

Chemical Safety Data Sheet MSDS / SDS

N-Methyldiethanolamine

Revision Date:2026-06-06 Revision Number:1

SECTION 1: Identification of the substance/mixture and of the company/undertaking**Product identifier**

Product name : N-Methyldiethanolamine
CBnumber : CB3260193
CAS : 105-59-9
EINECS Number : 203-312-7
Synonyms : mdea,N-methyldiethanolamine

Relevant identified uses of the substance or mixture and uses advised against

Relevant identified uses : For R&D use only. Not for medicinal, household or other use.
Uses advised against : none

Company Identification

Company : Chemicalbook
Address : Building 1, Huihuang International, Shangdi 10th Street, Haidian District, Beijing
Telephone : 010-86108875

SECTION 2: Hazards identification**GHS Label elements, including precautionary statements**

Symbol(GHS)



Signal word

Warning

Precautionary statements

P337+P313 IF eye irritation persists: Get medical advice/attention.

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continuerinsing.

P280 Wear protective gloves/protective clothing/eye protection/face protection.

P264 Wash skin thoroughly after handling.

Hazard statements

H319 Causes serious eye irritation

SECTION 3: Composition/information on ingredients

Substance

Product name	: N-Methyldiethanolamine
Synonyms	: mdea,N-methyldiethanolamine
CAS	: 105-59-9
EC number	: 203-312-7
MF	: C5H13NO2
MW	: 119.16

SECTION 4: First aid measures

Eye Contact

Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Get medical attention.

Skin Contact

Wash off immediately with plenty of water for at least 15 minutes. Get medical attention immediately if symptoms occur.

Inhalation

Remove to fresh air. Get medical attention immediately if symptoms occur. If not breathing, give artificial respiration.

Ingestion

Do NOT induce vomiting. Get medical attention.

Most important symptoms and effects

No information available.

Self-Protection of the First Aider

Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination.

Notes to Physician

Treat symptomatically.

SECTION 5: Firefighting measures

Extinguishing media which must not be used for safety reasons

No information available.

Suitable	Extinguishing Media					
Water spray,	carbon dioxide (CO2),	dry chemical,	alcohol-resistant	foam.		

Specific Hazards Arising from the Chemical

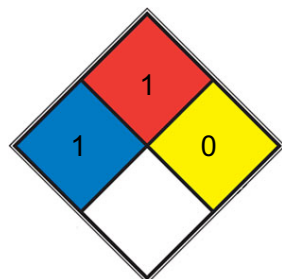
Thermal decomposition can lead to release of irritating gases and vapors.

Protective Equipment and Precautions for Firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

Thermal decomposition can lead to release of irritating gases and vapors.

NFPA 704



HEALTH 1 Exposure would cause irritation with only minor residual injury (e.g. [acetone](#), sodium bromate, potassium chloride)

Materials that require considerable preheating, under all ambient temperature conditions, before ignition and combustion

FIRE 1 can occur. Includes some finely divided suspended solids that do not require heating before ignition can occur. Flash point at or above 93.3 °C (200 °F). (e.g. [mineral oil](#), ammonia)

REACT 0 Normally stable, even under fire exposure conditions, and is not reactive with water (e.g. helium, [N₂](#))

SPEC.

HAZ.

SECTION 6: Accidental release measures

Personal Precautions

Ensure adequate ventilation. Use personal protective equipment as required.

Environmental Precautions

Should not be released into the environment. See Section 12 for additional Ecological Information. Do not flush into surface water or sanitary sewer system.

Methods for Containment and Clean Up

Soak up with inert absorbent material. Keep in suitable, closed containers for disposal.

Refer to protective measures listed in Sections 8 and 13.

SECTION 7: Handling and storage

Handling

Wear personal protective equipment/face protection. Ensure adequate ventilation. Do not get in eyes, on skin, or on clothing. Avoid ingestion and inhalation.

Storage

Keep containers tightly closed in a dry, cool and well-ventilated place.

Specific Use(s)

SECTION 8: Exposure controls/personal protection

Control Parameters

Exposure Controls

Engineering Measures

Ensure that eyewash stations and safety showers are close to the workstation location. Ensure adequate ventilation, especially in confined areas. Wherever possible, engineering control measures such as the isolation or enclosure of the process, the introduction of process or equipment changes to minimise release or contact, and the use of properly designed ventilation systems, should be adopted to control hazardous materials at source.

Personal protective equipment

Eye Protection

Goggles (European standard - EN 166)

Hand Protection

Protective gloves

Glove material Breakthrough time Glove thickness EU standard

Glove comments

Natural rubber See manufacturers -

(minimum requirement)

Nitrile rubber

recommendations EN 374

Neoprene

Inspect gloves before use.

Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves.

