

## Material Safety Data Sheets

CONSIDERED A HAZARDOUS SUBSTANCE ACCORDING TO OSHA 29 CFR 1910.1200.

### 1. Product and Company Identification

Product Name : LUS-150 Yellow  
Order No. : LUS15-Y-BA  
Ink Ver. : 1  
General Use : Ink jet printing ink  
Product Description : UV Inkjet Ink  
MSDS Number : 037-U080298  
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. Hazard Identification

#### CANADIAN WHMIS SYMBOLS



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



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WHMIS Hazard Class : D2B Toxic materials  
Emergency Overview CAUTION!  
Avoid contact with skin and eyes  
May be harmful if swallowed or if inhaled  
Irritating to eyes and skin  
Irritating to respiratory system  
May cause allergic skin reaction

Appearance	: Yellow
Physical State @20°C	: liquid
Odor	: Acrylates

### Potential Health Effects

Inhalation : May be harmful if inhaled. May cause irritation of respiratory tract.  
Eye Contact : Irritating to eyes.  
Skin Contact : Irritating to skin. Repeated or prolonged skin contact may cause allergic reactions with susceptible persons.  
Ingestion : May be harmful if swallowed. Ingestion may cause irritation to mucous membranes.

Principle Routes of Exposure : Eye contact, Skin contact, Inhalation.

Chronic toxicity : Repeated contact may cause allergic reactions in very susceptible persons.

Interactions with Other Chemicals : Irritants. Sensitizers. Epoxies.

Potential Environmental Effects : Harmful to aquatic organisms. May cause long-term adverse effects in the aquatic environment. See Section 12 for additional Ecological Information.

Aggravated Medical conditions : Allergies. Skin disorders. Respiratory disorders.

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HMIS Rating (scale 0 – 4)

Health = 2

Flammability = 1

Reactivity = 1

Protective Equipment = B

2*	Health
1	Flammability
1	Reactivity
B	Protective Equipment

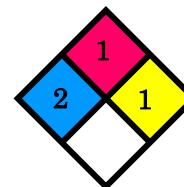
NFPA Rating (scale 0 – 4)

Health = 2

Flammability = 1

Instability = 1

Special =



### 3. Composition / Information On Ingredients

No	Chemical Name	Wt%	CAS No.
1	Trimethylolpropane formalacrylate	30-50%	66492-51-1
2	N-vinylcaprolactam	10-20%	2235-00-9
3	Isobornyl Acrylate ester	10-20%	5888-33-5
4	2-Phenoxyethyl acrylate	5-10%	48145-04-6
5	Trimethylolpropane triacrylate	1-5%	15625-89-5
6	phenyl bis(2,4,6-trimethylbenzoyl)-phosphine oxide	1-5%	162881-26-7
7	2,4,6-Trimethylbenzoyl diphenyl Phosphine Oxide	1-5%	75980-60-8
8	Tripropylene glycol diacrylate	0.5-1.5%	42978-66-5

### 4. First Aid Measures

General advice	: Do not get in eyes, on skin, or on clothing.
Inhalation	: Move to fresh air. If symptoms persist, call a physician.
Eye Contact	: Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. If symptoms persist, call a physician.
Skin Contact	: Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. If skin irritation persists, call a physician.
Ingestion	: Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth. Drink plenty of water. If symptoms persist, call a physician.
Note To Physician	: May cause sensitization of susceptible persons. Treat symptomatically.

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### 5. Fire Fighting Measures

Flammable Properties	: Not flammable.
Flash point	: > 200 °F
Extinguishing Media	: Use CO2, dry chemical, or foam.
Hazardous Combustion Products	: Nitrogen oxides (NOx). Carbon oxides.
Sensitivity to Mechanical Impact	: none
Sensitivity to Static Discharge	: none
Specific 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.
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.
NFPA	Health Hazard 2 Flammability 1 Stability 1 Physical and chemical hazards -
HMIS	Health Hazard 2* Flammability 1 Physical Hazard 1 Personal protection B

\*Indicates a chronic health hazard.

