

Safety Data Sheets

1. IDENTIFICATION

| | |
|-------------------------------------|--|
| Product Identifier | MH-100 ink Clear |
| Product Description | MH100-CL-BD / MH100-CL-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 | Skin corrosion/irritation Category 2 Serious eye damage/eye irritation Category 2A Sensitization – skin Category 1 Reproductive toxicity Category 2 Specific target organ toxicity (single exposure) Category 3 (respiratory tract irritation) |
| Environmental Hazards | Hazard to the aquatic environment (long-term hazard) Category 2 |

GHS LABEL ELEMENTS

Pictograms



Signal Word

Warning

Hazard Statements

H315 Causes skin irritation
H319 Causes serious eye irritation
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
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)
Avoid breathing mist, vapours and spray.(P261)
Wash thoroughly after handling.(P264)

Safety Data Sheets

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| Response | 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) 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) Call a POISON CENTER/doctor. If you feel unwell.(P312) Specific treatment.(P321) If skin irritation or rash occurs: Get medical advice/attention(P333+P313) If eye irritation persists: Get medical advice/attention(P337+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 |
| Acrylic monomer | 35-45% | Unknown | Confidential |
| Tripropylene glycol diacrylate | 25-35% | Unknown | 42978-66-5 |
| Oligomer | 20-30% | Unknown | Confidential |
| Diphenyl-2,4,6-trimethylbenzoyl phosphine oxide | 1-10% | Unknown | 75980-60-8 |

4. FIRST-AID MEASURES

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|-------------------------|---|
| 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 | IF IN EYES: Rinse cautiously with water for several minutes. Remove |

Safety Data Sheets

In case of ingestion

contact lenses, if present and easy to do. Continue rinsing.

If eye irritation persists: Get medical advice/attention.

IF exposed or concerned: Get medical advice and attention.

Rinse mouth.

IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.

IF exposed or concerned: Get medical advice and attention.

Induce vomiting.

5. FIRE-FIGHTING MEASURES

Suitable fire-extinguishing media

Dry chemical, alcohol-resistant foam, CO₂, 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.

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/eye protection/face protection.

Contaminated work clothing should not be allowed out of the workplace.

Avoid breathing dust/fume/gas/mist/vapours/spray.

Safety Data Sheets

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 electrocity. |
| 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 | 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 | 1.07(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 | 58±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. |

Safety Data Sheets

Incompatible materials
Hazardous decomposition products

Avoid contact with incompatible materials.
acids, bases, metals, oxidizing materials, metal oxides
oxides of carbon, oxides of nitrogen

11. TOXICOLOGICAL INFORMATION

Acute toxicity (Oral)

Not classified:42978-66-5 (source: NITE)
Not applicable:75980-60-8 (source: NITE)
No data:Confidential (source: None)

Acute toxicity (Dermal)

Contains substance of unknown toxicity. Changed from Not classified to Classification not possible.
Not classified:42978-66-5 (source: NITE)
Not applicable:75980-60-8 (source: NITE)
No data:Confidential (source: None)

Acute toxicity (Inhalation : Gases)
Acute toxicity (Inhalation : Vapours)
Acute toxicity (Inhalation : dust/mist)
Skin corrosion/ Irritation

Contains substance of unknown toxicity. Changed from Not classified to Classification not possible.
Does not fall under gas based on GHS definitions.
Unable to classify due to insufficient data.
Unable to classify due to insufficient data.
Category 2:42978-66-5 (source: 1272/2008/EC)
Not applicable:75980-60-8 (source: NITE)
No data:Confidential (source: None)

Serious eye damage/ irritation

Sum of Category 2 Concentration limit = 10%. Classification result = Category 2.
Category 2:42978-66-5 (source: 1272/2008/EC)
Not applicable:75980-60-8 (source: NITE)
No data:Confidential (source: None)

Respiratory Sensitization
Skin Sensitization

Sum of Eye category 2 Concentration limit = 10%. Classification result = Category 2A.
Unable to classify due to insufficient data.
Category 1:42978-66-5 (source: 1272/2008/EC)
Not applicable:75980-60-8 (source: NITE)
No data:Confidential (source: None)

Germ cell mutagenicity
Carcinogenicity
Reproductive toxicity

42978-66-5 \geq 1% Classification result = Category 1
Unable to classify due to insufficient data.
Unable to classify due to insufficient data.
Category 2:75980-60-8 (source: 1272/2008/EC)
No data:Confidential (source: None), 42978-66-5 (source: None)

Safety Data Sheets

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| Reproductive toxicity, effects on or via lactation Specific target organ Toxicity – Single Exposure | 75980-60-8 \geq 3% Classification result = Category 2 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) No data:Confidential (source: None) |
| Specific target organ toxicity – Repeated Exposure Aspiration hazard | Sum of Category 3(respiratory tract irritation) Concentration limit = 20%. Classification result = Category 3(respiratory tract irritation). Unable to classify due to insufficient data. Unable to classify due to insufficient data. |

12. ECOLOGICAL INFORMATION

| | |
|---|--|
| Hazardous to the Aquatic Environment – Acute Toxicity | Category 2:42978-66-5 (source: NITE) Not applicable:75980-60-8 (source: NITE) 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. (M factor x 100 x Category 1) + (10 x Category 2) + Category 3 \geq Concentration limit(25%). Contains substance of unknown toxicity. Changed from "Not classified" to "Classification not possible". Category 2:42978-66-5 (source: 1272/2008/EC) Not applicable:75980-60-8 (source: NITE) 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. |

13. DISPOSAL CONSIDERATIONS

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|--------------------------------------|--|
| 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

Safety Data Sheets

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

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 |

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 |

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.