(Refer to manufacturer/supplier for information)

Ensure gloves are suitable for the task

Chemical compatibility, Dexterity, Operational conditions, User susceptibility, e.g.:

sensitisation effects, also take into consideration the specific local conditions under which the product is used, such as the danger

of cuts, abrasion.

Remove gloves with care avoiding skin contamination.

Skin and body protection

Wear appropriate protective gloves and clothing to prevent skin exposure

Respiratory Protection

When workers are facing concentrations above the exposure limit they must use appropriate certified respirators.

To protect the wearer, respiratory protective equipment must be the correct fit and be used and maintained properly

Large scale/emergency use

Use a NIOSH/MSHA or European Standard EN 136 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced

Recommended Filter type: Particulates filter conforming to EN 143 Ammonia and organic ammonia derivatives filter Type K Green conforming to EN14387

Small scale/Laboratory use

Use a NIOSH/MSHA or European Standard EN 149:2001 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

Recommended half mask:- Valve filtering: EN405; or; Half mask: EN140; plus filter, EN 141

When RPE is used a face piece Fit Test should be conducted

Hygiene Measures

Handle in accordance with good industrial hygiene and safety practice.

Environmental exposure controls

Prevent product from entering drains.

SECTION 9: Physical and chemical properties

Information on basic physicochemical properties

Light yellow

Physical State

Liquid

Odor

Amine compounds

Odor Threshold

No data available

pH

11.5 100g/l aq. sol

Melting Point/Range

21 °C / -5.8 °F

Softening Point

No data available

Boiling Point/Range

243 - 248 °C / 469.4 - 478.4 °F @ 760 mmHg

Flash Point

137 °C / 278.6 °F Method - No information available

Evaporation Rate

No data available

Flammability (solid,gas)

Not applicable Liquid

Explosion Limits

Explosion limits Lower 0.9 Vol%

Upper 8.4 Vol%

Vapor Pressure

0.026 mbar @ 40 °C

Vapor Density

4.0 (Air = 1.0)

Specific Gravity / Density

1.038

Bulk Density

Not applicable Liquid

Water Solubility

Miscible

Solubility in other solvents

Chloroform (Slightly), Methanol (Slightly)

Partition Coefficient (n-octanol/water)

No data available

desc_info

Component: Methyldiethanolamine log Pow: -1.08

Autoignition Temperature

280 °C / 536 °F

Decomposition Temperature

No data available

Viscosity

101 mPa s at 20 °C

Explosive Properties

No information available

Oxidizing Properties

No information available

Molecular Formula

C₅ H₁₃ N O₂

Molecular Weight

119.16

Colour

Clear colorless to light yellow

Upper/lower flammability or explosive limits

0.9-8.4%(V)

SECTION 10: Stability and reactivity

Stability

Stable under normal conditions.

Hazardous Reactions

None under normal processing.

Hazardous Polymerization

Hazardous polymerization does not occur.

Conditions to Avoid

Incompatible products. Excess heat.

Materials to avoid

Strong oxidizing agents. Strong acids. Isocyanates. copper. Aluminium. Acid anhydrides.
Acid chlorides.

Hazardous Decomposition Products

Carbon monoxide (CO). Carbon dioxide (CO₂). Nitrogen oxides (NO_x).

SECTION 11: Toxicological information

Product Information

(a) acute toxicity;

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Methyldiethanolamine	4680 mg/kg (Rat)	5990 mg/kg (Rabbit)	>6.5 mg/m ³ /6h (Rat)

(b) skin corrosion/irritation;

Based on available data, the classification criteria are not met

(c) serious eye damage/irritation;

Category 2

(d) respiratory or skin sensitization;

Respiratory

Based on available data, the classification criteria are not met

Skin

Based on available data, the classification criteria are not met

(e) germ cell mutagenicity;

Based on available data, the classification criteria are not met

Not mutagenic in AMES Test

(f) carcinogenicity;

Based on available data, the classification criteria are not met

There are no known carcinogenic chemicals in this product

(g) reproductive toxicity;

Based on available data, the classification criteria are not met

(h) STOT-single exposure;

Based on available data, the classification criteria are not met

(i) STOT-repeated exposure;

Based on available data, the classification criteria are not met

Target Organs

None known.

(j) aspiration hazard;

Based on available data, the classification criteria are not met

Symptoms / effects, both acute and delayed

No information available

SECTION 12: Ecological information

Ecotoxicity effects

Do not empty into drains. Contains a substance which is: Harmful to aquatic organisms.

The product contains following substances which are hazardous for the environment.

