

## Safety Data Sheet

according to Regulation (EC) No 1907/2006

### Diethylamine > 99 % for synthesis

Revision date: 18.07.2023

Product code: 19881

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## SECTION 1: Identification of the substance/mixture and of the company/undertaking

### 1.1. Product identifier

Diethylamine > 99 % for synthesis

REACH Registration Number: 01-2119475610-41-XXXX  
CAS No: 109-89-7  
Index No: 612-003-00-X  
EC No: 203-716-3

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

#### Use of the substance/mixture

Laboratory chemicals

Industrial uses: Uses of substances as such or in preparations at industrial sites

Professional uses: Public domain (administration, education, entertainment, services, craftsmen)

#### Uses advised against

Do not use for private purposes (household).

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

Company name: AnalytiChem GmbH  
Street: Stempelstraße 6  
Place: D-47167 Duisburg  
Telephone: 0203/5194-0  
E-mail: info@analytichem.de  
Contact person: Abteilung Produktsicherheit  
E-mail: produktsicherheit@analytichem.de  
Internet: www.analytichem.de  
Responsible Department: Abteilung Produktsicherheit  
Telefax: 0203/5194-290  
Telephone: 0203/5194-107/117

### 1.4. Emergency telephone number:

For Hazardous Materials [or Dangerous Goods] Incidents Spill, Leak, Fire, Exposure, or Accident Call CHEMTREC Day or Night Within USA and Canada: 1-800-424-9300 Outside USA and Canada: +1 703-741-5970 (collect calls accepted)

### Further Information

No data available

## SECTION 2: Hazards identification

### 2.1. Classification of the substance or mixture

#### Regulation (EC) No 1272/2008

Flam. Liq. 2; H225  
Acute Tox. 3; H311  
Acute Tox. 4; H332  
Acute Tox. 4; H302  
Skin Corr. 1A; H314  
STOT SE 3; H335

Full text of hazard statements: see SECTION 16.

### 2.2. Label elements

#### Regulation (EC) No 1272/2008

Signal word: Danger

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#### Pictograms:



#### Hazard statements

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.
H335	May cause respiratory irritation.

#### Precautionary statements

P260	Do not breathe dust/fume/gas/mist/vapours/spray.
P280	Wear protective gloves/protective clothing/eye protection/face protection/hearing protection.
P303+P361+P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or 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.
P310	Immediately call a POISON CENTER/doctor.

#### 2.3. Other hazards

No data available

### SECTION 3: Composition/information on ingredients

#### 3.1. Substances

Sum formula:	(C <sub>2</sub> H <sub>5</sub> ) <sub>2</sub> NH
Molecular weight:	73,14 g/mol

#### Hazardous components

CAS No	Chemical name			Quantity
	EC No	Index No	REACH No	
	Classification (Regulation (EC) No 1272/2008)			
109-89-7	diethylamine			100 %
	203-716-3	612-003-00-X	01-2119475610-41-XXXX	
	Flam. Liq. 2, Acute Tox. 3, Acute Tox. 4, Acute Tox. 4, Skin Corr. 1A, STOT SE 3; H225 H311 H332 H302 H314 H335			

Full text of H and EUH statements: see section 16.

#### Specific Conc. Limits, M-factors and ATE

CAS No	EC No	Chemical name	Quantity
	Specific Conc. Limits, M-factors and ATE		
109-89-7	203-716-3	diethylamine	100 %
	inhalation: ATE = 11 mg/l (vapours); inhalation: ATE = 1,5 mg/l (dusts or mists); dermal: LD50 = 582 mg/kg; oral: LD50 = 540 mg/kg STOT SE 3; H335: >= 1 - 100		

#### Further Information

This product does not contain substances of very high concern according to Regulation (EC) No 1907/2006 (REACH), Article 57 above the respective regulatory concentration limit of = 0.1 % (w/w).

### SECTION 4: First aid measures

#### 4.1. Description of first aid measures

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#### General information

Self-protection of the first aider

#### After inhalation

Provide fresh air.

If breathing is irregular or stopped, administer artificial respiration.

Call a physician immediately.

#### After contact with skin

Wash immediately with: Water

Take off immediately all contaminated clothing and wash it before reuse.

Call a physician immediately.

