



**Di-methylamine**

Print date 17.06.2024  
 Revision date 17.06.2024  
 Version 13.0 (en)  
 replaces version of 28.03.2023 (12.0)

**Hazard statements for environmental hazards**

H412 Harmful to aquatic life with long lasting effects.

\* **2.2 Label elements**\* **Labelling according to Regulation (EC) No 1272/2008 [CLP]****Hazard pictograms**

GHS02



GHS05



GHS07

**Signal word**

Danger

**Hazard statements**

H220 Extremely flammable gas.  
 H280 Contains gas under pressure; may explode if heated.  
 H315 Causes skin irritation.  
 H318 Causes serious eye damage.  
 H332 Harmful if inhaled.  
 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 gas/vapours.  
 P280 Wear protective gloves/protective clothing/eye protection/face protection.  
 P304 + P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.  
 P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
 P315 Get immediate medical advice/attention.  
 P377 Leaking gas fire: Do not extinguish, unless leak can be stopped safely.  
 P403 Store in a well-ventilated place.

**Supplemental hazard information**

Please return container with residual pressure.

\* **2.3 Other hazards**\* **Adverse human health effects and symptoms**

Gas/vapour heavier than air. May accumulate in confined spaces, particularly at or below ground level.  
 Contact with liquid may cause cold burns/frostbite.

**Other adverse effects**

The substance/mixture does not contain components identified as having endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated Regulation (EU) 2017/2100 or Commission Delegated Regulation (EU) 2018/605 in quantities of 0.1% or more.

**Results of PBT and vPvB assessment**

The substance/mixture does not contain components meeting the PBT/vPvB criteria of the Reach Regulation, Annex XIII, at levels of 0.1% or higher.

**SECTION 3: Composition / information on ingredients****3.1 Substances**

<b>Substance name</b>	di-methylamine
<b>Index No</b>	612-001-00-9
<b>EC No</b>	204-697-4
<b>REACH No.</b>	01-2119475495-27
<b>CAS No</b>	124-40-3
<b>Specific concentration limit (SCL)</b>	Skin Irrit. 2;H315: C>=5% Eye Dam. 1;H318: C>=5% Eye Irrit. 2;H319: 0.5%<=C<5% STOT SE 3;H335: C>=5%

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**ATE** ATE(oral): approx. 1000 mg/kg  
ATE(dermal): 3900 mg/kg  
ATE(inhalation gas): 5290 ppm

### Additional information

Content: >= 99,8 %

### 3.2 Mixtures

not applicable

## \* SECTION 4: First aid measures

### \* 4.1 Description of first aid measures

- \* **General information**  
Remove contaminated, saturated clothing immediately.  
Call a physician immediately.  
First aider: Pay attention to self-protection!

#### Following inhalation

Remove casualty to fresh air and keep warm and at rest.  
In the event of pulmonary irritation treat initially with corticoid spray, e.g. Ventolair- or Pulmicort- metered-dose aerosol (Ventolair and Pulmicort are registered trademarks).  
In case of respiratory standstill give artificial respiration by respiratory bag (Ambu bag) or respirator. Obtain medical assistance.

#### Following skin contact

In case of skin contact rinse with warm water.  
In case of frostbite, wash with plenty of water; do not remove clothing.  
In case of frostbite rinse with lukewarm (not hot) water for at least 15 minutes. Do not remove clothing frozen to the skin.  
Thaw with lukewarm water. Apply a sterile dressing. Obtain medical assistance.

#### After eye contact

Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Obtain medical assistance.

#### Following ingestion

Ingestion is not considered a potential route of exposure.

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

- \* **Symptoms**  
Dyspnoea  
Strong eye irritation.  
Respiratory tract irritation
- \* **Effects**  
Pulmonary oedema

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

#### Notes for the doctor

Treat symptomatically.  
Pulmonary oedema prophylaxis.  
To supervise the blood circulation.

## SECTION 5: Firefighting measures

### 5.1 Extinguishing media

#### Suitable extinguishing media

Extinguishing powder  
Foam  
Water spray jet

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**Unsuitable extinguishing media**

Full water jet  
Carbon dioxide (CO<sub>2</sub>)

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

**Hazardous combustion products**

In case of fire formation of dangerous gases possible.  
Nitrogen oxides (NO<sub>x</sub>)  
Carbon monoxide  
Carbon dioxide (CO<sub>2</sub>)

**5.3 Advice for firefighters**

**Special protective equipment for firefighters**

Wear a self-contained breathing apparatus and chemical protective clothing.

