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

1.1 Product identifier

Product name: Bromomethane (R40 B1)

Additional identification

Chemical name: Bromomethane

Chemical formula: CH3Br
INDEX No. 602-002-00-2
CAS-No. 74-83-9
EC No. 200-813-2
REACH Registration No. Not available.

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

Telephone: +43 50 4273

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

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.

T; R23 / 25 Xi; R36 / 37 / 38 Xn; R48 / 20 Muta. 3; R68 N; R50 N; R59

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 2	H221: Flammable gas.
Gases under pressure	Liquefied gas	H280: Contains gas under pressure; may explode if heated.

Health Hazards

Acute toxicity (Inhalation - gas)	Category 2	H330: Fatal if inhaled.
Skin irritation	Category 2	H315: Causes skin irritation.
Serious eye irritation	Category 2	H319: Causes serious eye irritation.
Germ Cell Mutagenicity	Category 2	H341: Suspected of causing genetic defects.
Specific Target Organ Toxicity - Single Exposure	Category 3	H335: May cause respiratory irritation.
Specific Target Organ Toxicity - Repeated Exposure	Category 2	H373: May cause damage to organs through prolonged or repeated exposure.

Environmental Hazards

Acute hazards to the aquatic environment	Category 1	H400: Very toxic to aquatic life.
Hazardous to the ozone layer	Category 1	H420: Harms public health and the environment by destroying ozone in the upper atmosphere.

2.2 Label Elements

Contains: Bromomethane

Signal Words: Danger

Hazard Statement(s):

H221: Flammable gas.
H280: Contains gas under pressure; may explode if heated.
H315: Causes skin irritation.
H319: Causes serious eye irritation.
H330: Fatal if inhaled.
H335: May cause respiratory irritation.
H341: Suspected of causing genetic defects.
H373: May cause damage to organs through prolonged or repeated exposure.
H400: Very toxic to aquatic life.
H420: Harms public health and the environment by destroying ozone in the upper atmosphere.

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.
P273: Avoid release to the environment.
P280: Wear protective gloves / protective clothing / eye protection / face protection.

Response:

P302+P352: IF ON SKIN: Wash with plenty of water / ...
P332+P313: If skin irritation occurs: Get medical advice / attention.
P304+P340+P315: IF INHALED: Remove person to fresh air and keep comfortable for breathing. Get immediate medical advice / attention.
P305+P351+P338+P315: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get immediate medical advice / attention.
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.
P405: Store locked up.

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	Bromomethane
INDEX No.:	602-002-00-2
CAS-No.:	74-83-9
EC No.:	200-813-2
REACH Registration No.:	Not available.
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: 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: Remove victim to uncontaminated area wearing self contained breathing apparatus. Keep victim warm and rested. Call a doctor. Apply artificial respiration if breathing stopped.

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: Immediately flush with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Get medical attention. Contact with evaporating liquid may cause frostbite or freezing of skin.

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

4.2 Most important symptoms and effects, both acute and delayed: Irritating to eyes, respiratory system and skin. Contact with liquefied gas can cause damage (frostbite) due to rapid evaporative cooling. May be fatal if inhaled.

4.3 Indication of any immediate medical attention and special treatment needed

Hazards: Irritating to eyes, respiratory system and skin. Contact with liquefied gas can cause damage (frostbite) due to rapid evaporative cooling. May be fatal if inhaled.

Treatment: Thaw frosted parts with lukewarm water. Do not rub affected area. Get immediate medical advice / attention. Treat with a corticosteroid spray as soon as possible after inhalation.

SECTION 5: Firefighting measures

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

5.1 Extinguishing media

Suitable extinguishing media: Use water spray to reduce vapors or divert vapor cloud drift. Water Spray or Fog. Dry powder. Foam.

Unsuitable extinguishing media: Carbon Dioxide.

5.2 Special hazards arising from the substance or mixture: Fire or excessive heat may produce hazardous decomposition products.

