1. Identification

Product Name : UV ink LH-100 Black
Ink Ver. : 1
General Use : Ink for ink jet printer
Product Description : UV Inkjet Ink
SDS Number : 037-U060488
Manufacture
Company Name : Mimaki Engineering Co., Ltd.
Address : 2182-3 Shigeno-otsu, Tomi-shi, Nagano 389-0512 JAPAN
Telephone No. : +81-268-64-2413
Importer / Distributor Established in USA
Company Name : MIMAKI USA, INC.
Address : 150 Satellite Boulevard, suite A, Suwanee, Georgia 30024, U.S.A.
Telephone No. : +1-678-730-0170
Emergency Telephone No. : +1 866 928 0789 (within United States only, Toll free)
                      : +1 215 207 0061

2. Hazards Identification

[GHS Classification]
Physical Hazards
   Flammable Liquids : Not classified

Health Hazards
   Acute Toxicity – Oral : Category 4 (~40% unknown)
   Skin Corrosion / Irritation : Category 2
   Eye Damage / Irritation : Category 1
   Sensitization – Skin : Category 1
   Carcinogenicity : Category 2
   Toxic to Reproduction : Category 2
   Specific Target Organ Toxicity : Category 1 (lungs)
   (Repeated Exposure) : Category 2 (immune system)

Environmental Hazards
Hazardous to the Aquatic: Category 1
Environment · Acute Hazard
Hazardous to the Aquatic: Category 1
Environment · Long Term Hazard

The above list does not include category being non-classifiable or not-applicable.

[GHS Label Elements]

Signal Word
Danger

Hazard Statements
H302 Harmful if swallowed
H315 Causes skin irritation
H317 May cause an allergic skin reaction
H318 Causes serious eye damage
H351 Suspected of causing cancer
H361 Suspected of damaging fertility or the unborn child
H372 Causes damage to organs through prolonged or repeated exposure (lungs).
H373 May cause damage to organs through prolonged or repeated exposure (immune system).
H410 Very toxic to aquatic life with long lasting effects

Precautionary Statements
[Prevention]
P201 Obtain SDS (Safety Data Sheet) and printer’s Operation Manual before use.
P202 Do not handle until all safety precautions have been read and understood.
P260 Do not breathe gas/mist.
P264 Wash hands thoroughly after handling.
P270 Do not eat, drink, or smoke when using this product.
P272 Contaminated work clothing should not be allowed out of the workplace.
P273 Avoid release to the environment.
P280 Wear protective gloves/protective clothing/eye protection/face protection.
[Response]
P301+P312 IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.
P302+P352 IF ON SKIN: Wash with plenty of soap and water.
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
(P305)+P310 (IF IN EYES:) Immediately call a POISON CENTER or doctor/physician.
P308+P313 IF exposed or concerned: Get medical advice/attention.
P314 Get medical advice/attention if you feel unwell.
(P301+)+P330 (IF SWALLOWED): Rinse mouth.
P333+P313 If skin irritation or rash occurs, Get medical advice/attention.
P362+P364 Take off contaminated clothing and wash before reuse.
P391 Collect spillage.

[Storage]
P405 Store locked up.

[Disposal]
P501 Dispose of contents/container in accordance with local/regional/national/international regulation (to be specified).

NFPA Rating (scale 0 – 4)
Health = 2
Flammability = 1
Instability = 0
Special = None

### 3. Composition / Information on Ingredients

<table>
<thead>
<tr>
<th>No</th>
<th>Chemical Name</th>
<th>Wt%</th>
<th>CAS No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Acryl acid ester</td>
<td>40-60</td>
<td>Trade Secret</td>
</tr>
<tr>
<td>2</td>
<td>1,6-Hexanediol diacrylate</td>
<td>25-30</td>
<td>13048-33-4</td>
</tr>
<tr>
<td>3</td>
<td>Initiator</td>
<td>10-15</td>
<td>Trade Secret</td>
</tr>
<tr>
<td>4</td>
<td>Additive</td>
<td>0.1-5</td>
<td>Trade Secret</td>
</tr>
<tr>
<td>5</td>
<td>Carbon black</td>
<td>0.1-5</td>
<td>1333-86-4</td>
</tr>
</tbody>
</table>

### 4. First Aid Measures

**Inhalation**
: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER or doctor/physician.

**Eye Contact**
: Flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get immediate medical attention.

**Skin Contact**
: Wash with plenty of soap and water. Take off contaminated clothing and wash before re-use. If skin irritation or rash occurs: Get medical advice/attention. Contaminated clothing should be removed and laundered before reuse.

