	Confidential
Morpholine, 4-(1-oxo-2-propenyl)-	15-25%	Unknown	5117-12-4
Oligomer	15-25%	Unknown	Confidential
Diphenyl-2,4,6-trimethylbenzoyl phosphine oxide	1-10%	Unknown	75980-60-8
Carbon black	<1%	Unknown	1333-86-4

Safety Data Sheets

4. FIRST-AID MEASURES

In case of inhalation	Call a POISON CENTER or doctor / physician if you feel unwell. IF exposed or concerned: Get medical advice and attention.
In case of skin contact	IF ON SKIN: Wash with plenty of soap and water. Take of contaminated clothing and wash before re-use. If skin irritation or rash occurs, get medical advice and attention. IF exposed or concerned: Get medical advice and attention. Specific treatment.
In case of eye contact	Immediately call a POISON CENTRE or doctor/physician. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. IF exposed or concerned: Get medical advice and attention.
In case of ingestion	IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician. Rinse mouth. IF exposed or concerned: Get medical advice and attention. Induce vomiting.

5. FIRE-FIGHTING MEASURES

Suitable fire-extinguishing media	Dry chemical, alcohol-resistant foam, CO ₂ , sand, water spray.
Not suitable extinguishing media	Cylindric water.
Specific hazards arising from the chemical	Risk of producing harmful gases such as carbon monoxide and sulfur oxides. Avoid inhalation of smoke or gases
Special protective actions for fire fighters	Use goggles in combination with dust mask, and another protections as appropriate to situation.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures	Use goggles in combination with dust mask, and another protections as appropriate to situation. Large spills :Evacuate area. Ensure adequate ventilation.
Environmental precautions	Do not discharge into the drains, surface waters or ground water directly.
Methods and materials for containment and cleaning up	small spill : absorb with material such as non-combustible material wash thoroughly after handling Large spills: Dike spills and dispose of in safe area.
Prevention Measures for Secondary Accidents	Keep away from sources of ignition and prepare extinguishing media. Risk of slipping. Spilled material forms slippery floor. Do not recklessly walk on the spillage.

Safety Data Sheets

7. HANDLING AND STORAGE

Handling

Technical measures

Use local exhaust ventilation in case of production of fume or mist. Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower.

Safe handling advice

Do not eat, drink or smoke when using this product.
Wash hands thoroughly after handling.
Wear protective gloves/protective clothing/eye protection/face protection.
Contaminated work clothing should not be allowed out of the workplace.
Do not breathe dust/fume/gas/mist/vapours/spray.

Storage

Suitable storage conditions

Store locked up.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

	ACGIH (TLV)	OSHA (PEL)	Workplace Safety And Health (General Provisions) Regulations
Carbon black	TWA 3 mg/m ³ (I), STEL –	3.5 mg/m ³ TWA	3.5 mg/m ³ PEL

Engineering measures

Use local exhaust ventilation in case of production of fume or mist. Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower.
Use explosion-proof electrical equipment and prevent from static electricity.

Individual protection measures

Respiratory protection

If necessary, wear respiratory protection.

Hand protection

Wear protective gloves.

Eye protection

Wear eye protection/face protection.

Skin and body protection

Wear protective clothing.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance

Physical State

Liquid

Color

black

Odor

unique odor

Odor threshold

No data available

pH

No data available

Melting point

No data available

Boiling point

No data available

Flash point

93°C or more

Evaporation rate

No data available

Flammability(Solid,Gas)

No data available

Flammability or explosive limits

No data available

Safety Data Sheets

Vapor pressure	No data available
Vapor density	No data available
Relative density	1.07(25°C)
Solubility(ies)	No data available
Partition coefficient: n-octanol/water	No data available
Auto-ignition temperature	No data available
Decomposition temperature	No data available
Viscosity	62±3mPa·s(25°C)