5.3 Advice for firefighters

Special fire fighting procedures: In case of fire: Stop leak if safe to do so. Use of water may result in the formation of very toxic aqueous solutions. Keep run-off water out of sewers and water sources. Dike for water control. 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.

Special protective equipment for fire-fighters: Gas tight chemically protective clothing (Type 1) in combination with self contained breathing apparatus.
Guideline: EN 943-2 Protective clothing against liquid and gaseous chemicals, aerosols and solid particles. Performance requirements for gas-tight (Type 1) chemical protective suits for emergency teams (ET)

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 self-contained 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. Reduce vapour with fog or fine water spray. Keep run-off water out of sewers and water sources. Dike for water control.

6.3 Methods and material for containment and cleaning up: Provide adequate ventilation. Eliminate sources of ignition. Wash contaminated equipment or sites of leaks with copious quantities of water.

6.4 Reference to other sections: Refer to sections 8 and 13.

SECTION 7: Handling and storage:

7.1 Precautions for safe handling:

Only experienced and properly instructed persons should handle gases under pressure. Avoid exposure - obtain special instructions before use. 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. Installation of a cross purge assembly between the container and the regulator is recommended. Excess pressure must be vented through an appropriate scrubber system. 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 eg. 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. Keep away from food, drink and animal feeding stuffs. 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.

SECTION 8: Exposure controls / personal protection

8.1 Control Parameters

Occupational Exposure Limits

None of the components have assigned exposure limits.

Remarks

Bromomethane: Can be absorbed through the skin.
Listed.
Included in the regulation but with no data values. See regulation for further details

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 occupational exposure limits. Gas detectors should be used when toxic quantities may be released. Gas detectors should be used when quantities of flammable gases or vapours may be released. Systems under pressure should be regularly checked for leakages. Product to be handled in a closed system and under strictly controlled conditions. Only use permanent leak tight installations (e.g. welded pipes). Take precautionary measures against static discharges. Do not eat, drink or smoke when using the product.

Individual protection measures, such as personal protective equipment

General information: A risk assessment should be conducted and documented in each work area to 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. Protect eyes, face and skin from contact with product. Refer to local regulations for restriction of emissions to the atmosphere. See section 13 for specific methods for waste gas treatment.

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

Body protection: Wear fire / flame resistant / retardant clothing. Keep suitable chemically resistant protective clothing readily available for emergency use.
Guideline: ISO / TR 2801:2007 Clothing for protection against heat and flame -- General recommendations for selection, care and use of protective clothing.Guideline: EN 943 Protective clothing against liquid and gaseous chemicals, including liquid aerosols and solid particles.

Other: Wear safety shoes while handling containers
Guideline: ISO 20345 Personal protective equipment - Safety footwear.

Respiratory Protection: Reference should be made to European Standard EN 689 for methods for the assessment of exposure by inhalation to chemical agents and national guidance documents for methods for the determination of hazardous substances. The selection of the Respiratory Protective Device (RPD) must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected RPD.

Thermal hazards: No precautionary measures are necessary.

Hygiene measures: Obtain special instructions before use. 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
Form:	Liquefied gas
Color:	Colorless
Odor:	Sweetish odor
Odor Threshold:	Odor threshold is subjective and is inadequate to warn of over exposure.
pH:	not applicable.
Melting Point:	-93,66 °C
Boiling Point:	3,5 °C
Sublimation Point:	not applicable.
Critical Temp. (°C):	194,0 °C
Flash Point:	Not applicable to gases and gas mixtures.
Evaporation Rate:	Not applicable to gases and gas mixtures.

