Safety Data Sheets

1. Identification

Product Name	: Latex ink LX100/LX101 White
Order No.	: LX100-W-22
Ink Ver.	: 3
General Use	: Ink for ink jet printer
Product Description	: Aqueous ink
SDS Number	: 037-W350539
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	: 4851 Thurmon Tanner Parkway, STE 100 Flowery Branch, GA 30542, 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

[GHS Classification]

Physical Hazards

Flammable Liquids	: Not classified

Health Hazards

Skin Corrosion / Irritation	: Category 2
Eye Damage / Irritation	: Category 2A
Carcinogenicity	: Category 1A
Specific Target Organ Toxicity (Single Exposure)	: Category 3 (Respiratory tract irritation)

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

[GHS Label Elements]

Safety Data Sheets

Symbol

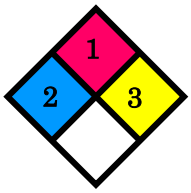
Signal Word
Danger

Hazard Statements
H315 Cause skin irritation
H319 Causes serious eye irritation
H335 May cause respiratory irritation.
H350 May cause 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.
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.
P332+P313 If skin irritation 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).

NFPA Rating (scale 0 – 4)

Health = 2
Flammability = 1
Instability = 3
Special = None



3. Composition / Information on Ingredients

No	Chemical Name	Wt%	CAS No.
1	Glycol ether solvents	10-20	Trade secret
2	Alcohol solvent series	23-27	Trade secret
3	titanium dioxide	1-10	13463-67-7
4	Organic ingredient	1-5	Trade secret
5	methyldiethanolamine	0.1-1.5	105-59-9

4. First Aid Measures

Description of first aid measures

Eye Contact : If this product comes in contact with the eyes:
Wash out immediately with fresh running water.
Ensure complete irrigation of the eye by keeping eyelids apart and away from eye and moving the eyelids by occasionally lifting the upper and lower lids.
Seek medical attention without delay; if pain persists or recurs seek medical attention.
Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.

Skin Contact : If skin contact occurs:
Immediately remove all contaminated clothing, including footwear.
Flush skin and hair with running water (and soap if available).
Seek medical attention in event of irritation.

Inhalation : If fumes or combustion products are inhaled remove from contaminated area.
Lay patient down. Keep warm and rested.
Prostheses such as false teeth, which may block airway, should be removed, where possible, prior to initiating first aid procedures.
Apply artificial respiration if not breathing, preferably with a demand valve resuscitator, bag-valve mask device, or pocket mask as trained. Perform CPR if necessary.
Transport to hospital, or doctor, without delay.

Ingestion : If swallowed do NOT induce vomiting.
If vomiting occurs, lean patient forward or place on left side (head-down position, if possible) to maintain open airway and prevent aspiration.

Observe the patient carefully.
Never give liquid to a person showing signs of being sleepy or with reduced awareness; i.e. becoming unconscious.
Give water to rinse out mouth, then provide liquid slowly and as much as casualty can comfortably drink.
Seek medical advice.

Most important symptoms and effects, both acute and delayed
See Section 11.

5. Fire Fighting Measures

Extinguishing Media : Alcohol stable foam. Dry chemical powder. BCF (where regulations permit). Carbon dioxide. Water spray or fog - Large fires only.

Special hazards arising from the substrate or mixture

Fire Incompatibility : Avoid contamination with oxidising agents i.e. nitrates, oxidising acids, chlorine bleaches, pool chlorine etc. as ignition may result

Special protective equipment and precautions for fire-fighters

Fire Fighting : Alert Fire Brigade and tell them location and nature of hazard.
Wear full body protective clothing with breathing apparatus.
Prevent, by any means available, spillage from entering drains or water course.
Use water delivered as a fine spray to control fire and cool adjacent area.
Avoid spraying water onto liquid pools.
DO NOT approach containers suspected to be hot.
Cool fire exposed containers with water spray from a protected location.
If safe to do so, remove containers from path of fire.

Fire/Explosion Hazard : Slight fire hazard when exposed to heat or flame.
Heating may cause expansion or decomposition leading to violent rupture of containers.
On combustion, may emit toxic fumes of carbon monoxide (CO).
May emit acrid smoke.
Mists containing combustible materials may be explosive.
Combustion products include:
carbon dioxide (CO2)

other pyrolysis products typical of burning organic material.
May emit poisonous fumes.
May emit corrosive fumes.

6. Accidental Release Measures

Personal precautions, protective equipment and emergency procedures

See section 8.

