



**SIGMA-ALDRICH**

## Material Safety Data Sheet

Date Printed: 09/03/2004  
Date Updated: 04/07/2004  
Version 1.30

### Section 1 - Product and Company Information

**Product Name** N,N-Dimethylethanolamine, redistilled, 99.5+%  
**Product Number** 391263  
**Brand** Aldrich Chemical  
**Company** Sigma-Aldrich  
**Street Address** 3050 Spruce Street  
**City, State, Zip, Country** SAINT LOUIS, MO 63103 US  
**Technical Phone:** 314 771 5765  
**Fax:** 800 325 5052  
**Emergency Phone:** 414 273 3850 Ext. 5996

### Section 2 - Composition/Information on Ingredient

Substance Name	CAS #	SARA 313	EC no	Annex I Index Number
N,N-DIMETHYLETHANOLAMINE	108-01-0	No	203-542-8	603-047-00-0

**Formula** C<sub>4</sub>H<sub>11</sub>NO  
**Synonyms** Amietol M 21, Bimanol, Deanol, Dimethylethanolamin (German), Dimethylaminoethanol (German), Dimethylaminoethanol, beta-Dimethylaminoethanol, N-Dimethylaminoethanol, N,N-Dimethylaminoethanol, 2-(Dimethylamino)ethanol, beta-Dimethylaminoethyl alcohol, N,N-Dimethylethanolamine, N,N-Dimethyl-N-(2-hydroxyethyl)amine, N,N-Dimethyl-2-hydroxyethylamine, DMAE, 2-Dimethylaminoethanol (Polish), beta-Hydroxyethylidimethylamine, Kalpur P, Liparon, Norcholine, Propamine A, Texacat DME

### Section 3 - Hazards Identification

#### Emergency Overview

Combustible (USA) Flammable (EU). Corrosive.  
Harmful by inhalation, in contact with skin and if swallowed. Causes burns. May cause sensitization by skin contact.  
Lachrymator. Target organ(s): Central nervous system.

**HMIS Rating**  
Health: 3\* Flammability: 2 Reactivity: 0

**NFPA Rating**  
Health: 3 Flammability: 2 Reactivity: 0

\*additional chronic hazards present.

For additional information on toxicity, please refer to Section 11.

### Section 4 - First Aid Measures

#### Oral Exposure

If swallowed, wash out mouth with water provided person is conscious. Call a physician. Do not induce vomiting.

#### Inhalation Exposure

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

#### Dermal Exposure

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

#### Eye Exposure

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.

### Section 5 - Fire Fighting Measures

**Flash Point:** 102 °F 39 °C  
**Explosion Limits:** Lower: 1.4 % Upper: 12.2 %  
**Autoignition Temp:** 245 °C

#### Extinguishing Media

**Suitable**  
Carbon dioxide, dry chemical powder, or appropriate foam.

#### Firefighting

##### Protective Equipment

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

##### Specific Hazard(s)

Combustible liquid.

### Section 6 - Accidental Release Measures

#### Procedure to be Followed in Case of Leak or Spill

Evacuate area. Shut off all sources of ignition.

#### Procedure(s) of Personal Precaution(s)

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

#### Methods for Cleaning Up

Cover with dry lime or soda ash, pick up, keep in a closed container, and hold for waste disposal. Ventilate area and wash spill site after material pickup is complete.

### Section 7 - Handling and Storage

#### Handling

##### User Exposure

Do not breathe vapor. Do not get in eyes, on skin, on clothing. Avoid prolonged or repeated exposure.

#### Storage

##### Suitable

Keep tightly closed. Keep away from heat and open flame. Store in a cool dry place.

#### Special Requirements

Handle and store under inert gas.

### Section 8 - Exposure Controls / PPE

#### Engineering Controls

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

#### Personal Protective Equipment

##### Respiratory

Government approved respirator.

Aldrich Chemical - 391263

Page 2

Sigma-Aldrich Corporation  
www.sigma-aldrich.com

**Hand**  
Compatible chemical-resistant gloves.  
**Eye**  
Chemical safety goggles.  
**Other**  
Faceshield (8-inch minimum).

#### General Hygiene Measures

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

### Section 9 - Physical/Chemical Properties

Appearance	Color	Odor
Physical State Clear liquid	Very faintly yellow	Fishy
Molecular Weight:	89.14 AMU	
pH	10.5 - 11	20 °C
BP/BP Range	134 - 136 °C	Concentration: 100 g/l
MP/MP Range	-70 °C	
Freezing Point	N/A	
Vapor Pressure	6.12 mmHg	20 °C
Vapor Density	3.1 g/l	
Saturated Vapor Conc.	N/A	
SG/Density	0.886 g/cm3	
Bulk Density	N/A	
Odor Threshold	N/A	
Volatile%	N/A	
VOC Content	N/A	
Water Content	N/A	
Solvent Content	N/A	
Evaporation Rate	N/A	
Viscosity	N/A	
Partition Coefficient	Log Kow: 0.55	
Decomposition Temp.	N/A	
Flash Point °F	102 °F	Method: closed cup
Flash Point °C	39 °C	Method: closed cup
Explosion Limits	Lower: 1.4 % 1.9 % Upper: 12.2 % 10 %	
Flammability	N/A	
Autoignition Temp	245 °C	
Refractive Index	1.43	
Solubility		
Solubility in Water:	Soluble.	

