

# 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-W352463  
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 Australia  
Company Name : MIMAKI SINGAPORE PTE. LTD.  
Address : 31 Kaki Bukit Road 3 Singapore 417818 TechLink #02-03  
Telephone No. : +65-6508-2789  
Emergency Telephone No. : +81-268-64-2281

## 2. Hazards Identification

[Classification of the substance or mixture]

### Physical Hazards

Flammable Liquids : Not classified

### Health Hazards

Eye Damage / Irritation : Category 2

Specific Target Organ Toxicity : Category 3 (narcotic effects)  
(Single Exposure)

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

[Label Elements]

Symbol



Signal Word

Warning

Hazard Statements

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H319 Causes serious eye irritation.  
 H336 May cause drowsiness or dizziness.

### Precautionary Statements

#### [Prevention]

P261 Avoid breathing mist/vapours/spray.  
 P271 Use only outdoors or in a well-ventilated area.  
 P280 Wear protective gloves/protective clothing/eye protection/face protection.

#### [Response]

P304+P340 IF INHALED: Remove person to fresh air and keep 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.  
 P312 Call a POISON CENTER/doctor/physician/first aider/if you feel unwell.  
 P337+P313 If eye irritation persists: Get medical advice/attention.

#### [Storage]

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

#### [Disposal]

P501 Dispose of contents/container in accordance with local regulations.

### 3. Composition / Information on Ingredients

#### [Substances]

See section below for composition of Mixtures

#### Mixtures

No	Chemical Name	Wt%	CAS No.
1	Alcohol solvent series	23-27	Not Available
2	Glycol ether solvents	15-25	Not Available
3	titanium dioxide	1-10	13463-67-7
4	Organic ingredient	1-10	Not Available
5	methyldiethanolamine	0.1-0.5	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.

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Skin Contact	<p>If skin contact occurs:</p> <p>Immediately remove all contaminated clothing, including footwear.</p> <p>Flush skin and hair with running water (and soap if available).</p> <p>Seek medical attention in event of irritation.</p>
Inhalation	<p>: If fumes or combustion products are inhaled remove from contaminated area.</p> <p>Lay patient down. Keep warm and rested.</p> <p>Prostheses such as false teeth, which may block airway, should be removed, where possible, prior to initiating first aid procedures.</p> <p>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.</p> <p>Transport to hospital, or doctor, without delay.</p>
Ingestion	<p>: If swallowed do NOT induce vomiting.</p> <p>If vomiting occurs, lean patient forward or place on left side (head-down position, if possible) to maintain open airway and prevent aspiration.</p> <p>Observe the patient carefully.</p> <p>Never give liquid to a person showing signs of being sleepy or with reduced awareness; i.e. becoming unconscious.</p> <p>Give water to rinse out mouth, then provide liquid slowly and as much as casualty can comfortably drink.</p> <p>Seek medical advice.</p>
Indication of Immediate Medical Attention and Special Treatment Needed	<p>: Treat symptomatically.</p>

### 5. Fire Fighting Measures

#### [Extinguishing Media]

Extinguishing Media : 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

#### [Advice for firefighters]

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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 courses.  
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 : Combustible.  
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 (CO<sub>2</sub>), 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.

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### Major Spills

Contain and absorb spill with sand, earth, inert material or vermiculite.

Wipe up.

Place in a suitable, labelled container for waste disposal.

: Slippery when spilt.

Moderate hazard.

Clear area of personnel and move upwind.

Alert Fire Brigade and tell them location and nature of hazard.

Wear breathing apparatus plus protective gloves.

Prevent, by any means available, spillage from entering drains or water course.

No smoking, naked lights or ignition sources.

Increase ventilation.

Stop leak if safe to do so.

Contain spill with sand, earth or vermiculite.

Collect recoverable product into labelled containers for recycling.

Absorb remaining product with sand, earth or vermiculite.

Collect solid residues and seal in labelled drums for disposal.

Wash area and prevent runoff into drains.

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

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

## 7. Handling and Storage

[Precautions for safe handling]

Safe handling

: Avoid all personal contact, including inhalation.

Wear protective clothing when risk of exposure occurs.

Use in a well-ventilated area.

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.

DO NOT allow clothing wet with material to stay in contact with skin

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[Conditions for safe storage, including any incompatibilities]

Storage	: Store in original containers. Keep containers securely sealed. No smoking, naked lights or ignition sources. Store locked up. Store in a well-ventilated place. Keep container tightly closed. 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.
Incompatibility	Strong acids, strong oxidisers, acid anhydrides, oxidising and reducing agents.

