

## SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY

### 1.1. Product Identifier

**Product Form:** Substance

**Product Name:** Diethanolamine

**CAS No:** 111-42-2

**Product Code:** VOLO10041

**Standard InChI:** InChI=1S/C4H11NO2/c6-3-1-5-2-4-7/h5-7H,1-4H2

### 1.2. Intended Use of the Product

**Use of the substance/mixture:** For laboratory research purposes.

### 1.3. Name, Address, and Telephone of the Responsible Party

#### Manufacturer

Volochem, Inc.

2600 Hilltop Dr.

Bldg B #C211

Richmond, CA 94806

T 510.748.0159

[www.volochem.com](http://www.volochem.com)

### 1.4. Emergency Telephone Number

**Emergency Number** : 510-748-0159 (9a-5p M-F)

## SECTION 2: HAZARDS IDENTIFICATION

### 2.1. Classification of the Substance or Mixture

#### Classification (GHS-US)

Acute toxicity, Oral (Category 4)

Serious eye damage (Category 1)

Acute aquatic toxicity (Category 3)

Specific organ toxicity (Category 2)

### 2.2. Label Elements

#### GHS-US Labeling

**Pictogram(s):** GHS05, GHS07, GHS08



**Signal word:** Danger

#### Hazard statement(s)

H302 Harmful if swallowed.

H318 Causes serious eye damage.

H373 May cause damage to organs through prolonged or repeated exposure.

H402 Harmful to aquatic life.

#### Precautionary statement(s)

P260 Do not breathe dust/fume/gas/mist/vapours/spray.

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P264	Wash skin thoroughly after handling.
P270	Do not eat, drink or smoke when using this product.
P273	Avoid release to the environment.
P280	Wear protective gloves/ eye protection/ face protection.
P301+P330+P310	IF SWALLOWED: Rinse mouth. Immediately call a POISON CENTER/doctor
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310	Immediately call a POISON CENTER or doctor/ physician.
P314	Get medical advice/attention if you feel unwell.
P501	Dispose of contents/ container in accordance with local/regional/national/international regulations.

### 2.3. Hazards not otherwise classified (HNOC) or not covered by GHS

No additional information available.

## SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

### 3.1. Substance

Name	Synonym(s)	Product Identifier
Diethanolamine	Bis(2-hydroxyethyl)amine 2,2'-Iminodiethanol	VOLO10041 CAS-No. 111-42-2 EC-No. 203-868-0

## SECTION 4: FIRST AID MEASURES

### 4.1. Description of First Aid Measures

#### General advice

Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

#### If inhaled

If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

#### In case of skin contact

Wash off with soap and plenty of water. Consult a physician.

#### In case of eye contact

Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

#### If swallowed

Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

### 4.2. Indication of Any Immediate Medical Attention and Special Treatment Needed

No data available

## SECTION 5: FIREFIGHTING MEASURES

### 5.1. Extinguishing Media

**Suitable Extinguishing Media:** Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

### 5.2. Special Hazards Arising From the Substance or Mixture

**Fire Hazard:** Product is flammable. Fire conditions may release toxic gases.

**Explosion Hazard:** Product is not explosive, but may form explosive vapor/air mixtures.

**Hazardous Combustion Products:** carbon oxides, nitrogen oxides

### 5.3. Advice for Firefighters

**Firefighting Instructions:** Exercise caution when fighting any chemical fire.

**Protection During Firefighting:** Do not enter fire area without proper protective equipment, including respiratory protection.

Wear self contained breathing apparatus for fire fighting if necessary.

### 5.4. NFPA Rating

Health hazard:	2
Fire:	1

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Reactivity hazard: 0

### SECTION 6: ACCIDENTAL RELEASE MEASURES

#### 6.1. Personal Precautions, Protective Equipment and Emergency Procedures

##### 6.1.1. For Non-emergency Personnel

**Protective Equipment:** Use appropriate personal protection equipment (PPE).

**Emergency Procedures:** Evacuate unnecessary personnel.

##### 6.1.2. For Emergency Responders

**Protective Equipment:** Equip cleanup crew with proper protection.

**Emergency Procedures:** Ventilate area.

#### 6.2. Environmental Precautions

Prevent entry to sewers and public waters.

