

Safety Data Sheets

1. Identification

Product Name	: UV ink White
Order No.	: SPC-0371W-6
General Use	: For ink jet
Product Description	: UV curable ink
SDS Number	: 037-U010383
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.	: +81-268-64-2281

2. Hazards Identification

[GHS Classification]

Physical Hazards

Flammable Liquids : Not classified

Health Hazards

Skin Corrosion / Irritation : Category 2

Eye Damage / Irritation : Category 2

Sensitization – Skin : Category 1

Carcinogenicity : Category 2

Specific Target Organ Toxicity : Category 3 (respiratory tract irritation)

(Single Exposure)

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

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[GHS Label Elements]

Symbol



Signal Word

Warning

Hazard Statements

- H315 Cause skin irritation
- H317 May cause an allergic skin reaction
- H319 Cause serious eye irritation
- H335 May cause respiratory irritation
- H351 Suspected of causing cancer

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.
- P261 Avoid breathing gas/mist.
- P264 Wash hands thoroughly after handling.
- P271 Use only outdoors or in a well-ventilated area.
- P272 Contaminated work clothing should not be allowed out of the workplace.
- P280 Wear protective gloves/protective clothing/eye protection/face protection.

[Response]

- P302+P352 IF ON SKIN: Wash with plenty of soap and water.
- 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.
- P312 Call a POISON CENTER or doctor/physician if you feel unwell.
- P333+P313 If skin irritation or rash occurs: Get medical advice/attention.
- P337+P313 If eye irritation persists: Get medical advice/attention.
- P362+P364 Take off contaminated clothing and wash before reuse.

[Storage]

- P403+P233 Store in a well-ventilated place. Keep container tightly closed.
- P405 Store locked up.

[Disposal]

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

Other Information

[Hazards not otherwise classified (HNOC)]

Not Applicable

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[Other hazards]

- Toxic to aquatic life with long lasting effects
- Toxic to aquatic life

[Unknown Acute Toxicity]

65% of the mixture consists of ingredient(s) of unknown toxicity

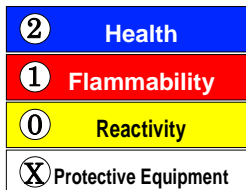
HMIS Rating (scale 0 – 4)

Health = 2

Flammability = 1

Reactivity = 0

Protective Equipment = X



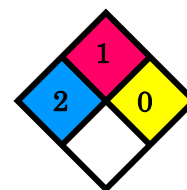
NFPA Rating (scale 0 – 4)

Health = 2

Flammability = 1

Instability = 0

Special = -



CANADIAN WHMIS SYMBOLS : D2A - Very toxic materials



3. Composition / Information on Ingredients

No	Chemical Name	Wt%	CAS No.
1	Monomers	50-60	Trade Secret
2	Titanium(4+) oxide	10-20	13463-67-7
3	Isooctyl acrylate (structure unspecified)	5-15	29590-42-9
4	Photoinitiator	5-10	Trade Secret
5	Phosphine oxide, phenylbis(2,4,6-trimethylbenzoyl)-	1-5	162881-26-7
6	2-Methyl-1-[p-(methylthio)phenyl]-2-morpholino-1-propanone	1-5	71868-10-5
7	Oligomer	1-5	Trade Secret
8	Additives	1-5	Trade Secret

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4. First Aid Measures

General advice	: If symptoms persist, call a physician.
Inhalation	: Move to fresh air in case of accidental inhalation of vapors. If symptoms persist, call a physician.
Eye Contact	: Rinse immediately with plenty of water and seek medical advice. Remove contact lenses, if present and easy to do. Continue rinsing. Keep eye wide open while rinsing.
Skin Contact	: If skin irritation persists, call a physician. Wash off immediately with soap and plenty of water. Wash contaminated clothing before reuse.
Ingestion	: If swallowed, call a poison control center or physician immediately. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person.
Protection To First-Aiders	: Use personal protective equipment as required.

Most important symptoms and effects, both acute and delayed

Symptoms : May cause allergic skin reaction.

Indication of any immediate medical attention and special treatment needed

Note to physicians : May cause sensitization of susceptible persons. Treat symptomatically.

5. Fire Fighting Measures

Flammable Properties	: Flash point ; 131 °C / 268 ° F Explosion data ; No data available
Extinguishing Media	: Dry chemical, CO ₂ , water spray or alcohol-resistant foam.
Unsuitable Extinguishing Media	: Straight streams.
Specific hazards arising from the chemical	: In the event of fire and/or explosion do not breathe fumes. May cause sensitization by inhalation and skin contact. Thermal decomposition can lead to release of irritating and toxic gases and vapors.

