

Material Safety Data Sheet

HAZARD WARNINGS	RISK PHRASES	PROTECTIVE CLOTHING
	Irritating to skin, eyes, and the respiratory system.	

Section I. Chemical Product and Company Identification

Chemical Name	Triisopropanolamine (mixture of isomer)		
Catalog Number	N0104	Supplier	TCI America 9211 N. Harborage St. Portland OR 1-800-423-8616
Synonym	Nitrilotripropanol		
Chemical Formula	C ₉ H ₂₁ NO ₃		
CAS Number	122-20-3	In case of Emergency Call	Chemtrec® (800) 424-9300 (U.S.) (703) 527-3887 (International)

Section II. Composition and Information on Ingredients

Chemical Name	CAS Number	Percent (%)	TLV/PEL	Toxicology Data
Triisopropanolamine (mixture of isomer)	122-20-3	Min. 95.0 (T)	Not available.	Rat LD ₅₀ (oral) 4730 mg/kg Rabbit LD ₅₀ (oral) 2520 mg/kg Rabbit LD ₅₀ (dermal) >1000 mg/kg

Section III. Hazards Identification

Acute Health Effects	Irritating to eyes and skin on contact. Inhalation causes irritation of the lungs and respiratory system. Inflammation of the eye is characterized by redness, watering, and itching. Skin inflammation is characterized by itching, scaling, reddening, or, occasionally, blistering. Follow safe industrial hygiene practices and always wear proper protective equipment when handling this compound.
Chronic Health Effects	CARCINOGENIC EFFECTS : Not available. MUTAGENIC EFFECTS : Not available. TERATOGENIC EFFECTS : Not available. DEVELOPMENTAL TOXICITY : Not available. Repeated or prolonged exposure to this compound is not known to aggravate existing medical conditions.

Section IV. First Aid Measures

Eye Contact	Check for and remove any contact lenses. In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention.
Skin Contact	In case of contact, immediately flush skin with plenty of water. Remove contaminated clothing and shoes. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention.
Inhalation	If the victim is not breathing, perform mouth-to-mouth resuscitation. Loosen tight clothing such as a collar, tie, belt or waistband. If breathing is difficult, oxygen can be administered. Seek medical attention if respiration problems do not improve.
Ingestion	INDUCE VOMITING by sticking finger in throat. Lower the head so that the vomit will not reenter the mouth and throat. Loosen tight clothing such as a collar, tie, belt or waistband. If the victim is not breathing, perform mouth-to-mouth resuscitation. Examine the lips and mouth to ascertain whether the tissues are damaged, a possible indication that the toxic material was ingested; the absence of such signs, however, is not conclusive.

Section V. Fire and Explosion Data

Flammability	May be combustible at high temperature.	Auto-Ignition	320°C (608°F)
Flash Points	160°C (320°F).	Flammable Limits	LOWER: 1.4% UPPER: 8.4%
Combustion Products	These products are toxic carbon oxides (CO, CO ₂), nitrogen oxides (NO, NO ₂).		
Fire Hazards	Not available.		
Explosion Hazards	Risks of explosion of the product in presence of mechanical impact: Not available. Risks of explosion of the product in presence of static discharge: Not available.		
Fire Fighting Media and Instructions	SMALL FIRE: Use DRY chemical powder. LARGE FIRE: Use water spray, fog or foam. DO NOT use water jet. Consult with local fire authorities before attempting large scale fire-fighting operations.		

Section VI. Accidental Release MeasuresSpill Cleanup
Instructions

Irritating material.

Use a shovel to put the material into a convenient waste disposal container. Finish cleaning the spill by rinsing any contaminated surfaces with copious amounts of water. Consult federal, state, and/or local authorities for assistance on disposal.

Section VII. Handling and StorageHandling and Storage
Information

IRRITANT. Keep away from heat. Mechanical exhaust required. When not in use, tightly seal the container and store in a dry, cool place. Avoid excessive heat and light. Do not breathe dust. Always store away from incompatible compounds such as oxidizing agents, acids, moisture.

Section VIII. Exposure Controls/Personal Protection

Engineering Controls

Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits. If user operations generate dust, fume or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit.

Personal Protection

Splash goggles. Lab coat. Dust respirator. Boots. Gloves. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product. Be sure to use a MSHA/NIOSH approved respirator or equivalent.



Exposure Limits

Not available.

Section IX. Physical and Chemical Properties

Physical state @ 20°C

Solid. (White Crystal Lumps)

Solubility

Water solubility: 1000g/l @ 20°C
Soluble in ethanol.

Specific Gravity

1.01 (water=1)

Slightly soluble in chloroform
Soluble in oxygenated and aromatic solvents.

Molecular Weight

191.27

Partition Coefficient

Log P_{ow} = -0.015

Boiling Point

190°C (374°F) @ 23 mmHg

Vapor Pressure

<1 mmHg (20°C)

Melting Point

48 to 52°C (118.4 to 125.6°F)

Vapor Density

6.6 (Air = 1)

Refractive Index

Not available.

Volatility

Not available.

Critical Temperature

Not available.

Odor

Slight Ammonia-like

Viscosity

Not available.

