



Issue Date: 16.01.2013 Version: 1.0 SDS No.: 000010021780 Last revised date: 20.01.2017

1/16

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

1.1 Product identifier

Product name: Methyl chloride (R40)

Additional identification

Chemical name: chloromethane; methyl chloride

Chemical formula: CH3CI

INDEX No. 602-001-00-7 CAS-No. 74-87-3 EC No. 200-817-4

REACH Registration No. 01-2119493708-22

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

Identified uses: Industrial and professional. Perform risk assessment prior to use.

> Degreasing. Using gas alone or in mixtures for the calibration of analysis equipment. Using gas as feedstock in chemical processes. Formulation of

mixtures with gas in pressure receptacles.

Uses advised against Consumer use.

1.3 Details of the supplier of the safety data sheet

Supplier

Linde Gas GmbH **Telephone:** +43 50 4273

Carl-von-Linde-Platz 1 A-4651 Stadl-Paura

E-mail: office@at.linde-gas.com

1.4 Emergency telephone number: Emergency number Linde: + 43 50 4273 (during business hours), Poisoning Information Center: +43 1 406 43 43



SAFETY DATA SHEET Methyl chloride (R40)

Issue Date: 16.01.2013 Version: 1.0 SDS No.: 000010021780 Last revised date: 20.01.2017

2/16

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

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

F+; R12 Carc. 3; R40 Xn; R48/20

The full text for all R-phrases is displayed in section 16.

Classification according to Regulation (EC) No 1272/2008 as amended.

Physical Hazards

Flammable gas Category 1 H220: Extremely flammable gas.

Gases under pressure Liquefied gas H280: Contains gas under pressure; may explode if

heated.

Health Hazards

Carcinogenicity Category 2 H351: Suspected of causing cancer.

Toxic to reproduction H361: Suspected of damaging fertility or the unborn Category 2

child.

Specific Target Organ Toxicity -Category 2 H373: May cause damage to organs through prolonged

Repeated Exposure or repeated exposure.

2.2 Label Elements

Contains: chloromethane; methyl chloride



Signal Words: Danger

Hazard Statement(s): H220: Extremely flammable gas.

H280: Contains gas under pressure; may explode if heated.

H351: Suspected of causing cancer.

H361: Suspected of damaging fertility or the unborn child.

H373: May cause damage to organs through prolonged or repeated exposure.



SAFETY DATA SHEET Methyl chloride (R40)

Issue Date: 16.01.2013 Version: 1.0 SDS No.: 000010021780 Last revised date: 20.01.2017

3/16

Precautionary Statement

Prevention: P202: Do not handle until all safety precautions have been read and

understood.

P210: Keep away from heat, hot surfaces, sparks, open flames and other

ignition sources. No smoking. P260: Do not breathe gas/vapors.

P280: Wear protective gloves/protective clothing/eye protection/face

protection.

Response: P308+P313: IF exposed or concerned: Get medical advice/attention.

P377: Leaking gas fire: Do not extinguish, unless leak can be stopped safely.

P381: Eliminate all ignition sources if safe to do so.

Storage: P403: Store in a well-ventilated place.

Disposal: None.

2.3 Other hazards: Contact with evaporating liquid may cause frostbite or freezing of skin.

SECTION 3: Composition/information on ingredients

3.1 Substances

Chemical name chloromethane; methyl chloride

INDEX No.: 602-001-00-7 CAS-No.: 74-87-3 EC No.: 200-817-4

REACH Registration No.: 01-2119493708-22

Purity: 100%

The purity of the substance in this section is used for classification only, and does

not represent the actual purity of the substance as supplied, for which other

documentation should be consulted.

Trade name:

SECTION 4: First aid measures

General: In high concentrations may cause asphyxiation. Symptoms may include loss of

> mobility/consciousness. Victim may not be aware of asphyxiation. Remove victim to uncontaminated area wearing self contained breathing apparatus. Keep victim warm and rested. Call a doctor. Apply artificial respiration if breathing stopped.

4.1 Description of first aid measures

Inhalation: In high concentrations may cause asphyxiation. Symptoms may include loss of

mobility/consciousness. Victim may not be aware of asphyxiation. Remove victim to uncontaminated area wearing self contained breathing apparatus. Keep victim warm and rested. Call a doctor. Apply artificial respiration if breathing stopped.





Issue Date: 16.01.2013 SDS No.: 000010021780 Version: 1.0 Last revised date: 20.01.2017

4/16

Eye contact: Rinse the eye with water immediately. Remove contact lenses, if present and easy

> to do. Continue rinsing. Flush thoroughly with water for at least 15 minutes. Get immediate medical assistance. If medical assistance is not immediately available,

flush an additional 15 minutes.

Skin Contact: Contact with evaporating liquid may cause frostbite or freezing of skin. In case of

frostbite spray with water for at least 15 minutes. Apply a sterile dressing. Get

medical attention.

Ingestion: Ingestion is not considered a potential route of exposure.

4.2 Most important symptoms and

effects, both acute and delayed:

Respiratory arrest. Contact with liquefied gas can cause damage (frostbite) due to

rapid evaporative cooling.

4.3 Indication of any immediate medical attention and special treatment needed

Hazards: Respiratory arrest. Contact with liquefied gas can cause damage (frostbite) due to

rapid evaporative cooling.

Thaw frosted parts with lukewarm water. Do not rub affected area. Get immediate Treatment:

medical advice/attention.

SECTION 5: Firefighting measures

General Fire Hazards: Heat may cause the containers to explode.

5.1 Extinguishing media

Suitable extinguishing media: Water Spray or Fog. Dry powder. Foam.

Unsuitable extinguishing

media:

Carbon Dioxide.

5.2 Special hazards arising from the

substance or mixture:

No data available.

Hazardous Combustion Products: If involved in a fire the following toxic and/or corrosive fumes may be produced

by thermal decomposition: Phosgene

; Hydrogen chloride ; Carbon monoxide

5.3 Advice for firefighters

Special fire fighting procedures:

In case of fire: Stop leak if safe to do so. Do not extinguish flames at leak because possibility of uncontrolled explosive reignition exists. Continue water spray from protected position until container stays cool. Use extinguishants to contain the

fire. Isolate the source of the fire or let it burn out.





Issue Date: 16.01.2013 Version: 1.0 SDS No.: 000010021780 Last revised date: 20.01.2017

5/16

Special protective equipment for fire-fighters:

Firefighters must use standard protective equipment including flame retardant coat, helmet with face shield, gloves, rubber boots, and in enclosed spaces, SCBA. Guideline: EN 469 Protective clothing for firefighters. Performance requirements for protective clothing for firefighting. EN 15090 Footwear for firefighters. EN 659 Protective gloves for firefighters. EN 443 Helmets for fire fighting in buildings and other structures. EN 137 Respiratory protective devices - Self-contained opencircuit compressed air breathing apparatus with full face mask - Requirements, testing, marking.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures:

Evacuate area. Provide adequate ventilation. Consider the risk of potentially explosive atmospheres . Eliminate all ignition sources if safe to do so. Monitor the concentration of the released product. Prevent from entering sewers, basements and workpits, or any place where its accumulation can be dangerous. Wear selfcontained breathing apparatus when entering area unless atmosphere is proved to be safe. EN 137 Respiratory protective devices - Self-contained open-circuit compressed air breathing apparatus with full face mask - Requirements, testing, marking.

6.2 Environmental Precautions:

Prevent further leakage or spillage if safe to do so.

6.3 Methods and material for containment and cleaning up: Provide adequate ventilation. Eliminate sources of ignition.

6.4 Reference to other sections:

Refer to sections 8 and 13.



SAFETY DATA SHEET Methyl chloride (R40)

Issue Date: 16.01.2013 Version: 1.0 SDS No.: 000010021780 Last revised date: 20.01.2017

6/16

SECTION 7: Handling and storage:

7.1 Precautions for safe handling:

Only experienced and properly instructed persons should handle gases under pressure. Use only properly specified equipment which is suitable for this product, its supply pressure and temperature. Purge system with dry inert gas (e.g. helium or nitrogen) before gas is introduced and when system is placed out of service. Purge air from system before introducing gas. Containers, which contain or have contained flammable or explosive substances, must not be inerted with liquid carbon dioxide. Assess the risk of a potentially explosive atmosphere and the need for suitable equipment i.e. explosion-proof. Take precautionary measures against static discharges. Keep away from ignition sources (including static discharges). Provide electrical earthing of equipment and electrical equipment usable in explosive atmospheres. Use only non-sparking tools. Refer to supplier's handling instructions. The substance must be handled in accordance with good industrial hygiene and safety procedures. Ensure the complete system has been (or is regularly) checked for leaks before use. Protect containers from physical damage; do not drag, roll, slide or drop. Do not remove or deface labels provided by the supplier for the identification of the container contents. When moving containers, even for short distances, use appropriate equipment eq. trolley, hand truck, fork truck etc. Secure cylinders in an upright position at all times, close all valves when not in use. Provide adequate ventilation. Suck back of water into the container must be prevented. Do not allow backfeed into the container. Avoid suckback of water, acid and alkalis. Keep container below 50°C in a well ventilated place. Observe all regulations and local requirements regarding storage of containers. When using do not eat, drink or smoke. Store in accordance with local/regional/national/international regulations. Never use direct flame or electrical heating devices to raise the pressure of a container. Leave valve protection caps in place until the container has been secured against either a wall or bench or placed in a container stand and is ready for use. Damaged valves should be reported immediately to the supplier Close container valve after each use and when empty, even if still connected to equipment. Never attempt to repair or modify container valves or safety relief devices. Replace valve outlet caps or plugs and container caps where supplied as soon as container is disconnected from equipment. Keep container valve outlets clean and free from contaminates particularly oil and water. If user experiences any difficulty operating container valve discontinue use and contact supplier. Never attempt to transfer gases from one container to another. Container valve guards or caps should be in place.

7.2 Conditions for safe storage, including any incompatibilities: All electrical equipment in the storage areas should be compatible with the risk of a potentially explosive atmosphere. Segregate from oxidant gases and other oxidants being stored. Containers should not be stored in conditions likely to encourage corrosion. Stored containers should be periodically checked for general conditions and leakage. Container valve guards or caps should be in place. Store containers in location free from fire risk and away from sources of heat and ignition. Keep away from combustible material.

7.3 Specific end use(s):

None.





Issue Date: 16.01.2013 Version: 1.0 SDS No.: 000010021780 Last revised date: 20.01.2017

7/16

SECTION 8: Exposure controls/personal protection

8.1 Control Parameters

Occupational Exposure Limits

Chemical name	type	Exposure Limit Values		Source
chloromethane; methyl	MAK	50 ppm	105	Austria. MAK List, OEL Ordinance (GwV),
chloride			mg/m3	BGBI. II, no. 184/2001 (09 2007)
	MAK STEL	200 ppm	420	Austria. MAK List, OEL Ordinance (GwV),
			mg/m3	BGBI. II, no. 184/2001 (09 2007)

DNEL-Values

Critical component	type	Value	Remarks
chloromethane; methyl	Worker - inhalative, long-	100 mg/m3	-
chloride	term - systemic		

PNEC-Values

Critical component	type	Value	Remarks
chloromethane; methyl	Sediment (freshwater)	0,556	-
chloride		mg/kg	
	freshwater	0,2 mg/l	-
	Aquatic (intermit. releases)	2 mg/l	-
	marine water	0,02 mg/l	-
	Soil	0,079	-
		mg/kg	
	freshwater - intermittent	2 mg/l	-
	Aquatic (marine water)	0,02 mg/l	-
	freshwater sediment	0,556	-
		mg/kg dry	
		weight	
	Aquatic (freshwater)	0,2 mg/l	-
	soil	0,079	-
		mg/kg dry	
		weight	

8.2 Exposure controls

Appropriate engineering controls:

Consider a work permit system e.g. for maintenance activities. Ensure adequate air ventilation. Provide adequate general and local exhaust ventilation. Keep concentrations well below lower explosion limits. Gas detectors should be used when quantities of flammable gases or vapours may be released. Provide adequate ventilation, including appropriate local extraction, to ensure that the defined occupational exposure limit is not exceeded. Systems under pressure should be regularly checked for leakages. Product to be handled in a closed system. Only use permanent leak tight installations (e.g. welded pipes). Take precautionary measures against static discharges.



Issue Date: SDS No.: 000010021780 16.01.2013 Version: 1.0 20.01.2017 Last revised date:

8/16

Individual protection measures, such as personal protective equipment

A risk assessment should be conducted and documented in each work area to General information:

> assess the risks related to the use of the product and to select the PPE that matches the relevant risk. The following recommendations should be considered. Keep self contained breathing apparatus readily available for emergency use. Personal protective equipment for the body should be selected based on the task being performed and the risks involved. Refer to local regulations for restriction of emissions to the atmosphere. See section 13 for specific methods for waste gas

treatment. Do not eat, drink or smoke when using the product.

Safety eyewear, goggles or face-shield to EN166 should be used to avoid Eye/face protection:

exposure to liquid splashes. Wear eye protection to EN 166 when using gases.

Guideline: EN 166 Personal Eye Protection.

Skin protection

Hand Protection: Wear working gloves while handling containers

Guideline: EN 388 Protective gloves against mechanical risks.

Break-through time: 8 min Glove thickness: > 0.05 mm

Guideline: EN 374-1/2/3 Protective gloves against chemicals and micro-

organisms.

Body protection: Wear fire/flame resistant/retardant clothing.

> Guideline: ISO/TR 2801:2007 Clothing for protection against heat and flame --General recommendations for selection, care and use of protective clothing.

Other: Wear safety shoes while handling containers

Guideline: ISO 20345 Personal protective equipment - Safety footwear.

Respiratory Protection: Not required. When allowed by a risk assessment Respiratory Protective

Equipment (RPE) may be used

Thermal hazards: No precautionary measures are necessary.

Hygiene measures: Specific risk management measures are not required beyond good industrial

hygiene and safety procedures. Do not eat, drink or smoke when using the

product.

Environmental exposure

controls:

For waste disposal, see section 13 of the SDS.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance

Physical state: Gas

Liquefied gas Form: Color: Colourless





 Issue Date:
 16.01.2013
 Version: 1.0
 SDS No.: 000010021780

 Last revised date:
 20.01.2017
 9/16

Odor: Ethereal odor (liquified)

Odor Threshold: Odor threshold is subjective and is inadequate to warn of over

exposure.

pH: not applicable.

Melting Point:-97 °CBoiling Point:-23,8 °CSublimation Point:not applicable.Critical Temp. (°C):143,0 °C

Flash Point: Not applicable to gases and gas mixtures. Evaporation Rate: Not applicable to gases and gas mixtures.

Flammability (solid, gas):

Flammability Limit - Upper (%):

Flammability Limit - Lower (%):

7,6 %(V)

Vapor pressure: 5.732,9 hPa (25 °C)

Vapor density (air=1): 2,47 AIR=1

Relative density: No data available.

Solubility(ies)

Solubility in Water: 5,32 g/I (25 °C)

Partition coefficient (n-octanol/water): 0,91
Autoignition Temperature: 625 °C
Decomposition Temperature: Not known.

Viscosity

Kinematic viscosity:No data available.Dynamic viscosity:0,183 mPa.s (20 °C)Explosive properties:Not applicable.Oxidizing properties:not applicable.

9.2 Other information: Gas/vapour heavier than air. May accumulate in confined

spaces, particularly at or below ground level.

Molecular weight: 50,49 g/mol (CH3Cl)

SECTION 10: Stability and reactivity

10.1 Reactivity: No reactivity hazard other than the effects described in sub-section below.

10.2 Chemical Stability: Stable under normal conditions.

10.3 Possibility of hazardous Can form a potentially explosive atmosphere in air. May react violently with

reactions: oxidants.

10.4 Conditions to avoid: Keep away from heat, hot surfaces, sparks, open flames and other ignition

sources. No smoking.





Issue Date: 16.01.2013 Version: 1.0 SDS No.: 000010021780 Last revised date: 20.01.2017

10/16

10.5 Incompatible Materials: Air and oxidizers. For material compatibility see latest version of ISO-11114.

10.6 Hazardous Decomposition Under normal conditions of storage and use, hazardous decomposition products

Products: should not be produced.

SECTION 11: Toxicological information

General information: May cause central nervous system depression. May cause damage to the liver.

11.1 Information on toxicological effects

Acute toxicity - Oral

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

Acute toxicity - Dermal

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

Acute toxicity - Inhalation

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

Repeated dose toxicity

chloromethane; methyl

chloride

NOAEL (Rat(Female, Male), Inhalation): 826 mg/m3

Skin Corrosion/Irritation

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

Serious Eye Damage/Eye Irritation

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

chloromethane; methyl

chloride

Not irritating

Respiratory or Skin Sensitization

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

Germ Cell Mutagenicity

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

Carcinogenicity

Product Suspected of causing cancer.

Reproductive toxicity

Product Suspected of damaging fertility or the unborn child.



SAFETY DATA SHEET Methyl chloride (R40)

Issue Date: 16.01.2013 Version: 1.0 SDS No.: 000010021780 Last revised date: 20.01.2017

11/16

Reproductive toxicity (Fertility)

chloromethane; methyl

chloride

Rat NOAEC: 310 mg/m³

Specific Target Organ Toxicity - Single Exposure

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

Specific Target Organ Toxicity - Repeated Exposure

Product May cause damage to organs through prolonged or repeated exposure.

chloromethane; methyl

chloride

Route of Exposure: Inhalation Target Organ(s): Liver

Repeated exposure may cause liver damage or failure. Causes damage to the

central nervous system.

Aspiration Hazard

Product Not applicable to gases and gas mixtures..

SECTION 12: Ecological information

12.1 Toxicity

Acute toxicity

Product No ecological damage caused by this product.

Acute toxicity - Fish

chloromethane; methyl

chloride

LC 50 (Various, 96 h): 396 mg/l (QSAR) Remarks: estimation

12.2 Persistence and Degradability

Product Not applicable to gases and gas mixtures..

chloromethane; methyl chloride The substance is biodegradable. Unlikely to persist.

Photodegradation

chloromethane; methyl

Degradation by OH radicals.

chloride

Air

Atmospheric degradation

chloromethane; methyl

chloride

Half-life time:231 day(s)





Issue Date: 16.01.2013 Version: 1.0 SDS No.: 000010021780 Last revised date: 20.01.2017

12/16

Stability in water

12.3 Bioaccumulative Potential

Product The product is expected to biodegrade and is not expected to persist for long

periods in an aquatic environment.

12.4 Mobility in Soil

Product Because of its high volatility, the product is unlikely to cause ground or water

pollution.

chloromethane; methyl chloride Henry's Law Constant: 49,46 MPa (24 °C)

12.5 Results of PBT and vPvB

assessment Product

Not classified as PBT or vPvB.

12.6 Other Adverse Effects:

Global Warming Potential

Global warming potential: 13

Contains greenhouse gas(es) not covered by 842/2006/EC. Contains greenhouse gas(es). When discharged in large quantities may contribute to the greenhouse

effect.

chloromethane; methyl

chloride

UN / IPCC. Greenhouse Gas Global Warming Potentials (IPCC Fourth Assessment

Report, Climate Change, Table TS.2 - Global warming potential: 13 100-yr

Ozone Depleting Potential

May have a damaging effect on the ozone layer.

chloromethane; methyl

chloride

SECTION 13: Disposal considerations

13.1 Waste treatment methods

General information: Do not discharge into any place where its accumulation could be dangerous.

> Consult supplier for specific recommendations. Do not discharge into areas where there is a risk of forming an explosive mixture with air. Waste gas should be flared

through a suitable burner with flash back arrestor.



SAFETY DATA SHEET Methyl chloride (R40)

Issue Date: 16.01.2013 Version: 1.0 SDS No.: 000010021780 Last revised date: 20.01.2017

13/16

Disposal methods: Refer to the EIGA code of practice (Doc. 30 "Disposal of Gases", downloadable at

http://www.eiga.org) for more guidance on suitable disposal methods. Dispose of container via supplier only. Discharge, treatment, or disposal may be subject to

national, state, or local laws.

European Waste Codes

Container: 16 05 04*: Gases in pressure containers (including halons) containing

dangerous substances.

SECTION 14: Transport information

ADR

14.1 UN Number: UN 1063

14.2 UN Proper Shipping Name: METHYL CHLORIDE (REFRIGERANT GAS R 40)

14.3 Transport Hazard Class(es)

2 Class: 2.1 Label(s): Hazard No. (ADR): 23 Tunnel restriction code: (B/D)

14.4 Packing Group:

14.5 Environmental hazards: not applicable

14.6 Special precautions for user:

RID

14.1 UN Number: UN 1063

14.2 UN Proper Shipping Name METHYL CHLORIDE (REFRIGERANT GAS R 40)

14.3 Transport Hazard Class(es)

2 Class: Label(s): 2.1 14.4 Packing Group:

14.5 Environmental hazards: not applicable

14.6 Special precautions for user:

IMDG

14.1 UN Number: UN 1063

14.2 UN Proper Shipping Name: METHYL CHLORIDE (REFRIGERANT GAS R 40)

14.3 Transport Hazard Class(es)

Class: 2.1 Label(s): 2.1 EmS No.: F-D, S-U

14.3 Packing Group:

14.5 Environmental hazards: not applicable

14.6 Special precautions for user:



SAFETY DATA SHEET Methyl chloride (R40)

Issue Date: 16.01.2013 Version: 1.0 SDS No.: 000010021780 Last revised date: 20.01.2017

14/16

IATA

14.1 UN Number: UN 1063 14.2 Proper Shipping Name: Methyl chloride

14.3 Transport Hazard Class(es):

Class: 2.1 Label(s): 2.1 14.4 Packing Group:

14.5 Environmental hazards: not applicable

14.6 Special precautions for user:

Other information

Passenger and cargo aircraft: Forbidden. Cargo aircraft only: Allowed.

14.7 Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code: not applicable

Additional identification: Avoid transport on vehicles where the load space is not separated from

the driver's compartment. Ensure vehicle driver is aware of the potential hazards of the load and knows what to do in the event of an accident or an emergency. Before transporting product containers ensure that they are firmly secured. Ensure that the container valve is closed and not leaking. Container valve guards or caps should be in place. Ensure

adequate air ventilation.