### 6. Accidental Release Measures

Personal Precautions	: Use personal protective equipment. Avoid contact with the skin and the eyes.
Environmental precautions	: Prevent entry into waterways, sewers, basements or confined areas. Do not flush into surface water or sanitary sewer system. Prevent

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

Methods for Containment : Prevent further leakage or spillage if safe to do so.

Methods for cleaning up : Soak up with inert absorbent material. Pick up and transfer to properly labeled containers. After cleaning, flush away traces with water. Prevent product from entering drains.

## 7. Handling And Storage

Advice on safe handling and storage : Ensure adequate ventilation. Wear personal protective equipment. Avoid contact with skin, eyes and clothing. Remove and wash contaminated clothing before re-use.

Technical measures/Storage conditions : Keep out of the reach of children. Keep containers tightly closed in a cool, well-ventilated place. Keep away from direct sunlight.

## 8. Exposure Controls / Personal Protection

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

No	Chemical Name		TWA	STEL	Ceiling	Skin	SEN
1	Trimethylolpropane triacrylate	OSHA PEL	N.E.	N.E.	N.E.	N.E.	N.E.
		ACGIH TLV	N.E.	N.E.	N.E.	N.E.	N.E.
		AIHA-Workplace Environmental Exposure Levels (WEELs) - TWAs	1 mg/m <sup>3</sup> TWA	N.E.	N.E.	N.E.	N.E.

### Exposure Controls

#### Occupational Exposure Controls

Engineering Controls : Showers  
 Eyewash stations  
 Ventilation systems

#### Personal Protection

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

Eye Protection : Safety glasses with side-shields.



Skin Protection : Wear protective gloves/clothing.



Hygiene measures : When using, do not eat, drink or smoke. Remove and wash contaminated clothing before re-use. Provide regular cleaning of equipment, work area and clothing.

### 9. Physical And Chemical Properties

Appearance	- Physical state	: liquid@20°C
	- Color	: Yellow
Odor		: Acrylates
pH		: Not available
Boiling Point / Boiling Range		: 232 °F
Melting Point / Melting Range		: Not available
Flash Point		: > 200 °F
Auto ignition temperature		: Not available
Flammability(solid, gas)		: Not available
Explosive Properties		: Not available
Oxidizing Properties		: Not available
Vapor Pressure		: <1 mm/Hg @ 20 C
Specific Gravity		: ~ 1.08
Water solubility		: Immiscible in water
Partition Coefficient(n-octanol / water)		: Not available
Vapor density		: Heavier than air

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Evaporation Rate	: Not available
Molecular Weight	: Not available
Weight per Gallon (lbs)	: ~9.0
Viscosity, dynamic	: Not available
Actual VOC (lb/gal)	: 0.0
EPA VOC (g/l)	: Not available

### 10. Stability And Reactivity

Conditions To Avoid	: Extremes of temperature and direct sunlight.
Stability	: Stable under recommended storage conditions.
Incompatible Materials	: Strong oxidizing agents, strong acids, and strong bases.
Hazardous Reactions/	: Carbon oxides. Nitrogen oxides (NO <sub>x</sub> ).
Decomposition Products	
Hazardous	: Hazardous polymerization may occur.
Polymerization	

### 11. Toxicological Information

Eye Irritation	: Irritating to eyes.
Skin Irritation	: Irritating to skin. Repeated or prolonged skin contact may cause allergic reactions with susceptible persons.
Inhalation	: May be harmful if inhaled. May cause irritation of respiratory tract.
Sensitization	: None known.
Mutagenicity	: None known.
Teratogenicity	: None known.
Carcinogenicity	: None known.
Reproductive And Developmental Toxicity	: None known.
Chronic Toxicity	: Repeated contact may cause allergic reactions in very susceptible persons.
Target Organ Effects	: None known.
Others	: None known.
Component Information	



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Chemical Name	LD50 Oral	LD50 Dermal	LC50 Inhalation
Isobornyl acrylate ester	4890 mg/kg ( Rat )	5 g/kg ( Rabbit )	
2-Phenoxyethyl acrylate	4660 µL/kg ( Rat )	2540 µL/kg ( Rabbit )	
Trimethylolpropane triacrylate	5190 µL/kg ( Rat )	5000 mg/kg ( Rabbit )	
Tripropylene glycol diacrylate	3000 mg/kg ( Rat )	2 g/kg ( Rabbit )	

### 12. Ecological Information

Ecotoxicity : Harmful to aquatic organisms. May cause long-term adverse effects in the aquatic environment.