#### After contact with eyes

In case of contact with eyes flush immediately with plenty of flowing water for 10 to 15 minutes holding eyelids apart and consult an ophthalmologist.

#### After ingestion

Rinse mouth immediately and drink plenty of water.

Do not allow a neutralisation agent to be drunk. Do NOT induce vomiting.

Call a physician immediately.

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

Irritant

corrosive

Dyspnoea

Risk of serious damage to eyes.

Pulmonary oedema

Gastrointestinal complaints

Vomiting

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

No data available

## SECTION 5: Firefighting measures

#### 5.1. Extinguishing media

##### Suitable extinguishing media

Foam

Carbon dioxide (CO<sub>2</sub>)

Extinguishing powder

##### Unsuitable extinguishing media

no restriction

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

Combustible liquids

Hazardous combustion products

In case of fire may be liberated:

Nitrogen oxides (NO<sub>x</sub>)

Carbon dioxide (CO<sub>2</sub>) Carbon monoxide

Vapours are heavier than air, spread along floors and form explosive mixtures with air.

Heating causes rise in pressure with risk of bursting.

Beware of reignition.

#### 5.3. Advice for firefighters

In case of fire: Wear self-contained breathing apparatus.

In case of fire and/or explosion do not breathe fumes.

Avoid contact with skin, eyes and clothes.

#### Additional information

Collect contaminated fire extinguishing water separately. Do not allow entering drains or surface water.

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Move undamaged containers from immediate hazard area if it can be done safely.  
Use water spray jet to protect personnel and to cool endangered containers.

#### SECTION 6: Accidental release measures

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

###### General advice

Keep away from sources of ignition - No smoking.  
This material can be ignited by heat, sparks, flames, or other sources of ignition (e.g., static electricity, pilot lights, mechanical/electrical equipment, and electronic devices such as cell phones, computers, calculators, and pagers which have not been certified as intrinsically safe).  
Take action to prevent static discharges.

###### For non-emergency personnel

Provide adequate ventilation.  
Use personal protection equipment.  
Avoid contact with skin, eyes and clothes.  
Remove persons to safety.  
Emergency procedures  
Do not breathe dust/fume/gas/mist/vapours/spray.

###### For emergency responders

Precautionary statements For emergency responders : Personal protection equipment: see section 8

##### 6.2. Environmental precautions

Do not allow to enter into surface water or drains.  
The vapour of the product is heavier than air and may accumulate below ground level, in pits, channels and basements in higher concentration.  
Danger of explosion

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

###### For containment

Cover drains.  
Prevent spread over a wide area (e.g. by containment or oil barriers).  
Collect in closed and suitable containers for disposal.  
Absorb with liquid-binding material (sand, diatomaceous earth, acid- or universal binding agents).

###### For cleaning up

Clean contaminated articles and floor according to the environmental legislation.

###### Other information

Provide adequate ventilation.  
Do not breathe dust/fume/gas/mist/vapours/spray.  
Wear breathing apparatus if exposed to vapours/dusts/aerosols.

##### 6.4. Reference to other sections

Safe handling: see section 7  
Personal protection equipment: see section 8  
Disposal: see section 13

#### SECTION 7: Handling and storage

##### 7.1. Precautions for safe handling

###### Advice on safe handling

Avoid exposure - obtain special instructions before use.  
Read label before use. Handle and open container with care.  
When using do not eat, drink, smoke, sniff. Keep container tightly closed.  
Use personal protection equipment. Use extractor hood (laboratory).  
Do not breathe gas/fumes/vapour/spray. Provide adequate ventilation.

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**Advice on protection against fire and explosion**

Take action to prevent static discharges. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

**Advice on general occupational hygiene**

Keep away from food, drink and animal feedingstuffs.

**Further information on handling**

Take off immediately all contaminated clothing and wash it before reuse.

Draw up and observe skin protection programme. Wash hands and face before breaks and after work and take a shower if necessary. If handled uncovered, arrangements with local exhaust ventilation have to be used.

Store in a place accessible by authorized persons only.

**7.2. Conditions for safe storage, including any incompatibilities**

**Requirements for storage rooms and vessels**

Keep in a cool, well-ventilated place.

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

Unsuitable container/equipment material:

Aluminium

Zinc

Tin

**Further information on storage conditions**

Keep container tightly closed.

