



## MATERIAL SAFETY DATA SHEET (MSDS)

### SECTION 1: Identification

#### 1.1 Product identifiers

**Product Name :** Diethylamine  
**Cat No.:** D46-1, D46-500, D46SS-50, NC9939183  
**CAS No. :** 109-89-7

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

**Recommended uses :** Laboratory chemicals  
**Uses advised against:** Food, drug, pesticide or biocidal product use.

#### 1.3 Details of the supplier of the safety data sheet

**Company :** Krishna Solvechem Limited.  
B/503, Sahayog, S. V. Road,  
Kandivali (West), Mumbai – 400067. India.  
**Telephone :** +91-22-6123 0222  
**Email :** exports@kscl.co.in

#### 1.4 Emergency telephone number

**Emergency Phone :** +91-8657457330

### SECTION 2: Hazards identification

#### 2.1 Classification

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Flammable liquids	(Category 2)
Acute oral toxicity	(Category 4)
Acute dermal toxicity	(Category 3)
Acute inhalation toxicity – vapors	(Category 4)
Skin Corrosion/Irritation	(Category 1 A)
Serious Eye Damage/Eye Irritation	(Category 1)
Specific target organ toxicity (single exposure)	(Category 3)
Target Organs - Respiratory system.	

#### 2.2 Label elements

**Pictogram :**



**Signal word** Danger

**Hazard statement (s)** Highly flammable liquid and vapor



**Precautionary statement (s)**

**Prevention**

Toxic in contact with skin  
Causes severe skin burns  
and eye damage  
May cause respiratory irritation

Wash face, hands and any exposed skin thoroughly after handling  
Wear protective gloves/protective clothing/eye protection/face protection  
Do not eat, drink or smoke when using this product  
Avoid breathing dust/fume/gas/mist/vapors/spray  
Use only outdoors or in a well-ventilated area  
Keep away from heat/sparks/open flames/hot surfaces. - No smoking

Keep container tightly closed  
Ground/bond container and receiving equipment  
Use explosion-proof electrical/ventilating/lighting/equipment  
Use only non-sparking tools  
Take precautionary measures against static discharge  
Keep cool

**Inhalation:**

IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing  
Call a POISON CENTER or doctor/physician if you feel unwell

**IF ON SKIN (or hair):**

If skin irritation occurs: Get medical advice/attention  
IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower  
Wash contaminated clothing before reuse

**Eyes:**

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing  
If eye irritation persists: Get medical advice/attention

**Ingestion:**

Do NOT induce vomiting. Rinse mouth

**Fire**

In case of fire: Use CO<sub>2</sub>, dry chemical, or foam for extinction

**Storage:**

Store locked up  
Store in a well-ventilated place.  
Keep container tightly closed



<b>Hazards not otherwise classified (HNOC)</b>	<b>Disposal:</b> Dispose of contents/container to an approved waste disposal plant None identified
--	--

**SECTION 3: Composition / information on ingredients**

**3.1**

Component	CAS-No	Weight %
Diethylamine	109-89-7	>95

**SECTION 4: First aid measures**

**4.1 Description of first aid measures**

<b>General Advice:</b>	If symptoms persist, call a physician.
<b>If inhalation :</b>	If not breathing, give artificial respiration. Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Remove to fresh air. Immediate medical attention is required.
<b>In case of skin contact :</b>	Wash off immediately with plenty of water for at least 15 minutes. If skin irritation persists, call a physician.
<b>In case of eye contact :</b>	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Get medical attention.
<b>Ingestion :</b>	Clean mouth with water and drink afterwards plenty of water.
<b>4.2 Most important symptoms and effects :</b>	Causes burns by all exposure routes. Difficulty in breathing. Inhalation of high vapor concentrations may cause symptoms like headache, dizziness, tiredness, nausea and vomiting: Ingestion causes severe swelling, severe damage to the delicate tissue and danger of perforation: Product is a corrosive material. Use of gastric lavage or emesis is contraindicated. Possible perforation of stomach or esophagus should be investigated
<b>4.3 Notes to Physician :</b>	Treat symptomatically

