



# Material Safety Data Sheet

NFPA	HMIS	Personal Protective Equipment						
	<table><tr><td>Health Hazard</td><td>3</td></tr><tr><td>Fire Hazard</td><td>3</td></tr><tr><td>Reactivity</td><td>0</td></tr></table>	Health Hazard	3	Fire Hazard	3	Reactivity	0	 See Section 15.
Health Hazard	3							
Fire Hazard	3							
Reactivity	0							

Section 1. Chemical Product and Company Identification			Page Number: 1
<b>Common Name/ Trade Name</b>	<b>Diethylamine</b>	<b>Catalog Number(s).</b>	DI117
<b>Manufacturer</b>	SPECTRUM CHEMICAL MFG. CORP. 14422 S. SAN PEDRO STREET GARDENA, CA 90248	<b>CAS#</b>	109-89-7
<b>Commercial Name(s)</b>	Not available.	<b>RTECS</b>	HZ8750000
<b>Synonym</b>	n-Ethyl-ethanamine	<b>TSCA</b>	TSCA 8(b) inventory: Diethylamine
<b>Chemical Name</b>	2,2'-diethylamine	<b>CI#</b>	Not applicable.
<b>Chemical Family</b>	Secondary aliphatic amine. (Alkali.)	<b>IN CASE OF EMERGENCY</b> <b>CHEMTREC (24hr) 800-424-9300</b>  CALL (310) 516-8000	
<b>Chemical Formula</b>	(CH <sub>3</sub> CH <sub>2</sub> ) <sub>2</sub> NH		
<b>Supplier</b>	SPECTRUM CHEMICAL MFG. CORP. 14422 S. SAN PEDRO STREET GARDENA, CA 90248		

Section 2. Composition and Information on Ingredients					
		Exposure Limits			
Name	CAS #	TWA (mg/m <sup>3</sup> )	STEL (mg/m <sup>3</sup> )	CEIL (mg/m <sup>3</sup> )	% by Weight
1) Diethylamine	109-89-7	30	75		100
<b>Toxicological Data on Ingredients</b>	<b>Diethylamine:</b> ORAL (LD50): Acute: 540 mg/kg [Rat]. DERMAL (LD50): Acute: 820 mg/kg [Rabbit]. VAPOR (LC50): Acute: 4000 ppm 4 hour(s) [Rat].				

Section 3. Hazards Identification	
<b>Potential Acute Health Effects</b>	Extremely hazardous in case of ingestion. Very hazardous in case of eye contact (irritant). Hazardous in case of skin contact (irritant, permeator). Slightly hazardous in case of inhalation. Inflammation of the eye is characterized by redness, watering, and itching.

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**Potential Chronic Health Effects**

Extremely hazardous in case of ingestion.  
Very hazardous in case of eye contact (irritant).  
Hazardous in case of skin contact (irritant, permeator).  
Slightly hazardous in case of inhalation.  
**CARCINOGENIC EFFECTS:** Classified A5 (Not suspected for human.) by ACGIH.  
**MUTAGENIC EFFECTS:** Not available.  
**TERATOGENIC EFFECTS:** Not available.  
**DEVELOPMENTAL TOXICITY:** Not available.

**Section 4. First Aid Measures****Eye Contact**

Check for and remove any contact lenses. Immediately flush eyes with running water for at least 15 minutes, keeping eyelids open. Finish by rinsing thoroughly with running water to avoid a possible infection. Cold water may be used.

**Skin Contact**

After contact with skin, wash immediately with plenty of water. Gently and thoroughly wash the contaminated skin with running water and non-abrasive soap. Be particularly careful to clean folds, crevices, creases and groin. Cold water may be used. Cover the irritated skin with an emollient. If irritation persists, seek medical attention. Wash contaminated clothing before reusing.

**Serious Skin Contact**

Wash with a disinfectant soap and cover the contaminated skin with an anti-bacterial cream. Seek immediate medical attention.

**Inhalation**

Allow the victim to rest in a well ventilated area. Seek immediate medical attention.

**Serious Inhalation**

Not available.

**Ingestion**

Do not induce vomiting. 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. Loosen tight clothing such as a collar, tie, belt or waistband. If the victim is not breathing, perform mouth-to-mouth resuscitation. Seek immediate medical attention.

**Serious Ingestion**

Not available.

**Section 5. Fire and Explosion Data****Flammability of the Product**

Flammable.

**Auto-Ignition Temperature**

312°C (593.6°F)

**Flash Points**

CLOSED CUP: Lower than -18°C (0°F). OPEN CUP: -28°C (-18.4°F) (Cleveland).

**Flammable Limits**

LOWER: 1.8% UPPER: 10.1%

**Products of Combustion**

These products are carbon oxides (CO, CO<sub>2</sub>), nitrogen oxides (NO, NO<sub>2</sub>...).

