

# Material Safety Data Sheets

CONSIDERED A HAZARDOUS SUBSTANCE ACCORDING TO OSHA 29 CFR 1910.1200.

## 1. Product and Company Identification

Product Name	: UV ink LF-200 White
Product Code	: SPC-0558W-5,SPC-0591W-5,SPC-0660W-5
General Use	: Inkjet Ink
Product Description	: UV Inkjet Ink
MSDS Number	: 031-38U05WC
Manufacture	
Company Name	: MIMAKI ENGINEERING Co., Ltd
Address	: 2182-3 Otsu, Shigeno, 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.	: 1-678-730-0100
Emergency Telephone No.	: +81-268-64-2413

## 2. Hazards Identification

### Emergency Overview

Immediate health, physical, and environmental hazards:

- Hazardous polymerization may occur.
- May cause severe eye irritation.
- May cause allergic skin reaction.
- Contains a chemical or chemicals which can cause birth defects or other reproductive harm.
- Contains a chemical or chemicals which can cause cancer.

### Potential Health Effects

Inhalation:

Respiratory Tract Irritation:

Signs/symptoms may include cough, sneezing, nasal discharge, headache, hoarseness, and nose and throat pain.

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

**Skin Contact:** Moderate Skin Irritation:  
 Signs/symptoms may include localized redness, swelling, itching, and dryness.  
 Allergic Skin Reaction (non-photo induced):  
 Signs/symptoms may include redness, swelling, blistering, and itching. Prolonged or repeated exposure may cause:  
 Dermal Effects: Signs/symptoms may include redness, itching, acne, or bumps on the skin.

**Ingestion:** Gastrointestinal Irritation:  
 Signs/symptoms may include abdominal pain, stomach upset, nausea, vomiting and diarrhea.

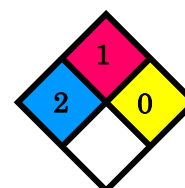
**Target Organ Effects:** Contains a chemical or chemicals which can cause birth defects or other reproductive harm.

**Carcinogenicity:** Contains a chemical or chemicals which can cause cancer.

Ingredient	C.A.S. No.	Class Description	Regulation
TITANIUM DIOXIDE	13463-67-7	Group 2B: Possibly carcinogenic to humans	International Agency for Research on Cancer

HMIS Rating (scale 0 – 4)  
 Not available

NFPA Rating (scale 0 – 4)  
 Health: 2  
 Flammability: 1  
 Reactivity: 0  
 Special Hazards: None



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### 3. Composition / Information On Ingredients

No.	Chemical Name	Wt%	CAS No.	Chemical Formula
1	ISOBORNYL ACRYLATE	20-30	5888-33-5	C <sub>13</sub> H <sub>20</sub> O <sub>2</sub>
2	PHENOXY ETHYL ACRYLATE	15-25	48145-04-6	C <sub>11</sub> H <sub>12</sub> O <sub>3</sub>
3	TETRAHYDROFURFURYL ACRYLATE	15-25	2399-48-6	C <sub>8</sub> H <sub>12</sub> O <sub>3</sub>
4	TITANIUM DIOXIDE	5-15	13463-67-7	TiO <sub>2</sub>
5	ALIPHATIC URETHANE ACRYLATE	5-10	Trade Secret	Trade Secret
6	2,4,6-TRIMETHYLBENZOYLDIPHENYLPHOSPHINE OXIDE	5-10	75980-60-8	C <sub>22</sub> H <sub>21</sub> O <sub>2</sub> P
7	1,6-HEXANEDIOL DIACRYLATE	1-5	13048-33-4	C <sub>12</sub> H <sub>18</sub> O <sub>4</sub>
8	STABILIZER	1-5	Trade Secret	Trade Secret
9	SUBSTITUTED TRIAZINE	1-5	Trade Secret	Trade Secret
10	SILICA	0.1-1.5	7631-86-9	SiO <sub>2</sub>
11	DISPERSANT	0.1-1.5	Trade Secret	Trade Secret
12	TREATMENT MATERIAL FOR TITANIUM DIOXIDE	0.1-1.5	Trade Secret	Trade Secret

### 4. First Aid Measures

The following first aid recommendations are based on an assumption that appropriate personal and industrial hygiene practices are followed.

Inhalation : Remove person to fresh air. If signs/symptoms develop, get medical attention.

Eye Contact : Immediately flush eyes with large amounts of water for at least 15 minutes. Get immediate medical attention.

Skin Contact : Remove contaminated clothing and shoes. Immediately flush skin with large amounts of water. Get medical attention. Wash contaminated clothing and clean shoes before reuse.

Ingestion : Do not induce vomiting unless instructed to do so by medical personnel. Give victim two glasses of water. Never give anything by mouth to an unconscious person. Get medical attention.

