Safety Data Sheets

1. Identification

Product Name	: UV ink LH-100 Yellow
Order No.	: LH100-Y-BA/LH100-Y-B2/SPC-0597Y/SPC-0659Y
General Use	: Ink for ink jet printer
Product Description	: UV Inkjet Ink
SDS Number	: 037-U060490
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 1A
Toxic to Reproduction	: Category 1B
Specific Target Organ Toxicity (Repeated Exposure)	: Category 2 (immune system)

Environmental Hazards

Hazardous to the Aquatic Environment - Acute Hazard	: Category 1

Hazardous to the Aquatic Environment - Long Term Hazard : Category 1

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

[GHS Label Elements]

Symbol

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
H350 May cause cancer
H360 May damage fertility or the unborn child
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

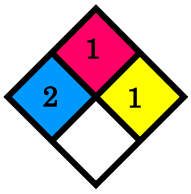
[Prevention]
P201 Obtain SDS (Safety Data Sheet) and printer's Operation Manual before use.
P202 Do not handle until all safety precautions have been read and understood.
P260 Do not breathe gas/mist.
P264 Wash hands thoroughly after handling.
P270 Do not eat, drink, or smoke when using this product.
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.
(P301+)P330 IF SWALLOWED: Rinse mouth.
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.
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.

Safety Data Sheets

[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

No	Chemical Name	Wt%	CAS No.
1	Acryl acid ester	30-50	Trade Secret
2	1,6-Hexanediol diacrylate	25-30	13048-33-4
3	2-methyl-1-(4-methylthiophenyl)-2-morpholinopropan-1-one	5-15	71868-10-5
4	pentaerythritol triacrylate	3-8	3524-68-3
5	1,1,1-trimethylolpropane triacrylate	3-8	15625-89-5
6	Initiator	1-10	Trade Secret
7	Additive	0.1-5	Trade Secret
8	Nickel series pigment	0.1-5	Trade Secret

Component Related Regulatory Information : This product may be regulated, have exposure limits or other information identified as the following: Nickel compounds.

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, cancer, reproductive effects, cancer, immune system disorders
Indication of Immediate Medical Attention and Special Treatment Needed, If Needed	: Treat symptomatically and supportively.

5. Fire Fighting Measures

Flammable Properties	: Flash point 136℃
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	: 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 : Nickel series pigment (CAS No. Trade Secret)

NIOSH	0.015 mg/m3 TWA (except Nickel carbonyl, as Ni, related to Nickel compounds)

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

Appearance	- Physical State	: Liquid
	- Color	: Yellow
Odor		: Characteristic odor
pH		: Not available
Boiling Point / Boiling Range		: Not available
Melting Point / Melting Range		: Not available
Decomposition Temperature		: Not available
Flash Point		: 136℃
Auto ignition temperature		: Not available
Flammability (Solid, Gas)		: Not available
Explosive Properties		: Not available
Oxidizing Properties		: Not available
Upper / Lower Flammability or Explosive Limits		: Not available
Vapor Pressure		
Specific Gravity		: 1.10 (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,
Ingestion	: irritation, nausea, headache, drowsiness, dizziness, loss of coordination, unconsciousness
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

Safety Data Sheets

Medical Conditions Aggravated by Exposure	: No information available for the product.
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	: Trimethylolpropane triacrylate(CAS No. 15625-89-5)

IARC	Monograph 122 [2019](technical grade) (Group 2B (possibly carcinogenic to humans))
OSHA	Hazard Communication Carcinogens: Present

Nickel series pigment (CAS No. Trade Secret)

IARC	Monograph 100C [2012]; Monograph 49 [1990] (evaluated as a group) (Group 1 (carcinogenic to humans), related to Nickel compounds)
NTP	Known Human Carcinogen (related to Nickel compounds)
DFG	Category 3B (could be carcinogenic for man, inhalable fraction)
OSHA	Present

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	: 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 - Aquatic Toxicity	: No LOLI ecotoxicity data are available for the component(s) of this product.
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
Hazardous Class or Division	: 9
Packing Group (PG)	: III
Label(s) Required	: 9
TDG Information	

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

15. Regulatory Information

U.S. Federal Regulations : This material contains one or more of the following chemicals required to be identified 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), and/or require an OSHA process safety plan.
Nickel series pigment (CAS No. Trade Secret)

SARA 313	0.1 % de minimis concentration (related to Nickel compounds)

SARA TitleⅢ 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:

Component	CA	MA	MN	NJ	PA
1,6-Hexanediol diacrylate (CAS No. 13048-33-4)	No	No	Yes	No	No
Nickel series pigment (related to Nickel compounds)	Yes	No	No	Yes	Yes

California Proposition 65 : **WARNING**
This product can expose you to chemicals including Nickel

compounds, Trimethylolpropane triacrylate, Toluene, and Methyl Acrylate 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 List (IDL) : None of the product component(s) are listed on the Ingredients Disclosure List (IDL).

Chemical Inventory Listings : Component Analysis - Inventory

Component	US	CA	EU	AU	PHIL	JP	KR	CN	NZ
1,6-Hexanediol diacrylate (CAS No. 13048-33-4)	Yes	DSL	EIN	Yes	Yes	Yes	Yes	Yes	Yes
Nickel series pigment (CAS No.Trade Secret)	Yes	DSL	EIN	Yes	Yes	Yes	Yes	Yes	Yes

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 - 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

This information is furnished without warranty, express or implied, except that it is accurate to the best knowledge of Mimaki Engineering Corporation.
It relates only to the specific material designated herein, and does not relate to use in combination with any other material or process.

Safety Data Sheets

Mimaki Engineering Corporation assumes no legal responsibility for use or reliance upon this information.