**SECTION 5: Firefighting effects**

**5.1 Extinguishing media**

<b>Suitable extinguishing media :</b>	Water spray, carbon dioxide (CO <sub>2</sub> ), dry chemical, alcohol-resistant foam. Water mist may be used to cool closed containers.
<b>Unsuitable Extinguishing Media: :</b>	No information available
<b>5.2 Flash Point : Method :</b>	-23 °C / -9.4 °F No information available



<b>Autoignition Temperature:</b>	312 °C / 593.6 °F
<b>Explosion Limits:</b>	
<b>Upper</b>	10.1 %
<b>Lower</b>	1.8 %
<b>Sensitivity to Mechanical Impact</b>	No information available
<b>Sensitivity to Static Discharge</b>	No information available
<b>Specific Hazards Arising from the Chemical :</b>	The product causes burns of eyes, skin and mucous membranes. Thermal decomposition can lead to release of irritating gases and vapors. Flammable. Containers may explode when heated. Vapors may form explosive mixtures with air. Vapors may travel to source of ignition and flash back.
<b>Hazardous Combustion Products :</b>	Carbon monoxide (CO). Carbon dioxide (CO <sub>2</sub> ). Nitrogen oxides

<b>5.4 Protective Equipment and Precautions for Firefighters:</b>	As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.			
<b><u>NFPA:</u></b>	<b>Health</b>	<b>Flammability</b>	<b>Instability</b>	<b>Physical hazards</b>
	3	3	0	N/A

## SECTION 6: Accidental release measures

<b>6.1 Personal precautions, protective equipment and emergency procedures</b>
Ensure adequate ventilation. Use personal protective equipment as required. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak. Remove all sources of ignition. Take precautionary measures against static discharges.
<b>6.2 Environmental precautions</b>
Should not be released into the environment. See section 12 for additional Ecological Information
<b>6.3 Methods and materials for containment and cleaning up</b>
Keep in suitable, closed containers for disposal. Soak up with inert absorbent material.

## SECTION 7: Handling and storage

<b>7.1 Precautions for safe handling</b>
Do not get in eyes, on skin, or on clothing. Wear personal protective equipment/face protection. Use only under a chemical fume hood. Do not breathe mist/vapors/spray. Do not ingest. If swallowed then seek immediate medical assistance. Use only non-sparking tools. To avoid ignition of vapors by static electricity discharge, all metal parts of the equipment must be



grounded. Take precautionary measures against static discharges.

## 7.2 Conditions for safe storage

Keep containers tightly closed in a dry, cool and well-ventilated place. Corrosives area. Keep away from heat, sparks and flame. Flammables area. Incompatible Materials. Acids. Strong oxidizing agents.

## SECTION 8: Exposure controls/personal protection

### 8.1 Exposure Guidelines

Component	ACGIH TLV	OSHA PEL	NIOSH IDLH	Mexico OEL (TWA)
Diethylamine	TWA: 5 ppm STEL: 15 ppm Skin	(Vacated) TWA: 10 ppm (Vacated) TWA: 30 mg/m <sup>3</sup> (Vacated) STEL: 25 ppm (Vacated) STEL: 75 mg/m <sup>3</sup> TWA: 25 ppm TWA: 75 mg/m <sup>3</sup>	IDLH: 200 ppm TWA: 10 ppm TWA: 30 g/m <sup>3</sup> STEL: 25 ppm STEL: 75 g/m <sup>3</sup>	TWA: 5 ppm STEL: 15 ppm

#### Engineering Measures

Use explosion-proof electrical/ventilating/lighting/equipment. Ensure that eyewash stations and safety showers are close to the workstation location. Ensure adequate ventilation, especially in confined areas.

### 8.2 Exposure controls

#### Personal protective equipment -

##### Eye / Face protection

Tight sealing safety goggles. Face protection shield

##### Skin protection and body protection

Wear appropriate protective gloves and clothing to prevent skin exposure.

##### Respiratory protection

Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

##### Hygiene Measures

Handle in accordance with good industrial hygiene and safety practice..