Environmental precautions

See section 12.

Methods and material for containment and cleaning up

Minor Spills : Slippery when spilt.
Remove all ignition sources.
Clean up all spills immediately.
Avoid breathing vapours and contact with skin and eyes.
Control personal contact with the substance, by using protective equipment.
Contain and absorb spill with sand, earth, inert material or vermiculite.
Wipe up.
Place in a suitable, labelled container for waste disposal.

Major Spills : Clear area of personnel and move upwind.
Alert Fire Brigade and tell them location and nature of hazard.
Wear full body protective clothing with breathing apparatus.
Prevent, by all means available, spillage from entering drains or water courses.
Consider evacuation (or protect in place).
No smoking, naked lights or ignition sources.
Increase ventilation.
Stop leak if safe to do so.
Water spray or fog may be used to disperse / absorb vapour.
Contain or absorb spill with sand, earth or vermiculite.
Collect recoverable product into labelled containers for recycling.
Collect solid residues and seal in labelled drums for disposal.
Wash area and prevent runoff into drains.
After clean up operations, decontaminate and launder all protective clothing and equipment before storing and re-using.

If contamination of drains or waterways occurs, advise emergency services.
Slippery when spilt.

Personal Protective Equipment advice is contained in Section 8 of the SDS.

7. Handling and Storage

Precautions for Safe Handling	: Avoid all personal contact, including inhalation. Wear protective clothing when risk of exposure occurs. Use in a well-ventilated area. Prevent concentration in hollows and sumps. DO NOT enter confined spaces until atmosphere has been checked. DO NOT allow material to contact humans, exposed food or food utensils. Avoid contact with incompatible materials. When handling, DO NOT eat, drink or smoke. Keep containers securely sealed when not in use. Avoid physical damage to containers. Always wash hands with soap and water after handling. Work clothes should be laundered separately. Launder contaminated clothing before re-use. Use good occupational work practice. Observe manufacturer's storage and handling recommendations contained within this SDS. Atmosphere should be regularly checked against established exposure standards to ensure safe working conditions are maintained. DO NOT allow clothing wet with material to stay in contact with skin
Conditions for Safe Storage, including any Incompatibilities	: Store in original containers. Keep containers securely sealed. No smoking, naked lights or ignition sources. Store in a cool, dry, well-ventilated area. Store away from incompatible materials and foodstuff containers. Protect containers against physical damage and check regularly for leaks. Observe manufacturer's storage and handling recommendations contained within this SDS.

Are incompatible with strong acids, acid chlorides, acid anhydrides, oxidising and reducing agents.

8. Exposure Controls / Personal Protection

Control parameters

OCCUPATIONAL EXPOSURE LIMITS (OEL)

INGREDIENT DATA

Ingredient	Material name	TWA	Notes	Source
titanium dioxidek	Rutile, Titanium oxide, Titanium peroxide	Not Available	Ca See Appendix A	1
titanium dioxidek	Titanium dioxide	3 mg/m3	TLV® Basis: LRT irr	2
titanium dioxidek	Titanium dioxide: Total dust	3.5 mg/m3	Not Available	3

Source: 1. US NIOSH Recommended Exposure Limits (RELs), 2. US ACGIH Threshold Limit Values (TLV), 3. US OSHA Permissible Exposure Levels (PELs) - Table Z1

EMERGENCY LIMITS

Ingredient	Material name	TEEL-1	TEEL-2	TEEL-3
titanium dioxidek	Titanium dioxide	30 mg/m3	330 mg/m3	2,000 mg/m3

Ingredient	Original IDLH	Revised IDLH
Glucol ether solvents	Not Available	Not Available
Alcohol solvent series	Not Available	Not Available
titanium dioxidek	5,000 mg/m3	Not Available
Organic ingredient	Not Available	Not Available
methyldiethanolamine	Not Available	Not Available

Exposure Controls

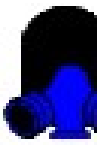
Occupational Exposure Controls

Appropriate Engineering Controls : Local exhaust ventilation usually required. If risk of overexposure exists, wear approved respirator.
Correct fit is essential to obtain adequate protection. Supplied-air type respirator may be required in special circumstances. Correct fit is essential to ensure adequate protection.
An approved self contained breathing apparatus (SCBA) may be

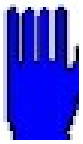
required in some situations.
Provide adequate ventilation in warehouse or closed storage area.

Personal Protection

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



Hand Protection : Wear chemical protective gloves, e.g. PVC.



