Safety Data Sheets

1. Identification

Product Name	: UV ink LF-200 Cyan
Order No.	: SPC-0591C
General Use	: Ink for ink jet printer
Product Description	: UV Inkjet Ink
SDS Number	: 037-U054861
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	
Company Name	: MIMAKI AUSTRALIA PTY LTD.
Address	: Unit 14, 38-46 South Street, Rydalmere, NSW 2116, Australia
Telephone No.	: + 61-2-8036-4500
Emergency Telephone No.	: +61 2 8014 4558 (within Australia only) 18000 74234 (within Australia only) +65 3158 1074

2. Hazards Identification

[GHS Classification]

Physical Hazards

Flammable Liquids	: Not classified

Health Hazards

Skin Corrosion / Irritation	: Category 2
Eye Damage / Irritation	: Category 1
Sensitization – Skin	: Category 1
Toxic to Reproduction	: Category 1B
Specific Target Organ Toxicity (Repeated Exposure)	: Category 2 (skin)

Environmental Hazards

Hazardous to the Aquatic Environment - Acute Hazard	: Category 1

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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

H315 Cause skin irritation
H317 May cause an allergic skin reaction
H318 Cause serious eye damage
H360 May damage fertility or the unborn child
H373 May cause damage to organs through prolonged or repeated exposure(skin)
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.
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]

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.

[Disposal]

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

3. Composition / Information on Ingredients

No	Chemical Name	Wt%	CAS No.
1	ISOBORNYL ACRYLATE	45 - 60	5888-33-5
2	2,4,6-Trimethylbenzoyldiphenylphosphine oxide	5 - 15	75980-60-8
3	AMINE MODIFIED ACRYLATE OLIGOMER	5 - 15	Trade Secret
4	DIETHYLENE GLYCOL ETHYL ETHER ACRYLATE	5 - 15	7328-17-8
5	TETRAHYDROFURFURYL ACRYLATE	5 - 15	2399-48-6
6	1,6-HEXANEDIOL DIACRYLATE	1 - 10	13048-33-4
7	9H-Thioxanthen-9-one, 2,4-diethyl-	1 - 10	82799-44-8
8	C.I. PIGMENT BLUE 15	1 - 10	147-14-8
9	SUBSTITUTED TRIAZINE	< 10	Trade Secret
10	CAMPHENE	< 1	79-92-5
11	Acrylic Acid	< 0.1	79-10-7
12	Toluene	< 0.1	108-88-3

4. First Aid Measures

Inhalation : Remove person to fresh air. If you feel unwell, get medical attention.

Eye Contact : Immediately flush with large amounts of water. Remove contact lenses if easy to do. Continue rinsing. Get medical attention.

Skin Contact : Immediately wash with soap and water. Remove contaminated clothing and wash before reuse. If signs/symptoms develop,get medical attention.

Ingestion : Rinse mouth. If you feel unwell, get medical attention.

Most important symptoms and effects, both acute and delayed : See Section 11 Information on toxicological effects.

Indication of Immediate Medical Attention and Special Treatment Needed, If Needed : Not applicable.

5. Fire Fighting Measures

Flammable Properties	: Flash point >200° F
Extinguishing Media	: Use a fire fighting agent suitable for ordinary combustible material such as water or foam to extinguish.
Special Hazards Arising from the Chemical	: Closed containers exposed to heat from fire may build pressure and explode.
Hazardous Combustion Products	: Carbon monoxide, Carbon dioxide (During Combustion)
Special protective actions for fire-fighters	: Water may not effectively extinguish fire; however, it should be used to keep fire-exposed containers and surfaces cool and prevent explosive rupture.

6. Accidental Release Measures

Personal precautions, protective equipment and emergency procedures	: Evacuate area. Ventilate the area with fresh air. For large spill, or spills in confined spaces, provide mechanical ventilation to disperse or exhaust vapors, in accordance with good industrial hygiene practice. Warning! A motor could be an ignition source and could cause flammable gases or vapors in the spill area to burn or explode. Refer to other sections of this SDS for information regarding physical and health hazards, respiratory protection, ventilation, and personal protective equipment.
Environmental precautions	: Avoid release to the environment. For larger spills, cover drains and build dikes to prevent entry into sewer systems or bodies of water
Methods and material for containment and cleaning up	: Contain spill. Working from around the edges of the spill inward, cover with bentonite, vermiculite, or commercially available inorganic absorbent material. Mix in sufficient absorbent until it appears dry. Remember, adding an absorbent material does not remove a physical, health, or environmental hazard. Collect as much of the spilled material as possible. Place in a closed container approved for transportation by appropriate authorities. Clean up residue with an appropriate solvent selected by a qualified and authorized person. Ventilate the area with fresh air. Read and follow safety precautions on the solvent label and SDS. Seal the container.