Taste

Not available.

Section X. Stability and Reactivity Data

Stability

This material is stable if stored under proper conditions. (See Section VII for instructions)

Conditions of Instability

Avoid excessive heat and light.

Incompatibilities

Reactive with strong oxidizing agents, strong acids, moisture.

Section XI. Toxicological Information

RTECS Number

UB8750000

Routes of Exposure

Eye Contact. Ingestion. Inhalation.

Toxicity Data

Rat LD₅₀ (oral) 4730 mg/kg
Rabbit LD₅₀ (oral) 2520 mg/kg
Rabbit LD₅₀ (dermal) >1000 mg/kg

Chronic Toxic Effects

CARCINOGENIC EFFECTS : Not available.
MUTAGENIC EFFECTS : Not available.
TERATOGENIC EFFECTS : Not available.
DEVELOPMENTAL TOXICITY Not available.
Repeated or prolonged exposure to this compound is not known to aggravate existing medical conditions.

Acute Toxic Effects

Irritating to eyes and skin on contact. Inhalation causes irritation of the lungs and respiratory system. Inflammation of the eye is characterized by redness, watering, and itching. Skin inflammation is characterized by itching, scaling, reddening, or, occasionally, blistering.
Follow safe industrial hygiene practices and always wear proper protective equipment when handling this compound.

Section XII. Ecological Information

Ecotoxicity

Not available.

Environmental Fate

Triisopropanolamine's production and use as a crosslinking agent (rubber); emulsifier/corrosion inhibitor (metal working fluids); and surfactant/solubilising agent may result in its release to the environment through various waste streams. If released to air, an estimated vapor pressure of 1.9X10⁻⁵ mm Hg @ 20 deg C indicates triisopropanolamine will exist primarily as a vapor in the ambient atmosphere. Vapor-phase triisopropanolamine will be degraded in the atmosphere by reaction with photochemically-produced hydroxyl radicals; the half-life for this reaction in air is estimated to be 3 hrs. If released to soil, triisopropanolamine is expected to have very high mobility based upon a Koc of 37. A pKa of 8.06 indicates that this compound will partially exist in the protonated form in moist soils and water, and cations adsorb to soils stronger than neutral compounds. Volatilization from moist soil surfaces is not expected to be an important fate process because cations do not volatilize and the estimated Henry's Law constant for the neutral species is 9.8X10⁻¹² atm-cu m/mole. Triisopropanolamine will not volatilize from dry soil surfaces based upon its vapor pressure. Biodegradation is not an important fate process as triisopropanolamine reached 1-46% of its theoretical BOD in 5-20 days. If released into water, triisopropanolamine is not expected to adsorb to suspended solids and sediment based upon the estimated Koc. Biodegradation is not an important fate process as triisopropanolamine reached 1-46% of its theoretical BOD in 5-20 days. Volatilization from water surfaces is not expected to be an important fate process because cations do not volatilize and based upon the Henry's Law constant of the neutral species

Section XIII. Disposal Considerations

Waste Disposal

Recycle to process, if possible. Consult your local regional authorities. You may be able to dissolve or mix material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber system. Observe all federal, state and local regulations when disposing of the substance.

Section XIV. Transport Information

DOT Classification

Not a DOT controlled material (United States).

PIN Number

Not applicable.

Proper Shipping Name

Not applicable.

Packing Group (PG)

Not applicable.

DOT Pictograms

**Section XV. Other Regulatory Information and Pictograms**TSCA Chemical Inventory
(EPA)This compound is **ON** the EPA Toxic Substances Control Act (TSCA) inventory list.WHMIS Classification
(Canada)

On DSL

EINECS Number (EEC)

204-528-4

EEC Risk Statements

R36/37/38- Irritating to eyes, respiratory system and skin.

Japanese Regulatory Data

Not available.

Section XVI. Other Information**Version 1.0****Validated on 6/17/2008.****Printed 6/17/2008.****Notice to Reader**

TCI laboratory chemicals are for research purposes only and are NOT intended for use as drugs, food additives, households, or pesticides. The information herein is believed to be correct, but does not claim to be all inclusive and should be used only as a guide. Neither the above named supplier nor any of its subsidiaries assumes any liability whatsoever for the accuracy or completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All chemical reagents must be handled with the recognition that their chemical, physiological, toxicological, and hazardous properties have not been fully investigated or determined. All chemical reagents should be handled only by individuals who are familiar with their potential hazards and who have been fully trained in proper safety, laboratory, and chemical handling procedures. Although certain hazards are described herein, we can not guarantee that these are the only hazards which exist. Our MSDS sheets are based only on data available at the time of shipping and are subject to change without notice as new information is obtained. Avoid long storage periods since the product is subject to degradation with age and may become more dangerous or hazardous. It is the responsibility of the user to request updated MSDS sheets for products that are stored for extended periods. Disposal of unused product must be undertaken by qualified personnel who are knowledgeable in all applicable regulations and follow all pertinent safety precautions including the use of appropriate protective equipment (e.g. protective goggles, protective clothing, breathing equipment, facial mask, fume hood). For proper handling and disposal, always comply with federal, state, and local regulations.