

## DIETHYLAMINE

Version number: GHS 1.0

Date of compilation: 2020-06-01

### SECTION 1: Identification

#### 1.1 Product identifier

Identification of the substance **Diethylamine**  
CAS number 109-89-7

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

Relevant identified uses Industrial use

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

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#### 1.4 Emergency telephone number

Emergency information service  
SETIQ 01-800-0021400  
CHEMTREC 800-424-9300  
Tel. (55) 5559 1588 Cd. de México.

### SECTION 2: Hazard(s) identification

#### 2.1 Classification of the substance or mixture

Classification acc. to GHS

Section	Hazard class	Category	Hazard class and category	Hazard statement
2.6	flammable liquid	2	Flam. Liq. 2	H225
3.1O	acute toxicity (oral)	4	Acute Tox. 4	H302
3.1D	acute toxicity (dermal)	3	Acute Tox. 3	H311
3.1I	acute toxicity (inhal.)	4	Acute Tox. 4	H332
3.2	skin corrosion/irritation	1A	Skin Corr. 1A	H314
3.3	serious eye damage/eye irritation	1	Eye Dam. 1	H318
3.8R	specific target organ toxicity - single exposure (respiratory tract irritation)	3	STOT SE 3	H335
4.1A	hazardous to the aquatic environment - acute hazard	3	Aquatic Acute 3	H402
4.1C	hazardous to the aquatic environment - chronic hazard	3	Aquatic Chronic 3	H412

For full text of abbreviations: see SECTION 16.

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The most important adverse physicochemical, human health and environmental effects

Skin corrosion produces an irreversible damage to the skin; namely, visible necrosis through the epidermis and into the dermis. The product is combustible and can be ignited by potential ignition sources. Spillage and fire water can cause pollution of water-courses.

### 2.2 Label elements

Labeling

- Signal word                      danger

- Pictograms

GHS02, GHS05,  
GHS06



- Hazard statements

H225                                  Highly flammable liquid and vapor.  
H302+H332                        Harmful if swallowed or if inhaled.  
H311                                  Toxic in contact with skin.  
H314                                  Causes severe skin burns and eye damage.  
H335                                  May cause respiratory irritation.  
H412                                  Harmful to aquatic life with long lasting effects.

- Precautionary statements

P210                                  Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.  
P260                                  Do not breathe dust/fume/gas/mist/vapors/spray.  
P280                                  Wear protective gloves/eye protection/face protection.  
P303+P361+P353                IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.  
P305+P351+P338                IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
P370+P378                        In case of fire: Use sand, carbon dioxide or powder extinguisher to extinguish.  
P403+P233                        Store in a well-ventilated place. Keep container tightly closed.  
P403+P235                        Store in a well-ventilated place. Keep cool.

### 2.3 Other hazards

Results of PBT and vPvB assessment

According to the results of its assessment, this substance is not a PBT or a vPvB.

## SECTION 3: Composition/information on ingredients

### 3.1 Substances

Name of substance	DIETHYLAMINE
Identifiers	
CAS No	109-89-7
Molecular formula	C <sub>4</sub> H <sub>11</sub> N
Molar mass	73.14 g/mol

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### SECTION 4: First-aid measures

#### 4.1 Description of first- aid measures

##### General notes

Do not leave affected person unattended. Remove victim out of the danger area. Keep affected person warm, still and covered. Take off immediately all contaminated clothing. In all cases of doubt, or when symptoms persist, seek medical advice. In case of unconsciousness place person in the recovery position. Never give anything by mouth.

##### Following inhalation

If breathing is irregular or stopped, immediately seek medical assistance and start first aid actions. In case of respiratory tract irritation, consult a physician. Provide fresh air.

##### Following skin contact

Wash with plenty of soap and water.

##### Following eye contact

Remove contact lenses, if present and easy to do. Continue rinsing. Irrigate copiously with clean, fresh water for at least 10 minutes, holding the eyelids apart.

##### Following ingestion

Rinse mouth with water (only if the person is conscious). Do NOT induce vomiting.

#### 4.2 Most important symptoms and effects, both acute and delayed

Symptoms and effects are not known to date.