Keep cool. Protect from sunlight.

storage temperature < +30°C

**7.3. Specific end use(s)**

Laboratory chemicals

**SECTION 8: Exposure controls/personal protection**

**8.1. Control parameters**

**Occupational exposure limits**

CAS No	Substance	ppm	mg/m <sup>3</sup>	fib/cm <sup>3</sup>	Category	Origin
109-89-7	Diethylamine	5	15		TWA (8 h)	
		10	30		STEL (15 min)	

**DNEL/DMEL values**

CAS No	Substance	Exposure route	Effect	Value
109-89-7	diethylamine			
Worker DNEL, long-term		inhalation	local	15 mg/m <sup>3</sup>
Worker DNEL, acute		inhalation	local	30 mg/m <sup>3</sup>

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**PNEC values**

CAS No	Substance	Value
Environmental compartment		
109-89-7	diethylamine	
Freshwater		0,04 mg/l
Freshwater (intermittent releases)		0,046 mg/l
Marine water		0,004 mg/l
Freshwater sediment		0,48 mg/kg
Marine sediment		0,048 mg/kg
Micro-organisms in sewage treatment plants (STP)		100 mg/l
Soil		0,072 mg/kg

**8.2. Exposure controls**

**Appropriate engineering controls**

Technical measures and the application of suitable work processes have priority over personal protection equipment.

If handled uncovered, arrangements with local exhaust ventilation have to be used.

**Individual protection measures, such as personal protective equipment**

**Eye/face protection**

goggles

Face protection umbrella

**Hand protection**

Protective gloves are recommended Company KCL GmbH, D-36124 Eichenzell, email: [vertrieb@kcl.de](mailto:vertrieb@kcl.de) With specification (test according to EN374):

By long-term hand contact: No data available

By short-term hand contact

Trade name/designation KCL 890 Vitoject®

Suitable material: FKM (fluoro rubber) 0,7 mm

Wearing time with occasional contact (splashes): > 120 min

The breakthrough times stated above were determined by KCL in laboratory tests acc. to EN374 with samples of the recommended glove types. This recommendation applies only to the product stated in the safety data sheet supplied by us and for the designated use. When dissolving in or mixing with other substances and under conditions deviating from those stated in EN374 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: [www.kcl.de](http://www.kcl.de)).

**Skin protection**

Take off immediately all contaminated clothing and wash it before reuse.

Wear fire resistant or flame retardant clothing.

Wash hands and face before breaks and after work and take a shower if necessary.

Draw up and observe skin protection programme.

**Respiratory protection**

Wear breathing apparatus if exposed to vapours/dusts/aerosols.

Filtering device with filter or ventilator filtering device of type: AX

**Environmental exposure controls**

Do not allow to enter into surface water or drains.

Due to danger of explosion, prevent leakage of vapours into cellars, flues and ditches.

Danger of explosion

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**SECTION 9: Physical and chemical properties**

**9.1. Information on basic physical and chemical properties**

Physical state:	Liquid
Colour:	colourless
Odour:	like: Amines
Odour threshold:	No data available
Melting point/freezing point:	-50 °C
Boiling point or initial boiling point and boiling range:	56 °C
Flammability:	No data available
Lower explosion limits:	2 vol. %
Upper explosion limits:	11,8 vol. %
Flash point:	-20 °C
Auto-ignition temperature:	290 °C
Decomposition temperature:	No data available
pH-Value (at 20 °C):	13 (100 g/l)
Viscosity / kinematic:	No data available
Water solubility: (at 20 °C)	Soluble in: Water
Solubility in other solvents	No data available
Dissolution rate:	No data available
Partition coefficient n-octanol/water:	No data available
Dispersion stability:	No data available
Vapour pressure: (at 20 °C)	253 hPa
Vapour pressure:	No data available
Density:	0,71 g/cm <sup>3</sup>
Relative density:	No data available
Bulk density:	No data available
Relative vapour density:	No data available
Particle characteristics:	No data available

**9.2. Other information**

**Information with regard to physical hazard classes**

**Explosive properties**

Vapours are heavier than air, spread along floors and form explosive mixtures with air.

