

Safety Data Sheets

1. Identification

Product Name : LUS-200 Yellow
Order No. : LUS20-Y-BA
Ink Ver. : 1
General Use : Ink jet printing ink
Product Description : UV curable ink
SDS Number : 031-38U10YB
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. : +1-678-730-0100
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 2A
Sensitization – Skin : Category 1
Carcinogenicity : Category 1
Toxic to Reproduction : Category 2
Specific Target Organ Toxicity : Category 1
(Repeated Exposure)

Environmental Hazards

Hazardous to the Aquatic : Category 1
Environment - Acute Hazard
Hazardous to the Aquatic : Category 1
Environment - Long Term Hazard

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

[GHS Label Elements]

Symbol



Signal Word

Danger

Hazard Statements

H315 Causes skin irritation

H317 May cause an allergic skin reaction

H319 Causes serious eye irritation

H350 May cause cancer

H361 Suspected of damaging fertility or the unborn child

H372 Causes damage to organs through prolonged or repeated exposure

H400 Very toxic to aquatic life

H410 Very toxic to aquatic life with long lasting effects

Precautionary Statements

[Prevention]

P201 Obtain special instructions 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]

P314 Get medical advice/attention if you feel unwell.

P321 Specific treatment (see 4-Response).

P362 Take off contaminated clothing and wash before reuse.

P391 Collect spillage.

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.

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P308+P313 IF exposed or concerned: Get medical advice/attention.

P332+P313 If skin irritation occurs: Get medical advice/attention.

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

[Disposal]

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

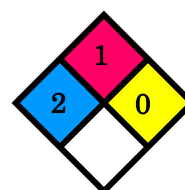
NFPA Rating (scale 0 – 4)

Health = 2

Flammability = 1

Reactivity= 0

Special = None



EMERGENCY OVERVIEW

Specific Physical Form	: Liquid
Odor, Color, Grade	: Acrylate odor/Yellow color
General Physical Form	: Liquid
Immediate health, physical, and environmental hazards	
	: Hazardous polymerization may occur. May cause severe eye irritation. May cause allergic skin reaction. May cause severe skin irritation. May cause target organ effects. Contains a chemical or chemicals which can cause birth defects or other reproductive harm.

Inhalation	: Respiratory Tract Irritation : Signs/symptoms may include cough, sneezing, nasal discharge, headache, hoarseness, and nose and throat pain.
Eye Contact	: Severe Eye Irritation : Signs/symptoms may include significant redness, swelling, pain, tearing, cloudy appearance of the cornea, and impaired vision.
Skin Contact	: Severe Skin Irritation : Signs/symptoms may include localized redness, swelling, itching, dryness, cracking, blistering, and pain. Allergic Skin Reaction

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(non-photo induced): Signs/symptoms may include redness, swelling, blistering, and itching.

Ingestion : Gastrointestinal Irritation
: Signs/symptoms may include abdominal pain, stomach upset, nausea, vomiting and diarrhea.
May be absorbed following ingestion and cause target organ effects.

Prolonged or repeated exposure may cause
: Respiratory Effects: Signs/symptoms may include cough, shortness of breath, chest tightness, wheezing, increased heart rate, bluish colored skin (cyanosis), sputum production, changes in lung function tests, and/or respiratory failure.

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

3. Composition / Information on Ingredients

No	Chemical Name	Wt%	CAS No.	Chemical Formula
1	ISOBORNYL ACRYLATE	15-40	5888-33-5	
2	PHENOXY ETHYL ACRYLATE	10-30	48145-04-6	
3	TETRAHYDROFURFURYL ACRYLATE	7-13	2399-48-6	
4	Vinyl monomer	7-13	Trade Secret	
5	ALIPHATIC URETHANEACRYLATE	5-10	Trade Secret	
6	2,4,6-Trimethylbenzoyldiphenylphosphine oxide	5-10	75980-60-8	
7	Acrylate monomer	3-7	Trade Secret	
8	Substitute diamine oligomer	1-5	Trade Secret	
9	9H-Thioxanthen-9-one, 2,4-diethyl-	1-5	82799-44-8	
10	NICKEL, 5,5'-AZOBIS-2,4,6(1H,3H,5H)-PYRIMIDI NETRIONE COMPLEXES	1-5	68511-62-6	
11	Dispersant	0.1-3	Trade Secret	
12	STABILIZER	0.5-1.5	Trade Secret	
13	2-PHENOXYETHANOL	0.1-1.0	122-99-6	

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4. First Aid Measures

Protection To First-Aiders

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

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

5. Fire Fighting Measures

Flammable Properties

Auto ignition temperature	No Data Available
Flash Point	95°C [Test Method: Closed Cup]
Flammable Limits(LEL)	No Data Available
Flammable Limits(UEL)	No Data Available

Extinguishing Media : Ordinary combustible material. Use fire extinguishers with class A extinguishing agents (e.g., water, foam).

Fire Fighting Instructions

Special Fire Fighting Procedures	: 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.

6. Accidental Release Measures

Personal Precautions : Evacuate unprotected and untrained personnel from hazard area.



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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.

Land Spill : 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.

Clean-up methods : 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. Collect as much of the spilled material as possible. 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.

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. 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. Store away from areas where product may come into contact with food or pharmaceuticals. Store away from oxidizing agents.

8. Exposure Controls / Personal Protection

Exposure Limit Values



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No	Chemical Name	Authority	TWA	STEL	Additional Information
	2-PHENOXYETHANOL	CMRG	25ppm		Skin Notation*
	TETRAHYDROFURFURYL ACRYLATE	Manufacturer determined	0.1ppm		
	TETRAHYDROFURFURYL ACRYLATE	Manufacturer determined		0.3ppm	
	Vinyl monomer	Manufacturer determined	0.1ppm		

* Substance(s) refer to the potential contribution to the overall exposure by the cutaneous route including mucous membrane and eye, either by airborne or, more particularly, by direct contact with the substance. Vehicles can alter skin absorption.