### 8. Exposure Controls / Personal Protection

[Control parameters]

OCCUPATIONAL EXPOSURE LIMITS (OEL)

INGREDIENT DATA

Source: Singapore Permissible Exposure Limits of Toxic Substances

Ingredient	Material name	TWA	STEL	Peak	Notes
titanium dioxide	Titanium dioxide	10 mg/m <sup>3</sup>	Not Available	Not Available	Not Available

EMERGENCY LIMITS

Ingredient	Material name	TEEL-1	TEEL-2	TEEL-3
titanium dioxide	Titanium oxide; (Titanium dioxide)	10 mg/m <sup>3</sup>	10 mg/m <sup>3</sup>	10 mg/m <sup>3</sup>

Ingredient	Original IDLH	Revised IDLH
Glycol ether solvents	Not Available	Not Available
Alcohol solvent series	Not Available	Not Available
titanium dioxide	N.E. mg/m <sup>3</sup> / N.E. ppm	5,000 mg/m <sup>3</sup>
Organic ingredient	Not Available	Not Available
methyldiethanolamine	Not Available	Not Available

Exposure Controls

Appropriate : Local exhaust ventilation usually required.

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Engineering Controls : Provide adequate ventilation in warehouse or closed storage area.

### Personal protection

Eye and face : Safety glasses with side shields.

protection : Chemical goggles.

Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants.

Hands/feet protection : Wear chemical protective gloves, e.g. PVC.

Wear safety footwear or safety gumboots, e.g. Rubber

Body protection : P.V.C. apron.

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

Thermal hazards : Not Available.



## 9. Physical and Chemical Properties

[Information on basic physical and chemical properties]

Appearance - Physical State : liquid

- Color : white

Odor : Slight

Odour threshold : Not Available

pH (as supplied) : 8.8-9.8

Melting point / freezing point (°C) : Not Available

Initial boiling point and boiling range (°C) : Not Available

Flash point (°C) : Not Available

Evaporation rate : Not Available

Flammability : Not Available

Upper Explosive Limit (%) : Not Available

Lower Explosive Limit (%) : Not Available

Vapour pressure (kPa) : Not Available

Solubility in water (g/L) : Not Available

Vapour density (Air = 1) : Not Available

Relative density (Water = 1) : 1.07-1.09

Partition coefficient n-octanol / water : Not Available

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Auto-ignition temperature (°C)	: Not Available
Decomposition temperature	: Not Available
Viscosity (cSt)	: Not Available
Molecular weight (g/mol)	: Not Available
Taste	: Not Available
Explosive properties	: Not Available
Oxidising properties	: Not Available
Surface Tension (dyn/cm or mN/m)	: Not Available
Volatile Component (%vol)	: Not Available
Gas group	: Not Available
pH as a solution (1%)	: Not Available
VOC g/L	: Not Available

### 10. Stability and Reactivity

Reactivity	: Stable under normal conditions of use.
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	: See section 7
Incompatible Materials	: See section 7
Hazardous	: See section 5
Decomposition	

### 11. Toxicological Information

#### Acute Toxicity

	TOXICITY	IRRITATION
As a product	Not Available	Not Available
titanium dioxide	Inhalation (rat) LC50: >2.28 mg/l/4hr	Skin (human): 0.3 mg /3D (int)-mild
	Inhalation (rat) LC50: >3.56 mg/l/4hr	
	Inhalation (rat) LC50: >6.82 mg/l/4hr	
	Inhalation (rat) LC50: 3.43 mg/l/4hr	
	Inhalation (rat) LC50: 5.09 mg/l/4hr	
	Oral (rat) LD50: >2000 mg/kg[	



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methyldiethanolamine	Dermal (rabbit) LD50: >2000 mg/kg	Eye (rabbit) 20 mg open - irrit.
	Oral (rat) LD50: 1945 mg/kg	Skin (rabbit) 10 mg/24H open-mild
		Skin (rabbit) 502 mg open - mild

### [Information on toxicological effects]

- Inhaled** : The material can cause respiratory irritation in some persons. The body's response to such irritation can cause further lung damage.  
 Inhalation of vapours may cause drowsiness and dizziness. This may be accompanied by sleepiness, reduced alertness, loss of reflexes, lack of co-ordination, and vertigo.  
 Inhalation of vapours or aerosols (mists, fumes), generated by the material during the course of normal handling, may be damaging to the health of the individual.
- Ingestion** : Accidental ingestion of the material may be damaging to the health of the individual.
- Skin Contact** : This material can cause inflammation of the skin on contact in some persons.  
 The material may accentuate any pre-existing dermatitis condition  
 Skin contact is not thought to have harmful health effects (as classified under EC Directives); the material may still produce health damage following entry through wounds, lesions or abrasions.  
 Open cuts, abraded or irritated skin should not be exposed to this material  
 Entry into the blood-stream, through, for example, cuts, abrasions or lesions, may produce systemic injury with harmful effects. Examine the skin prior to the use of the material and ensure that any external damage is suitably protected.
- Eye** : This material can cause eye irritation and damage in some persons.
- Chronic** : Studies show that inhaling this substance for over a long period (e.g. in an occupational setting) may increase the risk of cancer.  
 Long-term exposure to respiratory irritants may result in disease of the airways involving difficult breathing and related systemic problems.  
 Substance accumulation, in the human body, may occur and may

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cause some concern following repeated or long-term occupational exposure.