Dispose of collected material as soon as possible.

7. Handling and Storage

Precautions for Safe Handling : Avoid skin contact with hot material. For industrial or professional use only. Do not handle until all safety precautions have been read and understood. Do not breathe dust/fume/gas/mist/vapors/spray. Do not get in eyes, on skin, or on clothing. Do not eat, drink or smoke when using this product. Wash thoroughly after handling. Contaminated work clothing should not be allowed out of the workplace. Avoid release to the environment. Wash contaminated clothing before reuse. Avoid contact with oxidizing agents (eg. chlorine, chromic acid etc.) Use personal protective equipment (gloves, respirators, etc.) as required.

Conditions for Safe Storage, including any Incompatibilities : Protect from sunlight. Store away from heat. Store away from oxidizing agents.

8. Exposure Controls / Personal Protection

Exposure Limit Values : If a component is disclosed in section 3 but does not appear in the table below, an occupational exposure limit is not available for the component.

Ingredient	CAS No.	Agency	Limit type	Additional Comments
Toluene	108-88-3	ACGIH	TWA:20 ppm	A4: Not class. as human carcin
		OSHA	TWA:200 ppm;CEIL:300 ppm	
1,6-HEXANEDIOL DIACRYLATE	13048-33-4	AIHA	TWA:1 mg/m³ (0.11 ppm)	Dermal Sensitizer
COPPER COMPOUNDS	147-14-8	ACGIH	TWA(as Cu dust or mist):1 mg/m3;TWA(as Cu, fume):0.2mg/m3	
TETRAHYDROFURF	2399-48-6	Manufact	TWA:0.1 ppm	Dermal

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URYL ACRYLATE		urer determined	(0.64mg/m³); STEL:0.3 ppm(1.91mg/m3)	Sensitizer
Acrylic Acid	79-10-7	ACGIH	TWA:2 ppm	SKIN, A4: Not class. as human carcin

ACGIH : American Conference of Governmental Industrial Hygienists
AIHA : American Industrial Hygiene Association
CMRG : Chemical Manufacturer's Recommended Guidelines
OSHA : United States Department of Labor - Occupational Safety and Health Administration
TWA: Time-Weighted-Average
STEL: Short Term Exposure Limit
CEIL: Ceiling

Exposure Controls

Occupational Exposure Controls

Appropriate Engineering Controls : Use general dilution ventilation and/or local exhaust ventilation to control airborne exposures to below relevant Exposure Limits and/or control dust/fume/gas/mist/vapors/spray. If ventilation is not adequate, use respiratory protection equipment.

Personal Protection

Respiratory Protection : An exposure assessment may be needed to decide if a respirator is required. If a respirator is needed, use respirators as part of a full respiratory protection program. Based on the results of the exposure assessment, select from the following respirator type(s) to reduce inhalation exposure: Half facepiece or full facepiece air-purifying respirator suitable for organic vapors and particulates
For questions about suitability for a specific application, consult with your respirator manufacturer.

Skin/Hand Protection : Select and use gloves and/or protective clothing approved to relevant local standards to prevent skin contact based on the results of an exposure assessment. Selection should be based on use factors such as exposure levels, concentration of the substance or mixture, frequency and duration, physical challenges such as temperature extremes, and other use conditions. Consult with your glove and/or protective clothing manufacturer for selection of appropriate compatible gloves/protective clothing. Note: Nitrile gloves may be

worn over polymer laminate gloves to improve dexterity. Gloves made from the following material(s) are recommended: Polymer laminate
If this product is used in a manner that presents a higher potential for exposure (eg. spraying, high splash potential etc.), then use of protective coveralls may be necessary. Select and use body protection to prevent contact based on the results of an exposure assessment. The following protective clothing material(s) are recommended:
Apron - polymer laminate

Eye Protection : Select and use eye/face protection to prevent contact based on the results of an exposure assessment. The following eye/face protection(s) are recommended: Indirect Vented Goggles

Thermal hazards : Wear heat insulating gloves when handling hot material to prevent thermal burns.