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Fire Fighting : As in any fire, wear self-contained breathing apparatus
 Instructions : pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

6. Accidental Release Measures

Personal Precautions : Use personal protection recommended in Section 8. Avoid contact with eyes and skin. Keep people away from and upwind of spill/leak.
 Environmental precautions : Collect spillage. Prevent entry into waterways, sewers, basements or confined areas. Do not flush into surface water or sanitary sewer system.
 Methods for containment : Absorb or cover with dry earth, sand or other non-combustible material and transfer to containers.
 Methods for cleaning up : Use personal protective equipment as required. Soak up with inert absorbent material. Pick up and transfer to properly labeled containers. Clean contaminated surface thoroughly.

7. Handling and Storage

Handling : Use personal protection recommended in Section 8. Avoid contact with skin and eyes. Do not breathe gas/mist.
 Storage : Keep out of the reach of children. Keep in properly labeled containers. Keep containers tightly closed in a cool, well-ventilated place. Avoid direct sunlight or high temperature. Store locked up.
 Incompatible materials : Strong oxidizing agents.

8. Exposure Controls / Personal Protection

Exposure Limit Values

No	Chemical Name	ACGIH	OSHA PEL	NIOSH IDLH
1	Titanium(4+) oxide	TWA: 10 mg/m ³	TWA: 15 mg/m ³ total dust (vacated) TWA: 10 mg/m ³ total dust	IDLH: 5000 mg/m ³

NIOSH IDLH Immediately Dangerous to Life or Health

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Other Information : Vacated limits revoked by the Court of Appeals decision in AFL-CIO v. OSHA, 965 F.2d 962 (11th Cir., 1992).

Exposure Controls

Occupational Exposure Controls

Engineering Controls : Showers
Eyewash stations
Ventilation systems.

Personal Protection

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



Hand Protection : Gloves made of plastic or rubber.



Eye Protection : Tight sealing safety goggles. Face protection shield.



Skin Protection : Suitable protective clothing. Apron. Gloves made of plastic or rubber.



General Hygiene Considerations

: When using do not eat, drink or smoke. Wash contaminated clothing before reuse. Regular cleaning of equipment, work area and clothing is recommended. Wash face, hands and any exposed skin thoroughly after handling.

Environmental Exposure Controls

: Not available

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9. Physical and Chemical Properties

Appearance	- Physical State	: liquid
	- Color	: White
Odor		: Characteristic odor
Boiling Point / Boiling Range		: Not Available
Melting Point / Melting Range		: Not Available
Decomposition Temperature		: Not Available
Flash Point		: 131°C / 268° F (Cleveland Open Cup)
Auto ignition temperature		: Not Available
Upper / Lower Flammability or		: Not Available
Explosive Limits		
Vapor Pressure		: Not Available
Specific Gravity		: 1.2-1.3g/cm ³ (25 °C)
Solubility		: Not Available
Water Solubility		: Immiscible in water
Viscosity		: <30 mPa·s (25 °C)
VOC		: Not Available

10. Stability and Reactivity

Conditions to Avoid	: Extremes of temperature and direct sunlight.
Reactivity	: No reactivity under the normal usage
Stability	: Stable under recommended storage conditions.
Materials to Avoid	: Strong oxidizing agents.
Possibility of Hazardous	: None under normal processing.
Reactions	
Decomposition Products	: Thermal decomposition can lead to release of irritating and toxic gases and vapors.

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11. Toxicological Information

Acute Toxicity : 65% of the mixture consists of ingredient(s) of unknown toxicity

Chemical Name	Oral LD50	Dermal LD50	Inhalation LC50
Titanium(4+) oxide	>10000mg/kg (Rat)	-	-
Isooctyl acrylate (structure unspecified)	> 5 g/kg (Rat)	-	-

Eye Irritation : Category 2 as a product.

Skin Irritation : Category 2 as a product.

Sensitization : Category 1 as a product.

Specific Target Organ : Category 3 (respiratory tract irritation) as a product.

Toxicity(Single Exposure)

Chronic Toxicity : Avoid repeated exposure.

Carcinogenicity : Category 2 as a product. The table below indicates whether each agency has listed any ingredient as a carcinogen.

Chemical Name	ACGIH	IARC	NTP	OSHA
Titanium(4+) oxide	-	Group 2B	-	X

IARC (International Agency for Research on Cancer)

Group 2B - Possibly Carcinogenic to Humans

OSHA (Occupational Safety and Health Administration of the US Department of Labor)

X - Present

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.

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Ecotoxicity : Toxic to aquatic life with long lasting effects. Toxic to aquatic life.
65% of the mixture consists of component(s) of unknown hazards to the aquatic environment

Chemical Name	Fish	Crustaces
Isooctyl acrylate (structure unspecified)	0.67: 96 h Pimephales promelas mg/L LC50	0.4: 48 h Daphnia magna mg/L EC50

Persistence and : Not Available

Degradability

Bioaccumulative : Not Available

Potential

Other Adverse Effects : Not Available

13. Disposal Considerations

: Disposal should be in accordance with applicable regional, national and local laws and regulations.

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.