**Additional information**

If possible, shut off gas valves and move containers to a safe location.  
Use water spray jet to protect personnel and to cool endangered containers.  
Exposure to fire may cause rupture / explosion of the containers.  
Do not extinguish a leaking gas flame unless absolutely necessary. Spontaneous/explosive re-ignition may occur. Extinguish any other fire.  
Dispose of fire residues and contaminated extinguishing water in accordance with local, official regulations.

**SECTION 6: Accidental release measures**

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

**For non-emergency personnel**

Use personal protection equipment.  
Leave the danger area.  
Keep people away and stay on the upwind side.

**For emergency responders**

Personal protection by wearing close-fitting protective clothing and breathing apparatus.  
Pay attention to extension of gas especially at ground (heavier than air) and in direction of the wind.  
Remove persons to safety.  
Eliminate all ignition sources if safe to do so.

**6.2 Environmental precautions**

If possible, stop flow of product.  
Do not allow to enter into soil/subsoil.  
Do not allow to enter into surface water or drains.

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

**For containment**

If necessary, secure leaky pressure receptacles using a salvage container.  
Prevent the liquid from spreading over a wide area (set up barriers, cover sewage systems).  
Limit expansion of the gas (water spray jet).

**For cleaning up**

Leave to vapourize.  
Provide adequate ventilation.

**6.4 Reference to other sections**

Disposal: see section 13  
Personal protection equipment: see section 8

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**\* SECTION 7: Handling and storage****\* 7.1 Precautions for safe handling**

- \* Protective measures**  
 Use only in well-ventilated areas.  
 Transfer and handle product only in closed systems.  
 Usual measures for fire prevention.  
 Containers' temperature should not be increased above 50 °C.  
 The working pressure in the receptacle must not exceed the saturation vapour pressure of the pure product resulting at a temperature of 50 °C.  
 Prevent cylinders from falling over.  
 Take precautionary measures against static discharges. Ground barrels and installations. Use only antistatically equipped (spark-free) tools.  
 Use explosion-proof machinery, apparatus, ventilation facilities, tools etc.  
 Ensure valve protection device is correctly fitted.  
 Ensure valve outlet cap nut or plug (where provided) is correctly fitted.  
 Open valve slowly to avoid pressure shock.  
 Do not allow backflow into the container.  
 Entering of water into the container must be prevented.  
 No water to valves, flanges and other fittings.  
 Purging of pipes and valves with inert gases - to avoid: water, solvents.

**Advices on general occupational hygiene**

When using do not eat, drink, smoke, sniff.  
 Wash hands before breaks and after work.  
 Remove contaminated clothing and protective equipment before entering eating areas.

**7.2 Conditions for safe storage, including any incompatibilities****Requirements for storage rooms and vessels**

All regulations and local requirements for the storage of containers have to be respected.  
 Keep container tightly closed and in a well-ventilated place.  
 Containers' temperature should not be increased above 50 °C.  
 Prevent cylinders from falling over.  
 Only use containers specifically approved for the substance/product.  
 Information on suitable materials for receptacles and valves see ISO 11114.

**Materials to avoid**

Do not store together with explosives.  
 Do not store together with flammable liquids.  
 Do not store together with flammable solids.  
 Do not store together with pyrophoric and self-heating substances.  
 Do not store together with oxidizing liquids or oxidizing solids.  
 Do not store together with toxic liquids or toxic solids.  
 Do not store together with infectious substances.  
 Do not store together with radioactive material.  
 Do not store together with food or feed.

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

An exposure scenario is not required.  
 Use only as an intermediate under strictly controlled conditions.

**\* SECTION 8: Exposure controls/personal protection****\* 8.1 Control parameters****\* Occupational exposure limit values**

CAS No	EC No	Substance name	occupational exposure limit value
124-40-3	204-697-4	Dimethylamine	2 [ml/m <sup>3</sup> (ppm)] 3,8 [mg/m <sup>3</sup> ] Short-term(ml/m <sup>3</sup> ) 5 Short-term(mg/m <sup>3</sup> ) 9,4 (IE)

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\* **DNEL worker**

CAS No	Substance name	DNEL value	DNEL type	Remark
124-40-3	di-methylamine	0.263 mg/kg bw/day	long-term dermal (systemic)	Assessment factor 100
124-40-3	di-methylamine	1.854 mg/m <sup>3</sup>	long-term inhalative (systemic)	Assessment factor 25
124-40-3	di-methylamine	0.824 mg/m <sup>3</sup>	long-term inhalative (local)	Assessment factor 15
124-40-3	di-methylamine	28.56 mg/m <sup>3</sup>	acute inhalative (systemic)	Assessment factor 12.5