**Fire Hazards in Presence of Various Substances**

Highly flammable in presence of open flames and sparks, of heat, of oxidizing materials.

**Explosion Hazards in Presence of Various Substances**

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**

Flammable liquid, soluble or dispersed in water.  
SMALL FIRE: Use DRY chemical powder.  
LARGE FIRE: Use alcohol foam, water spray or fog.

**Special Remarks on Fire Hazards**

Vapor may travel considerable distance to source of ignition and flash back. When heated to decomposition it emits toxic fumes.

**Special Remarks on Explosion Hazards**

Not available.

**Section 6. Accidental Release Measures**

<b>Small Spill</b>	Dilute with water and mop up, or absorb with an inert dry material and place in an appropriate waste disposal container. If necessary: <b>Neutralize the residue with a dilute solution of acetic acid.</b> Finish cleaning by spreading water on the contaminated surface and dispose of according to local and regional authority requirements.
<b>Large Spill</b>	Flammable liquid. Keep away from heat. Keep away from sources of ignition. Stop leak if without risk. Absorb with DRY earth, sand or other non-combustible material. Do not touch spilled material. Prevent entry into sewers, basements or confined areas; dike if needed. Eliminate all ignition sources. <b>Neutralize the residue with a dilute solution of acetic acid.</b> Be careful that the product is not present at a concentration level above TLV. Check TLV on the MSDS and with local authorities.

**Section 7. Handling and Storage**

<b>Precautions</b>	Keep away from heat. Keep away from sources of ignition. Ground all equipment containing material. Do not ingest. Do not breathe gas/fumes/ vapour/spray. If ingested, seek medical advice immediately and show the container or the label. Avoid contact with skin and eyes. Keep away from incompatibles such as oxidizing agents, acids.
<b>Storage</b>	Alkalis may be stored in heavy duty gauge steel containers. Flammable materials should be stored in a separate safety storage cabinet or room. Keep away from heat. Keep away from sources of ignition. Keep container tightly closed. Keep in a cool, well-ventilated place. Ground all equipment containing material. A refrigerated room would be preferable for materials with a flash point lower than 37.8°C (100°F).

**Section 8. Exposure Controls/Personal Protection**

<b>Engineering Controls</b>	Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapors below their respective threshold limit value. Ensure that eyewash stations and safety showers are proximal to the work-station location.
<b>Personal Protection</b>	Splash goggles. Lab coat. Vapor respirator. Be sure to use an approved/certified respirator or equivalent. Gloves.
<b>Personal Protection in Case of a Large Spill</b>	Splash goggles. Full suit. Vapor respirator. Boots. Gloves. A self contained breathing apparatus should be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.
<b>Exposure Limits</b>	TWA: 10 STEL: 25 (ppm) from ACGIH (TLV) TWA: 30 STEL: 75 (mg/m <sup>3</sup> ) from ACGIH  Consult local authorities for acceptable exposure limits.

**Section 9. Physical and Chemical Properties**

<b>Physical state and appearance</b>	Liquid. (Liquid.)	<b>Odor</b>	Ammoniacal.
<b>Molecular Weight</b>	73.14 g/mole	<b>Taste</b>	Not available.
<b>pH (1% soln/water)</b>	13 [Basic.]	<b>Color</b>	Colorless.
<b>Boiling Point</b>	55.5°C (131.9°F)		
<b>Melting Point</b>	-50°C (-58°F)		
<b>Critical Temperature</b>	Not available.		
<b>Specific Gravity</b>	0.71 (Water = 1)		
<b>Vapor Pressure</b>	195 mm of Hg (@ 20°C)		
<b>Vapor Density</b>	2.5 (Air = 1)		
<b>Volatility</b>	Not available.		
<b>Odor Threshold</b>	Not available.		
<b>Water/Oil Dist. Coeff.</b>	The product is more soluble in oil; log(oil/water) = 0.6		

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<b>Diethylamine</b>		<b>Page Number: 4</b>
<b>Ionicity (in Water)</b>	Not available.	
<b>Dispersion Properties</b>	See solubility in water, methanol, diethyl ether, n-octanol.	
<b>Solubility</b>	Easily soluble in cold water, hot water. Soluble in methanol, diethyl ether, n-octanol.	

<b>Section 10. Stability and Reactivity Data</b>		
<b>Stability</b>	The product is stable.	
<b>Instability Temperature</b>	Not available.	
<b>Conditions of Instability</b>	Not available.	
<b>Incompatibility with various substances</b>	Reactive with oxidizing agents, acids.	
<b>Corrosivity</b>	Non-corrosive in presence of glass.	
<b>Special Remarks on Reactivity</b>	Not available.	
<b>Special Remarks on Corrosivity</b>	Not available.	
<b>Polymerization</b>	No.	

