

Trade name: R508b

Current version : 4.0.0, issued: 24.10.2022

Replaced version: 3.0.0, issued: 12.04.2021

Region: GB

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

**1.1 Product identifier**

Trade name

**R508b**

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

**Relevant identified uses of the substance or mixture**

Refrigerant for professional use in ultra-low temperature freezers

**Uses advised against**

No data available.

**1.3 Details of the supplier of the safety data sheet**

**Address**

Eppendorf SE  
Barkhausenweg 1  
D-22339 Hamburg

Telephone no. +49 40 53801-0

**Information provided by / telephone**

email: certificates@eppendorf.com

**Advice on Safety Data Sheet**

sdb\_info@umco.de

**1.4 Emergency telephone number**

For medical advice (in German and English):

+49 (0)551 192 40 (Giftinformationszentrum Nord)

**SECTION 2: Hazards identification**

**2.1 Classification of the substance or mixture**

**Classification in accordance with Regulation (EC) No 1272/2008 (CLP)**

Press. Gas liq.; H280

**Classification information**

This product is assessed and classified using the methods and criteria below referred to in Article 9 of Regulation (EC) n° 1272/2008:

Physical hazards: determined through assessment data based on the methods or standards referred to in part 2 of Annex I to CLP

Health hazards and environmental hazards: determined through toxicological and ecotoxicological assessment data based on the methods or standards referred to in Part 3, 4 and 5 of Annex I to CLP.

**2.2 Label elements**

**Labelling according to Regulation (EC) No 1272/2008 (CLP Regulation)**

**Hazard pictograms**



GHS04

**Signal word**

Warning

**Hazard statement(s)**

H280 Contains gas under pressure; may explode if heated.

**Precautionary statement(s)**

P403 Store in a well-ventilated place.

**Supplemental label elements**

Contains fluorinated greenhouse gases covered by the Kyoto protocol.

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**2.3 Other hazards**

Liquefied gas: Spilled liquid can cause cold burns. This gas is heavier than air and may accumulate in low areas.

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

**3.1 Substances**

Not applicable. The product is not a substance.

**3.2 Mixtures**

**Chemical characterization**

Pressurised liquified gas

**Hazardous ingredients**

No	Substance name		Additional information	
	CAS / EC / Index / REACH no	Classification (EC) 1272/2008 (CLP)	Concentration	%
1	<b>trifluoromethane</b>			
	75-46-7 200-872-4 - -	Press. Gas liq.; H280	>= 50.00 - < 70.00	Vol%
2	<b>perfluoroethane</b>			
	76-16-4 200-939-8 - -	Press. Gas liq.; H280	>= 25.00 - < 50.00	Vol%

Full Text for all H-phrases and EUH-phrases: pls. see section 16

**SECTION 4: First aid measures**

**4.1 Description of first aid measures**

**General information**

Remove contaminated clothing and shoes immediately, and launder thoroughly before reusing. In high concentrations may cause asphyxiation. Symptoms may include loss of mobility/consciousness. Victim may not be aware of asphyxiation.

**After inhalation**

Ensure supply of fresh air. Remove affected person from the immediate area. Irregular breathing/no breathing: artificial respiration. Take medical treatment.

**After skin contact**

In case of could burns after contact with liquified gas: rinse with plenty of warm water (40°C approx.). If clothing is burnt onto the wound DO NOT pull off. Seek medical attention.

**After eye contact**

Remove contact lenses. Rinse eye thoroughly under running water keeping eyelids wide open and protecting the unaffected eye (at least 10 to 15 minutes). Get immediate ophthalmic treatment.

**After ingestion**

Do not induce vomiting. Call a doctor. Never give anything by mouth to an unconscious person.

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

**Symptoms**

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**

No data available.

**SECTION 5: Firefighting measures**

**5.1 Extinguishing media**

**Suitable extinguishing media**

Product itself is non-combustible; adapt fire extinguishing measures to surrounding areas.

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**Unsuitable extinguishing media**

No data available.

