

Safety Data Sheet

1. IDENTIFICATION

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| Product Identifier | : ELH-100 White |
| Product code | : ELH100-W-BA / ELH100-W-B2 / ELH100-W-60 / ELH100-W-22 |
| Recommended use and restriction use | : INK JET 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 name | : MIMAKI SINGAPORE PTE. LTD. |
| Address | : 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 |

2. HAZARDS IDENTIFICATION

GHS CLASSIFICATION

| | |
|----------------|---|
| Health hazards | : Skin corrosion/irritation Category 2 Serious eye damage/eye irritation Category 1 Sensitization – skin Category 1 |
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GHS LABEL ELEMENTS

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| Pictograms | :  |
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| Signal Word | : Danger |
| Hazard Statements | : H315 Causes skin irritation H317 May cause an allergic skin reaction H318 Causes serious eye damage |

Precautionary Statements

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| Prevention | : Avoid breathing mist, vapours and spray.(P261) Wash thoroughly after handling.(P264) Contaminated work clothing should not be allowed out of the workplace.(P272) Wear protective gloves/protective clothing/eye protection/face protection(P280) |
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| Response | : 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) Immediately call a POISON CENTER/doctor(P310) If skin irritation or rash occurs: Get medical advice/attention(P333+P313) Take off contaminated clothing and wash it before |
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Storage : reuse.(P362+P364)
Disposal : Not applicable.
: Dispose of waste in accordance with local,state and federal regulations.(P501)

3. COMPOSITION / INFORMATION ON INGREDIENTS

| Substances or mixtures | : Mixtures | |
|---|------------|--------------|
| Chemical name | Contents | CAS RN |
| 2-Propenoic acid, 2-[2-(ethenyloxy)ethoxy]ethyl ester | 30-40% | 86273-46-3 |
| Acrylate monomer | 10-20% | Confidential |
| Titanium Oxide | 5-15% | 13463-67-7 |
| 2-Hydroxy-3-phenoxypropyl Acrylate | 5-15% | 16969-10-1 |
| Dipropylene Glycol Diacrylate | 5-15% | 57472-68-1 |
| 1,6-Hexanediol diacrylate | 5-15% | 13048-33-4 |
| Photo initiator | 1-10% | Confidential |
| 4-hydroxy-2,2,6,6-tetramethylpiperidinoxyl | 0.1-5% | 2226-96-2 |
| Additive | 0.1-5% | Confidential |

4. FIRST-AID MEASURES

Inhalation : Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.

Skin contact : Flush contaminated skin with plenty of water. Take of contaminated clothing and wash before re-use. Get medical attention if symptoms occur.

Eye contact : Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. IF exposed or concerned: Get medical advice and attention.

Ingestion : Rinse mouth. Do not induce vomiting unless directed to do so by medical personnel. IF exposed or concerned: Get medical advice and attention.

5. FIRE-FIGHTING MEASURES

Suitable fire-extinguishing media : Dry chemicals, CO2, water spray or regular foam.

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.

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6. ACCIDENTAL RELEASE MEASURES

- Personal precautions, protective equipment and emergency procedures : Put on appropriate personal protective equipment. Large spills :Evacuate area. Ensure adequate ventilation.
- Environmental precautions : Collect spillage. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.
- Methods and materials for containment and cleaning up : Small spill : absorb with material such as non-combustible materialwash 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 : Do not handle until all safety precautions have been read and understood. Avoid release to the environment. 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. Obtain special instructions before use.
- Storage
- Suitable storage conditions : Store in well-ventilated place. Store locked up.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Control parameters

| | ACGIH (TLV) | OSHA (PEL) | Workplace Safety And Health (General Provisions) Regulations |
|------------------|----------------------------------|---------------------------------------|--|
| Titanium dioxide | TWA 10 mg/m ³ ,STEL – | 15 mg/m ³ TWA (total dust) | 10 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.

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Individual protection measures

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| 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. |
| Hygiene measures | : Wash hand thoroughly after handling. |

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance

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| Physical State | : Liquid |
| Color | : White |
| Odor | : Unique odor |
| Odor threshold | : No data available |
| pH | : No data available |
| Melting point | : No data available |
| Boiling point | : No data available |
| Flash point | : $\geq 130^{\circ}\text{C}$ |
| Evaporation rate | : No data available |
| Flammability(Solid,Gas) | : Combustible |
| Flammability or explosive limits | : No data available |
| Vapor pressure | : No data available |
| Vapor density | : No data available |
| Relative density | : 1.0–1.2 |
| Solubility(ies) | : Non-water-soluble |
| Partition coefficient: n-octanol/water | : No data available |
| Auto-ignition temperature | : No data available |
| Decomposition temperature | : No data available |
| Viscosity | : $23 \pm 3 \text{ mPa} \cdot \text{s} (25^{\circ}\text{C})$ |

10. STABILITY AND REACTIVITY

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| Reactivity | : Stable under normal conditions of use. |
| 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 | : Heat source, storage near fire source, direct sunlight, ultraviolet rays. |
| 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

