

Safety Data Sheets

1. Identification

Product Name : LUS-150 Light Cyan
Order No. : LUS15-LC-BA
Ink Ver. : 1
General Use : Ink jet printing ink
Product Description : UV Inkjet Ink
SDS Number : 037- U080300
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

[HCS Classification]

Physical Hazards

Flammable Liquids : Not classified

Health Hazards

Skin Corrosion / Irritation : Category2

Eye Damage / Irritation : Category2

Sensitization – Skin : Category1

Toxic to Reproduction : Category2

Specific Target Organ Toxicity : Category1

(Repeated Exposure)

Environmental Hazards

Hazardous to the Aquatic : Category2

Environment - Long Term Hazard

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

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[HCS Label Elements]

Symbol



Signal Word

Danger

Hazard Statements

H315 Causes skin irritation.

H317 May cause an allergic skin reaction.

H319 Causes serious eye irritation.

H361 Suspected of damaging fertility or the unborn child.

H372 Causes damage to organs through prolonged or repeated exposure.

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 and eyes 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]

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.

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.

P337+P313 If eye irritation persists: Get medical advice/attention.

P362+P364 Take off contaminated clothing and wash it 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).

[Hazards not otherwise classified (HNOC)]

Not classified

[Other hazards]

May be harmful in contact with skin.

Toxic to aquatic life with long lasting effects.

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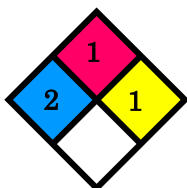
Toxic to aquatic life.

[Unknown Acute Toxicity]

58% of the mixture consists of ingredient(s) of unknown toxicity.

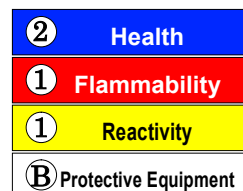
NFPA Rating (scale 0 – 4)

Health = 2
 Flammability = 1
 Instability = 1
 Special =



HMIS Rating (scale 0 – 4)

Health = 2
 Flammability = 1
 Reactivity = 1
 Protective Equipment = B



3. Composition / Information on Ingredients

No	Chemical Name	CAS No.	Wt%
1	Trimethylolpropane formalacrylate	66492-51-1	30-50
2	N-vinylcaprolactam	2235-00-9	10-20
3	Isobornyl acrylate ester	5888-33-5	10-20
4	2-Phenoxyethyl acrylate	48145-04-6	10-20
5	phenyl bis(2,4,6-trimethylbenzoyl)-phosphine oxide	162881-26-7	1-5
6	Ethylene glycol phenyl ether	122-99-6	1-5
7	Acrylated resin	Proprietary	1-5
8	2,4,6-Trimethylbenzoyl diphenyl Phosphine Oxide	75980-60-8	1-5
9	Tripolyethylene glycol diacrylate	42978-66-5	0.5-1.5

4. First Aid Measures

[First aid measures for different exposure routes]

- General advice : Do not get in eyes, on skin, or on clothing.
If symptoms persist, call a physician.
- Eye Contact : IF IN EYES: Rinse cautiously with water for several minutes.
Remove contact lenses, if present and easy to do. Continue rinsing.
If eye irritation persists: Get medical advice/attention.
- Skin Contact : IF ON SKIN: Wash with plenty of soap and water.
If skin irritation or rash occurs: Get medical advice/attention.
- Inhalation : Remove person to fresh air and keep comfortable for breathing.
Call a POISON CENTER or doctor/physician.
- Ingestion : If swallowed, get medical attention.

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Protection of First-aiders	: Use personal protective equipment.
Most important symptoms/effects, acute and delayed	: May cause redness, itching, and pain. May cause allergic skin reaction.
Indication of Immediate Medical Attention and Special Treatment Needed, If necessary	: May cause sensitization of susceptible persons. Treat symptomatically.