\* **DNEL Consumer**

CAS No	Substance name	DNEL value	DNEL type	Remark
124-40-3	di-methylamine	0.33 mg/m <sup>3</sup>	long-term inhalative (systemic)	Assessment factor 50
124-40-3	di-methylamine	21.33 mg/m <sup>3</sup>	acute inhalative (systemic)	Assessment factor 25
124-40-3	di-methylamine	0.615 mg/m <sup>3</sup>	long-term inhalative (local)	Assessment factor 30
124-40-3	di-methylamine	0.095 mg/kg bw/day	long-term dermal (systemic)	Assessment factor 200
124-40-3	di-methylamine	0.095 mg/kg bw/day	Long-term – oral, systemic effects	Assessment factor 200

\* **PNEC**

CAS No	Substance name	PNEC Value	PNEC type	Remark
124-40-3	di-methylamine	0.006 mg/L	aquatic, marine water	Assessment factor 100
124-40-3	di-methylamine	0.038 mg/kg dw	soil	
124-40-3	di-methylamine	0.06 mg/L	aquatic, freshwater	Assessment factor 10
124-40-3	di-methylamine	0.06 mg/L	aquatic, intermittent release	Assessment factor 10
124-40-3	di-methylamine	0.33 mg/kg dw	sediment, marine water	
124-40-3	di-methylamine	3.26 mg/kg dw	sediment, freshwater	
124-40-3	di-methylamine	100 mg/L	sewage treatment plant (STP)	Assessment factor 10

\* **8.2 Exposure controls****Appropriate engineering controls****Technical measures to prevent exposure**

Transfer and handle only in enclosed systems.  
 Use only as an intermediate under strictly controlled conditions.

\* **Personal protection equipment****Eye/face protection**

Protective goggles according to EN 166, in case of increased risk add protective face shield.

**Hand protection**

Safety gloves according to EN 374:  
 Glove material specification [make/type, thickness, permeation time/life]: PVC, >= 0,5 mm, >= 480 min

**Body protection:**

Safety shoes with steel toecap.  
 Body covering work clothing or chemical resistant suit at increased risk.

\* **Respiratory protection**

Keep self contained breathing apparatus readily available for emergency use.

Respiratory protection necessary at:

high concentrations

Respiratory protection complying with EN 137.

Short term: filter apparatus, filter K

In case of rescue and maintenance activities in storage containers use environment-independent breathing apparatus because of risk of suffocation due to displacement of oxygen.

**Thermal hazards**

Use cold-resistant protective equipment.

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**Environmental exposure controls****Remark**

Prevent release to the environment.

**\* SECTION 9: Physical and chemical properties****\* 9.1 Information on basic physical and chemical properties****Physical state**

Gaseous / liquefied under pressure.

**Colour**

colourless

**Odour**

like:

Amines

**Safety relevant basis data**

	Value	Method	Source, Remark
Odour threshold:			not determined
Melting point/freezing point			not applicable
Boiling point or initial boiling point and boiling range	7 °C		
flammability			Extremely flammable gas (H220).
Lower and upper explosion limit	Upper explosion limit 14.4 Vol-%		
Lower and upper explosion limit	Lower explosion limit 2.8 Vol-%		
Flash point			not applicable
Auto-ignition temperature	approx. 400 °C		
Decomposition temperature	400 °C		
pH			not applicable
Viscosity			not applicable
Solubility(ies)	Water solubility		miscible
Partition coefficient n-octanol/water (log value)	-0.38		
Vapour pressure	1703 hPa (20°C)		
Density and/or relative density			not applicable
Relative vapour density	1.6		air = 1
particle characteristics			not applicable

**9.2 Other information****Information with regard to physical hazard classes****Gases under pressure****Safety characteristics**

	Value	Method, Result	Source, Remark
Critical temperature	164.6 °C		

**Other information**

Vapours are heavier than air.

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**\* SECTION 10: Stability and reactivity****10.1 Reactivity**

May form an explosive mixture with air.

**10.2 Chemical stability**

The substance is chemically stable under recommended conditions of storage, use and temperature.

**\* 10.3 Possibility of hazardous reactions**

Reactions with numerous chemical compounds.  
 Explosion hazard on contact with mercury  
 May react violently with oxidants.  
 Reactions with halogenated compounds.  
 Reactions with alcohols.

**10.4 Conditions to avoid**

Heat sources / heat - risk of bursting.  
 Ignition sources, open flames, glowing metal surfaces, etc.

**\* 10.5 Incompatible materials**

Nitrogen oxides (NO<sub>x</sub>)  
 Chlorine  
 Acids  
 Copper, brass and other copper alloys

**10.6 Hazardous decomposition products**

When handled and stored appropriately, no dangerous decomposition products are known.