Flammability (solid, gas):	Flammable Gas, but only in presence of a high energy ignition source
Flammability Limit - Upper (%):	14,5 %(V)
Flammability Limit - Lower (%):	8,6 %(V)
Vapor pressure:	215,98 kPa (25 °C)
Vapor density (air=1):	3,3 AIR=1
Relative density:	1,730 (4 °C)
Solubility(ies)	
Solubility in Water:	13,4 g / l (25 °C)
Solubility (other):	water: 13,4 g / l (25 °C)
Partition coefficient (n-octanol / water):	1,19
Autoignition Temperature:	537 °C
Decomposition Temperature:	When heated to decomp, emits toxic fumes of hydrogen bromide.
Viscosity	
Kinematic viscosity:	No data available.
Dynamic viscosity:	0,397 mPa.s (0 °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:	94,94 g / mol (CH3Br)

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 reactions:	Can form a potentially explosive atmosphere in air. May react violently with oxidants.
10.4 Conditions to avoid:	Avoid moisture in the installation. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
10.5 Incompatible Materials:	Air and oxidizers. Moisture. For material compatibility see latest version of ISO-11114. May react violently with alkalis. Reacts with water to form corrosive acids.
10.6 Hazardous Decomposition Products:	Under normal conditions of storage and use, hazardous decomposition products should not be produced.

SECTION 11: Toxicological information

General information: Fatal intoxication possible with low concentrations.

11.1 Information on toxicological effects

Acute toxicity - Oral

Product	Based on available data, the classification criteria are not met.
Bromomethane	LD 50 (Rat): 214 mg / kg

Acute toxicity - Dermal

Product	Based on available data, the classification criteria are not met.
Bromomethane	LD 50 (Rat): 135 mg / kg Remarks: Experimental result, Key study LD 50 (Rat): 135 mg / kg

Acute toxicity - Inhalation

Product	Fatal if inhaled.
Bromomethane	LC 50 (Mouse, 1 h): 4,68 mg / l LC 50 (Rat, 1,0 h): 850 ppm

Repeated dose toxicity

Bromomethane	NOAEL (Mouse, Inhalation): 39 mg / kg Inhalation Experimental result, Supporting study NOAEL (Mouse, Inhalation): 39 mg / kg Inhalation

Skin Corrosion / Irritation

Product	Causes skin irritation.
Bromomethane	Irritating

Serious Eye Damage / Eye Irritation

Product	Causes serious eye irritation.
Bromomethane	Severely Irritating

Respiratory or Skin Sensitization

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

Germ Cell Mutagenicity

Product	Suspected of causing genetic defects.

Carcinogenicity

Product	Based on available data, the classification criteria are not met.
Bromomethane	Known or suspected carcinogen for humans.

Reproductive toxicity

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

Specific Target Organ Toxicity - Single Exposure

Product	May cause respiratory irritation.
Bromomethane	Causes irritation to the respiratory tract

Specific Target Organ Toxicity - Repeated Exposure

Product	May cause damage to organs through prolonged or repeated exposure.
Bromomethane	May cause damage to organs through prolonged or repeated exposure if swallowed. Causes damage to kidneys and liver.

Aspiration Hazard

Product	Not applicable to gases and gas mixtures..

SECTION 12: Ecological information

General information: Avoid release to the environment. Product is not allowed to be discharged into ground water or the aquatic environment.

12.1 Toxicity

Acute toxicity

Product	Very toxic to aquatic life.

Acute toxicity - Fish

Bromomethane	LC 50 (Bluegill (Lepomis macrochirus), 96 h): 11 mg / l (Static) Remarks: Mortality

Acute toxicity - Aquatic Invertebrates

Bromomethane	LC 50 (Water flea (Daphnia magna), 48 h): 2,2 mg / l (Static) Remarks: Mortality

12.2 Persistence and Degradability

Product	Not applicable to gases and gas mixtures..

Biodegradation

Inorganic The product is not readily biodegradable.

12.3 Bioaccumulative Potential

Product The substance has no potential for bioaccumulation.

12.4 Mobility in Soil

Product The substance has low mobility in soil.

Bromomethane Henry's Law Constant: 41,16 MPa (25 °C)

12.5 Results of PBT and vPvB assessment

Product Not classified as PBT or vPvB.

12.6 Other Adverse Effects:

Ozone Depleting Potential

May have a damaging effect on the ozone layer.

