

1 Identification of the substance/mixture and of the company/undertaking

Product identifier
Trade name Diethylamine
Stock number: A11716
CAS Number: 109-89-7
EINECS Number: 203-716-3
Index number: 612-003-00-X
Relevant identified uses of the substance or mixture and uses advised against
Sector of Use SU24 Scientific research and development
Details of the supplier of the safety data sheet
Manufacturer/Supplier: Alfa Aesar GmbH & Co.KG
A Johnson Matthey Company
Benzstrasse 3
D-76185 Karlsruhe / Germany
Tel: +49 (0) 721 84007 280
Fax: +49 (0) 721 84007 300
Email: tech@alfa.com
www.alfa.com
Informing department: Product safety department.
Emergency telephone number: Product Safety Department +049 (0) 7275 988687-0 (business hours)
Carechem 24: +44 (0) 1235 239 670 (Multi-language 24 hour emergency)
Giftnotruf Universität Mainz / Poison Information Center Mainz
www.giftinfo.uni-mainz.de Telefon:+49(0)6131/19240

2 Hazards identification

Classification of the substance or mixture
Classification according to Regulation (EC) No 1272/2008



GHS02 flame

Flam. Liq. 2 H225 Highly flammable liquid and vapour.



GHS05 corrosion

Skin Corr. 1A H314 Causes severe skin burns and eye damage.



GHS07

Acute Tox. 4 H302 Harmful if swallowed.

Acute Tox. 4 H312 Harmful in contact with skin.

Acute Tox. 4 H332 Harmful if inhaled.

Classification according to Directive 67/548/EEC or Directive 1999/45/EC

C; Corrosive

R35: Causes severe burns.

Xn; Harmful

R20/21/22: Harmful by inhalation, in contact with skin and if swallowed.

F; Highly flammable

R11: Highly flammable.

Information concerning particular hazards for human and environment:

Not applicable

Label elements
Labelling according to Regulation (EC) No 1272/2008

Hazard pictograms

The substance is classified and labelled according to the CLP regulation.



GHS02 GHS05 GHS07

Signal word

Danger

Hazard statements

H225 Highly flammable liquid and vapour.

H302 Harmful if swallowed.

H312 Harmful in contact with skin.

H332 Harmful if inhaled.

H314 Causes severe skin burns and eye damage.

Precautionary statements

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

P241 Use explosion-proof electrical/ventilating/lighting/equipment.

P303+P361+P353 IF ON SKIN (or hair): Remove/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.

P405 Store locked up.

P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

Other hazards

Results of PBT and vPvB assessment

PBT:

Not applicable.

vPvB:

Not applicable.

3 Composition/information on ingredients

Chemical characterization: Substances

(CAS#) Designation: 109-89-7 Diethylamine

Identification number(s):

EINECS Number: 203-716-3

Index number: 612-003-00-X

4 First aid measures

Description of first aid measures

General information

After inhalation

Instantly remove any clothing soiled by the product.

Supply fresh air. If required, provide artificial respiration. Keep patient warm. Consult doctor if symptoms persist.

After skin contact

Seek immediate medical advice.

Instantly wash with water and soap and rinse thoroughly.

After eye contact

Seek immediate medical advice.

Rinse opened eye for several minutes under running water. Then consult doctor.

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After swallowing Seek immediate medical advice.

Information for doctor

Most important symptoms and effects, both acute and delayed No further relevant information available.

Indication of any immediate medical attention and special treatment needed No further relevant information available.

5 Firefighting measures

Extinguishing media CO₂, extinguishing powder or water jet. Fight larger fires with water jet or alcohol-resistant foam.

Suitable extinguishing agents

Special hazards arising from the substance or mixture Can be released in case of fire:
Carbon monoxide and carbon dioxide
Nitrogen oxides (NO_x)
Possibly Hydrogen cyanide (HCN)

Advice for firefighters Wear self-contained breathing apparatus.

Protective equipment: Wear full protective suit.

6 Accidental release measures

Personal precautions, protective equipment and emergency procedures Wear protective equipment. Keep unprotected persons away.
Ensure adequate ventilation
Keep away from ignition sources

Environmental precautions: Do not allow material to be released to the environment without proper governmental permits.