SECTION 15: Regulatory information

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

EU Regulations

Regulation (EC) No. 1907/2006 Annex XVII Substances subject to restriction on marketing and use:

Chemical name	CAS-No.	Concentration
chloromethane; methyl chloride	74-87-3	100%

Directive 92/85/EEC: on the safety and health of pregnant workers and workers who have recently given birth or are breast feeding .:

Chemical name	CAS-No.	Concentration
chloromethane; methyl chloride	74-87-3	100%

Directive 96/82/EC (Seveso III): on the control of major accident hazards involving dangerous substances:

Chemical name	CAS-No.	Concentration
chloromethane; methyl chloride	74-87-3	100%





 Issue Date:
 16.01.2013
 Version: 1.0
 SDS No.: 000010021780

 Last revised date:
 20.01.2017
 15/16

Directive 98/24/EC on the protection of workers from the risks related to chemical agents at work:

Chemical name	CAS-No.	Concentration
chloromethane; methyl chloride	74-87-3	100%

National Regulations

Council Directive 89/391/EEC on the introduction of measures to encourage improvements in the safety and health of workers at work Directive 89/686/EEC on personal protective equipment Directive 94/9/EC on equipment and protective systems intended for use in potentially explosive atmospheres (ATEX) Only products that comply with the food regulations (EC) No. 1333/2008 and (EU) No. 231/2012 and are labelled as such may be used as food additives.

This Safety Data Sheet has been produced to comply with Regulation (EU) 453/2010.

15.2 Chemical safety assessment: No Chemical Safety Assessment has been carried out.

SECTION 16: Other information

Revision Information: Not relevant.

Key literature references and sources for data:

Various sources of data have been used in the compilation of this SDS, they include but are not exclusive to:

Agency for Toxic Substances and Diseases Registry (ATSDR)

(http://www.atsdr.cdc.gov/).

European Chemical Agency: Guidance on the Compilation of Safety Data Sheets.

European Chemical Agency: Information on Registered Substances http://apps.echa.europa.eu/registered/registered-sub.aspx#search

European Industrial Gases Association (EIGA) Doc. 169 Classification and Labelling

International Programme on Chemical Safety (http://www.inchem.org/)

ISO 10156:2010 Gases and gas mixtures - Determination of fire potential and

oxidizing ability for the selection of cylinder valve outlets.

Matheson Gas Data Book, 7th Edition.

National Institute for Standards and Technology (NIST) Standard Reference Database Number 69.

The ESIS (European chemical Substances 5 Information System) platform of the former European Chemicals Bureau (ECB) ESIS (http://ecb.jrc.ec.europa.eu/esis/).

The European Chemical Industry Council (CEFIC) ERICards.

United States of America's National Library of Medicine's toxicology data network

TOXNET (http://toxnet.nlm.nih.gov/index.html)

Threshold Limit Values (TLV) from the American Conference of Governmental

Industrial Hygienists (ACGIH).

Substance specific information from suppliers.

Details given in this document are believed to be correct at the time of publication.





Issue Date: 16.01.2013 Version: 1.0 SDS No.: 000010021780 Last revised date: 20.01.2017

16/16

Wording of the R-phrases and H-statements in section 2 and 3

H220 Extremely flammable gas.

H280 Contains gas under pressure; may explode if heated.

H351 Suspected of causing cancer.

H361 Suspected of damaging fertility or the unborn child.

H361fd Suspected of damaging fertility. Suspected of damaging the unborn

H373 May cause damage to organs through prolonged or repeated

exposure.

R12 Extremely flammable.

R40 Limited evidence of a carcinogenic effect.

R48/20 Harmful: danger of serious damage to health by prolonged exposure

through inhalation.

Users of breathing apparatus must be trained. Ensure operators understand the **Training information:**

flammability hazard.

Classification according to Regulation (EC) No 1272/2008 as amended.

Flam. Gas 1, H220

Press. Gas Liq. Gas, H280

Carc. 2, H351 Repr. 2, H361 STOT RE 2, H373

Other information: Before using this product in any new process or experiment, a thorough material

> compatibility and safety study should be carried out. Ensure adequate air ventilation. Ensure all national/local regulations are observed. Ensure equipment is adequately earthed. Whilst proper care has been taken in the preparation of this document, no

liability for injury or damage resulting from its use can be accepted.

Last revised date: 20.01.2017

This information is provided without warranty. The information is believed to be Disclaimer:

correct. This information should be used to make an independent determination of

the methods to safeguard workers and the environment.