**\* SECTION 11: Toxicological information****11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008****Acute toxicity****Animal data**

	Effective dose	Method, Evaluation	Source, Remark
Acute oral toxicity	CAS No124-40-3 di-methylamine LD50: approx. 1000 mg/kg Species Rat	BASF-Test	
Acute dermal toxicity	CAS No124-40-3 di-methylamine LD50: 3900 mg/kg Species Rat		
Acute inhalation toxicity	CAS No124-40-3 di-methylamine Acute inhalation toxicity (gas) LC50: 5290 ppm Species Rat Exposure time 1 h		

**Assessment/classification**

Harmful if inhaled.

**\* Skin corrosion/irritation****Animal data**

Result / Evaluation	Method	Source, Remark
Species Rabbit	BASF-Test	Aqueous solution.

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**Assessment/classification**

Causes skin irritation.

**Serious eye damage/irritation****Animal data**

Result / Evaluation	Method	Source, Remark
Species Rabbit	Draize-method	Aqueous solution.

**Assessment/classification**

Causes serious eye damage.

**Sensitisation to the respiratory tract****Assessment/classification**

No data available

**\* Skin sensitisation**

**\* Other information**  
 Study technically not feasible.

**Germ cell mutagenicity**

	Value	Method	Result / Evaluation	Remark
In vitro mutagenicity/genotoxicity			negative	
In vivo mutagenicity/genotoxicity			negative	

**Assessment/classification**

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

**\* Carcinogenicity****Assessment/classification**

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

**\* Reproductive toxicity****Animal data**

	Value	Method	Result / Evaluation	Remark
Reproductive toxicity	inhalative NOAEL(C): 75 ppm Species Rat	OECD 422	negative	

**Assessment/classification**

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

**\* STOT-single exposure****STOT SE 3****Irritation to respiratory tract****Assessment/classification**

May cause respiratory irritation.

**\* STOT-repeated exposure****\* Animal data**

	Effective dose	Method	Specific effects:	Organs affected:	Source, Remark
Inhalative specific target organ toxicity (repeated exposure)	NOAEL(C): 50 ppm Species Rat (male / female) Exposure duration 1 a				

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**Assessment/classification**

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

**\* Aspiration hazard**

- \* **Assessment/classification**  
 Study technically not feasible.

**11.2 Information on other hazards**

No data available

**\* SECTION 12: Ecological information****\* 12.1 Toxicity****\* Aquatic toxicity**

	Effective dose	Method, Evaluation	Source, Remark
Acute (short-term) fish toxicity	LC50: 118 mg/L Species <i>Oncorhynchus mykiss</i> (Rainbow trout) Test duration 96 h		
Chronic (long-term) fish toxicity	NOEC > 10 mg/L Species <i>Oncorhynchus mykiss</i> (Rainbow trout) Test duration 30 d		
Acute (short-term) toxicity to crustacea	EC50 88.67 mg/L Species <i>Daphnia magna</i> (Big water flea) Test duration 48 h	EU Method C.2	
Chronic (long-term) toxicity to aquatic invertebrate	NOEC 4.2 mg/L Species <i>Daphnia magna</i> (Big water flea) Test duration 21 d	OECD 211	Analogous to a similar product.
Acute (short-term) toxicity to algae and cyanobacteria	EC50 9 mg/L Species <i>Raphidocelis subcapitata</i> Test duration 96 h		
Chronic (long-term) toxicity to aquatic algae and cyanobacteria	not determined		
Toxicity to other aquatic plants/organisms	not determined		
Toxicity to microorganisms	EC10 > 1000 mg/L Species activated sludge Test duration 30 min	ISO 8192	Analogous to a similar product.

**\* 12.2 Persistence and degradability**

	Value	Method	Source, Remark
Biodegradation	Degradation rate 88 % Test duration 28 d	OECD 301C	CAS No124-40-3 di-methylamine

**Assessment/classification**

Readily biodegradable (according to OECD criteria).

**12.3 Bioaccumulative potential**

	Value	Method	Source, Remark
Bioconcentration factor (BCF)	Bioconcentration factor (BCF) 3.16	(Q)SAR	CAS No124-40-3 di-methylamine

**Assessment/classification**

Based on the n-octanol/water partition coefficient accumulation in organisms is not expected.

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**12.4 Mobility in soil**

	Value	Distribution	Transport type	Method	Remark
Half-life time in soil	4- 508			KOC value	

**12.5 Results of PBT and vPvB assessment**

The substance/mixture does not contain components meeting the PBT/vPvB criteria of the Reach Regulation, Annex XIII, at levels of 0.1% or higher.