## SECTION 9: Physical and chemical properties

### 9.1 Information on basic physical and chemical properties

a) Appearance	Colorless Liquid
b) Odour	Fishy
c) Odour Threshold	No information available
d) pH	12.0
e) Melting point / freezing point	-50 °C / -58 °F
f) Initial boiling point and	55 - °C / 131 - 136.4 °F



<b>boiling range</b>	
<b>g) Flash point</b>	-23 °C / -9.4 °F
<b>h) Evaporation rate</b>	No information available
<b>i) Flammability (solid, gas)</b>	Not applicable
<b>j) Upper/lower flammability or explosive limits</b>	10.1% 1.8%
<b>k) Vapour pressure</b>	250 mbar @ 20 °C
<b>l) Vapour density</b>	No information available
<b>m) Specific Gravity</b>	0.710
<b>n) Solubility</b>	Soluble in water
<b>o) Partition coefficient: n octanol/water</b>	No data available
<b>p) Auto-ignition temperature</b>	312 °C / 593.6 °F
<b>q) Decomposition temperature</b>	No information available
<b>r) Viscosity</b>	No information available
<b>s) Molecular formula</b>	C4 H11 N
<b>t) Molecular Weight</b>	73.13

### SECTION 10: Stability and Reactivity

<b>10.1 Reactive Hazard :</b>	None known, based on information available
<b>10.2 Chemical stability :</b>	Stable under normal conditions.
<b>10.3 Possibility of hazardous reactions :</b>	None under normal processing.
<b>10.4 Conditions to avoid :</b>	Keep away from open flames, hot surfaces and sources of ignition. Excess heat. Exposure to light. Incompatible products.
<b>10.5 Incompatible materials:</b>	Strong agents, acids
<b>10.6 Hazardous decomposition products :</b>	Carbon monoxide (CO), Carbon dioxide (CO <sub>2</sub> ), Nitrogen oxides
<b>10.7 Hazardous Polymerization</b>	Hazardous polymerization does not occur



## SECTION 11: Toxicological information

### 11.1

#### Information on toxicological effects

#### Acute toxicity:

#### Product Information:

#### Component Information

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Diethylamine	540 mg/kg ( Rat )	LD50 = 582 mg/kg ( Rabbit )	17.3 mg/L/4h ( Rat ) 4000 ppm/4h ( Rat )

**Toxicologically Synergistic Products** No information available

#### Delayed and immediate effects as well as chronic effects from short and long-term exposure

**Irritation :** Causes burns by all exposure routes

**Sensitization:** No information available

**Carcinogenicity :** The table below indicates whether each agency has listed any ingredient as a carcinogen.

Component	CAS-No	IARC	NTP	ACGIH	OSHA	Mexico
Diethylamine	109-89-7	Not listed	Not listed	Not listed	Not listed	Not listed

**Mutagenic Effects:** Not mutagenic in AMES Test

**Reproductive Effects:** No information available.

**Developmental Effects :** No information available.

**Teratogenicity:** No information available.

**STOT - single exposure :** Respiratory system

**STOT - repeated exposure:** None known

**Aspiration hazard :** No information available.

**Symptoms / effects, both acute and delayed:** Inhalation of high vapor concentrations may cause symptoms like headache, dizziness, tiredness, nausea and vomiting: Ingestion causes severe swelling, severe damage to the delicate tissue and danger of perforation: Product is a corrosive material. Use of gastric lavage or emesis is contraindicated. Possible perforation of stomach or esophagus should be investigated

**Endocrine Disruptor Information :** No information available

**Other Adverse Effects :** The toxicological properties have not been fully investigated.



## SECTION 12: Ecological information

### 12.1

#### Ecotoxicity:

Contains a substance which is: Harmful to aquatic organisms. The product contains following substances which are hazardous for the environment.

Component	Freshwater Algae	Freshwater Fish	Microtox	Water Flea
Diethylamine	EC50: = 20 mg/L, 96h (Pseudokirchneriella subcapitata)	LC50: 100 - 180 mg/L, 96h semi-static (Poecilia reticulata) LC50: = 25 mg/L, 96h (Oncorhynchus mykiss) LC50: = 855 mg/L, 96h flow-through (Pimephales promelas)	EC50 = 21.8 mg/L 15 min EC50 = 24.8 mg/L 30 min EC50 = 27.2 mg/L 15 min EC50 = 35.0 mg/L 5 min EC50 = 47 mg/L 17 h	EC50: = 100 mg/L, 48h (Daphnia magna)