5. Fire Fighting Measures

Flammable Properties	: Flash Pont > 201 ° F / > 94 ° C
Suitable Extinguishing Media	: Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Unsuitable Extinguishing Media	: Do not use a solid water stream as it may scatter and spread fire.
Special Hazards Arising from the Chemical	: Thermal decomposition can lead to release of irritating gases and vapors. In the event of fire and/or explosion do not breathe fumes. May cause sensitization by inhalation and skin contact. May cause sensitization by skin contact.
Hazardous Combustion Products	: Nitrogen oxides (NOx). Carbon oxides.
Explosion Data	: Sensitivity to Mechanical Impact ; none Sensitivity to Static Discharge ; none
Protective Equipment and Precautions for Firefighters	: As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

6. Accidental Release Measures

Personal Precautions, Protective Equipment and Emergency Procedures	: Use personal protective equipment. Avoid contact with the skin and the eyes. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak.
Environmental precautions	: Prevent entry into waterways, sewers, basements or confined areas. Do not flush into surface water or sanitary sewer system.

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Prevent further leakage or spillage if safe to do so.
 Prevent product from entering drains.

Methods and Materials for Containment and Cleaning Up : **Methods for Containment**
 Prevent further leakage or spillage if safe to do so.

Methods for cleaning up
 Use personal protective equipment.
 Dam up.
 Cover liquid spill with sand, earth or other noncombustible absorbent material.
 Take up mechanically, placing in appropriate containers for disposal.
 Clean contaminated surface thoroughly.
 Soak up with inert absorbent material.
 Pick up and transfer to properly labeled containers.

7. Handling and Storage

Precautions for Safe Handling : Ensure adequate ventilation.
 Wear personal protective equipment.
 Use only in area provided with appropriate exhaust ventilation.
 Do not breathe vapors or spray mist.
 Avoid exposure during pregnancy.

Conditions for Safe Storage, including any Incompatibilities : Keep container tightly closed.
 Keep containers tightly closed in a cool, well-ventilated place. Keep in properly labeled containers.

8. Exposure Controls / Personal Protection

[Control parameters]

Exposure Guidelines : This product does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies.

[Exposure Controls]

Engineering Measures : Ventilation systems

[Individual Protection Measures, such as Personal Protective Equipment]

Respiratory Protection : If exposure limits are exceeded or irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn.
 Positive-pressure supplied air respirators may be required for high

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Vapor Respirator

airborne contaminant concentrations. Respiratory protection must be provided in accordance with current local regulations.

Glove

: Wear protective gloves/clothing.

Recommendations



Gloves

Eye /Face

: Tightly fitting safety goggles. Face-shield.

Protection



Safety Glasses

Skin Protection

: Wear protective gloves/clothing.



Protective Apron

General Hygiene

: When using do not eat, drink or smoke.

Considerations

Take off contaminated clothing and wash before reuse.
 Regular cleaning of equipment, work area and clothing is recommended.

9. Physical and Chemical Properties

Appearance	- Physical State	: liquid (@20°C)
	- Color	: blue
Odor		: Acrylates
Odor Threshold		: Not available
pH		: Not available
Specific Gravity		: ~ 1.08
Molecular Weight		: Not available
Flash Point		: > 201 °F / > 94 °C
Auto ignition temperature		: Not available
Decomposition Temperature		: Not available
Boiling Point / Boiling Range		: 232 °F / 111 °C
Melting Point / Melting Range		: Not available

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Freezing Point	: Not available
Flammability Limit in Air	: Not available
Oxidizing Properties	: Not available
Explosive Property Details	: Not available
Solubility	: Immiscible in water
Partition Coefficient	: Not available
Evaporation Rate	: Not available
Vapor Pressure	: <1 mm/Hg (@ 20 C)
Vapor Density	: Not available
Density	: Not available
Weight per Gallon (lbs)	: ~9.0
Actual VOC (lb/gal)	: <0.27
VOC (lb/gal)	: Not available
VOC (g/l)	: Not available
Dynamic viscosity	: Not available

[VOC Content California]

VOC Content of Material	: <33 grams per liter
VOC Content of Coating less Water and Exempt Solvents	: <33 grams per liter