#### 4.3 Indication of any immediate medical attention and special treatment needed

None

### SECTION 5: Fire-fighting measures

#### 5.1 Extinguishing media

##### Suitable extinguishing media

Water spray, Alcohol resistant foam, BC-powder, Carbon dioxide (CO<sub>2</sub>)

##### Unsuitable extinguishing media

Water jet

#### 5.2 Special hazards arising from the substance or mixture

In case of insufficient ventilation and/or in use, may form flammable/explosive vapor-air mixture. Solvent vapors are heavier than air and may spread along floors. Places, which are not ventilated, e.g. unventilated below ground level areas such as trenches, conduits and shafts, are particularly prone to the presence of flammable substances or mixtures.

##### Hazardous combustion products

Nitrogen oxides (NO<sub>x</sub>), Carbon monoxide (CO), Carbon dioxide (CO<sub>2</sub>)

#### 5.3 Advice for firefighters

In case of fire and/or explosion, do not breathe fumes. Co-ordinate firefighting measures to the fire surroundings. Do not allow firefighting water to enter drains or water courses. Collect contaminated firefighting water separately. Fight fire with normal precautions from a reasonable distance.

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### SECTION 6: Accidental release measures

#### 6.1 Personal precautions, protective equipment and emergency procedures

For non-emergency personnel

Remove persons to safety.

For emergency responders

Wear breathing apparatus if exposed to vapors/dust/aerosols/gases.

#### 6.2 Environmental precautions

Keep away from drains, surface and ground water. Retain contaminated washing water and dispose of it. If substance has entered a water course or sewer, inform the responsible authority.

#### 6.3 Methods and material for containment and cleaning up

Advices on how to contain a spill

Covering of drains

Advices on how to clean up a spill

Wipe up with absorbent material (e.g. cloth, fleece). Collect spillage: Sawdust, Kieselgur (diatomite), Sand, Universal binder

Appropriate containment techniques

Use of adsorbent materials.

Other information relating to spills and releases

Place in appropriate containers for disposal. Ventilate affected area.

#### 6.4 Reference to other sections

Hazardous combustion products: see section 5. Personal protective equipment: see section 8. Incompatible materials: see section 10. Disposal considerations: see section 13.

### SECTION 7: Handling and storage

#### 7.1 Precautions for safe handling

Recommendations

- Measures to prevent fire as well as aerosol and dust generation

Use local and general ventilation. Avoidance of ignition sources. Keep away from sources of ignition - No smoking. Take precautionary measures against static discharge. Use only in well-ventilated areas. Due to danger of explosion, prevent leakage of vapours into cellars, flues and ditches. Ground/bond container and receiving equipment. Use explosion-proof electrical/ventilating/lighting equipment. Use only non-sparking tools.

- Specific notes/details

Places, which are not ventilated, e.g. unventilated below ground level areas such as trenches, conduits and shafts, are particularly prone to the presence of flammable substances or mixtures. Vapors are heavier than air, spread along floors and form explosive mixtures with air. Vapors may form explosive mixtures with air.

- Handling of incompatible substances or mixtures

Do not mix with acids.

Advice on general occupational hygiene

Wash hands after use. Do not eat, drink and smoke in work areas. Remove contaminated clothing and protective equipment before entering eating areas. Never keep food or drink in the vicinity of chemicals. Never place chemicals in containers that are normally used for food or drink. Keep away from food, drink and animal feedingstuffs.

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### 7.2 Conditions for safe storage, including any incompatibilities

Managing of associated risks

- Explosive atmospheres

Keep container tightly closed and in a well-ventilated place. Use local and general ventilation. Keep cool. Protect from sunlight.

- Flammability hazards

Keep away from sources of ignition - No smoking. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Take precautionary measures against static discharge. Protect from sunlight.

- Ventilation requirements

Keep any substance that emits harmful vapors or gases in a place that allows these to be permanently extracted. Use local and general ventilation. Ground/bond container and receiving equipment.

- Packaging compatibilities

Only packaging which are approved (e.g. acc. to the Dangerous Goods Regulations) may be used.

### 7.3 Specific end use(s)

See section 16 for a general overview.

## SECTION 8: Exposure controls/personal protection

### 8.1 Control parameters

Occupational exposure limit values (Workplace Exposure Limits)

Country	Name of agent	CAS No	Identifier	TWA [ppm]	TWA [mg/m <sup>3</sup> ]	STEL [ppm]	STEL [mg/m <sup>3</sup> ]	Source
MX	Diethylamine	109-89-7	VLE	5		15		NOM-010-STPS

Notation

STEL short-term exposure limit: a limit value above which exposure should not occur and which is related to a 15-minute period unless otherwise specified

TWA time-weighted average (long-term exposure limit): measured or calculated in relation to a reference period of 8 hours time-weighted Average

### 8.2 Exposure controls

Appropriate engineering controls

General ventilation.

