

## Material Safety Data Sheet

Version 4.0

Revision Date 07/19/2010

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## 1. PRODUCT AND COMPANY IDENTIFICATION

Product name : Diethylamine

Product Number : D0806

Brand : Sigma-Aldrich

Company : Sigma-Aldrich  
3050 Spruce Street  
SAINT LOUIS MO 63103  
USA

Telephone : +18003255832

Fax : +18003255052

Emergency Phone # : (314) 776-6555

## 2. HAZARDS IDENTIFICATION

## Emergency Overview

## OSHA Hazards

Flammable liquid, Harmful by ingestion., Toxic by skin absorption

## Other hazards which do not result in classification

Lachrymator.

## GHS Label elements, including precautionary statements

Pictogram



Signal word Danger

Hazard statement(s)

H225 Highly flammable liquid and vapour.

H302 + H332 Harmful if swallowed or if inhaled.

H311 Toxic in contact with skin.

H314 Causes severe skin burns and eye damage.

H317 May cause an allergic skin reaction.

H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.

H402 Harmful to aquatic life.

Precautionary statement(s)

P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking.

P261 Avoid breathing dust/fume/gas/mist/vapours/spray.

P280 Wear protective gloves.

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.

## HMIS Classification

Health hazard: 3

Chronic Health Hazard: \*

Flammability: 3

Physical hazards: 0

## NFPA Rating

Health hazard: 3

Fire: 3

**Reactivity Hazard:** 0

**Potential Health Effects**

<b>Inhalation</b>	May be harmful if inhaled. May cause respiratory tract irritation.
<b>Skin</b>	Toxic if absorbed through skin. May cause skin irritation.
<b>Eyes</b>	Causes eye burns. May cause eye irritation. Causes severe eye burns.
<b>Ingestion</b>	Harmful if swallowed.

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**3. COMPOSITION/INFORMATION ON INGREDIENTS**

Formula : C<sub>4</sub>H<sub>11</sub>N  
Molecular Weight : 73.14 g/mol

CAS-No.	EC-No.	Index-No.	Concentration
<b>Diethylamine</b>			
109-89-7	203-716-3	612-003-00-X	-

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**4. 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**

Take off contaminated clothing and shoes immediately. Wash off with soap and plenty of water. Take victim immediately to hospital. Consult a physician.

**In case of eye contact**

Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician. Continue rinsing eyes during transport to hospital.

**If swallowed**

Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

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**5. FIRE-FIGHTING MEASURES**

**Suitable extinguishing media**

For small (incipient) fires, use media such as "alcohol" foam, dry chemical, or carbon dioxide. For large fires, apply water from as far as possible. Use very large quantities (flooding) of water applied as a mist or spray; solid streams of water may be ineffective. Cool all affected containers with flooding quantities of water.

**Specific hazards arising from the chemical**

Flash back possible over considerable distance. Container explosion may occur under fire conditions.

**Special protective equipment for fire-fighters**

Wear self contained breathing apparatus for fire fighting if necessary.

**Further information**

Use water spray to cool unopened containers.

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**6. ACCIDENTAL RELEASE MEASURES**

**Personal precautions**

Wear respiratory protection. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapours accumulating to form explosive concentrations. Vapours can accumulate in low areas.

**Environmental precautions**

Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

### Methods and materials for containment and cleaning up

Contain spillage, and then collect with an electrically protected vacuum cleaner or by wet-brushing and place in container for disposal according to local regulations (see section 13).

## 7. HANDLING AND STORAGE

### Precautions for safe handling

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

Use explosion-proof equipment. Keep away from sources of ignition - No smoking. Take measures to prevent the build up of electrostatic charge.

### Conditions for safe storage

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. Store in cool place.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### Components with workplace control parameters

Components	CAS-No.	Value	Control parameters	Update	Basis
Diethylamine	109-89-7	TWA	5 ppm	2007-01-01	USA. ACGIH Threshold Limit Values (TLV)
Remarks	Eye & Upper Respiratory Tract irritation Not classifiable as a human carcinogen: Agents which cause concern that they could be carcinogenic for humans but which cannot be assessed conclusively because of a lack of data. In vitro or animal studies do not provide indications of carcinogenicity which are sufficient to classify the agent into one of the other categories. Danger of cutaneous absorption				
		STEL	15 ppm	2007-01-01	USA. ACGIH Threshold Limit Values (TLV)
	Eye & Upper Respiratory Tract irritation Not classifiable as a human carcinogen: Agents which cause concern that they could be carcinogenic for humans but which cannot be assessed conclusively because of a lack of data. In vitro or animal studies do not provide indications of carcinogenicity which are sufficient to classify the agent into one of the other categories. Danger of cutaneous absorption				
		TWA	10 ppm 30 mg/m <sup>3</sup>	1989-01-19	USA. OSHA - TABLE Z-1 Limits for Air Contaminants - 1910.1000
		STEL	25 ppm 75 mg/m <sup>3</sup>	1989-01-19	USA. OSHA - TABLE Z-1 Limits for Air Contaminants - 1910.1000
		TWA	25 ppm 75 mg/m <sup>3</sup>	1997-08-04	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
	The value in mg/m <sup>3</sup> is approximate.				