10. Stability and Reactivity

Reactivity	: Stable under recommended storage conditions.
Chemical Stability	: Stable under recommended storage conditions.
Possibility of Hazardous	: None under normal processing.
Reactions	Hazardous polymerization may occur.
Conditions to Avoid	: Extremes of temperature and direct sunlight.
Incompatible Materials	: Strong oxidizing agents, strong acids, and strong bases.
Hazardous	: Carbon oxides. Nitrogen oxides (NOx).
Decomposition Products	

11. Toxicological Information

[Information on likely routes of exposure]

[Product Information]

Acute Toxicity

Inhalation	: May be harmful if inhaled. May cause irritation of respiratory tract.
Eyes	: Irritating to eyes.

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- Skin : May be harmful in contact with skin. Irritating to skin.
 Repeated or prolonged skin contact may cause allergic reactions with susceptible persons. May cause inflammation.
- Ingestion : May be harmful if swallowed. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.
 Ingestion may cause irritation to mucous membranes.

[Component Information]

Chemical Name	Oral LD50	Dermal LD50	LC50 (lethal concentration)
Ethylene glycol phenyl ether	=1,260 mg/kg (Rat)	=5 mL/kg (Rabbit)	
Tripropylene glycol diacrylate	=3,000mg/kg (Rat)	> 2 g/kg (Rabbit)	

[Information on toxicological effects]

No information available.

[Delayed and immediate effects as well as chronic effects from short and long-term exposure]

- Irritation : Irritating to eyes and skin.
- Corrosivity : No information available.
- Sensitization : May cause sensitization by skin contact.
- Mutagenic Effects : No information available.
- Reproductive Toxicity : Product is or contains a chemical which is a known or suspected reproductive hazard.
- Carcinogenicity : None known.
- STOT - single exposure : No information available.
- STOT - repeated exposure : No information available.
- Chronic toxicity : Experiments have shown reproductive toxicity effects on laboratory animals. May adversely affect liver and kidney. Repeated contact may cause allergic reactions in very susceptible persons.
- Target Organ Effects : Eyes, Lymphatic System, Respiratory system.
- Aspiration hazard : No information available.

[Numerical measures of toxicity - Product Information]

The following values are calculated based on chapter 3.1 of the GHS document.

ATEmix (dermal) : 2,553 mg/kg

ATE: Acute toxicity estimate

12. Ecological Information

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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 :

Chemical Name	Algae toxicity	Toxicity to fish	Toxicity to microorganisms	Toxicity to daphnia and other aquatic invertebrates
Ethylene glycol phenyl ether		Pimephales promelas: 337 -352 mg/L at 96 h Pimephales promelas: 366mg/L at 96 h		

Persistence and : No information available.

Degradability

Bioaccumulation :

Chemical Name	Octonol Water Partition Coefficient (log pow)
Ethylene glycol phenyl ether	1.13
Tripropylene glycol diacrylate	2.77

Mobility : No information available.

Other adverse effects : No information available.

13. Disposal Considerations

Disposal Methods : Dispose of in accordance with all applicable national environmental laws and regulations. Dispose of in accordance with federal, state, and local regulations.

Do not dump this product into sewers, on the ground or into any body of water.

Contaminated : Do not re-use empty containers.

Packaging

14. Transport Information

Check a thing without a leak in a container. Perform prevention of collapse of cargo surely.