Us Department of Transportation (DOT)

UN Number : UN3082

Proper Shipping : Environmentally hazardous substance, liquid, n.o.s. (Isooctyl
Name acrylate, 1-Propanone, 2-methyl-1-[4-(methylthio)phenyl]-2-(4-morpholinyl)-)

Hazardous Class : 9

Packing Group (PG) : III

Special Provisions : 8, 146, 173, 335, IB3, T4, TP1, TP29

Marine pollutant : Not Applicable

Emergency Response : 171

Guide Number

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Description : UN3082, Environmentally hazardous substance, liquid, n.o.s.
(Isooctyl acrylate, 1-Propanone, 2-methyl-1-[4-(methylthio)phenyl]-2-(4-morpholinyl)-), 9, III

TDG

UN Number : UN3082
Proper Shipping Name : Environmentally hazardous substance, liquid, n.o.s. (Isooctyl acrylate, 1-Propanone, 2-methyl-1-[4-(methylthio)phenyl]-2-(4-morpholinyl)-)
Hazardous Class : 9
Packing Group (PG) : III
Special Provisions : none
Marine pollutant : Not regulated
Description : UN3082, Environmentally hazardous substance, liquid, n.o.s.
(Isooctyl acrylate, 1-Propanone, 2-methyl-1-[4-(methylthio)phenyl]-2-(4-morpholinyl)-), 9, III

MEX

UN Number : UN3082
Proper Shipping Name : Environmentally hazardous substance, liquid, n.o.s. (Isooctyl acrylate, 1-Propanone, 2-methyl-1-[4-(methylthio)phenyl]-2-(4-morpholinyl)-)
Hazardous Class : 9
Special Provisions : none
Packing Group (PG) : III
Description : UN3082, Environmentally hazardous substance, liquid, n.o.s.
(Isooctyl acrylate, 1-Propanone, 2-methyl-1-[4-(methylthio)phenyl]-2-(4-morpholinyl)-), 9, III

IATA

UN Number : UN3082
Proper Shipping Name : Environmentally hazardous substance, liquid, n.o.s. (Isooctyl acrylate, 1-Propanone, 2-methyl-1-[4-(methylthio)phenyl]-2-(4-morpholinyl)-)
Hazardous Class : 9
Packing Group (PG) : III
ERG Code : 9L
Special Provisions : A97, A158

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Description : UN3082, Environmentally hazardous substance, liquid, n.o.s.
(Isooctyl acrylate, 1-Propanone, 2-methyl-1-[4-(methylthio)phenyl]-2-(4-morpholinyl)-), 9, III

Sea Transport (IMDG)

UN Number : UN3082

Proper Shipping Name : Environmentally hazardous substance, liquid, n.o.s. (Isooctyl acrylate, 1-Propanone, 2-methyl-1-[4-(methylthio)phenyl]-2-(4-morpholinyl)-)

Hazardous Class : 9

Packing Group (PG) : III

EmS-No. : F-A, S-F

Special Provisions : 274, 335

Marine Pollutant Description : This material meets the definition of a marine pollutant
: UN3082, Environmentally hazardous substance, liquid, n.o.s.
(Isooctyl acrylate, 1-Propanone, 2-methyl-1-[4-(methylthio)phenyl]-2-(4-morpholinyl)-), 9, III

Environmental hazard : 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/IATAA197, IMDG 2.10.2.7, ADR SP 375.

15. Regulatory Information

U.S. Federal Regulations

CERCLA Reportable Quantity (40 CFR 302) : This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material

SARA Title III

Section 311/312 (40 CFR 370)	: Acute health hazard	Yes
	: Chronic Health Hazard	No
	: Fire hazard	No

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Sudden release of pressure hazard No

Reactive Hazard No

Section 313 (40 CFR 372) : Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

CWA (Clean Water Act) : This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42)

U.S. State Regulations

California Proposition 65 : **WARNING**

65



This product can expose you to chemicals including Titanium, Toluene, and Methanol, which is known to the State of California to cause cancer/ birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.

U.S.State Right-to-Know Regulations : This product contains substances regulated by state right-to-know regulations.

Regulations

Chemical Name	New Jersey	Massachusetts	Pennsylvania
Titanium(4+) oxide	X	X	X

U.S.EPA Label Information

EPA Pesticide : Not Applicable

Registration Number

Canada : This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the SDS contains all the information required by the CPR

WHMIS Hazard Class : D2A - Very toxic materials

Others : Please refer to any other federal, state and local regulations.

16. Other Information

References

- 1) LOLI Database (ChemADVISOR, Inc.)
- 2) Japan National Institute of Technology and Evaluation
- 3) EU CLP(1272/2008)Annex VI Table 3.1

This information is furnished without warranty, express or implied, except that it is accurate to



Product Name: UV ink White

SDS No. 037-U010383

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the best knowledge of Mimaki Engineering Corporation.

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