Individual protection measures (personal protective equipment)

Eye/face protection

Wear eye/face protection.

Skin protection

- Hand protection

Wear suitable gloves. Chemical protection gloves are suitable, which are tested according to EN 374. Check leak-tightness/impermeability prior to use. In the case of wanting to use the gloves again, clean them before taking off and air them well. For special purposes, it is recommended to check the resistance to chemicals of the protective gloves mentioned above together with the supplier of these gloves.

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**- Other protection measures**

Take recovery periods for skin regeneration. Preventive skin protection (barrier creams/ointments) is recommended. Wash hands thoroughly after handling.

**Respiratory protection**

In case of inadequate ventilation, wear respiratory protection.

**Environmental exposure controls**

Use appropriate container to avoid environmental contamination. Keep away from drains, surface and ground water.

### SECTION 9: Physical and chemical properties

#### 9.1 Information on basic physical and chemical properties

**Appearance**

Physical state	Liquid
Color	Colourless
Odor	Characteristic like amine

**Other safety parameters**

pH (value)	13 (100 g/l, 20 °C) (base)
Melting point/freezing point	-50 °C
Initial boiling point and boiling range	55.3 – 56.1 °C at 1,013 hPa
Flash point	-26 °C at 1,013 hPa
Evaporation rate	Not determined
Flammability (solid, gas)	Not relevant (fluid)

**Explosive limits**

- Lower explosion limit (LEL)	1.7 vol%
- Upper explosion limit (UEL)	10.1 vol%
Vapor pressure	316 hPa at 25 °C
Density	0.71 g/cm <sup>3</sup> at 20 °C
Vapor density	<p>RELATIVE VAPOUR DENSITY Ratio of the density to dry air at the same temperature and pressure, Value:2.53</p> <p>RELATIVE DENSITY OF THE VAPOUR-AIR-MIXTURE Ratio of the density to dry air at 20 °C and standard pressure, Value:1.38</p>

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### Solubility (ies)

- Water solubility	Miscible in any proportion
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### Partition coefficient

- n-octanol/water (log KOW)	0.58
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Auto-ignition temperature	310 °C
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Decomposition temperature	500 °C
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### Viscosity

- Dynamic viscosity	0.34 mPa s at 25 °C
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Explosive properties	None
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Oxidizing properties	None
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## 9.2 Other information

Temperature class (USA, acc. to NEC 500)	T2 (maximum permissible surface temperature on the equipment: 300°C)
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## SECTION 10: Stability and reactivity

### 10.1 Reactivity

Concerning incompatibility: see below "Conditions to avoid" and "Incompatible materials". It's a reactive substance. The mixture contains reactive substance(s). Risk of ignition.

If heated:

Risk of ignition

### 10.2 Chemical stability

See below "Conditions to avoid".

### 10.3 Possibility of hazardous reactions

No known hazardous reactions.

### 10.4 Conditions to avoid

Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

Hints to prevent fire or explosion

Use explosion-proof electrical/ventilating/lighting equipment. Use only non-sparking tools. Take precautionary measures against static discharge.

### 10.5 Incompatible materials

Risk of explosion in contact with: oxidizing agents, the substance may react dangerously with alcohols, acids, aldehydes. Esters, epoxies, glycol ethers, halogenated hydrocarbons, ketones, nitrites, nitro paraffins, phenols, acid anhydrides, cellulose nitrates. The reaction with nitrosating agents (for example, nitrites, nitrous acid, nitrous gases) can release carcinogenic nitrosamines.

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### 10.6 Hazardous decomposition products

Reasonably anticipated hazardous decomposition products produced as a result of use, storage, spill and heating are not known. Hazardous combustion products: see section 5.

## SECTION 11: Toxicological information

### 11.1 Information on toxicological effects

#### Classification acc. to GHS

##### Acute toxicity

Harmful if swallowed. Toxic in contact with skin. Harmful if inhaled.

##### - Acute toxicity estimate (ATE)

Oral	540 mg/kg
Dermal	580 mg/kg
Inhalation: vapor	12 mg/l/4h

##### Skin corrosion/irritation

Causes severe skin burns and eye damage.

##### Serious eye damage/eye irritation

Causes serious eye damage.

##### Respiratory or skin sensitization

Shall not be classified as a respiratory or skin sensitizer.