**Ingestion**
: If swallowed, get medical attention.
Most Important Symptoms/Effects

Acute: skin irritation, eye damage, allergic skin reaction

Delayed: allergic skin reaction, reproductive effects, immune system disorders

Indication of Immediate Medical Attention and Special Treatment

Treat symptomatically and supportively.

5. Fire Fighting Measures

Flammable Properties: Flash point 136°C

Extinguishing Media: carbon dioxide, regular dry chemical, water spray, alcohol resistant foam

Unsuitable Extinguishing Media: Do not scatter spilled material with high-pressure water streams.

Special Hazards Arising from the Chemical Products: Negligible fire hazard.

Hazardous Combustion Products: oxides of carbon, oxides of nitrogen, oxides of sulfur

Fire Fighting Measures: Move container from fire area if it can be done without risk. Do not scatter spilled material with high-pressure water streams. Cool containers with water spray until well after the fire is out. Stay away from the ends of tanks. Avoid inhalation of material or combustion by-products.

Special Protective Equipment and Precautions for Firefighters: Wear full protective fire fighting gear including self contained breathing apparatus (SCBA) for protection against possible exposure.

6. Accidental Release Measures

Personal Precautions, Protective Equipment and Emergency: Wear personal protective clothing and equipment, see Section 8. Avoid release to the environment.
Procedures

Methods and Materials for Containment and Cleaning Up:
- Eliminate all ignition sources if safe to do so. Stop leak if possible without personal risk. Reduce vapors with water spray.
- Small spills: Absorb with sand or other non-combustible material. Collect spilled material in appropriate container for disposal.
- Large spills: Dike for later disposal. Keep unnecessary people away, isolate hazard area and deny entry. Stay upwind and keep out of low areas.

7. Handling and Storage

Precautions for Safe Handling:
- Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not breathe vapor or mist. Avoid contact with eyes, skin and clothing. Do not eat, drink, or smoke when using this product. Wear protective gloves and eye/face protection. Wash thoroughly after handling. Contaminated work clothing should not be allowed out of the workplace. Avoid release to the environment.

Conditions for Safe Storage, including any Incompatibilities:
- Store and handle in accordance with all current regulations and standards. Store in a well-ventilated place. Keep container tightly closed. Keep cool. Store locked up. Keep separated from incompatible substances.

8. Exposure Controls / Personal Protection

Exposure Limit Values:
<table>
<thead>
<tr>
<th>Source</th>
<th>Limit Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACGIH</td>
<td>3 mg/m³ TWA (inhalable fraction)</td>
</tr>
<tr>
<td>OSHA</td>
<td>3.5 mg/m³ TWA</td>
</tr>
<tr>
<td>NIOSH</td>
<td>3.5 mg/m³ TWA; 0.1 mg/m³ TWA (Carbon black in presence of Polycyclic aromatic hydrocarbons, as PAH)</td>
</tr>
<tr>
<td>Mexico</td>
<td>3.5 mg/m³ TWA LMPE-PPT 7 mg/m³ STEL [LMPE-CT]</td>
</tr>
</tbody>
</table>

Component Biological Limit Values:
- There are no biological limit values for the component(s) of this product.
Exposure Controls

Occupational Exposure Controls

Appropriate Engineering Controls: Provide local exhaust or process enclosure ventilation system. Ensure compliance with applicable exposure limits.

Personal Protection

Respiratory Protection: Consult with a health and safety professional for specific respirators appropriate for your use.

Hand Protection: Wear appropriate chemical resistant gloves.

Eye Protection: Wear splash resistant safety goggles with a faceshield. Provide an emergency eye wash fountain and quick drench shower in the immediate work area.

Skin Protection: Wear appropriate chemical resistant clothing.