DOT	Not regulated
TDG	Not regulated
MEX	Not regulated

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ICAO	Proper Shipping Name	Environmentally hazardous substance, liquid, n.o.s (Isobornyl acrylate ester, 2-Phenoxyethyl acrylate, 2,4,6-Trimethylbenzoyl diphenyl Phosphine Oxide)
	UN/ID No	UN3082
	Hazard Class	9
	Packing Group	III
	Description	Environmentally hazardous substance, liquid, n.o.s (Isobornyl acrylate ester, 2-Phenoxyethyl acrylate, 2,4,6-Trimethylbenzoyl diphenyl Phosphine Oxide)
IATA	Proper Shipping Name	Environmentally hazardous substance, liquid, n.o.s (Isobornyl acrylate ester, 2-Phenoxyethyl acrylate, 2,4,6-Trimethylbenzoyl diphenyl Phosphine Oxide)
	UN/ID No	UN3082
	Hazard Class	9
	Packing Group	III
	Description	Environmentally hazardous substance, liquid, n.o.s (Isobornyl acrylate ester, 2-Phenoxyethyl acrylate, 2,4,6-Trimethylbenzoyl diphenyl Phosphine Oxide)
IMDG	Proper Shipping Name	Environmentally hazardous substance, liquid, n.o.s (Isobornyl acrylate ester, 2-Phenoxyethyl acrylate, 2,4,6-Trimethylbenzoyl diphenyl Phosphine Oxide)
	UN/ID No	UN3082
	Hazard Class	9
	Packing Group	III
	Description	Environmentally hazardous substance, liquid, n.o.s (Isobornyl acrylate ester, 2-Phenoxyethyl acrylate, 2,4,6-Trimethylbenzoyl diphenyl Phosphine Oxide)
ADR/RID	Proper Shipping Name	Environmentally hazardous substance, liquid, n.o.s (Isobornyl acrylate ester, 2-Phenoxyethyl acrylate, 2,4,6-Trimethylbenzoyl diphenyl Phosphine Oxide)
	UN/ID No	UN3082
	Hazard Class	9
	Packing Group	III
	Description	Environmentally hazardous substance, liquid, n.o.s (Isobornyl acrylate ester, 2-Phenoxyethyl acrylate, 2,4,6-Trimethylbenzoyl diphenyl Phosphine Oxide)

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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

[International Inventories]

TSCA : Yes
 DSL/NDSL : No
 PIC CS : No
 EINECS/ELINCS : Yes
 ENCS : No
 IECSC : Yes
 KECL : No
 AICS : Yes

*Yes - All component(s) of this product are included or are exempt from listing on the inventory.

*No - Indicates the component(s) of this product are either not listed or have not been determined to be listed on the inventory.

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
 DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List
 EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances
 ENCS - Japan Existing and New Chemical Substances
 IECSC - China Inventory of Existing Chemical Substances
 KECL - Korean Existing and Evaluated Chemical Substances
 PICCS - Philippines Inventory of Chemicals and Chemical Substances
 AICS - Australian Inventory of Chemical Substances

[U.S. Federal Regulations]

TSCA Sections 4, 5 and 12(b) : This product does not contain any chemicals regulated by TSCA Sections 4, 5 or 12(b).

SARA 313 : Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA).

This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372:

Chemical Name	CAS No	SARA 313 - Threshold	Weight-%
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		Values %	
2-Phenoxyethyl acrylate	48145-04-6	1.0	10-20
Ethylene glycol phenyl ether	122-99-6	1.0	1-5

SARA 311/312 Hazard Categories : Acute Health Hazard ; Yes
 Chronic Health Hazard ; Yes
 Fire Hazard ; No
 Sudden Release of Pressure Hazard ; No
 Reactive Hazard ; Yes

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).

CERCLA : 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.

[U.S. State Regulations]

California Proposition 65 : This product does not contain any Proposition 65 chemicals.

[U.S. State Right-to-Know Regulations]

Chemical Name	Massachusetts	New Jersey	Pennsylvania	Illinois	Rhode Island
2-Phenoxyethyl acrylate		×	×	×	
Ethylene glycol phenyl ether		×	×		

[International Regulations]

Canada - NDSL : This product does not contain any NDSL chemicals.

Mexico - Grade : Slight risk, Grade 1

[Mexico - Carcinogen Status and Exposure Limits]

No information available.

[Other Regulations]

No information available.

CPSIA : Formulated to comply.

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CONEG	: Formulated to comply.
ASTM F-963	: Formulated to comply.
CHPA	: Formulated to comply.
ROHS	: Formulated to comply.
REACH/SVHC	: Formulated to comply.
EN-71	: Formulated to comply.

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.