Methods and material for containment and cleaning up: Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
Use neutralizing agent.
Dispose of contaminated material as waste according to item 13.
Ensure adequate ventilation.
Keep away from ignition sources.

Reference to other sections See Section 7 for information on safe handling
See section 8 for information on personal protection equipment.
See Section 13 for information on disposal.

7 Handling and storage

Handling

Precautions for safe handling Handle under dry protective gas.
Keep containers tightly sealed.
Store in cool, dry place in tightly closed containers.
Ensure good ventilation/exhaustion at the workplace.

Information about protection against explosions and fires: Keep ignition sources away - Do not smoke.
Protect against electrostatic charges.
Fumes can combine with air to form an explosive mixture.

Conditions for safe storage, including any incompatibilities

Storage

Requirements to be met by storerooms and containers: Store in cool location.

Information about storage in one common storage facility: Store away from air.
Store away from oxidizing agents.
Do not store together with acids.

Further information about storage conditions: Store under dry inert gas.
Keep container tightly sealed.
Store in cool, dry conditions in well sealed containers.
Store in a locked cabinet or with access restricted to technical experts or their assistants.
This product is air sensitive.

Specific end use(s) No further relevant information available.

8 Exposure controls/personal protection

Additional information about design of technical systems: Properly operating chemical fume hood designed for hazardous chemicals and having an average face velocity of at least 100 feet per minute.

Control parameters**Components with critical values that require monitoring at the workplace:****109-89-7 Diethylamine (100.0%)**

WEL () Short-term value: 30 mg/m³, 10 ppm
Long-term value: 15 mg/m³, 5 ppm

Additional information: No data

Exposure controls

Personal protective equipment

General protective and hygienic measures The usual precautionary measures should be adhered to in handling the chemicals.
Keep away from foodstuffs, beverages and food.
Instantly remove any soiled and impregnated garments.
Wash hands during breaks and at the end of the work.
Avoid contact with the eyes and skin.

Breathing equipment: Use breathing protection with high concentrations.
Check protective gloves prior to each use for their proper condition.

Protection of hands: The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer.

Material of gloves Impervious gloves

Penetration time of glove material Not determined

Eye protection: Safety glasses
Tightly sealed safety glasses.
Face protection
Full face protection

Body protection: Protective work clothing.

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9 Physical and chemical properties**Information on basic physical and chemical properties****General Information****Appearance:**

Form: Liquid
Colour: Colourless
Smell: Ammonia-like
Odour threshold: Not determined.

pH-value: Not determined.

Change in condition

Melting point/Melting range: -50°C
Boiling point/Boiling range: 54-55°C
Sublimation temperature / start: Not determined

Flash point: -28°C

Inflammability (solid, gaseous) Not applicable.

Ignition temperature: 310°C

Decomposition temperature: Not determined

Self-inflammability: Not determined.

Critical values for explosion:

Lower: 1.7 Vol %
Upper: 10.1 Vol %

Steam pressure at 20°C: 260 hPa

Density at 20°C 0.706 g/cm³
Relative density Not determined.
Vapour density Not determined.
Evaporation rate Not determined.

Solubility in / Miscibility with Water at 20°C: 815 g/l

Segregation coefficient (n-octanol/water): Not determined.

Viscosity:

dynamic: Not determined.
kinematic: Not determined.

Other information No further relevant information available.

10 Stability and reactivity**Reactivity****Chemical stability****Thermal decomposition / conditions to be avoided:**

No decomposition if used and stored according to specifications.

Possibility of hazardous reactions No dangerous reactions known

Incompatible materials: Air

Oxidizing agents

Acids

Hazardous decomposition products: Carbon monoxide and carbon dioxide

Nitrogen oxides (NO_x)

Possibly Hydrogen cyanide (HCN)

11 Toxicological information**Information on toxicological effects****Acute toxicity:****LD/LC50 values that are relevant for classification:**

Oral	LD50	540 mg/kg (rat)
Dermal	LD50	579 mg/kg (rabbit)

Primary irritant effect:**on the skin:**

Strong corrosive effect on skin and mucous membranes.

on the eye:

Strong corrosive effect.

Sensitization:

No sensitizing effect known.

Additional toxicological information:

To the best of our knowledge the acute and chronic toxicity of this substance is not fully known.