9. Physical and Chemical Properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance - Physical State</td>
<td>Liquid</td>
</tr>
<tr>
<td>Appearance - Color</td>
<td>Black</td>
</tr>
<tr>
<td>Odor</td>
<td>Characteristic odor</td>
</tr>
<tr>
<td>pH</td>
<td>Not available</td>
</tr>
<tr>
<td>Boiling Point / Boiling Range</td>
<td>Not available</td>
</tr>
<tr>
<td>Melting Point / Melting Range</td>
<td>Not available</td>
</tr>
<tr>
<td>Decomposition Temperature</td>
<td>Not available</td>
</tr>
<tr>
<td>Flash Point</td>
<td>136°C</td>
</tr>
<tr>
<td>Auto ignition temperature</td>
<td>Not available</td>
</tr>
<tr>
<td>Flammability (Solid, Gas)</td>
<td>Not available</td>
</tr>
<tr>
<td>Explosive Properties</td>
<td>Not available</td>
</tr>
</tbody>
</table>
Safety Data Sheets

Oxidizing Properties : Not available
Upper / Lower Flammability or Explosive Limits : Not available
Vapor Pressure Specific Gravity : 1.11 (25℃)
Solubility : Not available
Water Solubility : Not available
Partition Coefficient (n-octanol / Water) : Not available
Viscosity : 22±3 mPa・s (25℃)
Vapor Density : Not available
Evaporation Rate : Not available
VOC : Not available

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. Containers may rupture or explode if exposed to heat. Avoid contact with incompatible materials.
Incompatible Materials : acids, bases, oxidizing materials, peroxides, metal oxides
Hazardous Decomposition : Combustion: oxides of carbon, oxides of nitrogen, oxides of sulfur

11. Toxicological Information

Acute Toxicity : The component(s) of this material have been reviewed in various sources and no selected endpoints have been identified.
Component Analysis - LD50/LC50
Information on Likely Routes of Exposure
Inhalation : irritation, nausea, headache, drowsiness, dizziness, loss of coordination, difficulty breathing, cancer, reproductive effects, lung damage
Ingestion : irritation, nausea, headache, drowsiness, dizziness, loss of
Skin Contact: allergic reactions, irritation, nausea, headache, drowsiness, dizziness
Eye Contact: eye damage
Immediate Effects: allergic skin reaction, skin irritation, eye damage
Delayed Effects: allergic skin reaction, cancer, reproductive effects, lung damage, immune system disorders
Medical Conditions: No information available for the product.

Aggravated by Exposure
Irritation/Corrosivity Data: skin irritation, eye damage
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: Carbon black (CAS No. 1333-86-4)

<table>
<thead>
<tr>
<th>ACGIH</th>
<th>A3 · Confirmed Animal Carcinogen with Unknown Relevance to Humans</th>
</tr>
</thead>
<tbody>
<tr>
<td>IARC</td>
<td>Monograph 93 [2010]; Monograph 65 [1996] (Group 2B (possibly carcinogenic to humans))</td>
</tr>
<tr>
<td>DFG</td>
<td>Category 3B (could be carcinogenic for man, inhalable fraction)</td>
</tr>
<tr>
<td>OSHA</td>
<td>Present</td>
</tr>
</tbody>
</table>

Reproductive Toxicity: Available data characterizes components of this product as reproductive hazards.

Specific Target Organ Toxicity · Single Exposure: No target organs identified.
Specific Target Organ Toxicity · Repeated Exposure: lungs, immune system
Aspiration Hazard: Not expected to be an aspiration hazard.
12. Ecological Information

Handling is noted because it might influence the environment when leaking and abandoning it. Especially, note that the product doesn't flow directly to ground, the river, and the drain ditch.

Ecotoxicity: Very toxic to aquatic life with long lasting effects.
Component Analysis: No LOI ecotoxicity data are available for the component(s) of this product.
Aquatic Toxicity: Not available
Persistence and Degradability: Not available
Bioaccumulation: Not available
Mobility: Not available
Other Toxicity: Not available

13. Disposal Considerations

Comply with all USA, national and local regulations.
Do not dump this product into sewers, on the ground or into any body of water.

Disposal Methods: Dispose in accordance with all applicable regulations.
Component Waste Numbers: The U.S. EPA has not published waste numbers for this product's components.
Disposal of Contaminated Packaging: Empty containers may contain product residue. Dispose in accordance with all applicable regulations.

14. Transport Information

Check a thing without a leak in a container.
Perform prevention of collapse of cargo surely.

US DOT Information
Shipping Name: Environmentally hazardous substance, liquid, n.o.s.
(Contains: 1,6-Hexanediol diacrylate, Acryl acid ester)
UN Number: UN3082
**Safety Data Sheets**

Hazardous Class or Division : 9

Packing Group (PG) : III

Label(s) Required : 9

**TDG Information**

Shipping Name : Environmentally hazardous substance, liquid, n.o.s.