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## 5. Fire Fighting Measures

Flammable Properties	Auto ignition temperature	: No Data Available
	Flash Point	: 95 degree C
	Flammable Limits – LEL	: No Data Available
	Flammable Limits – UEL	: No Data Available
Extinguishing Media	: Use fire extinguishers with class B extinguishing agents (e.g., dry chemical, carbon dioxide).	
Protection of Fire Fighters		
Special Fire Fighting Procedures	: Water may be used to blanket the fire. Wear full protective equipment (Bunker Gear) and a self-contained breathing apparatus (SCBA).	
Unusual Fire and Explosion Hazards	: Closed containers exposed to heat from fire may build pressure and explode.	

Note: See Stability and Reactivity (SECTION 10) for hazardous combustion and thermal decomposition information.

## 6. Accidental Release Measures

Personal precautions, protective equipment and emergency procedures

: Evacuate unprotected and untrained personnel from hazard area. The spill should be cleaned up by qualified personnel. 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.

Environmental precautions

For larger spills, cover drains and build dikes to prevent entry into sewer systems or bodies of water. Place in a closed container approved for transportation by appropriate authorities. Dispose of collected material as soon as possible.

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## Clean-up methods

Observe precautions from other sections. 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. 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 MSDS.

In the event of a release of this material, the user should determine if the release qualifies as reportable according to local, state, and federal regulations.

## 7. Handling And Storage

### Handling

- : Do not eat, drink or smoke when using this product.
- Wash exposed areas thoroughly with soap and water.
- Avoid breathing of vapors, mists or spray.
- For industrial or professional use only.
- Decontaminate work surfaces frequently to avoid exposure by contact.
- Avoid contact with oxidizing agents.
- Use general dilution ventilation and/or local exhaust ventilation to control airborne exposures to below Occupational Exposure Limits.
- If ventilation is not adequate, use respiratory protection equipment.

### Storage

- : Store away from heat.
- Store out of direct sunlight.
- Keep container tightly closed.
- Store away from areas where product may come into contact with food or pharmaceuticals.
- Store away from oxidizing agents.

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## 8. Exposure Controls / Personal Protection

### Exposure Limit Values

No.	Chemical Name		TWA	STEL	Additional Information
1	1,6-HEXANEDIOL DIACRYLATE	AIHA	1 mg/m <sup>3</sup>		Dermal Sensitizer
2	SILICA	CMRG	3 mg/m <sup>3</sup> (as respirable dust)		
3	SILICA, AMORPHOUS	OSHA	0.8 mg/m <sup>3</sup> (concentration)		
4	SILICA, AMORPHOUS	OSHA	20 millions of particles/cu. Ft.		
5	TETRAHYDROFURFURYL ACRYLATE	Manufacturer determined	0.1 ppm	0.3 ppm	
6	TITANIUM DIOXIDE	ACGIH	10mg/m <sup>3</sup>		
		CMRG	5mg/m <sup>3</sup> (as respirable dust)		
		OSHA	15mg/m <sup>3</sup> (as total dust)		

### SOURCE OF EXPOSURE LIMIT DATA:

ACGIH: American Conference of Governmental Industrial Hygienists

CMRG: Chemical Manufacturer Recommended Guideline

OSHA: Occupational Safety and Health Administration

AIHA: American Industrial Hygiene Association Workplace Environmental Exposure Level (WEEL)

### Exposure Controls

#### Occupational Exposure Controls

Engineering Controls : Use general dilution ventilation and/or local exhaust ventilation to control airborne exposures to below Occupational Exposure Limits and/or control mist, vapor, or spray. If ventilation is not adequate, use respiratory protection equipment.

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## Personal Protection

### Respiratory Protection



: Avoid breathing of vapors, mists or spray.

Select one of the following NIOSH approved respirators based on airborne concentration of contaminants and in accordance with OSHA regulations: Half facepiece or fullface air-purifying respirator with organic vapor cartridges.

Select and use respiratory protection to prevent an inhalation exposure based on the results of an exposure assessment. Consult with your respirator manufacturer for selection of appropriate types of respirators.

### Eye Protection



: Avoid eye contact.

The following eye protection(s) are recommended: Indirect Vented Goggles

### Hand/Skin Protection



: Avoid skin contact.

Select and use gloves and/or protective clothing to prevent skin contact based on the results of an exposure assessment.

Consult with your glove and/or protective clothing manufacturer for selection of appropriate compatible materials.

Gloves made from the following material(s) are recommended:  
Neoprene

### Prevention of Swallowing

: Do not eat, drink or smoke when using this product. Wash exposed areas thoroughly with soap and water. Not applicable.

