

Safety Data Sheets

1. Identification

Product Name : Latex ink LX101 Green
Order No. : LX101-G-60
General Use : Ink for ink jet printer
Product Description : Aqueous ink
SDS Number : 037-W352468
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

H319 Causes serious eye irritation.

Safety Data Sheets

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	28-32	Not Available
2	Glycol ether solvents	10-20	Not Available
3	Pigment	1-5	Not Available
4	Organic ingredient	1-5	Not Available
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.

Safety Data Sheets

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]

Safety Data Sheets

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 (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.

Safety Data Sheets

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

Safety Data Sheets

[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

Not Available

EMERGENCY LIMITS

Ingredient	Material name	TEEL-1	TEEL-2	TEEL-3
As a Product	Not Available	Not Available	Not Available	Not Available

Ingredient	Original IDLH	Revised IDLH
Glycol ether solvents	Not Available	Not Available
Alcohol solvent series	Not Available	Not Available
Pigment	Not Available	Not Available
Organic ingredient	Not Available	Not Available
methyldiethanolamine	Not Available	Not Available

Exposure Controls

Appropriate : Local exhaust ventilation usually required.

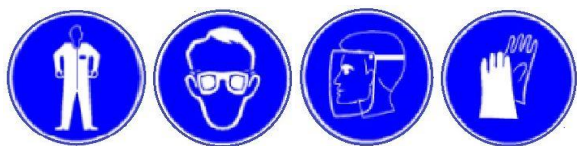
Engineering Controls Provide adequate ventilation in warehouse or closed storage area.

Personal protection

Eye and face : Safety glasses with side shields.

Safety Data Sheets

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	: Yellow
Odor		: green
Odour threshold		: Not Available
pH (as supplied)		: 9.0-10.0
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)		: 1.02-1.04
Partition coefficient n-octanol / water		: Not Available
Auto-ignition temperature (°C)		: Not Available
Decomposition temperature		: Not Available
Viscosity (cSt)		: Not Available

Safety Data Sheets

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	: Hazardous polymerisation will not occur.
Reactions	
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
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.
---------	--

Safety Data Sheets

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.

Copper poisoning following exposure to copper dusts and fume may result in headache, cold sweat and weak pulse. Capillary, kidney, liver and brain damage are the longer term manifestations of such poisoning.

Inhalation of freshly formed metal oxide particles sized below 1.5 microns and generally between 0.02 to 0.05 microns may result in "metal fume fever". Symptoms may be delayed for up to 12 hours and begin with the sudden onset of thirst, and a sweet, metallic or foul taste in the mouth. Other symptoms include upper respiratory tract irritation accompanied by coughing and a dryness of the mucous membranes, lassitude and a generalised feeling of malaise. Mild to severe headache, nausea, occasional vomiting, fever or chills, exaggerated mental activity, profuse sweating, diarrhoea, excessive urination and prostration may also occur. Tolerance to the fumes develops rapidly, but is quickly lost. All symptoms usually subside within 24-36 hours following removal from exposure.

Ingestion : Accidental ingestion of the material may be damaging to the health of the individual.

A metallic taste, nausea, vomiting and burning feeling in the upper stomach region occur after ingestion of copper and its derivatives. The vomitus is usually green/blue and discolours contaminated skin.

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.

Exposure to copper, by skin, has come from its use in pigments, ointments, ornaments, jewellery, dental amalgams and IUDs (intra-uterine devices), and in killing fungi and algae. Although copper is used in the treatment of water in swimming pools and reservoirs,

Safety Data Sheets

there are no reports of toxicity from these applications.

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.

Copper salts, in contact with the eye, may produce inflammation of the conjunctiva, or even ulceration and cloudiness of the cornea.

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

There is some evidence from animal testing that exposure to this material may result in toxic effects to the unborn baby.

Copper has fairly low toxicity. Some rare hereditary conditions (Wilson disease or hepatolenticular degeneration) can lead to accumulation of copper on exposure, causing irreversible damage to a variety of organs (liver, kidney, CNS, bone, vision) and lead to death.

Chronic intoxication with ionic bromides, historically, has resulted from medical use of bromides but not from environmental or occupational exposure; depression, hallucinosis, and schizophreniform psychosis can be seen in the absence of other signs of intoxication. Bromides may also induce sedation, irritability, agitation, delirium, memory loss, confusion, disorientation, forgetfulness (aphasias), dysarthria, weakness, fatigue, vertigo, stupor, coma, decreased appetite, nausea and vomiting, diarrhoea, hallucinations, an acne like rash on the face, legs and trunk, known as bronchoderma (seen in 25-30% of case involving bromide ion), and a profuse discharge from the nostrils (coryza). Ataxia and generalised hyperreflexia have also been observed. Correlation of neurologic symptoms with blood levels of bromide is inexact. The use of substances such as brompheniramine, as antihistamines, largely reflect current day usage of bromides; ionic bromides have been largely withdrawn from therapeutic use due to

Safety Data Sheets

their toxicity.

In test animals, brominated vegetable oils (BVOs), historically used as emulsifiers in certain soda-based soft drinks, produced damage to the heart and kidneys in addition to increasing fat deposits in these organs. In extreme cases BVO caused testicular damage, stunted growth and produced lethargy and fatigue.

Brominism produces slurred speech, apathy, headache, decreased memory, anorexia and drowsiness, psychosis resembling paranoid schizophrenia, and personality changes

Several cases of foetal abnormalities have been described in mothers who took large doses of bromides during pregnancy.

Reproductive effects caused by bromide (which crosses the placenta) include central nervous system depression, brominism, and bronchoderma in the newborn.

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 : METHYLDIETHANOLAMINE

Aggravated by Exposure The material may cause skin irritation after prolonged or repeated exposure and may produce on contact skin redness, swelling, the production of vesicles, scaling and thickening of the skin.

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.

Safety Data Sheets

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.

Skin	: Data Not Available to make classification
Irritation/Corrosion	
Serious Eye	: Category 2, as a product
Damage/Irritation	
Respiratory or Skin sensitisation	: Data Not Available to make classification
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
methyldiethanolamine	LC50	96	Fish	320mg/L	1
	EC50	48	Crustacea	=230mg/L	1
	EC50	96	Algae or other aquatic plants	=20mg/L	1
	EC20	96	Algae or other aquatic plants	=7.4mg/L	1
	NOEC	72	Algae or other aquatic plants	6.25mg/L	2

Legend: Extracted from 1. IUCLID Toxicity Data 2. Europe ECHA Registered Substances - Ecotoxicological

Safety Data Sheets

Information - Aquatic Toxicity

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]

Chemical Name	Regulatory
METHYLDIETHANOLAMINE (105-59-9)	Not Applicable

Safety Data Sheets

[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.

Mimaki Engineering Corporation assumes no legal responsibility for use or reliance upon this information.