

Safety Data Sheets

1. IDENTIFICATION

Product Identifier	MH-110 Ink Pure Clear
Product code	MH110-PCL-BD
Recommended use and restriction use	UV curable 3D model ink
Manufacturer	MIMAKI ENGINEERING CO., LTD. 2182-3 Shigeno-otsu, Tomi-shi, Nagano 389-0512 Japan +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 (repeated exposure) Category 2
Environmental Hazards	Hazard to the aquatic environment (long-term hazard) Category 2

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
H373 May cause damage to organs through prolonged or repeated exposure
H411 Toxic to aquatic life with long lasting effects

Precautionary Statements

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)

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Response	Wash thoroughly after handling.(P264) Do not eat, drink or smoke when using this product(P270) Contaminated work clothing should not be allowed out of the workplace.(P272) Avoid release to the environment(P273) Wear protective gloves, eye protection and face protection.(P280) IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell(P301+P312) IF ON SKIN: Wash with plenty of soap and water(P302+P352) 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) Get medical advice/attention if you feel unwell(P314) 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 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
Acryl ester	45-55%	Unknown	Confidential
Isobornyl acrylate	10-20%	Unknown	5888-33-5
Oligomer	10-20%	Unknown	Confidential
4-(1-oxo-2-propenyl)-morpholine	5-15%	Unknown	5117-12-4
Diphenyl-2,4,6-trimethylbenzoyl phosphine oxide	1-10%	Unknown	75980-60-8
4-Hydroxy-2,2,6,6-tetramethylpiperidinoxyl	<1%	Unknown	2226-96-2
Additives	<0.1%	Unknown	Confidential

4. FIRST-AID MEASURES

In case of inhalation	Call a doctor if you feel unwell.
In case of skin contact	IF ON SKIN: Wash with plenty of soap and water. Specific treatment. Take off immediately all contaminated clothing and wash it before reuse. Call a doctor if you feel unwell.
In case of eye contact	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

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In case of ingestion

Rinse mouth.

IF SWALLOWED: Call a doctor if you feel unwell.

5. FIRE-FIGHTING MEASURES

Suitable fire-extinguishing media

Dry chemical, alcohol-resistant foam, CO₂, sand.

Not suitable extinguishing media

Cylindric water.

Specific hazards arising from the chemical

Risk of producing harmful gases such as carbon monoxide. 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.

Environmental precautions

Large spills :Evacuate area.

Methods and materials for containment and cleaning up

Ensure adequate ventilation.

Do not discharge into the drains, surface waters or ground water directly.

Prevention Measures for Secondary Accidents

small spill : absorb with material such as non-combustible material wash thoroughly after handling

Large spills: Dike spills and dispose of in safe area.

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.

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

Wash hands thoroughly after handling.

Wear protective gloves/protective clothing.

Storage

Suitable storage conditions

Store locked up.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

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.

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Individual protection measures

Respiratory protection	If necessary, wear respiratory protection.
Hand protection	Wear protective gloves.
Eye protection	If necessary, wear protective eye protection.
Skin and body protection	Wear protective clothing.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	
Physical State	Liquid
Color	Clear to light yellow
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
Vapor pressure	No data available
Vapor density	No data available
Relative density	1.08 (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	57.1 ± 3 mPa·s (25°C)

10. STABILITY AND REACTIVITY

Reactivity	No information available
Chemical stability	Stable under normal conditions of use.
Possibility of hazardous reactions	Polymerization and curing may occur when exposed to light, particularly ultraviolet rays.
Conditions to avoid	No information available
Incompatible materials	Strong oxidizing agents, radical initiator, inert gas, oxygen scavenger
Hazardous decomposition products	Combustion may produce toxic gas, carbon monoxide and carbon dioxide.

11. TOXICOLOGICAL INFORMATION

Acute toxicity (Oral)	Category 4:2226-96-2 (converted value = 500mg/kg, source: Registered substances (ECHA)), 5117-12-4 (converted value = 500mg/kg, source: 1272/2008/EC)
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	Not classified:5888-33-5 (toxicity value = 5000mg/kg, source: Registered substances (ECHA)) Classification not possible:75980-60-8 (source: 1272/2008/EC) No data:Confidential (source: None)
	Calculation result = 1148.3050847mg/kg. Classification result = Category 4.
Acute toxicity (Dermal)	Unable to classify due to insufficient data.
Acute toxicity (Inhalation : Gases)	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	Category 2:5888-33-5 (source: Registered substances (ECHA)) Classification not possible:75980-60-8 (source: 1272/2008/EC), 2226-96-2 (source: Registered substances (ECHA)), 5117-12-4 (source: 1272/2008/EC) No data:Confidential (source: None)
	Sum of Category 2 Concentration limit = 10%. Classification result = Category 2.
Serious eye damage/ irritation	Category 1:2226-96-2 (source: Registered substances (ECHA)), 5117-12-4 (source: 1272/2008/EC) Category 2:5888-33-5 (source: Registered substances (ECHA)) Classification not possible:75980-60-8 (source: 1272/2008/EC) No data:Confidential (source: None)
	Sum of Eye category 1 Concentration limit = 3%. Classification result = Category 1.
Respiratory Sensitization	Unable to classify due to insufficient data.
Skin Sensitization	Category 1:5117-12-4 (source: 1272/2008/EC), 5888-33-5 (source: Registered substances (ECHA)) Classification not possible:75980-60-8 (source: 1272/2008/EC), 2226-96-2 (source: Registered substances (ECHA)) No data:Confidential (source: None)
	5888-33-5 >= 1% Classification result = Category 1
Germ cell mutagenicity	Unable to classify due to insufficient data.
Carcinogenicity	Unable to classify due to insufficient data.
Reproductive toxicity	Category 2:75980-60-8 (source: 1272/2008/EC) Classification not possible:2226-96-2 (source: Registered substances (ECHA)), 5117-12-4 (source: 1272/2008/EC), 5888-33-5 (source: Registered substances (ECHA))