<b>Section 11. Toxicological Information</b>		
<b>Routes of Entry</b>	Dermal contact. Eye contact. Ingestion.	
<b>Toxicity to Animals</b>	<b>WARNING: THE LC50 VALUES HEREUNDER ARE ESTIMATED ON THE BASIS OF A 4-HOUR EXPOSURE.</b> Acute oral toxicity (LD50): 540 mg/kg [Rat.]. Acute dermal toxicity (LD50): 820 mg/kg [Rabbit.]. Acute toxicity of the vapor (LC50): 4000 ppm 4 hour(s) [Rat.].	
<b>Chronic Effects on Humans</b>	<b>CARCINOGENIC EFFECTS:</b> Classified A5 (Not suspected for human.) by ACGIH.	
<b>Other Toxic Effects on Humans</b>	Extremely hazardous in case of ingestion. Hazardous in case of skin contact (irritant, permeator). Slightly hazardous in case of inhalation.	
<b>Special Remarks on Toxicity to Animals</b>	Not available.	
<b>Special Remarks on Chronic Effects on Humans</b>	Not available.	
<b>Special Remarks on other Toxic Effects on Humans</b>	Material is destructive to tissue of the mucous membranes and upper respiratory tract.	

<b>Section 12. Ecological Information</b>		
<b>Ecotoxicity</b>	Not available.	
<b>BOD5 and COD</b>	Not available.	
<b>Products of Biodegradation</b>	Possibly hazardous short term degradation products are not likely. However, long term degradation products may arise.	
<b>Toxicity of the Products of Biodegradation</b>	The products of degradation are more toxic.	
<b>Special Remarks on the Products of Biodegradation</b>	Not available.	

**Section 13. Disposal Considerations****Waste Disposal****Section 14. Transport Information****DOT Classification** Class 3: Flammable liquid.**Identification** : Diethylamine : UN1154 PG: II**Special Provisions for Transport** Not available.**DOT (Pictograms)****Section 15. Other Regulatory Information and Pictograms**

**Federal and State Regulations**

Pennsylvania RTK: Diethylamine  
 Massachusetts RTK: Diethylamine  
 TSCA 8(b) inventory: Diethylamine  
 CERCLA: Hazardous substances.: Diethylamine

**California Proposition 65 Warnings**

**Other Regulations** OSHA: Hazardous by definition of Hazard Communication Standard (29 CFR 1910.1200).

**Other Classifications**

**WHMIS (Canada)** CLASS B-2: Flammable liquid with a flash point lower than 37.8°C (100°F).  
 CLASS D-1B: Material causing immediate and serious toxic effects (TOXIC).  
 CLASS D-2B: Material causing other toxic effects (TOXIC).

**DSCL (EEC)**

R11- Highly flammable.  
 R38- Irritating to skin.  
 R41- Risk of serious damage to eyes.

**HMIS (U.S.A.)**

Health Hazard	3
Fire Hazard	3
Reactivity	0
Personal Protection	h

**National Fire Protection Association (U.S.A.)**

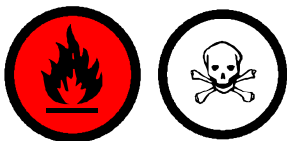
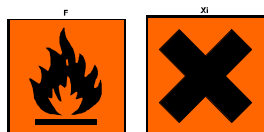
Health



Flammability

Reactivity

Specific hazard

**WHMIS (Canada) (Pictograms)****DSCL (Europe) (Pictograms)**

**TDG (Canada)  
(Pictograms)****ADR (Europe)  
(Pictograms)****Protective Equipment**

Gloves.



Lab coat.



Vapor respirator. Be sure to use an approved/certified respirator or equivalent. Wear appropriate respirator when ventilation is inadequate.



Splash goggles.

**Section 16. Other Information****MSDS Code**

D3250

**References**

-Hawley, G.G.. The Condensed Chemical Dictionary, 11e ed., New York N.Y., Van Nostrand Reinold, 1987.  
-Material safety data sheet emitted by: la Commission de la Santé et de la Sécurité du Travail du Québec.  
-SAX, N.I. Dangerous Properties of Industrial Materials. Toronto, Van Nostrand Reinold, 6e ed. 1984.  
-The Sigma-Aldrich Library of Chemical Safety Data, Edition II.  
-Guide de la loi et du règlement sur le transport des marchandises dangereuses au Canada. Centre de conformité internationale Ltée. 1986.

**Other Special  
Considerations**

Not available.

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Verified by Sonia Owen.

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CALL (310) 516-8000

**Notice to Reader**

All chemicals may pose unknown hazards and should be used with caution. This Material Safety Data Sheet (MSDS) applies only to the material as packaged. If this product is combined with other materials, deteriorates, or becomes contaminated, it may pose hazards not mentioned in this MSDS. It shall be the user's responsibility to develop proper methods of handling and personal protection based on the actual conditions of use. While this MSDS is based on technical data judged to be reliable, Spectrum Quality Products, Inc. assumes no responsibility for the completeness or accuracy of the information contained herein.