9. Physical and Chemical Properties

Appearance	- Physical State	: Liquid
	- Color	: Cyan
Odor		: Acrylate Odor,
pH		: Not available
Boiling Point / Boiling Range		: >200° F
Melting Point / Melting Range		: Not available
Decomposition Temperature		: Not available
Flash Point		: >200° F
Auto ignition temperature		: Not available
Flammability (Solid, Gas)		: Not Applicable
Explosive Properties		: Not available
Oxidizing Properties		: Not available
Upper / Lower Flammability or Explosive Limits		: Not available
Vapor Pressure		: < 10 mmHg [@ 20 °C]
Specific Gravity		: 1.04 [Ref Std: WATER=1]
Solubility		: Not available
Water Solubility		: Negligible
Partition Coefficient (n-octanol / Water)		: Not available

Viscosity	: Not available
Vapor Density	: > 1 [Ref Std: AIR=1]
Evaporation Rate	: Not available
VOC	: Not available

10. Stability and Reactivity

Reactivity	: This material may be reactive with certain agents under certain conditions - see the remaining headings in this section.
Chemical Stability	: Stable under normal conditions of use.
Possibility of Hazardous Reactions	: Hazardous polymerization may occur. (Upon depletion of inhibitor or exposure to heat)
Conditions to Avoid	: Heat
Incompatible Materials	: Strong oxidizing agents
Hazardous Decomposition	: None known.

Refer to section 5 for hazardous decomposition products during combustion

11. Toxicological Information

Acute Toxicity :

Name	Value
Overall product(Dermal)	No data available; calculated ATE >5,000 mg/kg
Overall product(Ingestion)	No data available; calculated ATE 2,000 – 5,000 mg/kg

Inhalation : Respiratory Tract Irritation: Signs/symptoms may include cough, sneezing, nasal discharge, headache, hoarseness, and nose and throat pain.

Skin Contact : Skin Irritation: Signs/symptoms may include localized redness, swelling, itching, dryness, cracking, blistering, and pain. Allergic Skin Reaction (non-photo induced) in sensitive people: Signs/symptoms may include redness, swelling, blistering, and itching.

Eye Contact : Severe Eye Irritation: Signs/symptoms may include significant redness, swelling, pain, tearing, cloudy appearance of the cornea, and

	impaired vision
Ingestion	: May be harmful if swallowed. Gastrointestinal Irritation: Signs/symptoms may include abdominal pain, stomach upset, nausea, vomiting and diarrhea.
Additional Health Effects:	
Prolonged or repeated exposure may cause target organ effects:	: Dermal Effects: Signs/symptoms may include redness, itching, acne, or bumps on the skin.
Reproductive /Developmental Toxicity:	: Contains a chemical or chemicals which can cause birth defects or other reproductive harm.

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	: Acute Hazard, Category 1, Very toxic to aquatic life Long Term Hazard, Category 1, Very toxic to aquatic life with long lasting effects
Persistence and Degradability	: Not available
Bioaccumulation	: Not available
Mobility	: Not available
Other Toxicity	: Not available

13. Disposal Considerations

Disposal Methods	: Dispose in accordance with all applicable regulations. Empty containers may contain product residue. Do not dump this product into sewers, on the ground or into any body of water.

14. Transport Information

Check a thing without a leak in a container.

	Perform prevention of collapse of cargo surely.
UN Number	: UN3082
Shipping Name	: Environmentally hazardous substance, liquid, n.o.s. (Contains: ISOBORNYL ACRYLATE, 1,6-HEXANEDIOL DIACRYLATE)
Hazardous Class or Division	: 9
Packing Group (PG)	: III
Marine Pollutant	: Yes
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

CHEMICAL INVENTORIES

The components of product are compliance with the chemical notification requirements of TSCA.
All required components of this product are listed on the active portion of TSCA Inventory.

16. Other Information

This information is furnished without warranty, express or implied, except that it is accurate to the best knowledge of Mimaki Engineering Corporation.
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