### Personal protective equipment

#### Respiratory protection

Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type AXBEK (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).

#### 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).

**Skin and body protection**

Complete suit protecting against chemicals, Flame retardant antistatic protective clothing, 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.

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**9. PHYSICAL AND CHEMICAL PROPERTIES****Appearance**

Form                      liquid

**Safety data**

pH	13 at 100 g/l at 20 °C (68 °F)
Melting point	-50 °C (-58 °F)
Boiling point	55 °C (131 °F)
Flash point	-23 °C (-9 °F) - closed cup
Ignition temperature	312 °C (594 °F)
Lower explosion limit	1.8 %(V)
Upper explosion limit	10.1 %(V)
Vapour pressure	241.936 hPa (181.467 mmHg) at 20 °C (68 °F) 974.637 hPa (731.038 mmHg) at 55 °C (131 °F)
Density	0.707 g/mL at 25 °C (77 °F)
Water solubility	soluble
Partition coefficient: n-octanol/water	log Pow: 0.58
Relative vapour density	2.53 - (Air = 1.0)

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**10. STABILITY AND REACTIVITY****Chemical stability**

Stable under recommended storage conditions.

**Possibility of hazardous reactions**

Vapours may form explosive mixture with air.

**Conditions to avoid**

Heat, flames and sparks. Extremes of temperature and direct sunlight.

**Materials to avoid**

Strong oxidizing agents

**Hazardous decomposition products**

Hazardous decomposition products formed under fire conditions. - Carbon oxides, nitrogen oxides (NOx)

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**11. TOXICOLOGICAL INFORMATION****Acute toxicity**

LD50 Oral - rat - 540 mg/kg

LC50 Inhalation - rat - 4 h - 4000 ppm

LD50 Dermal - rabbit - 577 mg/kg

**Skin corrosion/irritation**

Skin - rabbit - Severe skin irritation

**Serious eye damage/eye irritation**

no data available

**Respiratory or skin sensitization**

May cause allergic respiratory and skin reactions

**Germ cell mutagenicity**

no data available

**Carcinogenicity**

This product is or contains a component that is not classifiable as to its carcinogenicity based on its IARC, ACGIH, NTP, or EPA classification.

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

ACGIH: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

**Reproductive toxicity**

no data available

**Specific target organ toxicity - single exposure (GHS)**

no data available

**Specific target organ toxicity - repeated exposure (GHS)**

no data available

**Aspiration hazard**

no data available

**Potential health effects**

<b>Inhalation</b>	May be harmful if inhaled. May cause respiratory tract irritation.
<b>Ingestion</b>	Harmful if swallowed.
<b>Skin</b>	Toxic if absorbed through skin. May cause skin irritation.
<b>Eyes</b>	Causes eye burns. May cause eye irritation. Causes severe eye burns.

**Signs and Symptoms of Exposure**

Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skin., burning sensation, Cough, wheezing, laryngitis, Shortness of breath, Headache, Nausea, Vomiting, Lachrymation

**Additional Information**

RTECS: HZ8750000

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**12. ECOLOGICAL INFORMATION****Toxicity**

Toxicity to fish	LC50 - Oncorhynchus mykiss (rainbow trout) - 25 - 198 mg/l - 96 h
	LC50 - Oncorhynchus mykiss (rainbow trout) - 25 - 198 mg/l - 96 h
Toxicity to daphnia and other aquatic invertebrates.	EC50 - Daphnia magna (Water flea) - 56 mg/l - 48 h
	EC50 - Daphnia magna (Water flea) - 56 mg/l - 48 h



**SARA 313 Components**

SARA 313: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

**SARA 311/312 Hazards**

Fire Hazard, Acute Health Hazard

**Massachusetts Right To Know Components**

Diethylamine	CAS-No. 109-89-7	Revision Date 2007-03-01
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**Pennsylvania Right To Know Components**

Diethylamine	CAS-No. 109-89-7	Revision Date 2007-03-01
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**New Jersey Right To Know Components**

Diethylamine	CAS-No. 109-89-7	Revision Date 2007-03-01
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**California Prop. 65 Components**

This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

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**16. OTHER INFORMATION****Further information**

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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 Co., 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.

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