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

In case of fire: danger of pressure build up, which could result in container rupture. In the event of fire, the following can be released: Carbon monoxide and carbon dioxide; Hydrogen fluoride (HF); Carbonyl fluoride; Fluorinated hydrocarbons; When pressurised with air or oxygen, the mixture may become flammable. Certain mixtures of HCFCs or HFCs with chlorine may become flammable or reactive under certain conditions.

**5.3 Advice for firefighters**

Use self-contained breathing apparatus. Cool endangered containers with water spray jet. Wear protective clothing.

**SECTION 6: Accidental release measures**

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

**For non-emergency personnel**

Refer to protective measures listed in sections 7 and 8. Ensure adequate ventilation. Keep away from ignition sources.

**For emergency responders**

No data available. Personal protective equipment (PPE) - see Section 8.

**6.2 Environmental precautions**

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

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

Ventilate room.

**6.4 Reference to other sections**

Information regarding personal protective measures, see section 8. Information regarding waste disposal, see section 13.

**SECTION 7: Handling and storage**

**7.1 Precautions for safe handling**

**Advice on safe handling**

Provide good ventilation at the work area (local exhaust ventilation, if necessary). If workplace exposure limits are exceeded, respiratory protection approved for this particular job must be worn. Risks inherent to handling the product must be minimised by applying the appropriate protective and preventive measures. Working processes should - so far as possible, according to the state of the art - be designed to rule out bodily contact or the release of hazardous substances.

**General protective and hygiene measures**

Do not eat, drink or smoke during work time. Keep away from foodstuffs and beverages. Avoid contact with eyes and skin. Remove soiled or soaked clothing immediately. Do not inhale vapours. Wash hands before breaks and after work. Provide eye wash fountain in work area. Have emergency shower available.

**Advice on protection against fire and explosion**

Isolate from sources of heat, sparks and open flame.

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

**Technical measures and storage conditions**

Keep container tightly closed and dry in a cool, well-ventilated place. Store upright.

**Requirements for storage rooms and vessels**

Containers which are opened must be carefully closed and kept upright to prevent leakage. Always keep in containers of same material as the original.

**Incompatible products**

Do not store together with: Acids; oxidizing agents; Magnesium; Zinc; Calcium; Aluminium powder; Alkali metals; Earth alkali metals

**7.3 Specific end use(s)**

No data available.

**SECTION 8: Exposure controls/personal protection**

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**8.1 Control parameters**

No parameters available for monitoring.

**8.2 Exposure controls**

**Appropriate engineering controls**

Ensure adequate ventilation, local exhaust at the work station if necessary.

**Personal protective equipment**

**Respiratory protection**

If workplace exposure limits are exceeded, a respiration protection approved for this particular job must be worn. In case of aerosol and mist formation, take appropriate measures for breathing protection in the event workplace threshold values are not specified.

**Eye / face protection**

Safety glasses (EN 166)

**Hand protection**

Sufficient protection is given wearing suitable protective gloves checked according to i.e. EN 374, in the event of risk of skin contact with the product. Before use, the protective gloves should be tested in any case for its specific work-station suitability (i.e. mechanical resistance, product compatibility and antistatic properties). Adhere to the manufacturer's instructions and information relating to the use, storage, care and replacement of protective gloves. Protective gloves shall be replaced immediately when physically damaged or worn. Design operations thus to avoid permanent use of protective gloves.

**Other**

Normal chemical work clothing.

**Environmental exposure controls**

No data available.

**SECTION 9: Physical and chemical properties**

**9.1 Information on basic physical and chemical properties**

<b>State of aggregation</b>	
gas	
<b>Form</b>	
liquified gas	
<b>Colour</b>	
colourless	
<b>Odour</b>	
sweetish	
<b>pH value</b>	
Not applicable	
<b>Boiling point / boiling range</b>	
Value	-88.3 °C
<b>Melting point/freezing point</b>	
No data available	
<b>Sublimation point / sublimation range</b>	
Not applicable	
<b>Decomposition temperature</b>	
No data available	
<b>Flash point</b>	
Not applicable	
<b>Ignition temperature</b>	
No data available	
<b>Auto-ignition temperature</b>	