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## 9. Physical And Chemical Properties

Appearance	- Physical state	: Liquid
	- Color	: White
Odor		: Acrylate odor
pH		: Not Applicable
Boiling Point / Boiling Range		: No Data Available
Melting Point / Melting Range		: Not Applicable
Flash Point		: 95 degree C
Auto ignition Temperature		: No data available
Flammable Limits		: No data available
Vapor Pressure		: No Data Available
Specific Gravity		: 1.13 [Ref Std: WATER=1]
Water Solubility		: Negligible
Viscosity		: 19 centipoise [@ 25 degree C]
Vapor Density		: No Data Available
Evaporation rate		: No Data Available
Kow - Oct/Water partition coef		: No Data Available
Percent volatile		: No Data Available

## 10. Stability And Reactivity

Stability	: Stable
Materials and Conditions To Avoid	: Strong oxidizing agents Heat
Hazardous Polymerization	: Hazardous polymerization may occur.
Hazardous Decomposition or By-Products	

Substance	Condition
Carbon monoxide	Not Specified
Carbon dioxide	Not Specified
None known.	Not Specified



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## 11. Toxicological Information

Acute Toxicity	: Not available
Eye Irritation	: May cause severe eye irritation. Signs/symptoms may include significant redness, swelling, pain, tearing, cloudy appearance of the cornea, and impaired vision.
Skin Irritation	: May cause moderate skin irritation. Signs/symptoms may include localized redness, swelling, itching, and dryness.
Sensitization	: May cause allergic skin reaction (non-photo induced). Signs/symptoms may include redness, swelling, blistering, and itching.
Repeated Dose Toxicity	: Dermal effects. Signs/symptoms may include redness, itching, acne, or bumps on the skin.
Mutagenicity	: Not available
Carcinogenicity	: Contains a chemical or chemicals which can cause cancer.
Reproductive And Developmental Toxicity	
Others	: 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	: Not available
Persistence and Degradability	: Not available
Bioaccumulative Potential	: Not available
Other Adverse Effects	: Not available

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## 13. Disposal Considerations

Waste Disposal Method : Incinerate in an industrial or commercial facility in the presence of a combustibile material. As a disposal alternative, dispose of waste product in a facility permitted to accept chemical waste.

EPA Hazardous :Not regulated

Waste Number  
(RCRA)

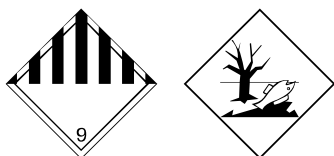
Since regulations vary, consult applicable regulations or authorities before disposal.

## 14. Transport Information

Check a thing without a leak in a container.

Perform prevention of collapse of cargo surely.

Land transport ADR/RID (cross-border)



ADR/RID class : 9 Miscellaneous dangerous substances and articles.

Danger code (Kemler) : 90

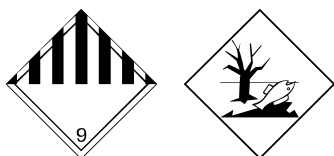
UN-Number : 3082

Packaging group : III

Hazard label : 9

Description of goods : 3082 ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID,  
N.O.S.

Sea Transport (IMDG)



Class : 9

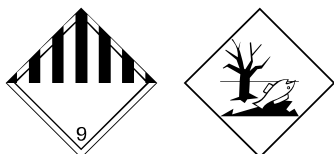
Packing Group (PG) : III

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UN Number : 3082  
 Proper Shipping : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID,  
 Name N.O.S.  
 Marine Pollutant : No

Air Transport (ICAO/IATA)



Class : 9  
 Packing Group(PG) : III  
 UN Number : 3082  
 Proper Shipping : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID,  
 Name N.O.S.

UN "Model Regulation"

:UN3082; ENVIRONMENTALLY HAZARDOUS SUBSTANCE,  
 LIQUID, N.O.S.; 9; III

Special precautions for user

:Warning: Miscellaneous dangerous substances and articles

Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code

: Not applicable.

## 15. Regulatory Information

US Federal regulations

Section 311/312 : Fire Hazard·No Pressure Hazard·No Reactivity Hazard·No  
 Immediate Hazard – Yes Delayed Hazard - Yes

Section 313 Toxic Chemicals subject to the reporting requirements of that section and 40 CFR part 372 (EPCRA):

Ingredient	C.A.S. No	% by Wt
PHENOXY ETHYL ACRYLATE (GLYCOL ETHERS)	48145-04-6	15 - 25

TSCA Status : The components of this product are in compliance with the chemical notification requirements of TSCA.

Please refer to any other USA, national and local measures.

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## 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. It relates only to the specific material designated herein, and does not relate to use in combination with any other material or process. Mimaki Engineering Corporation assumes no legal responsibility for use or reliance upon this information.

### Revision history

Version	Date	Content
1.0	2012/04/11	First issue