Bromomethane EIGA Classification and Labelling Guide, Doc 169 / 13
- Ozone Depletion Potential: 0,6 Group VI

Other Ecological Information

May cause pH changes in aqueous ecological systems.
May cause pH changes in aqueous ecological systems. Depending on local conditions and existing concentrations, disturbances in the biodegradation process of activated sludge are possible.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

General information: Must not be discharged to atmosphere. Consult supplier for specific recommendations.

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 1581
14.2 UN Proper Shipping Name:	CHLOROPICRIN AND METHYL BROMIDE MIXTURE
14.3 Transport Hazard Class(es)	
Class:	2
Label(s):	2.3
Hazard No. (ADR):	26
Tunnel restriction code:	(C / D)
14.4 Packing Group:	–
14.5 Environmental hazards:	Environmentally Hazardous
14.6 Special precautions for user:	–

RID

14.1 UN Number:	UN 1581
14.2 UN Proper Shipping Name	CHLOROPICRIN AND METHYL BROMIDE MIXTURE
14.3 Transport Hazard Class(es)	
Class:	2
Label(s):	2.3
14.4 Packing Group:	–
14.5 Environmental hazards:	Environmentally Hazardous
14.6 Special precautions for user:	–

IMDG

14.1 UN Number:	UN 1581
14.2 UN Proper Shipping Name:	CHLOROPICRIN AND METHYL BROMIDE MIXTURE
14.3 Transport Hazard Class(es)	
Class:	2.3
Label(s):	2.3
EmS No.:	F-C, S-U
14.3 Packing Group:	–
14.5 Environmental hazards:	not applicable
14.6 Special precautions for user:	–

IATA

14.1 UN Number:	UN 1581
14.2 Proper Shipping Name:	Chloropicrin and methyl bromide mixture
14.3 Transport Hazard Class(es):	
Class:	2.3
Label(s):	–
14.4 Packing Group:	–
14.5 Environmental hazards:	Environmentally Hazardous
14.6 Special precautions for user:	–
Other information	
Passenger and cargo aircraft:	Forbidden.
Cargo aircraft only:	Forbidden.

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. 2037 / 2000 Substances that deplete the ozone layer:

Chemical name	CAS-No.	Concentration
Bromomethane	74-83-9	100%

Directive 96 / 61 / EC: concerning integrated pollution prevention and control (IPPC): Article 15, European Pollution Emission Registry (EPER):

Chemical name	CAS-No.	Concentration
Bromomethane	74-83-9	100%

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

Chemical name	CAS-No.	Concentration
Bromomethane	74-83-9	100%

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

Chemical name	CAS-No.	Concentration
Bromomethane	74-83-9	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 guide.
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.

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

H221	Flammable gas.
H280	Contains gas under pressure; may explode if heated.
H301	Toxic if swallowed.
H315	Causes skin irritation.
H319	Causes serious eye irritation.
H330	Fatal if inhaled.
H335	May cause respiratory irritation.
H341	Suspected of causing genetic defects.
H373	May cause damage to organs through prolonged or repeated exposure.
H400	Very toxic to aquatic life.
H420	Harms public health and the environment by destroying ozone in the upper atmosphere.
R23/25	Toxic by inhalation and if swallowed.
R36/37/38	Irritating to eyes, respiratory system and skin.
R48/20	Harmful: danger of serious damage to health by prolonged exposure through inhalation.
R50	Very toxic to aquatic organisms.
R59	Dangerous for the ozone layer.
R68	Possible risk of irreversible effects.

Training information:

Users of breathing apparatus must be trained. Ensure operators understand the toxicity hazard.

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

Flam. Gas 2, H221
Press. Gas Liq. Gas, H280
Acute Tox. 2, H330
Skin Irrit. 2, H315
Eye Irrit. 2, H319
Muta. 2, H341
STOT SE 3, H335
STOT RE 2, H373
Aquatic Acute 1, H400
Ozone 1, H420

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. 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: 02.02.2017

Disclaimer: This information is provided without warranty. The information is believed to be correct. This information should be used to make an independent determination of the methods to safeguard workers and the environment.