Sustaining combustion: Sustaining combustion

**Self-ignition temperature**

Solid: No data available

Gas: No data available

**Oxidizing properties**

No data available

**Other safety characteristics**

Evaporation rate: No data available

Solvent separation test: No data available

Solid content: No data available

Sublimation point: No data available

Softening point: No data available

Pour point: No data available

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Viscosity / dynamic:  
(at 25 °C) 0,34 mPa·s

Flow time: No data available

#### Further Information

No data available

## SECTION 10: Stability and reactivity

### 10.1. Reactivity

Vapours may form explosive mixtures with air.

### 10.2. Chemical stability

The product is stable under storage at normal ambient temperatures.

### 10.3. Possibility of hazardous reactions

Oxidising agent  
Acids  
Alcohols  
Ketone  
aldehydes  
ester  
Nitriles  
Phenols  
mercury (Hg).

### 10.4. Conditions to avoid

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

### 10.5. Incompatible materials

copper  
Copper alloys  
Tin  
Zinc iron and steel  
Lead

### 10.6. Hazardous decomposition products

SECTION 5: Firefighting measures

#### Further information

No data available

## SECTION 11: Toxicological information

### 11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008

#### Toxicokinetics, metabolism and distribution

Avoid exposure - obtain special instructions before use.

#### Acute toxicity

Toxic in contact with skin.

Harmful if swallowed.

Harmful if inhaled.

If swallowed danger of perforation of the esophagus and the stomach (strong corrosive effects).

Pulmonary oedema



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CAS No	Chemical name				
	Exposure route	Dose	Species	Source	Method
109-89-7	diethylamine				
	oral	LD50 540 mg/kg	Rat	cited in: Patty's Ind.Hyg. and Toxicol.	OECD Guideline 401
	dermal	LD50 582 mg/kg	Rabbit	cited in: Patty's Ind.Hyg. and Toxicol.	Penetration of rabbit skin is estimated
	inhalation vapour	ATE 11 mg/l			
	inhalation dust/mist	ATE 1,5 mg/l			

**Irritation and corrosivity**

Causes severe skin burns and eye damage.  
Causes serious eye damage.

**Sensitising effects**

Based on available data, the classification criteria are not met.

**Carcinogenic/mutagenic/toxic effects for reproduction**

Based on available data, the classification criteria are not met.

**STOT-single exposure**

May cause respiratory irritation. (diethylamine)  
kidneys

**STOT-repeated exposure**

Based on available data, the classification criteria are not met.

**Aspiration hazard**

Based on available data, the classification criteria are not met.

**Information on likely routes of exposure**

No data available

**Specific effects in experiment on an animal**

No data available

**Additional information on tests**

No data available

**Practical experience**

No data available

**11.2. Information on other hazards**

**Endocrine disrupting properties**

No data available

**Other information**

No data available

**Further information**

Irritant  
corrosive  
Dyspnoea  
Risk of serious damage to eyes.  
Pulmonary oedema  
Gastrointestinal complaints  
Vomiting

**SECTION 12: Ecological information**

**12.1. Toxicity**

Based on available data, the classification criteria are not met.

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CAS No	Chemical name					
	Aquatic toxicity	Dose	[h]   [d]	Species	Source	Method
109-89-7	diethylamine					
	Acute fish toxicity	LC50 27 mg/l	96 h	Oryzias latipes	NITE (National Institute of Technology a	OECD Guideline 203
	Acute algae toxicity	ErC50 54 mg/l	72 h	Pseudokirchneriella subcapitata	NITE (National Institute of Technology a	OECD Guideline 201
	Acute crustacea toxicity	EC50 4,6 mg/l	48 h	Ceriodaphnia dubia	Study report (1994)	other: Standard guide for conducting acu
	Crustacea toxicity	NOEC 4,2 mg/l	21 d	Daphnia magna	Publication (1999)	OECD Guideline 211

**12.2. Persistence and degradability**

> 70 %; 28 d  
OECD 301C  
Readily biodegradable (according to OECD criteria).

**12.3. Bioaccumulative potential**

No indication of bioaccumulation potential.

**Partition coefficient n-octanol/water**

CAS No	Chemical name	Log Pow
109-89-7	diethylamine	0,58

**BCF**

CAS No	Chemical name	BCF	Species	Source
109-89-7	diethylamine	ca. 1,62		Medchem. Project Iss

**12.4. Mobility in soil**

No data available

**12.5. Results of PBT and vPvB assessment**

This substance does not meet the PBT/vPvB criteria of REACH, annex XIII.