Component	Freshwater Fish	Water Flea	Freshwater Algae	Microtox
Methyldiethanolamine	LC50: 1466 mg/L/96h (leuciscus idus)	EC50: = 230 mg/L, 48h (Daphnia magna)	EC50: = 20 mg/L, 96h (Desmodesmus subspicatus) EC50: = 37 mg/L, 72h (Desmodesmus subspicatus)	EC50 = 410 mg/L 17 h

Persistence and Degradability

Expected to be biodegradable

Persistence

Persistence is unlikely.

Degradation in sewage

Contains substances known to be hazardous to the environment or not degradable in waste

treatment plant

water treatment plants.

Bioaccumulative Potential

Bioaccumulation is unlikely

Component	log Pow	Bioconcentration factor (BCF)
Methyldiethanolamine	-1.08	0.7-3.2

Mobility in soil

The product is water soluble, and may spread in water systems Will likely be mobile in the environment due to its water solubility Highly mobile in soils

Endocrine Disruptor Information

This product does not contain any known or suspected endocrine disruptors

Persistent Organic Pollutant

This product does not contain any known or suspected substance

Ozone Depletion Potential

This product does not contain any known or suspected substance

SECTION 13: Disposal considerations

Waste from Residues/Unused Products

Waste is classified as hazardous. Dispose of in accordance with the European Directives on waste and hazardous waste. Dispose of in accordance with local regulations.

Contaminated Packaging

Dispose of this container to hazardous or special waste collection point.

Other Information

Do not flush to sewer. Waste codes should be assigned by the user based on the application for which the product was used. Do not empty into drains. Solutions with high pH-value must be neutralized before discharge.

SECTION 14: Transport information

desc_info

Road and Rail Transport Not Regulated

IMDG/IMO Notregulated

IATA Notregulated

Special Precautions for User

No special precautions required

SECTION 15: Regulatory information

International Inventories

X = listed, China (IECSC), Europe (EINECS/ELINCS/NLP), U.S.A. (TSCA), Canada (DSL/NDL), Philippines (PICCS), Japan (ENCS), Japan (ISHL), Australia (AICS), Korea (KECL).

Component	The Inventory of Hazardous Chemicals (2015 Edition)	List of dangerous goods GB 12268 - 2012	TCSI	IECSC	EINECS	TSCA	DSL	PICCS	ENCS	ISHL	AICS	KECL
Methyldiethanolamine	-	-	X	X	203-312-7	X	X	X	X	X	X	KE-24304

National Regulations

SECTION 16: Other information

Prepared By

Creation Date

09-Jun-2010

Revision Date

14-Sep-2025

Revision Summary

Not applicable.

Training Advice

Chemical hazard awareness training, incorporating labelling, Safety Data Sheets (SDS), Personal Protective Equipment (PPE) and hygiene. Use of personal protective equipment, covering appropriate selection, compatibility, breakthrough thresholds, care, maintenance, fit and standards.

First aid for chemical exposure, including the use of eye wash and safety showers.

Legend

CAS

Chemical Abstracts Service

TSCA

United States Toxic Substances Control Act Section 8(b)

Inventory

EINECS/ELINCS

European Inventory of Existing Commercial Chemical Substances/EU List of Notified Chemical Substances

DSL/NDSL

Canadian Domestic Substances List/Non-Domestic Substances List

PICCS

Philippines Inventory of Chemicals and Chemical Substances

ENCS

Japanese Existing and New Chemical Substances

IECSC

Chinese Inventory of Existing Chemical Substances

AICS

Australian Inventory of Chemical Substances

KECL

Korean Existing and Evaluated Chemical Substances

NZIoC

New Zealand Inventory of Chemicals

WEL

Workplace Exposure Limit

TWA

Time Weighted Average

ACGIH

American Conference of Governmental Industrial Hygienists

IARC

International Agency for Research on Cancer

DNEL

Derived No Effect Level

PNEC

Predicted No Effect Concentration

RPE

Respiratory Protective Equipment

LD50

Lethal Dose 50%

LC50

Lethal Concentration 50%

EC50

Effective Concentration 50%

NOEC

No Observed Effect Concentration

POW

Partition coefficient Octanol:Water

PBT

Persistent, Bioaccumulative, Toxic

vPvB

very Persistent, very Bioaccumulative

ICAO/IATA

International Civil Aviation Organization/International Air

Transport Association

IMO/IMDG

International Maritime Organization/International Maritime

Dangerous Goods Code

ADR

European Agreement Concerning the International Carriage of

Dangerous Goods by Road

MARPOL

International Convention for the Prevention of Pollution from

Ships

OECD

Organisation for Economic Co-operation and Development

ATE

Acute Toxicity Estimate

BCF

Bioconcentration factor

VOC

(Volatile Organic Compound)

Key literature references and sources for data

<https://echa.europa.eu/information-on-chemicals>

Suppliers safety data sheet, Chemadvisor - LOLI, Merck index, RTECS

Disclaimer

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