**12.2 Persistence and degradability:** Persistence is unlikely based on information Available.

**Bioaccumulation/ Accumulation** No information available

**12.3 Mobility:** Will likely be mobile in the environment due to its volatility.  
**Log pow : 0.58**

## SECTION 13: Disposal considerations

**13.1 Waste treatment methods:** Should not be released into the environment

## SECTION 14: Transport information

### 14.1 UN number :

DOT : UN1154      TDG : UN1154  
IATA : UN1154      IMDG : UN1154

### 14.2 UN proper shipping name

**DOT :** DIETHYLAMINE      **TDG :** DIETHYLAMINE  
**IMDG :** DIETHYLAMINE      **IATA :** DIETHYLAMINE

**14.3 Transport hazard class(es)**      DOT: 3      TDG: 3      IMDG: 3      IATA: 3

**14.4 Packaging group:**      DOT: II      TDG: II      IMDG: II      IATA: II

## SECTION 15: Regulatory information

### 15.1 United states of America Inventory:

Component	CAS-No	TSCA	TSCA Inventory notification Active/Inactive	TSCA - EPA Regulatory Flags
Diethylamine	109-89-7	X	ACTIVE	-

**Legend:**





**TSCA - Toxic Substances Control Act, (40 CFR Part 710)**

X - Listed

'-' - Not Listed

**TSCA 12(b) - Notices of Export** Not applicable

**International Inventories:**

Canada (DSL/NDSL), Europe (EINECS/ELINCS/NLP), Philippines (PICCS), Japan (ENCS), Japan (ISHL), Australia(AICS), China (IECSC), Korea (ECL).

Component	CAS-No	DSL	NDSL	EINECS	PICCS	ENCS	ISHL	AICS	IECSC	KECL
Diethylamine	109-89-7	X	-	203-716-3	X	X	X	X	X	KE-13688

**U.S. Federal Regulations**

**SARA 313**

Not applicable

**SARA 311/312 Hazard Categories**

See section 2 for more information

**CWA (Clean Water Act)**

Component	CWA - Hazardous Substances	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants
Diethylamine	X	100 lb	-	-

**Clean Air Act**

Not applicable

**OSHA - Occupational Safety and Health Administration**

Not applicable

**CERCLA**

This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302)

Component	Hazardous substances RQs	CERCLA EHS RQs
Diethylamine	100 lb	-

**California Proposition 65** chemicals.

This product does not contain any Proposition 65

**15.2 U.S. State Right-to-Know Regulations:**

Component	Massachusetts	New Jersey	Pennsylvania	Illinois	Rhode Island
Diethylamine	X	X	X	-	X

**U.S. Department of Transportation**

Reportable Quantity (RQ): Y



DOT Marine Pollutant N  
 DOT Severe Marine Pollutant N

**U.S. Department of Homeland Security** - This product does not contain the any DHS Chemicals.

**Other International Regulations**

**Mexico – Grade** No information available

**Safety, health and environmental regulations/legislation specific for the substance or mixture**

Component	CAS No	OECD HPV	Persistent Organic Pollutant	Ozone Depletion Potential	Restriction of Hazardous Substances (RoHS)
Diethylamine	109-89-7	Listed	Not applicable	Not applicable	Not applicable

Component	CAS No	Seveso III Directive (2012/18/EC) - Qualifying Quantities for Major Accident Notification	Seveso III Directive (2012/18/EC) - Qualifying Quantities for Safety Report Requirements	Rotterdam Convention (PIC)	Basel Convention (Hazardous Waste)
Diethylamine	109-89-7	Not applicable	Not applicable	Not applicable	Not applicable

**SECTION 16: Other information**

**16.1 Prepared By:** Regulatory affairs  
 Krishna Solvechem Limited  
**Email:** exports@kscl.co.in  
**Creation Date:** 23-Mar-2012  
**Revision Date:** 19-July-2023  
**Print Date:** 19-July-2023  
**Revision Summary:** This document has been updated to comply with the US OSHA HazCom 2012 Standard replacing the current legislation under 29 C F R 1910.1200 to align with the Globally Harmonized System of Classification and Labeling of Chemicals (GHS).

**16.2 Disclaimer:**  
 The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.