There has been concern that this material can cause cancer or mutations, but there is not enough data to make an assessment.

Some glycol esters and their ethers cause wasting of the testicles, reproductive changes, infertility and changes to kidney function.

Shorter chain compounds are more dangerous.

Medical Conditions : TITANIUM DIOXIDE

Aggravated by Exposure The material may produce moderate eye irritation leading to inflammation. Repeated or prolonged exposure to irritants may produce conjunctivitis.

WARNING: This substance has been classified by the IARC as Group 2B: Possibly Carcinogenic to Humans.

### PRODUCT & METHYLDIETHANOLAMINE

Asthma-like symptoms may continue for months or even years after exposure to the material ceases.

This may be due to a non-allergenic condition known as reactive airways dysfunction syndrome (RADS) which can occur following exposure to high levels of highly irritating compound.

Key criteria for the diagnosis of RADS include the absence of preceding respiratory disease, in a non-atopic individual, with abrupt onset of persistent asthma-like symptoms within minutes to hours of a documented exposure to the irritant. A reversible airflow pattern, on spirometry, with the presence of moderate to severe bronchial hyperreactivity on methacholine challenge testing and the lack of minimal lymphocytic inflammation, without eosinophilia, have also been included in the criteria for diagnosis of RADS. RADS (or asthma) following an irritating inhalation is an infrequent disorder with rates related to the concentration of and duration of exposure to the irritating substance. Industrial bronchitis, on the other hand, is a disorder that occurs as result of exposure due to high concentrations of irritating substance (often particulate in nature) and is completely reversible after exposure ceases. The disorder is characterised by dyspnea, cough and mucus production.

### TITANIUM DIOXIDE & METHYLDIETHANOLAMINE

The material may cause skin irritation after prolonged or repeated exposure and may produce on contact skin redness, swelling, the

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	production of vesicles, scaling and thickening of the skin.
Skin	: Data Not Available to make classification
Irritation/Corrosion	
Serious Eye	: Category 2, as a product
Damage/Irritation	
Respiratory or Skin	: Data Not Available to make classification
sensitisation	
Mutagenicity	: Data Not Available to make classification
Carcinogenicity	: Data Not Available to make classification
Reproductivity	: Data Not Available to make classification
STOT – Single	: Category 3, as a product
Exposure	
STOT – Repeated	: Data Not Available to make classification
Exposure	
Aspiration Hazard	: Data Not Available to make classification

### 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.

#### Toxicity

Ingredient	Endpoint	Test Duration (hr)	Species	Value	Source
titanium dioxide	LC50	96	Fish	9.214mg/L	3
	EC50	72	Algae or other aquatic plants	5.83mg/L	4
	NOEC	336	Fish	0.089mg/L	4
	EC50	48	Crustacea	1.23mg/L	2
	EC50	504	Crustacea	0.46mg/L	2
methyldiethanolamine	EC50	48	Crustacea	=230mg/L	1
	EC20	96	Algae or other aquatic plants	7.4mg/L	1
	EC50	96	Algae or other aquatic plants	=20mg/L	1
	LC50	96	Fish	320mg/L	1
	NOEC	72	Algae or other aquatic	6.25mg/L	2

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

Mobility : No information available for the product.  
 Persistence and Degradability : No information available for the product.  
 Bioaccumulative Potential : No information available for the product.  
 Other Adverse Effects : No information available for the product.

## 13. Disposal Considerations

Disposal Methods : Dispose in accordance with all applicable regulations. Empty containers may contain product residue.  
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.

Land transport (UN) : NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS  
 Air transport (ICAO-IATA / DGR) : NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS  
 Sea transport (IMDG-Code / GGVSee) : NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS  
 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]

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Chemical Name	Regulatory
TITANIUM DIOXIDE(13463-67-7)	International Agency for Research on Cancer (IARC) – Agents Classified by the IARC Monographs Singapore Permissible Exposure Limits of Toxic Substances
METHYLDIETHANOLAMINE (105-59-9)	Not Applicable

### [National Inventory]

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 (see specific ingredients in brackets)

### 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.

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