Eye Protection : Safety glasses with side shields.
Chemical goggles.
Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants.

Skin Protection : Wear appropriate chemical resistant clothing.
Wear safety footwear or safety gumboots, e.g. Rubber

9. Physical and Chemical Properties

Appearance	- Physical State	: Liquid
	- Color	: White
Odor		: slight
pH		: 8.8-9.8
Boiling Point / Boiling Range		: Not available
Melting Point / Melting Range		: Not available
Decomposition Temperature		: Not available
Flash Point		: Not flammable
Flammability (Solid, Gas)		: Not applicable
Explosive Properties		: Not available
Oxidizing Properties		: Not available
Specific Gravity		: 1.07-1.09
Solubility		: Not available

Water Solubility	: Not available
Partition Coefficient (n-octanol / Water)	: Not available
Viscosity	: Not available
Vapor Density	: Not available
Evaporation Rate	: Not available
VOC	: Not available

10. Stability and Reactivity

Reactivity	: No reactivity hazard is expected.
Chemical Stability	: Unstable in the presence of incompatible materials. Product is considered stable.
Possibility of Hazardous Reactions	: Hazardous polymerisation will not occur.
Conditions to Avoid	: Avoid flames, sparks, and other sources of ignition. Avoid contact with incompatible materials.
Incompatible Materials	: Strong acids, acid chlorides, acid anhydrides, oxidising and reducing agents.
Hazardous Decomposition	: See section 5

11. Toxicological Information

Acute Toxicity : **methyldiethanolamine**

Component Analysis - LD50/LC50

Dermal (rabbit) LD50: 10244 mg/kg

Oral (rat) LD50: 1945 mg/kg

titanium dioxide

Inhalation (rat) LC50: >2.28 mg/l4 h

Oral (rat) LD50: >2000 mg/kg

Information on Likely Routes of Exposure

Inhalation	: Respiratory tract irritation
Ingestion	: no information on significant adverse effects
Skin Contact	: irritation
Eye Contact	: irritation
Immediate Effects	: Skin irritation, eye irritation
Delayed Effects	: Cancer, Respiratory tract irritation

Medical Conditions Aggravated by Exposure	: No information available for the product.
Irritation/Corrosivity Data	: Skin irritation, eye irritation
Respiratory Sensitization	: No information available for the product.
Dermal Sensitization	: No information available for the product.
Germ Cell Mutagenicity	: No information available for the product.
Carcinogenicity	: titanium dioxide k (CAS No. 13463-67-7) This substance has been classified by the IARC as Group 2B: Possibly Carcinogenic to Humans.
Reproductive Toxicity	: No information available for the product.
Specific Target Organ Toxicity - Single Exposure	: Respiratory tract irritation.
Specific Target Organ Toxicity - Repeated Exposure	: Respiratory organ
Aspiration Hazard	: Not expected to be an aspiration hazard.

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

Product: Not classified

Component Analysis - Aquatic Toxicity

Methyldiethanolamine

ENDPOINT	TEST DURATION (HR)	SPECIES	VALUE	SOURCE
LC50	96	Fish	320mg/L	1
EC50	48	Crustacea	=230mg/L	1
EC50	96	Algae or other aquatic plants	=20mg/L	1
NOEC	96	Fish	=460mg/L	1

titanium dioxide

ENDPOINT	TEST	SPECIES	VALUE	SOURCE

	DURATION (HR)			
LC50	96	Fish	155mg/L	2
EC50	48	Crustacea	>10mg/L	2
EC50	72	Algae or other aquatic plants	5.83mg/L	4
EC20	72	Algae or other aquatic plants	1.81mg/L	4
NOEC	336	Fish	0.089mg/L	4

SOURCE: Extracted from 1. IUCLID Toxicity Data 2. Europe ECHA Registered Substances – Ecotoxicological Information - Aquatic Toxicity 3. EPIWIN Suite V3.12 (QSAR) - Aquatic Toxicity Data (Estimated) 4. US EPA, Ecotox database - Aquatic Toxicity Data

Persistence and Degradability	: No information available for the product.
Bioaccumulation	: No information available for the product.
Mobility	: No information available for the product.
Other Toxicity	: No information available for the product.

13. Disposal Considerations

	: Comply with all USA, national and local regulations. Do not dump this product into sewers, on the ground or into any body of water.
Disposal Methods	: Dispose in accordance with all applicable regulations.
Component Waste Numbers	: The U.S. EPA has not published waste numbers for this product's components.
Disposal of Contaminated Packaging	: Empty containers may contain product residue. Dispose in accordance with all applicable regulations.