Name (Contains: 1,6-Hexanediol diacrylate, Acryl acid ester)

UN Number : UN3082

Hazardous Class or Division : 9

Packing Group (PG) : III

Label(s) Required : 9

Marine Pollutant : YES (Product)

Remarks : Single or inner packaging less than 5 L (liquid) or 5 kg net (solids) is excepted from Dangerous Goods regulations.

Refer to ICAO/IATA A197, IMDG 2.10.2.7, ADR SP 375.

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**15. Regulatory Information**

**U.S. Federal Regulations** : None of this products components are listed under SARA Sections 302/304 (40 CFR 355 Appendix A), SARA Section 311/312 (40 CFR 370.21), SARA Section 313 (40 CFR 372.65), CERCLA (40 CFR 302.4), TSCA 12(b), or require an OSHA process safety plan.

**SARA Title III Section 311/312** : Acute Health: Yes

Chronic Health: Yes

Fire: No

Pressure: No

Reactive: No

**U.S. State Regulations** : The following components appear on one or more of the following state hazardous substances lists:

<table>
<thead>
<tr>
<th>Component</th>
<th>CA</th>
<th>MA</th>
<th>MN</th>
<th>NJ</th>
<th>PA</th>
</tr>
</thead>
<tbody>
<tr>
<td>1,6-Hexanediol diacrylate (CAS No. 13048-33-4)</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Carbon black (CAS No. 1333-86-4)</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
</tbody>
</table>
California Proposition 65

: WARNING

This product can expose you to chemicals including Benzene, Benz[a]anthracene, Benzo[a]pyrene, Benzo[b]fluoranthene, Benzo[j]fluoranthene, Benzo[k]fluoranthene, Carbon black, Chrysene, Dibenz[a,h]anthracene, Naphthalene, Toluene which are known to the State of California to cause cancer/ birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.

Canadian WHMIS Ingredient Disclosure

: Components of this material have been checked against the Canadian WHMIS Ingredients Disclosure List. The List is composed of chemicals which must be identified on MSDSs if they are included in products which fall under WHMIS criteria specified in the Controlled Products Regulations and present above the threshold limits listed on the IDL.

Carbon black (CAS No.1333-86-4) : 1%

Chemical Inventory Listings

: Component Analysis ∙ Inventory

<table>
<thead>
<tr>
<th>Component</th>
<th>US</th>
<th>CA</th>
<th>EU</th>
<th>AU</th>
<th>PHIL</th>
<th>JP</th>
<th>KR</th>
<th>CN</th>
<th>NZ</th>
</tr>
</thead>
<tbody>
<tr>
<td>1,6-Hexanediol diacrylate</td>
<td>Yes</td>
<td>DSL</td>
<td>EIN</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
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<tr>
<td>(CAS No. 13048-33-4)</td>
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</tr>
<tr>
<td>Carbon black</td>
<td>Yes</td>
<td>DSL</td>
<td>EIN</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
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<tr>
<td>(CAS No.1333-86-4)</td>
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</tr>
</tbody>
</table>

16. Other Information

Key/Legend

ACGIH ∙ American Conference of Governmental Industrial Hygienists; ADR ∙ European Road Transport; CAS ∙ Chemical Abstracts Service; CLP ∙ Classification, Labelling and Packaging; EEC ∙ European Economic Community; EIN (EINECS) ∙ European Inventory of Existing Commercial Chemical Substances; ELN (ELINCS) ∙ European List of Notified Chemical Substances; IARC ∙ International Agency for Research on Cancer; IATA ∙ International Air Transport Association; IMDG ∙ International Maritime Dangerous Goods; IBC Code ∙ International Bulk Chemical Code; Kow ∙ Octanol/water partition coefficient; LEL ∙ Lower Explosive Limit; LOLI ∙ List Of Lists™ ∙ ChemADVISOR’s Regulatory Database; MAK ∙
Safety Data Sheets

Maximum Concentration Value in the Workplace: MEL · Maximum Exposure Limits: NTP = National Toxicology Program · REACH · Registration, Evaluation, Authorisation and Restriction of Chemicals · RID · European Rail Transport · STEL · Short-term Exposure Limit · TWA · Time Weighted Average · UEL · Upper Explosive Limit

Other Information

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