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, metals, oxidizing materials, metal oxides
Hazardous decomposition products	oxides of carbon, oxides of nitrogen

11. TOXICOLOGICAL INFORMATION

Acute toxicity (Oral)	<p>Category 4:5117-12-4 (converted value = 500mg/kg, source: 1272/2008/EC)</p> <p>Not classified:1333-86-4 (source: NITE), 42978-66-5 (source: NITE)</p> <p>Not applicable:75980-60-8 (source: NITE)</p> <p>No data:Confidential (source: None)</p>
Acute toxicity (Dermal)	<p>Calculation result = 1259.5mg/kg. Classification result = Category 4.</p> <p>Not classified:42978-66-5 (source: NITE)</p> <p>Not applicable:75980-60-8 (source: NITE), 5117-12-4 (source: NITE)</p> <p>No data:1333-86-4 (source: None), Confidential (source: None)</p>
Acute toxicity (Inhalation : Gases)	Contains substance of unknown toxicity. Changed from Not classified to Classification not possible. Does not fall under gas based on GHS definitions.
Acute toxicity (Inhalation : Vapours)	Unable to classify due to insufficient data.
Acute toxicity (Inhalation : dust/mist)	Unable to classify due to insufficient data.
Skin corrosion/ Irritation	<p>Category 2:42978-66-5 (source: 1272/2008/EC)</p> <p>Not classified:1333-86-4 (source: NITE)</p> <p>Not applicable:75980-60-8 (source: NITE), 5117-12-4 (source: NITE)</p> <p>No data:Confidential (source: None)</p>
	Sum of Category 2 Concentration limit = 10%. Classification result = Category 2.

Safety Data Sheets

Serious eye damage/ irritation

Category 1:5117-12-4 (source: 1272/2008/EC)
 Category 2:42978-66-5 (source: 1272/2008/EC)
 Not classified:1333-86-4 (source: NITE)
 Not applicable:75980-60-8 (source: NITE)
 No data:Confidential (source: None)

Sum of Eye category 1 Concentration limit = 3%. Classification result = Category 1.

Respiratory Sensitization
 Skin Sensitization

Unable to classify due to insufficient data.
 Category 1:5117-12-4 (source: 1272/2008/EC), 42978-66-5 (source: 1272/2008/EC)
 Not applicable:75980-60-8 (source: NITE)
 No data:1333-86-4 (source: None), Confidential (source: None)

42978-66-5 >= 1% Classification result = Category 1

Germ cell mutagenicity
 Carcinogenicity

Unable to classify due to insufficient data.
 Category 2:1333-86-4 (source: NITE)
 Not applicable:75980-60-8 (source: NITE), 5117-12-4 (source: NITE)
 No data:Confidential (source: None), 42978-66-5 (source: None)

Substances classified as hazardous are below the concentration limit.
 Contains substance of unknown toxicity. Changed from Not classified to Classification not possible.

Reproductive toxicity

Ingredients not contributing to classification:
 1333-86-4 (category = Category 2, source: NITE)
 Category 2:75980-60-8 (source: 1272/2008/EC)
 Not applicable:5117-12-4 (source: NITE)
 No data:1333-86-4 (source: None), Confidential (source: None), 42978-66-5 (source: None)

75980-60-8 >= 3% Classification result = Category 2

Reproductive toxicity, effects on or via lactation
 Specific target organ Toxicity – Single Exposure

Unable to classify due to insufficient data.
 Category 3:42978-66-5 (organ = respiratory tract irritation, source: 1272/2008/EC)
 Not applicable:75980-60-8 (source: NITE), 5117-12-4 (source: NITE)
 No data:1333-86-4 (source: None), Confidential (source: None)

Sum of Category 3(respiratory tract irritation) Concentration limit = 20%. Classification result = Category 3(respiratory tract irritation).