14. Transport Information

	Check a thing without a leak in a container. Perform prevention of collapse of cargo surely.
Land transport (DOT)	: NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS
Air transport (ICAO-IATA / DGR)	: NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS
Sea transport	: NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS

(IMDG-Code / GGVSee)

Transport in bulk according to Annex II of MARPOL and the IBC code	: Not Applicable
Marine Pollutant	: NO

15. Regulatory Information

Safety, health and environmental regulations / legislation specific for the substance or mixture

METHYLDIETHANOLAMINE (105-59-9) IS FOUND ON THE FOLLOWING REGULATORY LISTS

US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory

US TSCA Chemical Substance Inventory - Interim List of Active Substances

TITANIUM DIOXIDE(13463-67-7) IS FOUND ON THE FOLLOWING REGULATORY LISTS

International Agency for Research on Cancer (IARC) – Agents Classified by the IARC Monographs

US - Alaska Limits for Air Contaminants

US - California Proposition 65 - Carcinogens

US - Hawaii Air Contaminant Limits

US - Idaho - Limits for Air Contaminants

US - Massachusetts - Right To Know Listed Chemicals

US - Michigan Exposure Limits for Air Contaminants

US - Minnesota Permissible Exposure Limits (PELs)

US - Oregon Permissible Exposure Limits (Z-1)

US - Pennsylvania - Hazardous Substance List

US - Rhode Island Hazardous Substance List

US - Tennessee Occupational Exposure Limits - Limits For Air Contaminants

US - Vermont Permissible Exposure Limits Table Z-1-A Final Rule Limits for Air Contaminants

US - Vermont Permissible Exposure Limits Table Z-1-A Transitional Limits for Air Contaminants

US - Washington Permissible exposure limits of air contaminants

US - Wyoming Toxic and Hazardous Substances Table Z1 Limits for Air Contaminants

US ACGIH Threshold Limit Values (TLV)

US ACGIH Threshold Limit Values (TLV) - Carcinogens

US List of Active Substances Exempt from the TSCA Inventory Notifications (Active-Inactive) Rule

US NIOSH Recommended Exposure Limits (RELs)

US OSHA Permissible Exposure Levels (PELs) - Table Z1

US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory

US TSCA Chemical Substance Inventory - Interim List of Active Substances

US TSCA Section 12(b) - List of Chemical Substances Subject to Export Notification Requirements

US TSCA Section 5(a)(2) - Significant New Use Rules (SNURs)

Federal Regulations

Superfund Amendments and Reauthorization Act of 1986 (SARA)

SECTION 311/312 HAZARD CATEGORIES

Flammable (Gases, Aerosols, Liquids, or Solids)	No
Gas under pressure	No
Explosive	No
Self-heating	No
Pyrophoric (Liquid or Solid)	No
Pyrophoric Gas	No
Corrosive to metal	No
Oxidizer (Liquid, Solid or Gas)	No
Organic Peroxide	No
Self-reactive	No
In contact with water emits flammable gas	No
Combustible Dust	No
Carcinogenicity	Yes
Acute toxicity (any route of exposure)	No
Reproductive toxicity	No
Skin Corrosion or Irritation	Yes
Respiratory or Skin Sensitization	No
Serious eye damage or eye irritation	Yes
Specific target organ toxicity (single or repeated exposure)	Yes
Aspiration Hazard	No
Germ cell mutagenicity	No
Simple Asphyxiant	No

US. EPA CERCLA HAZARDOUS SUBSTANCES AND REPORTABLE QUANTITIES (40 CFR 302.4)

None Reported

State Regulations

California Proposition 65

: **WARNING:**

This product can expose you to chemicals including Titanium dioxide, Acetaldehyde, Formaldehyde, Acrylonitrile, Styrene, Ethylbenzene, which is known to the State of California to cause cancer. For more information go to www.P65Warnings.ca.gov.

National Inventory Status

National Inventory	Status
Australia - AICS	Y
Canada - DSL	N
Canada - NDSL	Y
China - IECSC	N
Europe - EINEC / ELINCS / NLP	Y
Japan - ENCS	Y
Korea - KECI	Y
New Zealand - NZIoC	N
Philippines - PICCS	N
USA - TSCA	Y

Y = All ingredients are on the inventory

N = Not determined or one or more ingredients are not on the inventory and are not exempt from listing

16. Other Information

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.