NINGBO LUCKY CHEMICAL INDUSTRY CO., LTD

Material Safety Data Sheet

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1 - Product and Company Information

Product Name	TRIISOPROPANOLAMINE
Formula	C9H21NO3
Molecular Weight	191.27 AMU
Synonyms	1,1',1''-Nitrilotri-2-propanol Triisopropanolamine Tris(2-hydroxypropyl)amine Tris(2-hydroxy-1-propyl)amine
Company:	NINGBO LUCKY CHEMICAL INDUSTRY CO.,LTD
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2 - Hazards Identification

SPECIAL INDICATION OF HAZARDS TO HUMANS AND THE ENVIRONMENT

Irritating to eyes. Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

3 - Composition/Information on Ingredients

Product Name	CAS #	EC no	Content
TRI-ISO-PROPANOLAMINE	122-20-3	204-528-4	≥85%
Diisopropanolamine	110-97-4		≤3.0%
Isopropanolamine	78-96-6		---
Water	7732-18-5		≤13%

4 - First Aid Measures

AFTER INHALATION

If inhaled, remove to fresh air. If not breathing give artificial respiration. If breathing is difficult, give oxygen.

AFTER SKIN CONTACT

In case of skin contact, flush with copious amounts of water for at least 15 minutes. Remove contaminated clothing and shoes. Call a physician.

AFTER EYE CONTACT

In case of contact with eyes, flush with copious amounts of water for at least 15 minutes. Assure adequate flushing by separating the eyelids with fingers. Call a physician.

AFTER INGESTION

If swallowed, wash out mouth with water provided person is conscious. Call a physician immediately.

5 - Fire Fighting Measures

EXTINGUISHING MEDIA

Suitable: Water spray. Carbon dioxide, dry chemical powder, or appropriate foam.

SPECIAL RISKS

Specific Hazard(s): Emits toxic fumes under fire conditions.

SPECIAL PROTECTIVE EQUIPMENT FOR FIREFIGHTERS

Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.

6 - Accidental Release Measures

PERSONAL PRECAUTION PROCEDURES TO BE FOLLOWED IN CASE OF LEAK OR SPILL

Evacuate area.

PROCEDURE(S) OF PERSONAL PRECAUTION(S)

Wear self-contained breathing apparatus, rubber boots, and heavy rubber gloves.

METHODS FOR CLEANING UP

Sweep up, place in a bag and hold for waste disposal. Ventilate area and wash spill site after material pickup is complete.

7 - Handling and Storage

HANDLING

Directions for Safe Handling: Do not breathe dust. Do not get in eyes, on skin, on clothing. Avoid prolonged or repeated exposure.

STORAGE

Conditions of Storage: Keep tightly closed.

SPECIAL REQUIREMENTS: Hygroscopic.

8 - Exposure Controls / Personal Protection

ENGINEERING CONTROLS

Safety shower and eye bath. Use only in a chemical fume hood.

GENERAL HYGIENE MEASURES

Wash contaminated clothing before reuse. Discard contaminated shoes. Wash thoroughly after handling.

PERSONAL PROTECTIVE EQUIPMENT

Respiratory Protection: Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU). Where risk assessment shows air-purifying respirators are appropriate use a full-face particle respirator type N100 (US) or type P3 (EN 143) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator.
Hand Protection: Compatible chemical-resistant gloves.
Eye Protection: Chemical safety goggles.

9 - Physical and Chemical Properties

Appearance	Physical State:	Colorless Liquid
Property	Value	At Temperature or Pressure
pH	10,9	20,00 °C Concentration: 100,00000 g/l
BP/BP Range	104-107°C	

Flash Point	160°C	Method: closed cup
Flammability	N/A	
Autoignition Temp	295°C	
Oxidizing Properties	N/A	
Explosive Properties	N/A	
Explosion Limits	Lower:1,400 %	
	Upper: 8,400 %	
Vapor Pressure	< 1,000000000 mmHg	20,00 °C
SG/Density	1,027 g/cm3	50,00 °C
Partition Coefficient	N/A	
Viscosity	N/A	
Vapor Density	N/A	
Saturated Vapor Conc.	N/A	
Evaporation Rate	N/A	
Bulk Density	N/A	
Decomposition Temp.	N/A	
Solvent Content	N/A	
Water Content	N/A	
Surface Tension	N/A	
Conductivity	N/A	
Miscellaneous Data	N/A	
Solubility	Solubility in Water:soluble	

10 - Stability and Reactivity

STABILITY

Stable: Stable.
Conditions to Avoid: Moisture.
Materials to Avoid: Strong oxidizing agents, Strong acids.

HAZARDOUS DECOMPOSITION PRODUCTS

Hazardous Decomposition Products: Carbon monoxide, Carbon dioxide, Nitrogen oxides.

HAZARDOUS POLYMERIZATION

Hazardous Polymerization: Will not occur

11 - Toxicological Information

ACUTE TOXICITY

LD50
Oral
Rat
4730,000000 mg/kg

Remarks: Gastrointestinal:Hypermotility, diarrhea. Behavioral:Somnolence (general depressed activity). Nutritional and Gross Metabolic:Changes in:Body temperature decrease.

LD50
Oral
Mouse
2520,000000 mg/kg
Remarks: Behavioral:Muscle contraction or spasticity.

LD50
Oral
Rabbit
11000,000000 mg/kg
Remarks: Behavioral:Muscle contraction or spasticity.

LD50
Oral
Guinea pig
1580,000000 mg/kg
Remarks: Behavioral:Somnolence (general depressed activity). Gastrointestinal:Other changes. Kidney, Ureter, Bladder:Other changes.

LD50
Skin
Mammal
> 1000,000000 mg/kg

IRRITATION DATA

Eyes
Rabbit
5,000000 mg
Remarks: Severe irritation effect

SIGNS AND SYMPTOMS OF EXPOSURE

Inhalation may result in spasm, inflammation and edema of the larynxand bronchi, chemical pneumonitis, and pulmonary edema. Symptoms of exposure may include burning sensation, coughing, wheezing, laryngitis, shortness of breath, headache, nausea, and vomiting. Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skin. To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

ROUTE OF EXPOSURE

Skin Contact: May cause skin irritation.
Skin Absorption: May be harmful if absorbed through the skin.
Eye Contact: Causes severe eye irritation.
Inhalation: May be harmful if inhaled. Material may be irritating to mucous membranes and upper respiratory tract.
Ingestion: May be harmful if swallowed.

12 - Ecological Information

No data available.

13 - Disposal Considerations

SUBSTANCE DISPOSAL

Contact a licensed professional waste disposal service to dispose of this material. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber. Observe all federal, state, and local environmental regulations.

14 - Transport Information

RID/ADR

Non-hazardous for road transport.

IMDG

Non-hazardous for sea transport.

IATA

Non-hazardous for air transport.

15 - Regulatory Information

CLASSIFICATION AND LABELING ACCORDING TO EU DIRECTIVES

ANNEX I INDEX NUMBER: 603-097-00-3
INDICATION OF DANGER: Xi
Irritant.
R-PHRASES: 36-52/53
Irritating to eyes. Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

S-PHRASES: 26-61

In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Avoid release to the

environment. Refer to special instructions/safety data sheets.

16 - Other Information

WARRANTY

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Ningbo Lucky Chemical Industry CO.,LTD,shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale.