

# Safety Data Sheet according to Regulation (EC)

## No. 1907/2006 (REACH)

Printed 10.01.2018  
revision 10.01.2018 (GB) Version 9.1

### Trimethylamine

1140, 70114



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

### 1.1. Product identifier

Name of product	Trimethylamine
	Art-Nr(n): 1140, 70114
Name of substance	tri-methylamine
Index No	612-001-00-9
EC No	200-875-0
REACH registration number	01-2119492296-28-xxxx
CAS No	75-50-3

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

#### Recommended intended purpose(s)

Basic substance.

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

Manufacturer/distributor	GHC Gerling, Holz & Co. Handels GmbH Ruhrstraße 113, D-22761 Hamburg Phone +49 40 853 123-0, Fax +49 40 853 123-66 E-Mail hamburg@ghc.de Internet www.ghc.com
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Advice	GHC Gerling, Holz & Co. Handels GmbH Phone +49 40 853 123-0 Fax +49 40 853 123-66 E-mail (competent person): msds@ghc.de
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### 1.4. Emergency telephone number

Emergency advice	Giftinformationszentrum (Poison Control Centre) Mainz Phone +49 6131 19240
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## SECTION 2: Hazards identification

### 2.1. Classification of the substance or mixture

#### Classification according to Regulation (EC) No 1272/2008 [CLP/GHS]

Hazard classes and Hazard categories	Hazard Statements	Classification procedure
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Flam. Gas 1	H220
Liquef. Gas	H280
Acute Tox. 4	H332
Skin Irrit. 2	H315
Eye Dam. 1	H318
STOT SE 3	H335

#### 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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**Additional hints**

Listed substance (Regulation (EC) No 1272/2008, Annex VI, part 3).

**2.2. Label elements**

Labelling according to Regulation (EC) No 1272/2008 [CLP/GHS]



GHS02



GHS05



GHS07

**Signal word**

**Danger**

**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.

**Precautionary Statements**

**Prevention**

**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.

**Response**

**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.

**Storage**

**P403** Store in a well-ventilated place.

**Hazardous ingredients for labeling**

tri-methylamine

**2.3. Other hazards**

**Information pertaining to special dangers for human and environment**

In high concentrations may cause asphyxiation.

Dangerous substances are released in case of decomposition.

Gas/vapour heavier than air. May accumulate in confined spaces, particularly at or below ground level.

Contact with liquid may cause cold burns/frostbite.

**Results of PBT and vPvB assessment**

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

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**! SECTION 3: Composition/ information on ingredients**

**3.1. Substances**

**Description**

Content: > 99 %

**CAS No 75-50-3**

**tri-methylamine**

EC No 200-875-0

Index No 612-001-00-9

REACH registration number 01-2119492296-28-xxxx

**3.2. Mixtures**

not applicable

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**SECTION 4: First aid measures**

**4.1. Description of first aid measures**

**General information**

Remove contaminated soaked clothing immediately.

Adhere to personal protective measures when giving first aid.

Seek medical treatment immediately.

**In case of inhalation**

Remove the casualty into fresh air and keep him immobile.

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).

Seek medical treatment immediately.

In case of respiratory standstill give artificial respiration by respiratory bag (Ambu bag) or respirator. Send for a doctor.

**In case of skin contact**

In case of contact with skin wash off with warm water.

In case of frostbite spray with lukewarm (not hot) water for at least 15 minutes. Do not remove clothing frozen to the skin. Thaw it with lukewarm water. Apply a sterile dressing. Obtain medical assistance.

**In case of eye contact**

Eye rinsing with water carefully while protecting unhurt eye.

Call for a doctor immediately.

Remove contact lenses, if present and easy to do. Continue rinsing.

**In case of ingestion**

Ingestion is not considered a potential route of exposure.

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

**Physician's information / possible dangers**

Risk of pulmonary irritation

Risk of pulmonary oedema

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

**Treatment (Advice to doctor)**

Treat symptoms.

Symptome können verzögert auftreten.

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**SECTION 5: Firefighting measures**

**5.1. Extinguishing media**

**Suitable extinguishing media**

Alcohol-resistant foam

Dry fire-extinguishing substance

Dry powder

Carbon dioxide

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Water spray jet

**Unsuitable extinguishing media**

Full water jet

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

In case of fire formation of dangerous gases possible.

Formation of explosive gas mixtures in air.

In the event of fire the following can be released:

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

Carbon monoxide (CO)

Hydrogen cyanide (HCN)

**5.3. Advice for firefighters**

**Special protective equipment for fire-fighters**

Umluftunabhängige Atemschutzgeräte mit Vollgesichtsmaske nach EN 137.

Wear full protective clothing.

**Additional information**

Cool endangered containers with water spray jet.

Exposure to fire may cause containers to rupture / explode.

Do not extinguish a leaking gas flame unless absolutely necessary. Spontaneous/explosive re-ignition may occur.

Extinguish any other fire.

Collect contaminated firefighting water separately, must not be discharged into the drains.

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**! SECTION 6: Accidental release measures**

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

**For non-emergency personnel**

Evacuate area.

Keep people away and stay on the upwind side.

Avoid skin contact with running out liquid (risk of frostbites! ).

Keep away sources of ignition.

**For emergency responders**

Remove persons to safety.

Personal protection by wearing close-fitting protective clothing and breathing apparatus.

Eliminate all ignition sources if safe to do so.

**6.2. Environmental precautions**

Collect contaminated water / firefighting water separately.

If possible, stop flow of product.

Eliminate ignition sources.

Do not discharge into the drains/surface waters/groundwater.

If necessary, secure leaky pressure receptacles in a salvage packaging.

Suppress gases/vapours/mists with water spray jet

Do not discharge into the subsoil/soil.

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

Ensure adequate air ventilation.

Flush away residues with water.

Dispose of contaminated material in accordance with regulations.

**6.4. Reference to other sections**

Safe handling: see section 7

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**

**Advice on safe handling**

Use only in thoroughly ventilated areas.  
Transfer and handle only in enclosed systems.  
The working pressure in the receptacle must not exceed the saturation vapour pressure of the pure product resulting at a temperature of 50 °C.  
Barrels and installations thoroughly earthing (grounding ).  
Use antistatic tools.  
Treatment only in suitable rooms and systems.  
Provide good room ventilation even at ground level (vapours are heavier than air).  
Prevent cylinders from falling over.  
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 backfeed into the container.  
Suck back 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.

**General protective measures**

Do not inhale gases.

**Hygiene measures**

At work do not eat, drink and smoke.  
Remove soiled or soaked clothing immediately.  
Wash soiled clothing immediately.  
Wash skin thoroughly and immediately after handling the product.

**Advice on protection against fire and explosion**

The product is combustible.  
Because of risk of explosion avoid vapours getting into cellar, sewage system and holes.  
Take precautionary measures against static discharges.  
Formation of explosive gas mixtures in air.  
Pay attention to general rules of internal fire prevention.  
Use explosion-proof equipment / fittings and non-sparking tools.

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

**Requirements for storage rooms and vessels**

Keep in closed original container.  
Ventilate store-rooms thoroughly.  
Use transportable pressure equipment.  
Suitable materials: Normalised carbon steel, tempered alloy steel, aluminium alloys.  
Valve: Suitable materials: Carbon steels, aluminium alloys, austenitic stainless steels.  
Other material details see ISO 11114.  
All regulations and local requirements for the storage of containers have to be respected.  
Unsuitable materials: Brass, copper alloys.

**Advice on storage compatibility**

Do not store with spontaneously flammable materials.  
Do not store together with combustible liquids or combustible solids.  
Do not store together with animal feedstuffs.  
Do not store together with explosives.  
Do not store together with infectious substances.  
Do not store together with radioactive material.  
Do not store together with toxic liquids or toxic solids.  
Do not store together with food.  
Do not store together with oxidizing agents.

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## Further information on storage conditions

Ensure valve protection device is correctly fitted.  
Store only in original container at temperature of 50 °C maximum (=122 °F).  
Keep container tightly closed and store at cool and aired place.  
Prevent cylinders from falling over.  
Protect from heat/overheating.

## Information on storage stability

At appropriate storage unlimited stability.

## 7.3. Specific end use(s)

### ! Recommendation(s) for intended use

No further recommendations.