**12.6. Endocrine disrupting properties**

This substance does not have endocrine disrupting properties with respect to non-target organisms.

**12.7. Other adverse effects**

Do not allow to enter into surface water or drains.

**Further information**

Avoid release to the environment.

**SECTION 13: Disposal considerations**

**13.1. Waste treatment methods**

**Disposal recommendations**

Waste disposal according to directive 2008/98/EC, covering waste and dangerous waste.  
Send to a physico-chemical treatment facility under observation of official regulations.  
Do not empty into drains.

**Contaminated packaging**

Handle contaminated packages in the same way as the substance itself.  
The allocation of waste identity numbers/waste descriptions must be carried out according to the EEC, specific to the industry and process.

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## SECTION 14: Transport information

## Land transport (ADR/RID)

**14.1. UN number or ID number:** UN 1154**14.2. UN proper shipping name:** DIETHYLAMINE**14.3. Transport hazard class(es):** 3**14.4. Packing group:** II

Hazard label: 3+8

Classification code: FC

Limited quantity: 1 L

Excepted quantity: E2

Transport category: 2

Hazard No: 338

Tunnel restriction code: D/E

## Inland waterways transport (ADN)

**14.1. UN number or ID number:** UN 1154**14.2. UN proper shipping name:** DIETHYLAMINE**14.3. Transport hazard class(es):** 3**14.4. Packing group:** II

Hazard label: 3+8

Classification code: FC

Limited quantity: 1 L

Excepted quantity: E2

## Marine transport (IMDG)

**14.1. UN number or ID number:** UN 1154**14.2. UN proper shipping name:** DIETHYLAMINE**14.3. Transport hazard class(es):** 3**14.4. Packing group:** II

Hazard label: 3+8

Special Provisions: -

Limited quantity: 1 L

Excepted quantity: E2

EmS: F-E, S-C

## Air transport (ICAO-TI/IATA-DGR)

**14.1. UN number or ID number:** UN 1154**14.2. UN proper shipping name:** DIETHYLAMINE**14.3. Transport hazard class(es):** 3**14.4. Packing group:** II

Hazard label: 3+8

Limited quantity Passenger: 0.5 L

Passenger LQ: Y340

Excepted quantity: E2

IATA-packing instructions - Passenger: 352

IATA-max. quantity - Passenger: 1 L

IATA-packing instructions - Cargo: 363

IATA-max. quantity - Cargo: 5 L

## SECTION 15: Regulatory information

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

## EU regulatory information

Restrictions on use (REACH, annex XVII):

Entry 3, Entry 40, Entry 75

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Information according to 2012/18/EU  
(SEVESO III):

P5c FLAMMABLE LIQUIDS

#### National regulatory information

Employment restrictions:

Observe restrictions to employment for juveniles according to the 'juvenile work protection guideline' (94/33/EC). Observe employment restrictions under the Maternity Protection Directive (92/85/EEC) for expectant or nursing mothers.

Water hazard class (D):

1 - slightly hazardous to water

### SECTION 16: Other information

#### Changes

This data sheet contains changes from the previous version in section(s): 12.

#### Abbreviations and acronyms

Flam. Liq: Flammable liquid

Acute Tox: Acute toxicity

Skin Corr: Skin corrosion

Eye Dam: Eye damage

STOT SE: Specific target organ toxicity - single exposure

#### Relevant H and EUH statements (number and full text)

H225 Highly flammable liquid and vapour.

H302 Harmful if swallowed.

H302+H332 Harmful if swallowed or if inhaled.

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.

#### Further Information

The above information describes exclusively the safety requirements of the product and is based on our present-day knowledge. The information is intended to give you advice about the safe handling of the product named in this safety data sheet, for storage, processing, transport and disposal. The information cannot be transferred to other products. In the case of mixing the product with other products or in the case of processing, the information on this safety data sheet is not necessarily valid for the new made-up material. The information is based on the present level of our knowledge. It does not, however, give assurance of product properties and establishes no contract legal rights.

The receiver of our product is singularly responsible for adhering to existing laws and regulations.