Specific target organ toxicity –

Category 1:1333-86-4 (organ = respiratory apparatus, source: NITE)

Safety Data Sheets

Repeated Exposure Category 2:5117-12-4 (organ = ---, source: 1272/2008/EC)
 Not applicable:75980-60-8 (source: NITE)
 No data:Confidential (source: None), 42978-66-5 (source: None)

Aspiration hazard 5117-12-4 >= 10% Classification result = Category 2
 Unable to classify due to insufficient data.

12. ECOLOGICAL INFORMATION

Hazardous to the Aquatic Environment Category 2:42978-66-5 (source: NITE)
 - Acute Toxicity Not classified:1333-86-4 (source: NITE)
 Not applicable:75980-60-8 (source: NITE), 5117-12-4 (source: NITE)
 No data:Confidential (source: None)

(M factor x 10 x Category 1) + Category 2 >= Concentration limit(25%).
 Classification result = Category 2.

(M factor x 100 x Category 1) + (10 x Category 2) + Category 3 >=
 Concentration limit(25%). Contains substance of unknown toxicity.
 Changed from "Not classified" to "Classification not possible".

Hazardous to the Aquatic Environment Category 2:42978-66-5 (source: 1272/2008/EC)
 - Chronic Toxicity Not applicable:75980-60-8 (source: NITE), 5117-12-4 (source: NITE)
 No data:1333-86-4 (source: None), Confidential (source: None)

(M factor x 10 x Category 1) + Category 2 >= Concentration limit(25%).
 Classification result = Category 2.

Hazardous to the Ozone layer Unable to classify due to insufficient data.

13. DISPOSAL CONSIDERATIONS

Residual Waste Before disposal, make the wastes harmless, stabilized, and neutralized,
 and minimize danger and toxicity of the wastes.
 Dispose of waste in accordance with local,state and federal regulations.

Contaminated Container and Passed to a licensed waste contractor.
 Packaging

In case of disposal of empty containers, remove the content thoroughly.

14. TRANSPORT INFORMATION

International regulations
 Sea(IMDG)

UN number	3082
UN proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
Transport hazard class(es)	9
Packing group	III
Special Provision	2.10.2.7 *1

Safety Data Sheets

air(IATA)

UN number	3082
UN proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
Transport hazard class(es)	9
Packing group	III
Special Provision	A197 *1

*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.

15. REGULATORY INFORMATION

Workplace Safety And Health Occupational Exposure Limits

Component Analysis – Inventory

Tripropylene glycol diacrylate (42978-66-5)

TSCA – United States	ENCS – Japan	KECI – Korea	IECSC – China	DSL – Canada	PICCS – Philippines	AICS – Australia	EINECS – European Union	TCSI – Taiwan	NZIoC – New Zealand
Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Morpholine, 4-(1-oxo-2-propenyl)- (5117-12-4)

TSCA – United States	ENCS – Japan	KECI – Korea	IECSC – China	NDSL – Canada	PICCS – Philippines	AICS – Australia	ELINCS – European Union	TCSI – Taiwan	NZIoC – New Zealand
Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Diphenyl-2,4,6-trimethylbenzoyl phosphine oxide (75980-60-8)

TSCA – United States	ENCS – Japan	KECI – Korea	IECSC – China	DSL – Canada	PICCS – Philippines	AICS – Australia	EINECS – European Union	TCSI – Taiwan	NZIoC – New Zealand
Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Carbon black (1333-86-4)

TSCA – United States	ENCS – Japan	KECI – Korea	IECSC – China	DSL – Canada	PICCS – Philippines	AICS – Australia	EINECS – European Union	TCSI – Taiwan	NZIoC – New Zealand
Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

16. OTHER INFORMATION

Literature References

NITE GHS

EU CLP Regulation, AnnexVI

Other data

The information suggested in this Safety Data Sheet does not comprehend everything and should be adopted only as a guide.

The accuracy of the information and recommendations suggested herein are credible. However the company makes no warranty regarding such information and recommendations and disclaims all liability for reliance thereon.