##### Germ cell mutagenicity

Shall not be classified as germ cell mutagenic.

##### Carcinogenicity

Shall not be classified as carcinogenic.

##### Reproductive toxicity

Shall not be classified as a reproductive toxicant.

##### Specific target organ toxicity - single exposure

May cause respiratory irritation.

##### Specific target organ toxicity - repeated exposure

Shall not be classified as a specific target organ toxicant (repeated exposure).

##### Aspiration hazard

Shall not be classified as presenting an aspiration hazard.

## SECTION 12: Ecological information

### 12.1 Toxicity

Harmful to aquatic life with long lasting effects.

Aquatic toxicity (acute)			
Endpoint	Value	Species	Exposure time
LC50	>25 mg/l	fish	96 h
LC50	56 mg/l	crustacean	48 h
EC50	>20 mg/l	algae	96 h



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### 12.2 Persistence and degradability

Data are not available.

### 12.3 Bioaccumulative potential

Data are not available.

n-octanol/water (log KOW)	0.58
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### 12.4 Mobility in soil

Data are not available.

### 12.5 Results of PBT and vPvB assessment

Data are not available.

### 12.6 Other adverse effects

Data are not available.

## SECTION 13: Disposal considerations

### 13.1 Waste treatment methods

Waste treatment-relevant information

Solvent reclamation/regeneration.

Sewage disposal-relevant information

Do not empty into drains. Avoid release to the environment. Refer to special instructions/safety data sheets.

Waste treatment of containers/packages

Only packaging, which are approved (e.g. acc. to the Dangerous Goods Regulations) may be used. Completely emptied packages can be recycled. Handle contaminated packages in the same way as the substance itself.

#### Remarks

Please consider the relevant national or regional provisions. Waste shall be separated into the categories that can be handled separately by the local or national waste management facilities.

## SECTION 14: Transport information

<b>14.1 UN number</b>	1154
<b>14.2 UN proper shipping name</b>	DIETHYLAMINE
<b>14.3 Transport hazard class(es)</b>	
Class	3 (flammable liquids)
Subsidiary risk(s)	8 (corrosive effects)
<b>14.4 Packing group</b>	II (substance presenting medium danger)
<b>14.5 Environmental hazards</b>	non-environmentally hazardous acc. to the dangerous goods regulations

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### 14.6 Special precautions for user

There is no additional information.

### 14.7 Transport in bulk according to Annex II of MARPOL and the IBC Code

The cargo is not intended to be carried in bulk.

#### Information for each of the UN Model Regulations

##### **Transport information - National regulations - Additional information (UN RTDG)**

UN number	1154
Proper shipping name	DIETHYLAMINE
Class	3
Subsidiary risk(s)	8
Packing group	II
Danger label(s)	3+8



Special provisions (SP)	- (UN RTDG)
Excepted quantities (EQ)	E2 (UN RTDG)
Limited quantities (LQ)	1 L (UN RTDG)

##### **International Maritime Dangerous Goods Code (IMDG)**

UN number	1154
Proper shipping name	DIETHYLAMINE
Class	3
Subsidiary risk(s)	8
Marine pollutant	-
Packing group	II
Danger label(s)	3+8



Special provisions (SP)	-
Excepted quantities (EQ)	E2
Limited quantities (LQ)	1 L
EmS	F-E, S-C
Stowage category	E

##### **International Civil Aviation Organization (ICAO-IATA/DGR)**

UN number	1154
Proper shipping name	Diethylamine
Class	3
Subsidiary risk(s)	8
Packing group	II

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Danger label(s) 3+8



Excepted quantities (EQ) E2

Limited quantities (LQ) 0.5 l

### SECTION 15: Regulatory information

#### 15.1 Safety, health and environmental regulations specific for the product in question

There is no additional information.

##### National regulations (United States)

**Toxic Substance Control Act (TSCA)** substance is listed

##### SARA TITLE III (Superfund Amendment and Reauthorization Act)

- List of Extremely Hazardous Substances (40 CFR 355) (EPCRA Section 302 and 304)

Not listed

- Specific Toxic Chemical Listings (40 CFR 372) (EPCRA Section 313)

Not listed

##### CERCLA (Comprehensive Environmental Response, Compensation, and Liability Act)

- Section 102(A) Hazardous Substances (40 CFR 302.4)

Name of substance	CAS No	Remarks	Statutory code	Final RQ pounds (Kg)
Diethylamine	109-89-7		1	100 (45,4)

##### Legend

1 "1" indicates that the statutory source is section 311(b) (2) of the Clean Water Act

##### Clean Air Act

Not listed

New Jersey Worker and Community Right to Know Act N.J.S.A. 34:5A-1 et. seq.