#### 6.3. Methods and Material for Containment and Cleaning Up

**For Containment:** Contain and collect as any solid.

**Methods for Cleaning Up:** Collect spillage. Avoid generation of dust during clean-up of spills. Clear up spills immediately and dispose of waste safely.

### SECTION 7: HANDLING AND STORAGE

#### 7.1. Precautions for Safe Handling

Avoid contact with skin and eyes. Avoid inhalation of vapor or mist.

#### 7.2. Conditions for Safe Storage, Including Any Incompatibilities

Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage. Air sensitive.

#### 7.3. Specific End Use(s) For laboratory research purposes

### SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

#### 8.1. Control Parameters

Component	CAS-No.	Value	Control Parameters	Basis
Diethanolamine	111-42-2	TWA	3 ppm 15 mg/m3	USA. NIOSH Recommended Exposure Limits

#### 8.2. Exposure Controls

##### Appropriate Engineering Controls:

Emergency eye wash fountains should be available in the immediate vicinity of any potential exposure. Avoid high dust concentration. Ensure adequate ventilation, especially in confined areas.

##### Personal Protective Equipment:

Gloves. Protective goggles. Insufficient ventilation: wear respiratory protection.



##### Hand Protection:

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands

##### Eye Protection:

Tightly fitting safety goggles. Faceshield (8-inch minimum). Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

##### Respiratory Protection:

Where risk assessment shows air-purifying respirators are appropriate use a full-

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face respirator with multi-purpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

### Skin and body protection:

Complete suit protecting against chemicals, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

### Hygiene measures:

Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product

This recommendation is advisory only and must be evaluated by an Industrial Hygienist familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

## SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

### 9.1. Information on Basic Physical and Chemical Properties

Physical State:	liquid
Appearance:	No data available
Odor:	No data available
Odor Threshold:	No data available
pH:	11.0 - 12 at 105 g/l at 25 °C (77 °F)
Relative Evaporation Rate (butylacetate=1):	No data available
Melting Point:	Melting point/range: 28 °C (82 °F)
Boiling Point:	217 °C (423 °F) at 200 hPa (150 mmHg)
Flash Point:	138 °C (280 °F) - closed cup
Auto-ignition Temperature:	No data available
Decomposition Temperature:	No data available
Flammability (solid, gas):	No data available
Vapor Pressure:	No data available
Relative Vapor Density at 20 °C:	3.63 - (Air = 1.0)
Relative Density:	1.097 g/mL at 25 °C (77 °F)
Specific Gravity:	No data available
Solubility:	105 g/l at 20 °C (68 °F) - completely soluble
Log Pow:	2.18
Log Kow:	No data available
Viscosity, Kinematic:	No data available
Viscosity, Dynamic:	No data available
Explosive Properties:	No data available
Oxidizing Properties:	No data available
Explosive Limits:	Upper explosion limit: 10.6 %(V) Lower explosion limit: 1.6 %(V)

### 9.2. Other Information

## SECTION 10: STABILITY AND REACTIVITY

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<b>10.1 Reactivity:</b>	No data available
<b>10.2 Chemical Stability:</b>	Absorbs carbon dioxide (CO <sub>2</sub> ) from air. Stable under recommended storage conditions.
<b>10.3 Possibility of Hazardous Reactions:</b>	No data available
<b>10.4 Conditions to Avoid:</b>	No data available
<b>10.5 Incompatible Materials:</b>	Oxidizing agents, Copper, Zinc, Iron
<b>10.6 Hazardous Decomposition Products:</b>	Other decomposition products - no data available In the event of fire: see section 5

