Safety Data Sheets

1. Identification

Product Name	: UV ink LF-140 White
Order No.	: SPC-0727W / SPC-0728W / LF140-W-BA
General Use	: Ink for ink jet printer
Product Description	: UV Inkjet Ink
SDS Number	: 037-U060431
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

Skin Corrosion / Irritation	: Category 1
Eye Damage / Irritation	: Category 1
Sensitization – Skin	: Category 1
Carcinogenicity	: Category 2
Toxic to Reproduction	: Category 1B
Specific Target Organ Toxicity (Repeated Exposure)	: Category 1 (central nervous system, blood, respiratory system, thyroid gland, and lungs) Category 2 (nose)

Environmental Hazards

Hazardous to the Aquatic Environment - Acute Hazard	: Category 2
Hazardous to the Aquatic Environment - Long Term Hazard	: Category 2

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

[GHS Label Elements]

Symbol

Signal Word

Danger

Hazard Statements

H314 Causes severe skin burns and eye damage
H317 May cause an allergic skin reaction
H318 Cause serious eye damage
H351 Suspected of causing cancer
H360 May damage fertility or the unborn child
H372 Causes damage to organs through prolonged or repeated exposure (central nervous system, blood, respiratory system, thyroid gland, and lungs)
H373 May cause damage to organs through prolonged or repeated exposure (nose)
H411 Toxic to aquatic life with long lasting effects

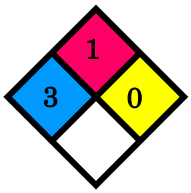
Precautionary Statements

[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+P330+P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P302+P352 IF ON SKIN: Wash with plenty of soap and water.
P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water[or shower].
P304+P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P308+P313 IF exposed or concerned: Get medical advice/attention.
P310 Immediately call a POISON CENTER or doctor/physician.

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

NFPA Rating (scale 0 – 4)

Health = 3
Flammability = 1
Instability = 0
Special = None



3. Composition / Information on Ingredients

No	Chemical Name	Wt%	CAS No.
1	Acryl acid ester	45-55	Trade Secret
2	2-Ethylhexyl acrylate	1-5	103-11-7
3	1,6-Hexanediol diacrylate	20-30	13048-33-4
4	Titanium dioxide	10-20	Trade Secret
5	Initiator	10-15	Trade Secret
6	Additive	0.1-5	Trade Secret

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	: severe skin burns and eye damage, allergic skin reaction
Delayed	: allergic skin reaction, cancer, reproductive effects, central nervous system damage, blood damage, respiratory system damage, thyroid effects, lung damage
Indication of Immediate Medical Attention and Special Treatment Needed, If Needed	: Treat symptomatically and supportively.

5. Fire Fighting Measures

Flammable Properties	: Flash point >93℃
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 Procedures	: Wear personal protective clothing and equipment, see Section 8. Avoid release to the environment.

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 : Titanium dioxide (CAS No. 13463-67-7)

ACGIH	10 mg/m^3 TWA
OSHA	15 mg/m^3 TWA (total dust)
Mexico	10 mg/m^3 TWA LMPE-PPT (as Ti) 20 mg/m^3 STEL [LMPE-CT] (as Ti)

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 : Ventilation equipment should be explosion-resistant if explosive concentrations of material are present. 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	: White
Odor		: Characteristic odor
pH		: Not available
Boiling Point / Boiling Range		: Not available
Melting Point / Melting Range		: Not available
Decomposition Temperature		: Not available
Flash Point		: >93℃
Auto ignition temperature		: Not available
Flammability (Solid, Gas)		: Not available
Explosive Properties		: Not available
Oxidizing Properties		: Not available
Upper / Lower Flammability or		: Not available

Explosive Limits	
Vapor Pressure	
Specific Gravity	: 1.17 (25℃)
Solubility	: Not available
Water Solubility	: Not available
Partition Coefficient (n-octanol / Water)	: Not available
Viscosity	: 23±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,
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 the following selected endpoints are published:
Component Analysis - LD50/LC50	Titanium dioxide (Proprietary) Oral LD50 Rat >10000 mg/kg

Information on Likely Routes of Exposure

Inhalation	: irritation, nausea, headache, drowsiness, dizziness, loss of coordination, difficulty breathing, cancer, reproductive effects, blood damage, respiratory system damage, lung damage, thyroid effects
Ingestion	: irritation, nausea, headache, drowsiness, dizziness, loss of coordination, unconsciousness, blood damage, thyroid effects

Skin Contact	: severe skin burns, allergic reactions, nausea, headache, drowsiness, dizziness
Eye Contact	: eye damage
Immediate Effects	: allergic skin reaction, severe skin burns and eye damage
Delayed Effects	: allergic skin reaction, cancer, reproductive effects, central nervous system damage, blood damage, respiratory system damage, thyroid effects, lung damage
Medical Conditions Aggravated by Exposure	: No information available for the product.
Irritation/Corrosivity Data	: severe skin burns and 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	: Titanium dioxide(CAS No. 13463-67-7)

ACGIH	A4 - Not Classifiable as a Human Carcinogen
IARC	Monograph 93 [2010]; Monograph 47 [1989] (Group 2B (possibly carcinogenic to humans))
DFG	Category 3A (could be carcinogenic for man, inhalable fraction with the exception of ultra small particles)
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	: central nervous system, blood, respiratory system, thyroid, nose, lungs
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	: Toxic to aquatic life with long lasting effects.
Component Analysis - Aquatic Toxicity	: **Acute hazard** Category 1:13048-33-4 (source: NITE) Category 2: Trade Secret (source: NITE) (M factor x 10 x Category 1) + Category 2 >= Concentration limit (25%). Classification result = Category 2. **Long-term hazard** Category 1:13048-33-4 (source: NITE) Category 2: Trade Secret (source: 1272/2008/EC) (M factor x 10 x Category 1) + Category 2 >= Concentration limit (25%). Classification result = Category 2.
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.

DOT Information

UN Number	: UN1760
UN proper shipping name	: CORROSIVE LIQUID, N.O.S. (Acryl acid ester)
Hazardous Class or Division	: 8
Packing Group (PG)	: III

IMDG Information

UN Number	: UN1760
UN proper shipping name	: CORROSIVE LIQUID, N.O.S. (Acryl acid ester)
Hazardous Class or Division	: 8
Packing Group (PG)	: III
Marine Pollutant	: YES (Product)

IATA Information

UN Number	: UN1760
UN proper shipping name	: CORROSIVE LIQUID, N.O.S. (Acryl acid ester)
Hazardous Class or Division	: 8
Packing Group (PG)	: III

15. Regulatory Information

CERCLA/SARA - Section 313 : CERCLA/SARA - Section 313 - Emission Reporting

U.S. - RTK (Right To Know) List : New Jersey - RTK (Right to Know) - Hazardous Substance List
Pennsylvania - RTK (Right to Know) List
Massachusetts - RTK (Right To Know) List

California Proposition 65 : **WARNING**

This product can expose you to chemicals including Titanium dioxide, Toluene, Methyl Acrylate and 2-Ethylhexyl 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.

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

Initiater	Yes	DSL	EIN	Yes	Yes	Yes	Yes	Yes	Yes
Titanium dioxide	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

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