

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	trifluoromethane		
	75-46-7 200-872-4 -	Press. Gas liq.; H280	>= 50.00 - < 70.00 Vol%
2	perfluoroethane		
	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

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

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

9.2 Other information

Other information
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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