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Not applicable	
<b>Oxidising properties</b>	
Not applicable	
<b>Explosive properties</b>	
Not applicable	
<b>Flammability</b>	
The product is not combustible.	
<b>Lower explosion limit</b>	
No data available	
<b>Upper explosion limit</b>	
No data available	
<b>Vapour pressure</b>	
No data available	
<b>Relative vapour density</b>	
Value	3.33
Reference temperature	15 °C
Comments	Air = 1
<b>Relative density</b>	
No data available	
<b>Density</b>	
No data available	
<b>Solubility</b>	
No data available	
<b>Partition coefficient n-octanol/water (log value)</b>	
No data available	
<b>Kinematic viscosity</b>	
No data available	
<b>Particle characteristics</b>	

9.2 Other information

<b>Other information</b>
No data available.

**SECTION 10: Stability and reactivity**

10.1 Reactivity

No data available.

10.2 Chemical stability

Stable under recommended storage and handling conditions (See section 7).

10.3 Possibility of hazardous reactions

Dangerous reactions are not to be expected when handling product according to its intended use.

10.4 Conditions to avoid

Heat, naked flames or other ignition sources, electrostatic charge and discharge, formation of vapours/aerosols.

10.5 Incompatible materials

Aluminium powder; calcium; Zinc; Magnesium; Oxidizing agents; Alkali metals; Earth alkali metals

10.6 Hazardous decomposition products

Fluorinated hydrocarbons

**SECTION 11: Toxicological information**

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**11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008**

Acute oral toxicity	
No	Product Name
1	R508b
Evaluation/classification	Based on available data, the classification criteria are not met.

Acute dermal toxicity	
No	Product Name
1	R508b
Evaluation/classification	Based on available data, the classification criteria are not met.

Acute inhalational toxicity	
No	Product Name
1	R508b
Evaluation/classification	Based on available data, the classification criteria are not met.

Skin corrosion/irritation	
No	Product Name
1	R508b
Evaluation/classification	Based on available data, the classification criteria are not met.

Serious eye damage/irritation	
No	Product Name
1	R508b
Evaluation/classification	Based on available data, the classification criteria are not met.

Respiratory or skin sensitisation	
No	Product Name
1	R508b
Route of exposure	Skin
Evaluation/classification	Based on available data, the classification criteria are not met.

Germ cell mutagenicity	
No	Product Name
1	R508b
Evaluation/classification	Based on available data, the classification criteria are not met.

Reproduction toxicity	
No	Product Name
1	R508b
Evaluation/classification	Based on available data, the classification criteria are not met.

Carcinogenicity	
No	Product Name
1	R508b
Evaluation/classification	Based on available data, the classification criteria are not met.

STOT - single exposure	
No	Product Name
1	R508b
Evaluation/classification	Based on available data, the classification criteria are not met.

STOT - repeated exposure	
No	Product Name
1	R508b
Evaluation/classification	Based on available data, the classification criteria are not met.

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

Delayed and immediate effects as well as chronic effects from short and long-term exposure	
Product specific toxicological data are not available.	

**11.2 Information on other hazards**

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**Endocrine disrupting properties**  
No data available.

**Other information**  
No data available.

**SECTION 12: Ecological information**

**12.1 Toxicity**

Toxicity to fish (acute)	
No	Product Name
1	R508b
Evaluation/classification	Based on available data, the classification criteria are not met.

Toxicity to fish (chronic)	
No data available	

Toxicity to Daphnia (acute)	
No	Product Name
1	R508b
Evaluation/classification	Based on available data, the classification criteria are not met.

Toxicity to Daphnia (chronic)	
No data available	

Toxicity to algae (acute)	
No	Product Name
1	R508b
Evaluation/classification	Based on available data, the classification criteria are not met.

Toxicity to algae (chronic)	
No data available	

Bacteria toxicity	
No data available	

**12.2 Persistence and degradability**

Biodegradability	
No	Product Name
1	R508b
Evaluation	The product is expected to biodegrade and is not expected to persist for long periods in an aquatic environment.

Physico-chemical eliminability	
No	Product Name
1	R508b
Not applicable	

**12.3 Bioaccumulative potential**

No data available.

**12.4 Mobility in soil**

Mobility in soil	
No	Product Name
1	R508b
Comments	Because of its high volatility, the product is unlikely to cause ground or water pollution.

**12.5 Results of PBT and vPvB assessment**

No data available.

**12.6 Endocrine disrupting properties**

No data available.

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**12.7 Other adverse effects**

No data available.

**12.8 Other information**

**Other information**

Do not discharge product unmonitored into the environment.

**SECTION 13: Disposal considerations**

**13.1 Waste treatment methods**

**Product**

Waste code 14 06 01\* chlorofluorocarbons, HCFC, HFC

The listed waste code numbers, according to the European Waste Catalogue, are to be understood as a recommendation. A final decision must be made in agreement with the regional waste disposal company. Refer to the EIGA code of practice (Doc.30 "Disposal of Gases"; <http://www.eiga.org>). dispose of in accordance with local regulation.

**Packaging**

Contaminated packaging should be emptied as far as possible and after appropriate cleansing may be taken for reuse. Packaging that cannot be cleaned should be disposed of in agreement with the regional waste disposal company.

**SECTION 14: Transport information**

**14.1 Transport ADR/RID/ADN**

Class 2  
 Classification code 2A  
 Hazard identification no. 20  
 UN number UN3163  
 Proper shipping name LIQUEFIED GAS, N.O.S.  
 Tunnel restriction code C/E  
 Label 2.2

**14.2 Transport IMDG**

Class 2.2  
 UN number UN3163  
 Proper shipping name LIQUEFIED GAS, N.O.S.  
 EmS F-C, S-V  
 Label 2.2

**14.3 Transport ICAO-TI / IATA**

Class 2.2  
 UN number UN3163  
 Proper shipping name Liquefied gas, n.o.s.  
 Label 2.2

**14.4 Other information**

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.

**14.5 Environmental hazards**

Information on environmental hazards, if relevant, please see 14.1 - 14.3.

**14.6 Special precautions for user**

No data available.

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

Not relevant

**SECTION 15: Regulatory information**

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

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**EU regulations**

**Regulation (EC) No 1907/2006 (REACH) Annex XIV (List of substances subject to authorisation)**

According to the data available and/or specifications supplied by upstream suppliers, this product does not contain any substances considered as substances requiring authorisation as listed on Annex XIV of the REACH regulation (EC) 1907/2006.

**REACH candidate list of substances of very high concern (SVHC) for authorisation**

According to available data and the information provided by preliminary suppliers, the product does not contain substances that are considered substances meeting the criteria for inclusion in annex XIV (List of Substances Subject to Authorisation) as laid down in Article 57 and article 59 of REACH (EC) 1907/2006.

**Regulation (EC) No 1907/2006 (REACH) Annex XVII: RESTRICTIONS ON THE MANUFACTURE, PLACING ON THE MARKET AND USE OF CERTAIN DANGEROUS SUBSTANCES, MIXTURES AND ARTICLES**

According to the data available and/or specifications supplied by upstream suppliers, this product does not contain any substances subject to restriction as listed in Annex XVII of the REACH regulation (EC) 1907/2006.

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

This product is not subject to Part 1 or 2 of Annex I.

**Other regulations**

Adhere to the national sanitary and occupational safety regulations when using this product.

**15.2 Chemical safety assessment**

A chemical safety assessment has not been carried out for this mixture.

**SECTION 16: Other information**

**Sources of key data used to compile the data sheet:**

Regulation (EC) No 1907/2006 (REACH), 1272/2008 (CLP) as amended in each case.

Directives 2000/39/EC, 2006/15/EC, 2009/161/EU, (EU) 2017/164.

National Threshold Limit Values of the corresponding countries as amended in each case.

Transport regulations according to ADR, RID, IMDG, IATA as amended in each case.

The data sources used to determine physical, toxic and ecotoxic data, are indicated directly in the corresponding section.

**Creation of the safety data sheet**

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These data are based on our present knowledge. However, they shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

**Alterations/supplements:**

Alterations to the previous edition are marked in the left-hand margin.

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