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	No data:Confidential (source: None)
Reproductive toxicity, effects on or via lactation	75980-60-8 \geq 3% Classification result = Category 2 Unable to classify due to insufficient data.
Specific target organ Toxicity – Single Exposure	Category 3:5888-33-5 (organ = respiratory tract irritation, source: Registered substances (ECHA)) Classification not possible:75980-60-8 (source: 1272/2008/EC), 2226-96-2 (source: Registered substances (ECHA)), 5117-12-4 (source: 1272/2008/EC) No data:Confidential (source: None)
Specific target organ toxicity – Repeated Exposure	Substances classified as hazardous are below the concentration limit. Contains substance of unknown toxicity. Changed from Not classified to Classification not possible. Category 2:2226-96-2 (organ = spleen, liver, source: Registered substances (ECHA)), 5117-12-4 (organ = ---, source: 1272/2008/EC) Classification not possible:75980-60-8 (source: 1272/2008/EC), 5888-33-5 (source: Registered substances (ECHA)) No data:Confidential (source: None)
Aspiration hazard	5117-12-4 \geq 10% Classification result = Category 2 Unable to classify due to insufficient data.

12. ECOLOGICAL INFORMATION

Hazardous to the Aquatic Environment – Acute Toxicity	Category 1:5888-33-5 (source: Registered substances (ECHA)) Classification not possible:75980-60-8 (source: 1272/2008/EC), 2226-96-2 (source: Registered substances (ECHA)), 5117-12-4 (source: 1272/2008/EC) No data:Confidential (source: None)
Hazardous to the Aquatic Environment – Chronic Toxicity	(M factor x 10 x Category 1) + Category 2 \geq Concentration limit(25%). Classification result = Category 2. Category 1:5888-33-5 (source: Registered substances (ECHA)) Classification not possible:75980-60-8 (source: 1272/2008/EC), 2226-96-2 (source: Registered substances (ECHA)), 5117-12-4 (source: 1272/2008/EC) No data:Confidential (source: None)
Hazardous to the Ozone layer	(M factor x 10 x Category 1) + Category 2 \geq Concentration limit(25%). Classification result = Category 2. Unable to classify due to insufficient data.

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13. DISPOSAL CONSIDERATIONS

Residual Waste	Before disposal, make the wastes harmless, stabilized, and neutralized, and minimize danger and toxicity of the wastes.
Contaminated Container and Packaging	Dispose of waste in accordance with local, state and federal regulations. Passed to a licensed waste contractor.
	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

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

No main regulation

Component Analysis – Inventory

Isobornyl acrylate (5888-33-5)

TSCA – United States	ENCS – Japan	KECI Annex 1, 2 – Korea	IECSC – China	DSL/NDSL – Canada	PICCS – Philippines	AICS – Australia	EINECS/ELINGS – European Union	TCSI – Taiwan	NZIoC – New Zealand
Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

4-(1-oxo-2-propenyl)-morpholine (5117-12-4)

TSCA – United States	ENCS – Japan	KECI Annex 1, 2 – Korea	IECSC – China	DSL/NDSL – Canada	PICCS – Philippines	AICS – Australia	EINECS/ELINGS – 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 Annex 1, 2 – Korea	IECSC – China	DSL/NDSL – Canada	PICCS – Philippines	AICS – Australia	EINECS/ELINGS – European Union	TCSI – Taiwan	NZIoC – New Zealand
Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

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4-Hydroxy-2,2,6,6-tetramethylpiperidinoxyl (2226-96-2)

TSCA – United States	ENCS – Japan	KECI Annex 1, 2 – Korea	IECSC – China	DSL/NDSL – Canada	PICCS – Philippines	AICS – Australia	EINECS/ELINGS – European Union	TCSI – Taiwan	NZIoC – New Zealand
Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

16. OTHER INFORMATION

Literature References

NITE GHS

Other data

EU CLP Regulation, AnnexVI

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.