## SECTION 11: TOXICOLOGICAL INFORMATION

### 11.1. Information on Toxicological Effects

**Acute Toxicity: Oral LD50**

LD50 Oral - rat - 710 mg/kg

**Inhalation LC50**

no data available

**Dermal LD50**

LD50 Dermal - rabbit - 12,200 mg/kg

**Other information on acute toxicity**

LD50 Intraperitoneal - rat - 120 mg/kg

LD50 Intravenous - rat - 778 mg/kg

**Skin Corrosion/Irritation:**

Skin - rabbit Result: Mild skin irritation - 24 h

**Serious Eye Damage/Irritation:**

Eyes - rabbit Result: Severe eye irritation - 24 h

**Respiratory or Skin Sensitization:**

No data available

**Germ Cell Mutagenicity:**

No data available

**Carcinogenicity:**

IARC: 2B - Group 2B: Possibly carcinogenic to humans  
(Diethanolamine)

**Reproductive Toxicity:**

No data available

**Specific Target Organ Toxicity (Single Exposure):**

No data available

**Specific Target Organ Toxicity (Repeated Exposure):**

No data available

**Aspiration Hazard:**

No data available

## SECTION 12: ECOLOGICAL INFORMATION

### 12.1. Toxicity

Toxicity to fish mortality NOEC - Cyprinodon variegatus (sheepshead minnow) - 540 mg/l - 96 h

LC50 - Pimephales promelas (fathead minnow) - 1,460 mg/l - 96 h

Toxicity to daphnia and mortality NOEC - Daphnia magna (Water flea) - < 4.2 mg/l - 11 d

other aquatic invertebrates EC50 - Daphnia magna (Water flea) - 55 mg/l - 48 h

### 12.2. Persistence and Degradability

Biodegradability Result: > 90 % - Readily biodegradable.

### 12.3. Bioaccumulative Potential

No data available

### 12.4. Mobility in Soil

No data available

### 12.5. Other Adverse Effects

No data available

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### SECTION 13: DISPOSAL CONSIDERATIONS

#### 13.1. Waste treatment methods

**Waste Disposal Recommendations:** Contact a licensed professional waste disposal service to dispose of this material. Dispose of waste material in accordance with all local, regional, national, and international regulations.

### SECTION 14: TRANSPORT INFORMATION

In Accordance With ICAO/IATA/IMDG/DOT

<b>14.1. UN Number</b>	3267
<b>14.2. UN Proper Shipping Name</b>	Corrosive liquid, basic, organic, n.o.s. (Diethanolamine)
<b>14.3. Transport hazard class(es)</b>	8
<b>14.4. Packing group</b>	III
<b>14.5.1. Marine Pollutant</b>	No
<b>14.5.2. Reportable Quantity</b>	
<b>14.6.1. Toxic Inhalation Hazard</b>	No
<b>14.6.2. Mode specific comments</b>	
<b>14.6.3. Ground transportation - DOT (US)</b>	
<b>14.6.4. Marine transportation - IMDG</b>	
<b>14.6.5. Air transportation - IATA/ICAO</b>	

### SECTION 15: REGULATORY INFORMATION

#### 15.1. US Federal Regulations

##### EPA TSCA Inventory

Listed

##### SARA 302 Components

SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

##### SARA 313 Components

The following components are subject to reporting levels established by SARA Title III, Section 313:

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##### SARA 311/312 Components

Acute Health Hazard, Chronic Health Hazard

#### 15.2. US State Regulations

##### California Prop. 65 List 2014

Not listed

##### Maine Chemicals of High Concern List 2012

Not listed

##### Massachusetts Right to Know Hazardous Substance List 2014

Listed

##### New Jersey Right to Know Hazardous Substance List 2010

Listed

##### Pennsylvania Right to Know Hazardous Substance List 2010

Listed

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### SECTION 16: OTHER INFORMATION

#### 16.1. Other Classifications

##### HMIS

Health Hazard: 2

Chronic Health Hazard \*

Flammability: 1

Physical hazards: 0

Revision date : 1/3/2015

Other Information : This document has been prepared in accordance with the SDS requirements of the OSHA Hazard Communication Standard 29 CFR 1910.1200.

*Volochem chemicals are for research purposes only and are NOT intended for use as drugs, food additives, household goods, 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 affiliates or 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 cannot guarantee that these are the only hazards which exist. Our SDS 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 SDS 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, face mask, fume hood). For proper handling and disposal, always comply with federal, state and local regulations.*

SDS US (GHS HazCom) - US Only