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| Acute toxicity (Oral) | : Category 4:2226-96-2 (converted value = 500mg/kg, source: Registered substances (ECHA)), 86273-46-3 (toxicity value = 1908mg/kg, source: Self-classification) Category 5:57472-68-1 (toxicity value = 3530mg/kg, source: Self-classification) Classification not possible:13463-67-7 (source: 1272/2008/EC), 13048-33-4 (source: 1272/2008/EC), 16969-10-1 (source: Registered substances (ECHA)), Confidential (source: NITE), Confidential (source: 1272/2008/EC) No data:Confidential |
| | Calculation result = 2052.1635107mg/kg. Classification result = Classification not possible. |
| 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 2:13048-33-4 (source: 1272/2008/EC), 57472-68-1 (source: Self-classification) Classification not possible:13463-67-7 (source: 1272/2008/EC), 2226-96-2 (source: Registered substances (ECHA)), 16969-10-1 (source: Registered substances (ECHA)), Confidential (source: NITE), Confidential (source: 1272/2008/EC), 86273-46-3 (source: Self-classification) No data:Confidential |
| | Sum of Category 2 Concentration limit = 10%. Classification result = Category 2. |
| Serious eye damage/ irritation | : Category 1:2226-96-2 (source: Registered substances (ECHA)), 16969-10-1 (source: Registered substances (ECHA)), 57472-68-1 (source: Self-classification) Category 2:13048-33-4 (source: 1272/2008/EC) Classification not possible:13463-67-7 (source: 1272/2008/EC), Confidential (source: NITE), Confidential (source: 1272/2008/EC), 86273-46-3 (source: Self-classification) No data:Confidential |
| | Sum of Eye category 1 Concentration limit = 3%. Classification result = Category 1. |
| Respiratory Sensitization | : Unable to classify due to insufficient data. |
| Skin Sensitization | : Category 1:13048-33-4 (source: 1272/2008/EC), 57472-68-1 (source: Self-classification), 86273-46-3 (source: Self-classification) |

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Category 1A:Confidential (source: 1272/2008/EC)
Category 1B:16969-10-1 (source: Registered substances (ECHA))
Classification not possible:13463-67-7 (source: 1272/2008/EC),
2226-96-2 (source: Registered substances (ECHA)), Confidential
(source: NITE)
No data:Confidential

Germ cell mutagenicity
Carcinogenicity

86273-46-3 >= 1% Classification result = Category 1
: Unable to classify due to insufficient data.
: Category 2:13463-67-7 (source: 1272/2008/EC)
Classification not possible:2226-96-2 (source: Registered
substances (ECHA)), 13048-33-4 (source: 1272/2008/EC), 16969-
10-1 (source: Registered substances (ECHA)), Confidential (source:
NITE), 57472-68-1 (source: Self-classification), Confidential (source:
1272/2008/EC), 86273-46-3 (source: Self-classification)
No data:Confidential

13463-67-7 >= 1% Classification result = Category 2.

Because the shape is liquid, Changed from Category 2 to
Classification not possible.

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

: Unable to classify due to insufficient data.
: Unable to classify due to insufficient data.
: Unable to classify due to insufficient data.
: Category 2:2226-96-2 (organ = spleen, liver, source: Registered
substances (ECHA))
Classification not possible:13463-67-7 (source: 1272/2008/EC),
13048-33-4 (source: 1272/2008/EC), 16969-10-1 (source:
Registered substances (ECHA)), Confidential (source: NITE), 57472-
68-1 (source: Self-classification), Confidential (source:
1272/2008/EC), 86273-46-3 (source: Self-classification)
No data:Confidential

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

Aspiration hazard

: Unable to classify due to insufficient data.

12. ECOLOGICAL INFORMATION

Hazardous to the Aquatic Environment – : Classification not possible:13463-67-7 (source: 1272/2008/EC),

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Acute Toxicity

2226-96-2 (source: Registered substances (ECHA)), 13048-33-4 (source: 1272/2008/EC), 16969-10-1 (source: Registered substances (ECHA)), Confidential (source: NITE), 57472-68-1 (source: Self-classification), Confidential (source: 1272/2008/EC), 86273-46-3 (source: Self-classification)
No data:Confidential

Hazardous to the Aquatic Environment – Chronic Toxicity

Contains substance of unknown toxicity. Changed from Not classified to Classification not possible.
Category 2:16969-10-1 (source: Registered substances (ECHA))
Category 3:86273-46-3 (source: Self-classification)
Category 4:Confidential (source: 1272/2008/EC)
Classification not possible:13463-67-7 (source: 1272/2008/EC), 2226-96-2 (source: Registered substances (ECHA)), 13048-33-4 (source: 1272/2008/EC), Confidential (source: NITE), 57472-68-1 (source: Self-classification)
No data:Confidential

Hazardous to the Ozone layer

(M factor x 100 x Category 1) + (10 x Category 2) + Category 3 >= Concentration limit(25%). Classification result = Category 3. does not apply to the target country.
: Unable to classify due to insufficient data.

13. DISPOSAL CONSIDERATIONS

- Residual Waste : Disposal should be in accordance with applicable regional, national and local laws and regulations. Passed to a licensed waste contractor.
- Contaminated Container and Packaging : Disposal should be in accordance with applicable regional, national and local laws and 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

Air(IATA)

- UN number : 3082

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UN proper shipping name : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
Transport hazard class(es) : 9
Packing group : III

15. REGULATORY INFORMATION

Workplace Safety And Health : Occupational Exposure Limits

16. OTHER INFORMATION

Literature References : SDS of raw material
National Institute of Technology and Evaluation (NITE) GHS
Classifications List
Regulation (EC) 1272/2008 Annex VI
Regulation (EC) 1907/2006 registered substances

Other data : The information suggested in this Safety Data Sheet does not
comprehend everything and should be adopted only as a guide.
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herein are credible. However the company makes no warranty
regarding such information and recommendations and disclaims all
liability for reliance thereon.