Danger by skin resorption.

Swallowing will lead to a strong caustic effect on mouth and throat and to the danger of perforation of esophagus and stomach.

The Registry of Toxic Effects of Chemical Substances (RTECS) contains acute and/or other multiple dose toxicity data for components in this product.

The Registry of Toxic Effects of Chemical Substances (RTECS) contains reproductive and/or mutation data for components in this product.

ACGIH A4: Not classifiable as a human carcinogen: Inadequate data on which to classify the agent in terms of its carcinogenicity in humans and/or animals.

12 Ecological information**Toxicity**

Acquatic toxicity: No further relevant information available.

Persistence and degradability No further relevant information available.

Behaviour in environmental systems:

Bioaccumulative potential No further relevant information available.

Mobility in soil No further relevant information available.

Additional ecological information:**General notes:**

Water hazard class 1 (Assessment by list): slightly hazardous for water.

Do not allow undiluted product or large quantities of it to reach ground water, water bodies or sewage system.

Do not allow material to be released to the environment without proper governmental permits.

Results of PBT and vPvB assessment

PBT: Not applicable.

vPvB: Not applicable.

Other adverse effects No further relevant information available.

13 Disposal considerations**Waste treatment methods**

Recommendation Hand over to disposers of hazardous waste.

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Must be specially treated under adherence to official regulations.
Consult state, local or national regulations for proper disposal.

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Uncleaned packagings:
Recommendation:
Recommended cleaning agent:

Disposal must be made according to official regulations.
Water, if necessary with cleaning agent.

14 Transport information

Land transport ADR/RID and GGVS/GGVE (cross-border/domestic)



ADR/RID-GGVS/E Class: 3 (FC) Flammable liquids.
Kemler Number: 338
UN-Number: 1154
Packaging group: II
Label: 3+8
UN proper shipping name: 1154 DIETHYLAMINE
Limited quantities (LQ): LQ4
Transport category: 2
Tunnel restriction code: D/E

Maritime transport IMDG/GGVSea:



IMDG/GGVSea Class: 3
UN Number: 1154
Label: 3+8
Packaging group: II
EMS Number: F-E, S-C
Marine pollutant: No
Correct technical name: DIETHYLAMINE

Air transport ICAO-TI and IATA-DGR:



ICAO/IATA Class: 3
UN/ID Number: 1154
Label: 3+8
Packaging group: II
Correct technical name: DIETHYLAMINE

UN "Model Regulation":

UN1154, DIETHYLAMINE, 3 (8), II
Warning: Flammable liquids.

Special precautions for user
Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code

Not applicable.

15 Regulatory information

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

Labelling according to Regulation (EC) No 1272/2008

Hazard pictograms

The substance is classified and labelled according to the CLP regulation.



GHS02 GHS05 GHS07

Signal word
Hazard statements

Danger
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P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P405 Store locked up.
P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

National regulations**Information about limitation of use:**

Employment restrictions concerning young persons must be observed.
For use only by technically qualified individuals.

Technical instructions (air):

Class	Share in %
NK	100.0

Water hazard class:

Water hazard class 1 (Assessment by list): slightly hazardous for water.

Chemical safety assessment:

A Chemical Safety Assessment has not been carried out.

16 Other information

Employers should use this information only as a supplement to other information gathered by them, and should make independent judgement of suitability of this information to ensure proper use and protect the health and safety of employees. This information is furnished without warranty, and any use of the product not in conformance with this Material Safety Data Sheet, or in combination with any other product or process, is the responsibility of the user.

Department issuing data specification sheet: Health, Safety and Environmental Department.
Contact: Zachariah C. Holt

Abbreviations and acronyms:

Global EHS Manager
ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)
IMDG: International Maritime Code for Dangerous Goods

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IATA: International Air Transport Association
IATA-DGR: Dangerous Goods Regulations by the "International Air Transport Association" (IATA)
ICAO: International Civil Aviation Organization
ICAO-TI: Technical Instructions by the "International Civil Aviation Organization" (ICAO)
GHS: Globally Harmonized System of Classification and Labelling of Chemicals
EINECS: European Inventory of Existing Commercial Chemical Substances
CAS: Chemical Abstracts Service (division of the American Chemical Society)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent

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