**\* 12.6 Endocrine disrupting properties**

No data available

**\* 12.7 Other adverse effects**

No data available

**SECTION 13: Disposal considerations****13.1 Waste treatment methods****Waste codes/waste designations according to EWC/AVV**

Waste code product	Waste name
160504 *	gases in pressure containers (including halons) containing hazardous substances

**Appropriate disposal / Product**

Waste disposal according to directive 2008/98/EC, covering waste and dangerous waste.  
 Prevent release to the environment. No disposal via the sewage.

**Appropriate disposal / Package**

Transportable pressure equipment (empty, residual pressure): Return to supplier / manufacturer.

**SECTION 14: Transport information**

	Land transport (ADR/RID)	Sea transport (IMDG)	Air transport (ICAO-TI / IATA-DGR)
<b>14.1 UN number or ID number</b>	UN 1032	UN 1032	UN 1032
<b>14.2 UN proper shipping name</b>	DIMETHYLAMINE, ANHYDROUS	DIMETHYLAMINE, ANHYDROUS	Dimethylamine, anhydrous
<b>14.3 Transport hazard class(es)</b>	2.1	2.1	2.1
<b>14.4 Packing group</b>	-	-	-
<b>14.5 Environmental hazards</b>	No	No	No

**14.6 Special precautions for user**

The protective measures listed in Sections 6, 7 and 8 of the Safety Data Sheet have to be considered.

**14.7 Maritime transport in bulk according to IMO instruments**

No carriage in bulk.

**Land transport (ADR/RID)**

UN number or ID number	UN 1032
UN proper shipping name	DIMETHYLAMINE, ANHYDROUS
Transport hazard class(es)	2.1
Hazard label(s)	2.1
Classification code	2F
Packing group	-
Environmental hazards	No
Limited quantity (LQ)	0
Special provisions	662

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Tunnel restriction code B/D

**Sea transport (IMDG)**

UN number or ID number UN 1032  
 UN proper shipping name DIMETHYLAMINE, ANHYDROUS  
 Transport hazard class(es) 2.1  
 Packing group -  
 Environmental hazards No  
 Limited quantity (LQ) 0  
 Marine pollutant No  
 EmS F-D, S-U

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

UN number or ID number UN 1032  
 UN proper shipping name Dimethylamine, anhydrous  
 Transport hazard class(es) 2.1  
 Packing group -  
 Environmental hazards No

**\* SECTION 15: Regulatory information****\* 15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture****\* EU legislation****Restrictions of occupation**

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

**\* Other regulations (EU)****\* To follow:**

Regulation (EC) No 1907/2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), Annex XVII No 40.

Directive 2012/18/EU on the control of major-accident hazards involving dangerous substances.

REGULATION (EU) 2021/821 setting up a Union regime for the control of exports, brokering, technical assistance, transit and transfer of dual-use items.

National and local regulations concerning chemicals shall be observed.

**\* Directive 2010/75/EU on industrial emissions [Industrial Emissions Directive] VOC**

VOC-value  $\geq 99.8\%$

**15.2 Chemical Safety Assessment****\* National regulations**

For this substance a chemical safety assessment has been carried out.

**\* SECTION 16: Other information****\* Abbreviations and acronyms**

Flam. Gas 1A: Flammable gas, Category 1A

Press. Gas (Liq.): Liquefied gas (LG)

Skin Irrit. 2: Skin irritation, Category 2

Eye Dam. 1: Serious eye damage, Category 1

STOT SE 3, H335: Specific target organ toxicity (single exposure), Category 3

Aquatic Chronic 3: Long-term (chronic) aquatic hazard, Category 3

Acute Tox. 4, H332: Acute Toxicity (inhalation), Category 4

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**Key literature references and sources for data**

Information from our suppliers and data from the "GESTIS Substances Database" and the "Registered Substances" database of the European Chemicals Agency (ECHA) were used to create this safety data sheet.

**Additional information**

The information contained herein is based on the state of our knowledge. It characterizes the product with regard to the appropriate safety precautions. It does not represent a guarantee of the properties of the product.

**Relevant H- and EUH-phrases (Number and full text)**

- H220 Extremely flammable gas.
- H280 Contains gas under pressure; may explode if heated.
- H315 Causes skin irritation.
- H318 Causes serious eye damage.
- H332 Harmful if inhaled.
- H335 May cause respiratory irritation.
- H412 Harmful to aquatic life with long lasting effects.

**Indication of changes**

\* Data changed compared with the previous version