## ! SECTION 8: Exposure controls/personal protection

### 8.1. Control parameters

### 8.2. Exposure controls

#### Respiratory protection

Short term: filter apparatus, filter K  
Breathing apparatus in the event of high concentrations.  
Keep self contained breathing apparatus readily available for emergency use.  
In case of rescue and maintenance activities in storage containers use environment-independent breathing apparatus because of risk of suffocation by edging out of air oxygen

#### Hand protection

Chemical-resistant protective gloves complying with EN 374.  
Safety gloves according EN 388  
Glove material specification [make/type, thickness, permeation time/life]: NBR; 0,4 mm; >= 480 min

#### Eye protection

Schutzbrille nach EN 166, bei erhöhter Gefährdung zusätzlich Gesichtsschutzschild.

#### Other protection measures

Safety shoes with steel toe.  
Body covering work clothing, or chemical resistant suit at increased risk complying with EN 14605.

#### Thermal hazards

Contact with the liquid phase may cause cold burns / frostbite.

## SECTION 9: Physical and chemical properties

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

#### Appearance

Gaseous / liquefied under pressure.

#### Colour

colourless

#### Odour

similar to amine

#### Odour threshold

not determined

#### Important health, safety and environmental information

	Value	Temperature	at	Method	Remark
<b>pH value</b>	13	20 °C	450 g/l		aqueous solution
<b>boiling point</b>	3 °C		1013 hPa		

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	Value	Temperature	at	Method	Remark
<b>melting point</b>	-117 °C				
<b>Flash point</b>	-7 °C			closed cup	
<b>Vapourisation rate</b>	not determined				
<b>Flammable (solid)</b>	not applicable				
<b>Flammability (gas)</b>					flammable.
<b>Ignition temperature</b>	190 °C			DIN 51794	
<b>Self ignition temperature</b>	165 °C				
<b>Lower explosion limit</b>	2 Vol-%				
<b>Upper explosion limit</b>	11,6 Vol-%				
<b>Vapour pressure</b>	1880 hPa	20 °C			
<b>Relative density</b>	0,63 g/cm3	20 °C			liquid phase
<b>Vapour density</b>	1,995				air = 1
<b>Solubility in water</b>					miscible
<b>Solubility/other</b>					soluble in organic solvent
<b>Partition coefficient n-octanol/water (log P O/W)</b>	0,245	25 °C			
<b>Decomposition temperature</b>	>= 400 °C				
<b>Viscosity dynamic</b>	0,177 mPa*s	25 °C			liquid phase
<b>Viscosity kinematic</b>	0,28 mm2/s	25 °C			
<b>Oxidising properties</b>	no				
<b>Explosive properties</b>	no				
<b>9.2. Other information</b>	Vapours are heavier than air.				

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## ! SECTION 10: Stability and reactivity

### 10.1. Reactivity

See section "Possibility of hazardous reactions".

### 10.2. Chemical stability

Stable under recommended conditions of use and storage (see section 7).

### 10.3. Possibility of hazardous reactions

Reactions with acids.

Reactions with halogenated compounds.

Reactions with oxidizing agents.

### 10.4. Conditions to avoid

Formation of explosive gas/air mixtures.

Heat sources / heat - risk of bursting.

### 10.5. Incompatible materials

#### ! Substances to avoid

Aluminium

mercury (Hg)

Sulphur dioxide (SO<sub>2</sub>)

Oxidising agent

Zinc.

Copper, brass and other copper alloys.

Acids.

### 10.6. Hazardous decomposition products

Nitrous gases

Carbon monoxide

Hydrogen

Methane

Ammonia

Hydrogen cyanide (HCN).

### Thermal decomposition

Remark No decomposition below 400°C.

## SECTION 11: Toxicological information

### 11.1. Information on toxicological effects

#### Acute toxicity/Irritation/Sensitization

	Value/Validation	Species	Method	Remark
<b>LD50 acute oral</b>	766 mg/kg	rat	OECD 401	
<b>LD50 acute dermal</b>	> 5000 mg/kg	rat (male / female)	OECD 402	Aqueous solution.
<b>LC50 acute inhalation</b>	> 5,9 mg/l (4 h)	rat (male / female)		
<b>Skin irritation</b>	corrosive	rabbit	BASF-Test	Aqueous solution.



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	Value/Validation	Species	Method	Remark
<b>Eye irritation</b>	irritant - risk of strong eye injuries	rabbit eye	Draize-method	Aqueous solution.

