



Material Safety Data Sheet

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

Section I. Chemical Product and Company Identification

Chemical Name	N-Methyldiethanolamine		
Catalog Number	M0505	Supplier	TCI America 9211 N. Harborside St. Portland OR 1-800-423-8616
Synonym	Not available.		
Chemical Formula	C ₅ H ₁₃ NO ₂		
CAS Number	105-59-9	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
N-Methyldiethanolamine	105-59-9	Min. 99.0 (GC)	Not available.	Rat LD ₅₀ (oral) 1945 mg/kg Rabbit LD ₅₀ (dermal) 5990 µL/kg Mouse LD ₅₀ (intraperitoneal) 500 mg/kg

Section III. Hazards Identification

Acute Health Effects	Harmful if ingested or inhaled. Minimize exposure to this material. Severe overexposure can result in injury or death. 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 : Reproductive effects. Rat TDLo Skin 10 gm/kg, female 6-15 days of pregnancy TOXIC EFFECTS : Maternal Effects - Other effects 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	265 °C (509 °F)
Flash Points	140 °C (284 °F).	Flammable Limits	LOWER: 0.9% 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.		

Continued on Next Page

Emergency phone number (800) 424-9300

Section VI. Accidental Release Measures**Spill Cleanup
Instructions**

Harmful material. Irritating material.
Absorb with an inert material and put the spilled material in an appropriate waste disposal. 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 Storage**Handling and Storage
Information**

HARMFUL. 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 gas/fumes/ vapor/spray. Always store away from incompatible compounds such as oxidizing agents, acids.

Section VIII. Exposure Controls/Personal Protection**Engineering Controls**

Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapors below their respective threshold limit value. Ensure that eyewash station and safety shower is proximal to the work-station location.

Personal Protection

Splash goggles. Lab coat. Vapor 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**

Liquid. (Clear, colorless ~ light yellow.)

Solubility

Miscible with water.
Soluble in benzene.

Specific Gravity

1.04 (water=1)

Molecular Weight

119.16

Partition Coefficient

LOG P_{ow}: -1.08

Boiling Point

245 °C (473 °F)

Vapor Pressure

0.03 Pa (@ 25 °C)

Melting Point

-21 °C (-5.8 °F)

Vapor Density

4.12 (Air = 1)

Refractive Index

1.47

Volatility

Not available.

Critical Temperature

Not available.

Odor

Ammoniacal.

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 oxidizing agents, acids.

Section XI. Toxicological Information**RTECS Number**

KL7525000

Routes of Exposure

Eye Contact. Ingestion. Inhalation.

Toxicity Data

Rat LD₅₀ (oral) 1945 mg/kg
Rabbit LD₅₀ (dermal) 5990 µL/kg
Mouse LD₅₀ (intraperitoneal) 500 mg/kg

Chronic Toxic Effects

CARCINOGENIC EFFECTS : Not available.
MUTAGENIC EFFECTS : Not available.
TERATOGENIC EFFECTS : Not available.
DEVELOPMENTAL TOXICITY: Reproductive effects.
Rat TDLo Skin 10 gm/kg, female 6-15 days of pregnancy
TOXIC EFFECTS:
Maternal Effects - Other effects
Repeated or prolonged exposure to this compound is not known to aggravate existing medical conditions.

Acute Toxic Effects

Harmful if ingested or inhaled. Minimize exposure to this material. Severe overexposure can result in injury or death. 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	N-Methyldiethanolamine's production and use in the absorption of acidic gases, catalyst for polyurethane foams, pH control agent, and surfactant intermediate may result in its release to the environment through various waste streams. If released to air, a vapor pressure of 2.00X10 ⁻⁴ mm Hg at 25 deg C indicates N-methyldiethanolamine will exist solely as a vapor in the atmosphere. Vapor-phase N-methyldiethanolamine 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 4.0 hrs. N-Methyldiethanolamine does not contain chromophores that absorb at wavelengths >290 nm and therefore is not expected to be susceptible to direct photolysis by sunlight. If released to soil, N-methyldiethanolamine is expected to have very high mobility based upon an estimated Koc of 1 for the neutral species. The pKa of N-methyldiethanolamine is 8.52, indicating that this compound will partially exist in the cation form in the environment and cations generally adsorb more strongly to soils containing organic carbon and clay than their neutral counterparts. Volatilization from moist soil surfaces is not expected to be an important fate process based upon an estimated Henry's Law constant for the neutral species of 3.1X10 ⁻¹¹ atm-cu m/mole. N-Methyldiethanolamine did not biodegrade after 28 days in activated sludge, but degraded >96% after 40 days in a continuous-flow experiment where the inoculum had time to acclimate. These data indicate that biodegradation of N-methyldiethanolamine in soil and water may only be important under acclimated conditions. If released into water, N-methyldiethanolamine is not expected to adsorb to suspended solids and sediment based upon the estimated Koc. Volatilization from water surfaces is not expected to be an important fate process based upon this compound's estimated Henry's Law constant for the neutral species. An estimated BCF of 3.2 suggests the potential for bioconcentration in aquatic organisms is low. Hydrolysis is not expected to be an important environmental fate process since this compound lacks functional groups that hydrolyze under environmental conditions. Occupational exposure to N-methyldiethanolamine may occur through dermal contact with this compound at workplaces where N-methyldiethanolamine is produced or used.

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.
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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)	203-312-7
EEC Risk Statements	R20/21/22- Harmful by inhalation, in contact with skin and if swallowed. R36/37/38- Irritating to eyes, respiratory system and skin.
Japanese Regulatory Data	ENCS No. 2-300

Section XVI. Other Information

Version 1.0
Validated on 10/27/2009.
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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.