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

1.1 Product identifier

Trade name/designation Di-methylamine Art-Nr(n). 1120, 70112 Substance name di-methylamine INDEX No. 612-001-00-9 EC No. 204-697-4

REACH No. 01-2119475495-27

CAS No. 124-40-3

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

Use of the substance/mixture

Intermediate.

1.3 Details of the supplier of the safety data sheet

Supplier

GHC Gerling, Holz & Co. Handels GmbH Ruhrstraße 113 D-22761 Hamburg Telephone +49 40 853 123 0 E-mail hamburg@ghc.de Website www.ghc.com

Department responsible for information: GHC Gerling, Holz & Co. Handels GmbH Telephone +49 40 853 123 0

E-mail (competent person): msds@ghc.de

* 1.4 Emergency telephone number

EN: Poison Information Center Mainz +49 6131 19240

* SECTION 2: Hazards identification

* 2.1 Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008 Classification procedure

[CLP]

Flam. Gas 1A. H220 Press. Gas (Liq.), H280 Acute Tox. 4, H332 Skin Irrit. 2, H315 Eye Dam. 1, H318 **STOT SE 3, H335**

Aquatic Chronic 3, H412

Hazard statements for physical hazards H220 Extremely flammable gas.

H280 Contains gas under pressure; may explode if heated.

Hazard statements for health hazards

H315 Causes skin irritation

H318 Causes serious eye damage.

H332 Harmful if inhaled

H335 May cause respiratory irritation.

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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

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.

P273 Avoid release to the environment.

P280 Wear protective gloves/protective clothing and eye/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.

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 considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

Results of PBT and vPvB assessment

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

* SECTION 3: Composition / information on ingredients

* 3.1 Substances

Substance name di-methylamine INDEX No. 612-001-00-9 FC No. 204-697-4

REACH No. 01-2119475495-27

CAS No. 124-40-3

Specific concentration limit Skin Irrit. 2;H315: C>=5% (SCL) 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 registrated trademarks).

În 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 Pulmonary oedema Strong eye irritation. Respiratory tract irritation

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

Unsuitable extinguishing media

Full water jet

Carbon dioxide (CO2)

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5.2 Special hazards arising from the substance or mixture

Hazardous combustion products
In case of fire formation of dangerous gases possible. Nitrogen oxides (NOx) Carbon monoxidè Carbon dioxide (CO2)

* 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

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 respondersPersonal 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. Eliminate all ignition sources if safe to do so.

Remove persons to safety.

* 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

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

* SECTION 7: Handling and storage

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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.

Storage class

2A Gases (except aerosol dispensers and lighters)

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	o. EC No.	Substance name	occupational exposure limit value
124-40-	3 204-697-4	Dimethylamine	2 [ml/m³(ppm)]
			3,8 [mg/m³] Short-term(ml/m³) 5
			Short-term(mg/m³) 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/m³	long-term inhalative (systemic)	Assessment factor 25
124-40-3	di-methylamine	0.824 mg/m³	long-term inhalative (local)	Assessment factor 15
124-40-3	di-methylamine	28.56 mg/m³	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/m³	long-term inhalative (systemic)	Assessment factor 50
124-40-3	di-methylamine	21.33 mg/m³	acute inhalative (systemic)	Assessment factor 25
124-40-3	di-methylamine	0.615 mg/m ³	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

Suitable respiratory protection apparatus: 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.

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Thermal hazards

Use cold-resistant protective equipment.

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

currently restricted to the same			
	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 pressure 1013 hPa		
flammability			inflammable
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		
рН			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. 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

Copper, brass and other copper alloys mercury (Hg). Chlorine

* 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 No.124-40-3 di- methylamine LD50: approx. 1000 mg/kg Species Rat	BASF-Test	
Acute dermal toxicity	CAS No.124-40-3 di- methylamine LD50: 3900 mg/kg Species Rat		
Acute inhalation toxicity	CAS No.124-40-3 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
	BASF-Test	Aqueous solution.

Species Rabbit

* Assessment/classification

Causes skin irritation.

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Serious eye damage/irritation

Animal data

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

Species Rabbit

Assessment/classification

Causes serious eye damage.

* Sensitisation to the respiratory tract

Assessment/classification No data available

* Skin sensitisation

Assessment/classification

Study technically not feasible.

* Germ cell mutagenicity

Value Method Result / Evaluation Remark In vitro negative mutagenicity/genotox icity In vivo negative mutagenicity/genotox icity

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	OECD 422		

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

Remark

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 Oncorhynchus mykiss (Rainbow trout) Test duration 96 h		
Chronic (long-term) fish toxicity	not determined		
Acute (short-term) toxicity to crustacea	EC50 88.67 mg/L Species Daphnia magna (Big water flea) Test duration 48 h	EU Method C.2	
Chronic (long-term) toxicity to aquatic invertebrate	not determined		
Acute (short-term) toxicity to algae and cyanobacteria	EC50 9 mg/L Species Raphidocelis subcapitata 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 Pseudomonas putida Test duration 30 min	DIN 38412 / part 8	Analogous to a simila product.
ersistence and degradability			
	Value	Method	Source, Remark
Biodegradation	Degradation rate 88 % Test duration 28 d	OECD 301C	CAS No.124-40-3 di- methylamine
Assessment/classification Readily biodegradable (according t	o OECD criteria).		
Bioaccumulative potential			
	Value	Method	Source, Remark
	Bioconcentration factor	(Q)SAR	CAS No.124-40-3 di-

* 12.4 Mobility in soil

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

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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

Effective dose Method, Evaluation Source, Remark See section 2.3 Endocrine disrupting properties

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

Appropriate disposal / PackageTransportable 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)
14.1 UN number or ID number	UN 1032	UN 1032	UN 1032
14.2 UN proper shipping name	DIMETHYLAMINE, ANHYDROUS	DIMETHYLAMINE, ANHYDROUS	Dimethylamine, anhydrous
14.3 Transport hazard class(es)	2.1	2.1	2.1
14.4 Packing group	-	-	-
14.5 Environmental hazards	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 2F Classification code Packing group Environmental hazards No Limited quantity (LQ) 0 Special provisions 662 Tunnel restriction code B/D

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* 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.

National and local regulations concerning chemicals shall be observed.

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

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.

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H335 May cause respiratory irritation.

H412 Harmful to aquatic life with long lasting effects.

Indication of changes
* Data changed compared with the previous version