**Skin sensitization** not determined**Sensitization  
respiratory system** not determined**Subacute Toxicity - Carcinogenicity**

	Value	Species	Method	Validation
<b>Subchronic Toxicity</b>	NOAEL 40 mg/kg (42 d) Subchronic oral toxicity (potable water)	Rat (male / female)	OECD 422.	

**Mutagenicity** No experimental information on genotoxicity in vitro available.**Reproduction-Toxicity** No indications of toxic effects were observed in reproduction studies in animals.**Carcinogenicity** The existing data do not justify a classification as a carcinogen.**Specific target organ toxicity (repeated exposure)**

May cause damage to heart through prolonged or repeated exposure in contact with skin.

**Toxicity test (Additional information)**

Substance has no mutagen activity ( Ames test ).

**Experiences made from practice**

May cause frostbite.

Irritates respiratory tract.

Irritates eyes and skin.

**SECTION 12: Ecological information****12.1. Toxicity****Ecotoxicological effects**

	Value	Species	Method	Validation
<b>Fish</b>	LC50 25 mg/l (96 h)	Leuciscus idus		Aqueous solution.
<b>Daphnia</b>	EC50 139 mg/l (48 h)	Daphnia magna		Aqueous solution.
<b>Algae</b>	EC50 98,8 mg/l (72 h)	Scenedesmus subspicatus		
<b>Bacteria</b>	EC50 208 mg/l (17 h)	Pseudomonas putida		

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**12.2. Persistence and degradability**

	Elimination rate	Method of analysis	Method	Validation
<b>Biological degradability</b>	> 90 %	BOD in % of COD	OECD 301 C	Biodegradable

**Biological eliminability** not determined

**12.3. Bioaccumulative potential**

Does not bioaccumulate.

BCF &lt; 1

**12.4. Mobility in soil**

Koc: 14,68

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

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

**12.6. Other adverse effects****Behaviour in sewage plant**

When low concentrations are discharged correctly into adapted biological sewage treatment plants, interference with the degradation activity of activated sludge is not likely.

The product is an alkaline solution. Neutralization is normally necessary before waste water is discharged into sewage treatment plants.

**SECTION 13: Disposal considerations****13.1. Waste treatment methods****Waste code No.**

16 05 04\*

**Name of waste**

gases in pressure containers (including halons) containing hazardous substances

Wastes marked with an asterisk are considered to be hazardous waste pursuant to Directive 2008/98/EC on hazardous waste.

**Recommendations for the product**

Dispose of in accordance with the local official regulations.

Dispose of as hazardous waste.

**Recommendations for packaging**

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

**! SECTION 14: Transport information**

	ADR/RID	IMDG	IATA-DGR
<b>14.1. UN number</b>	1083	1083	1083
<b>14.2. UN proper shipping name</b>	TRIMETHYLAMINE, ANHYDROUS	TRIMETHYLAMINE, ANHYDROUS	Trimethylamine, anhydrous
<b>14.3. Transport hazard class(es)</b>	2.1	2.1	2.1
<b>14.4. Packing group</b>	-	-	-

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	ADR/RID	IMDG	IATA-DGR
<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. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code**

not applicable

No transport as bulk according IBC - Code.

**Land and inland navigation transport ADR/RID**

Hazard label(s) 2.1

tunnel restriction code B/D

Classification code 2F

**Marine transport IMDG**

Ems: F-D, S-U

**Air transport ICAO/IATA-DGR**

Cargo aircraft only.

Cargo aircraft only: Package max. 150 kg.

**! SECTION 15: Regulatory information**

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

**Other regulations (EU)**

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.

**VOC standard**

**VOC content** >=99 % 20 °C 1880 hPa

**15.2. Chemical Safety Assessment**

For this substance a chemical safety assessment has not been carried out.

**SECTION 16: Other information**

**Recommended uses and restrictions**

National and local regulations concerning chemicals shall be observed.

**Further information**

All declarations of safety-data-sheet refer to pure substance.

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.

Indication of changes: "!" = Data changed compared with the previous version. Previous version: 9.0

**Sources of key data used**

For the preparation of this safety data sheet, information from our suppliers as well as data from the "database of registered substances" of the European Chemicals Agency (ECHA) were used.