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 in an enclosed process area is recommended. Do not use in a confined area or areas with little or no air movement. 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.

Personal Protection

Respiratory Protection : Avoid breathing of vapors, mists or spray.
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 face piece or full face piece air-purifying respirator suitable for organic vapors and particulates

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	For questions about suitability for a specific application, consult with your respirator manufacturer.
Hand Protection	: Select and use gloves to prevent skin contact based on the results of an exposure assessment. Consult with your glove manufacturer for selection of appropriate compatible materials. Gloves made from the following material(s) are recommended: Polymer laminate.
Eye Protection	: Avoid eye contact. The following eye protection(s) are recommended: Indirect Vented Goggles.
Skin Protection	: Do not get on skin or on clothing. Select and use protective clothing to prevent skin contact based on the results of an exposure assessment. Consult with your protective clothing manufacturer for selection of appropriate compatible materials. The following protective clothing material(s) are recommended: Apron - polymer laminate
Prevention of Swallowing	: Do not eat, drink or smoke when using this product. Wash exposed areas thoroughly with soap and water.

9. Physical and Chemical Properties

Appearance	- Physical State	: liquid
	- Color	: Yellow color
Odor		: Acrylate odor
Odor threshold;		: No Data Available
pH		: No Data Available
Boiling Point / Boiling Range		: No Data Available
Melting Point / Melting Range		: Not Applicable
Decomposition Temperature		: No Data Available
Flash Point		: 95 °C [Test Method: Closed Cup]
Auto ignition temperature		: No Data Available
Flammability (Solid, Gas)		: No Data Available
Explosive Properties		: No Data Available
Oxidizing Properties		: No Data Available



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Upper / Lower Flammability or Explosive Limits	: No Data Available
Vapor Pressure	
Specific Gravity	: 1.08 [Ref Std: WATER=1]
Solubility	: No Data Available
Water Solubility	: No Data Available
Partition Coefficient (n-octanol / Water)	: No Data Available
Viscosity	: 20 centipoise [@ 25 °C]
Vapor Density	: No Data Available
Evaporation Rate	: No Data Available
VOC	: No Data Available

10. Stability and Reactivity

Conditions to Avoid	: Heat
Stability	: Stable
Materials to Avoid	: Strong oxidizing agents
Hazardous	: Hazardous polymerization may occur.
Polymerization	
Hazardous Reactions /Decomposition Products	

<u>Substance</u>	<u>Condition</u>
Carbon monoxide	During Combustion
Carbon dioxide	During Combustion

11. Toxicological Information

Signs and Symptoms of Exposure

Based on test data and/or information on the components, this material may produce the following health effects:

Inhalation	: Respiratory Tract Irritation: Signs/symptoms may include cough, sneezing, nasal discharge, headache, hoarseness, and nose and throat pain. May cause target organ effects after inhalation.
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Skin Contact	: Skin Irritation: Signs/symptoms may include localized redness, swelling, itching, dryness, cracking, blistering, and pain. Allergic Skin Reaction (non-photo induced): 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.
Target Organ Effects	
Prolonged or repeated exposure may cause	: Respiratory Effects: Signs/symptoms may include cough, shortness of breath, chest tightness, wheezing, increased heart rate, bluish colored skin (cyanosis), sputum production, changes in lung function tests, and/or respiratory failure.
Reproductive/Developmental Toxicity	: Contains a chemical or chemicals which can cause birth defects or other reproductive harm.
Carcinogenicity	: Contains a chemical or chemicals which can cause cancer.

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.

13. Disposal Considerations

Waste Disposal Method	: Do not release to ground water or waterways. Incinerate in an industrial or commercial facility in the presence of a combustible material. As a disposal alternative, dispose of waste product in a facility permitted to accept chemical waste.
EPA Hazardous Waste Number (RCRA)	: Not regulated



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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.

Sea Transport (IMDG)

Class : 9

Packing Group (PG) : III

UN Number : UN 3082

Proper Shipping Name : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID,
N.O.S., (ISOBORNYL ACRYLATE AND NICKEL,
5,5'-AZOBIS-2,4,6(1H,3H,5H)-PYRIMIDINETRIONE COMPLEXES)

Marine Pollutant : ISOBORNYL ACRYLATE AND NICKEL,
5,5'-AZOBIS-2,4,6(1H,3H,5H)-PYRIMIDINETRIONE COMPLEXES

15. Regulatory Information

TSCA Status : This material contains a chemical which requires export
notification under TSCA Section 12[b]:

<u>Ingredient</u> (Category if applicable)	<u>C.A.S. No</u>	<u>Regulation</u>	<u>Status</u>
9H-Thioxanthen-9-one, 2,4-diethyl-	82799-44-8	Toxic Substances Control Act (TSCA) 5 SNUR or Consent Order Chemicals	Applicable

: This material contains a chemical regulated by an EPA Significant
New Use Rule (TSCA Section 5)

<u>Ingredient</u> (Category if applicable)	<u>C.A.S. No</u>	<u>Regulation</u>
9H-Thioxanthen-9-one, 2,4-diethyl-	82799-44-8	40CFR721.9664

SARA Title III

Section 311/312 (40 CFR 370) Fire Hazard - No Pressure Hazard - No Reactivity Hazard - No
Immediate Hazard - Yes Delayed Hazard - Yes



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CHEMICAL INVENTORIES

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

The components of this product are listed on Japan's Chemical Substance Control Law List (also known as the Existing and New Chemical Substances List.)

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.