Right to Know Hazardous Substance List			
Name acc. to inventory	CAS No	Remarks	Classifications
Diethylamine	109-89-7		CO F3

##### Legend

CO Corrosive  
F3 Flammable - Third Degree

##### California Environmental Protection Agency (Cal/EPA): Proposition 65 Chemicals known to the State to cause cancer or reproductive toxicity

Not listed

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### National inventories

Country	Inventory	Status
CA	DSL	substance is listed
US	TSCA	substance is listed

#### Legend

DSL Domestic Substances List (DSL)  
TSCA Toxic Substance Control Act

### 15.2 Chemical Safety Assessment

No Chemical Safety Assessment has been carried out for this substance.

## SECTION 16: Other information, including date of preparation or last revision

### Abbreviations and acronyms

Abbr.	Descriptions of used abbreviations
CAS	Chemical Abstracts Service (service that maintains the most comprehensive list of chemical substances)
DGR	Dangerous Goods Regulations (see IATA/DGR)
EmS	Emergency Schedule
GHS	"Globally Harmonized System of Classification and Labelling of Chemicals" developed by the United Nations
IATA	International Air Transport Association
IATA/DGR	Dangerous Goods Regulations (DGR) for the air transport (IATA)
ICAO	International Civil Aviation Organization
IMDG	International Maritime Dangerous Goods Code
MARPOL	International Convention for the Prevention of Pollution from Ships (abbr. of "Marine Pollutant")
NOM-010-STPS	NORMA Oficial Mexicana NOM-010-STPS: Agentes químicos contaminantes del ambiente laboral- Reconocimiento, evaluación y control
PBT	Persistent, Bioaccumulative and Toxic
ppm	Parts per million
STEL	Short-term exposure limit
TWA	Time-weighted average
VLE	Permissible exposure limit
vPvB	Very Persistent and very Bioaccumulative

### Key literature references and sources for data

Norma Oficial Mexicana NOM-018-STPS-2015, Sistema armonizado para la identificación y comunicación de peligros y riesgos por sustancias químicas peligrosas en los centros de trabajo y NMX-R-019-SCFI-2011 Sistema Armonizado de Clasificación y Comunicación de Peligros de los Productos Químicos.

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UN Recommendations on the Transport of Dangerous Good. International Maritime Dangerous Goods Code (IMDG). Dangerous Goods Regulations (DGR) for the air transport (IATA).

### List of relevant phrases (code and full text as stated in chapter 2 and 3)

Code	Text
H225	Highly flammable liquid and vapor.
H302	Harmful if swallowed.
H311	Toxic in contact with skin.
H314	Causes severe skin burns and eye damage.
H318	Causes serious eye damage.
H332	Harmful if inhaled.
H335	May cause respiratory irritation.
H402	Harmful to aquatic life.
H412	Harmful to aquatic life with long lasting effects.

### Disclaimer

THIS INFORMATION IS BASED UPON CALCULATED DATA. THE COMPANY HAS NO LIABILITY FOR DAMAGES SUFFERED BY THE PURCHASER OR OTHER PERSONS IN HANDLING OF THESE MATERIALS IF SAFETY INSTRUCTIONS WERE NOT FOLLOWED. THE COMPANY HAS NO LIABILITY FOR MISUSE OF THIS MATERIAL, EVEN IF THE SAFETY INSTRUCTIONS WERE FOLLOWED. PURCHASER IS RESPONSIBLE FOR THE USE OF THIS MATERIAL. THIS SAFETY DATA SHEET IS PREPARED IN ACCORDANCE WITH THE GUIDELINES OF THE CURRENT MEXICAN OFFICIAL STANDARD. CONFIDENTIAL INFORMATION ABOUT THE COMPOSITION WAS OMITTED. THE INFORMATION IS CONSIDERED CORRECT, BUT IS NOT EXHAUSTIVE AND WILL BE USED ONLY AS A GUIDANCE, WHICH IS BASED ON THE CURRENT KNOWLEDGE OF THE CHEMICAL SUBSTANCE OR MIXTURE AND IS APPLICABLE TO THE APPROPRIATE SAFETY PRECAUTIONS FOR THE PRODUCT.