N/A = not available

### Section 10 - Stability and Reactivity

**Stability**  
**Stable**  
Stable.  
**Materials to Avoid**  
Oxidizing agents, Copper, Copper alloys, Zinc, Galvanized iron, Avoid contact with acid.

#### Hazardous Decomposition Products

##### Hazardous Decomposition Products

Carbon monoxide, Carbon dioxide, Nitrogen oxides.

**Hazardous Polymerization**  
**Hazardous Polymerization**  
Will not occur.

### Section 11 - Toxicological Information

#### Route of Exposure

##### Skin Contact

Causes burns.

##### Skin Absorption

Harmful if absorbed through skin.

##### Eye Contact

Causes burns. Lachrymator.

##### Inhalation

Material is extremely destructive to the tissue of the mucous membranes and upper respiratory tract. Harmful if inhaled.

##### Ingestion

Harmful if swallowed.

#### Sensitization

##### Skin

May cause allergic skin reaction.

#### Target Organ(s) or System(s)

Central nervous system.

#### Signs and Symptoms of Exposure

Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skin. Inhalation may result in spasm, inflammation and edema of the larynx and bronchi, chemical pneumonitis, and pulmonary edema. Symptoms of exposure may include burning sensation, coughing, wheezing, laryngitis, shortness of breath, headache, nausea, and vomiting.

**RTECS Number:** KK6125000

#### Toxicity Data

Oral - Rat: 2000 mg/kg (LD50)

Inhalation - Rat: 1,641 ppm (LC50)

Remarks: Sense Organs and Special Senses (Nose, Eye, Ear, and Taste): Eye: Lacrimation.

Behavioral: Ataxia.

Lungs, Thorax, or Respiration: Dyspnea.

Intraperitoneal - Rat: 1080 MG/KG (LD50)

Remarks: Biochemical: Enzyme inhibition, induction, or change in blood or tissue levels True cholinesterase.

Inhalation - Mouse: 3,250 mg/m3 (LC50)

Remarks: Brain and Coverings: Recordings from specific areas of CNS.

Sense Organs and Special Senses (Nose, Eye, Ear, and Taste): Eye: Conjunctive irritation.

Behavioral: Convulsions or effect on seizure threshold.

Intraperitoneal - Mouse: 234 MG/KG (LD50)

Remarks: Behavioral: Ataxia.

Subcutaneous - Mouse: 961 MG/KG (LD50)

Remarks: Behavioral: Tremor.

Behavioral: Coma.

Lungs, Thorax, or Respiration: Other changes.

Skin - Rabbit: 1370 UL/KG (LD50)

#### Irritation Data

Skin - Rabbit:

Remarks: Severe irritation effect

Skin - Rabbit: 445 mg

Remarks: Open irritation test

Eyes - Rabbit: 0.005 ml

Remarks: Severe irritation effect

## Section 12 - Ecological Information

### Acute Ecotoxicity Tests

#### Test Type

LC50 Fish

#### Species

Leuciscus idus

**Time:** 96.0 h  
**Value:** > 100 - 220 mg/l

#### Test Type

EC50 Daphnia

#### Species

Daphnia

**Time:** 48.0 h  
**Value:** 98.37 mg/l

#### Test Type

EC50 Algae

**Time:** 72.0 h  
**Value:** 35 mg/l

#### Test Type

LC50 Bacteria

**Time:** 17 h  
**Value:** > 8,000 mg/l

### Elimination

## Section 13 - Disposal Considerations

### Appropriate Method of Disposal of Substance or Preparation

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.

## Section 14 - Transport Information

### DOT

**Proper Shipping Name:** 2-Dimethylaminoethanol

**UN#:** 2051

**Class:** 8

**Packing Group:** Packing Group II

**Hazard Label:** Corrosive

**Hazard Label:** Flammable liquid

**PIH:** Not PIH

### IATA

**Proper Shipping Name:** 2-Dimethylaminoethanol

**IATA UN Number:** 2051

**Hazard Class:** 8

**Packing Group:** II

## Section 15 - Regulatory Information

### EU Directives Classification

**Symbol of Danger:** C

**Indication of Danger**

Corrosive.

**Risk Statements** R: 10 20/21/22 34

Flammable. Harmful by inhalation, in contact with skin and if swallowed. Causes burns.

### Safety Statements S: 25 26 36/37/39 45

Avoid contact with eyes. In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Wear suitable protective clothing, gloves, and eye/face protection. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

### US Classification and Label Text

#### Indication of Danger

Combustible (USA) Flammable (EU), Corrosive.

#### Risk Statements

Harmful by inhalation, in contact with skin and if swallowed. Causes burns. May cause sensitization by skin contact.

#### Safety Statements

Keep away from sources of ignition - no smoking. Do not breathe vapor. In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Wear suitable protective clothing, gloves, and eye/face protection.

#### US Statements

Lachrymator, Target organ(s): Central nervous system.

### United States Regulatory Information

SARA Listed: No

TSCA Inventory Item: Yes

### Canada Regulatory Information

#### WHMIS Classification

This product has been classified in accordance with the hazard criteria of the CPR, and the MSDS contains all the information required by the CPR.

DSL: Yes

NDSL: No

## Section 16 - Other Information

### Disclaimer

For R&D use only. Not for drug, household or other uses.

### 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. Sigma-Aldrich Inc., 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. Copyright 2004 Sigma-Aldrich Co. License granted to make unlimited paper copies for internal use only.