Chemical Name	Octanol Water Partition Coefficient (log pow)
Tripropylene glycol diacrylate	2.77

### 13. Disposal Considerations

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

Contaminated packaging : Do not re-use empty containers.



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### 14. Transport Information

Check a thing without a leak in a container.

Perform prevention of collapse of cargo surely.

#### Sea Transport(IMDG)

Class : 9  
Packing Group(PG) : III  
UN Number : UN3082  
Proper Shipping Name : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID,  
N.O.S., (Acrylate Monomer)  
Marine Pollutant : Yes

#### Air Transport (ICAO/IATA)

Class : 9  
Packing Group(PG) : III  
UN Number : UN3082  
Proper Shipping Name : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID,  
N.O.S., (Acrylate Monomer)

#### Land Transport(ADR)

Class : 9  
Packing Group(PG) : III  
UN Number : UN3082  
Proper Shipping Name : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID,  
N.O.S., (Acrylate Monomer)

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## 15. Regulatory Information

Chemical Name	TSCA	TSCA-Section 5	TSCA-Section 4	TSCA 12(b)	DSL	NDSL	EINECS	ELINCS	ENCS	IECSC	KECL	AICS
Trimethylolpropane formalacrylate	×				×		×			×		×
N-vinylcaprolactam	×				×		×		×	×	×	×
Isobornyl acrylate ester	×				×		×		×	×	×	×
2-Phenoxyethyl acrylate	×				×		×		×	×	×	×
Trimethylolpropane triacrylate	×				×		×		×	×	×	×
phenyl bis(2,4,6-trimethylbenzoyl)-phosphine oxide	×				×			×	×	×	×	×
2,4,6-Trimethylbenzoyl diphenyl Phosphine Oxide	×				×		×		×	×	×	×
Tripropylene glycol diacrylate	×				×		×		×	×	×	×

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

**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 Commercial Chemical Substances/EU 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

**ROHS** - Restriction of Hazardous Substances in Electrical and Electronic Equipment (EU)

**ASTM F-963** - Standard Consumer Safety Specification for Toy Safety (US)

**EN-71** - Soluble Heavy Metals Toy Standard (EU)

**CHPA** Canadian Hazardous Product Act Heavy Metals (CA)



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- CONEG** - Coalition of Northeast Governors Model Toxics in Packaging Legislation (US)
- REACH/SVHC** - Registration, Evaluation, Authorization of Chemicals - Substances of Very High Concern (EU)
- CPSIA** - Consumer Product Safety Improvement Act (US)

**CERCLA**  
 Reportable Quantity  
 (40 CFR 117, 302)

: This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act. There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material.

**SARA Title III**  
 Section 302  
 (40 CFR 355)

: This material, as supplied, does not contain any substances regulated as hazardous substances under the Superfund Amendments and Reauthorization Act. There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material.

Section 311/312  
 (40 CFR 370)

:

Acute Health Hazard	Yes
Chronic Health Hazard	Yes
Fire Hazard	no
Sudden Release of Pressure Hazard	no
Reactive Hazard	Yes

Section 313  
 (40 CFR 372)

: 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	Threshold Values %
2-Phenoxyethyl acrylate	1.0

Clean Water Act  
 (40 CFR 122.21, 122.42)

: This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act

California Proposition

: This product does not contain any Proposition 65 chemicals.



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U.S. State :

Right-to-Know  
Regulations

Chemical Name	Massac husetts	New Jersey	Pennsyl vania	Illinois	Rhode Island
2-Phenoxyethyl acrylate		×	×	×	

### 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	2012/09/20	First issue.
2.0	2014/06/10	14. Not applicable UN → Applicable UN