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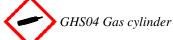
Reviewed on 11/04/2022

1 Identification

- · Product identifier
- · Trade name: FROSTBITE RAPID COOLANT CAN
- · Article number: 72594-01, 72594-10, 72594-20
- · CAS Number:
- 811-97-2
- · EC number:
- 212-377-0
- · Application of the substance / the mixture Laboratory chemicals
- \cdot Details of the supplier of the safety data sheet
- Manufacturer/Supplier: Electron Microscopy Sciences 1560 Industry Road USA-Hatfield, PA 19440 Tel: 215-412-8400 Fax: 215-412-8450 email: info@emsdiasum.com www.emsdiasum.com
- Information department: Product safety department • Emergency telephone number: ChemTrec 1-800-424-9300 Contract CCN7661
- 1-703-527-3887

2 Hazard(s) identification

· Classification of the substance or mixture



Gases under Pressure - Liquefied gas

H280 Contains gas under pressure; may explode if heated.

GHS07

Specific Target Organ Toxicity - Single Exposure 3 H336 May cause drowsiness or dizziness.

· Label elements

• *GHS label elements* The substance is classified and labeled according to the Globally Harmonized System (GHS). • *Hazard pictograms*



· Signal word Warning

· Hazard statements

Contains gas under pressure; may explode if heated.

- May cause drowsiness or dizziness.
- · Precautionary statements

Avoid breathing dust/fume/gas/mist/vapors/spray

Use only outdoors or in a well-ventilated area.

IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a poison center/doctor if you feel unwell.

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Store in a well-ventilated place. Keep container tightly closed. Store locked up. Protect from sunlight. Store in a well-ventilated place. Dispose of contents/container in accordance with local/regional/national/international regulations. • Classification system: • NFPA ratings (scale 0 - 4)	(Contd. of page 1)
Health = 1 Fire = 0 Reactivity = 0 HMIS-ratings (scale $0 - 4$)	
HEALTH1Health = 1FIRE \bigcirc Fire = 0REACTIVITY \bigcirc Reactivity = 0	
 Other hazards Results of PBT and vPvB assessment PBT: Not applicable. vPvB: Not applicable. 	

3 Composition/information on ingredients

- · Chemical characterization: Substances
- · CAS No. Description
- *811-97-2 1,1,1,2-tetrafluoroethane*
- · Identification number(s)
- EC number: 212-377-0

4 First-aid measures

 \cdot Description of first aid measures

- After inhalation: Supply fresh air; consult doctor in case of complaints.
- After skin contact: Generally the product does not irritate the skin.
- · After eye contact: Rinse opened eye for several minutes under running water.
- After swallowing: If symptoms persist consult doctor.
- · Information for doctor:
- Most important symptoms and effects, both acute and delayed No further relevant information available.
- *Indication of any immediate medical attention and special treatment needed No further relevant information available.*

5 *Fire-fighting measures*

- · Extinguishing media
- Suitable extinguishing agents: Use fire fighting measures that suit the environment.
- Special hazards arising from the substance or mixture No further relevant information available.
- · Advice for firefighters
- · Protective equipment: No special measures required.

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6 Accidental release measures

- · Personal precautions, protective equipment and emergency procedures Not required.
- Environmental precautions: Do not allow to enter sewers/ surface or ground water.
- Methods and material for containment and cleaning up: No special measures required.
- · Reference to other sections
- See Section 7 for information on safe handling.
- See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.

• Protective Action Criteria for Chemicals

• PAC-1:

· PAC-2:

· PAC-3:

27,000 ppm

13,000 ppm

8,000 ppm

7 Handling and storage

· Handling:

- Precautions for safe handling No special precautions are necessary if used correctly.
- · Information about protection against explosions and fires: No special measures required.
- · Conditions for safe storage, including any incompatibilities
- · Storage:
- Requirements to be met by storerooms and receptacles: Store in a cool location.
- · Information about storage in one common storage facility: Not required.
- Further information about storage conditions: Store in cool, dry conditions in well sealed receptacles.
- Specific end use(s) No further relevant information available.

8 Exposure controls/personal protection

- Additional information about design of technical systems: No further data; see item 7.
- · Control parameters
- · Components with limit values that require monitoring at the workplace:

811-97-2 1,1,1,2-tetrafluoroethane

WEEL Long-term value: 1000 ppm

• Additional information: The lists that were valid during the creation were used as basis.

- · Exposure controls
- · Personal protective equipment:
- General protective and hygienic measures: Wash hands before breaks and at the end of work.
- · Breathing equipment: Not required.
- Protection of hands:

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation. Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.

Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

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· Material of gloves

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer.

• Penetration time of glove material The exact break through time has to

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

• Eye protection: Not required.

9 Physical and chemical properties · Information on basic physical and chemical properties · General Information · Appearance: Form: Frozen liquefied gas Color: Colorless Ether-like · Odor: · Odor threshold: Not determined. Not determined. · pH-value: · Change in condition Melting point/Melting range: Undetermined. Boiling point/Boiling range: -26.2 °C (-15.2 °F) · Flash point: Not applicable. · Flammability (solid, gaseous): Not determined. Not determined. · Decomposition temperature: • Auto igniting: Not determined. Not determined. · Danger of explosion: · Explosion limits: Lower: Not determined. Upper: Not determined. 5,716 hPa (4.316 mm Hg) · Vapor pressure at 20 °C (68 °F): 1.21 g/cm³ (10.09745 lbs/gal) · Density at 20 °C (68 °F): Not determined. · Relative density Not determined. · Vapor density Not applicable. · Evaporation rate · Solubility in / Miscibility with *Water at 20 °C (68 °F):* 1.93 g/l · Partition coefficient (n-octanol/water): Not determined. · Viscosity: Dynamic at 20 °C (68 °F): 0.22 mPas Kinematic: Not determined. **VOC content:** 0.00 % 0.0 % Solids content: (Contd. on page 5)

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• Other information

No further relevant information available.

10 Stability and reactivity

- · Reactivity No further relevant information available.
- · Chemical stability
- Thermal decomposition / conditions to be avoided: No decomposition if used according to specifications.
- · Possibility of hazardous reactions No dangerous reactions known.
- · Conditions to avoid No further relevant information available.
- · Incompatible materials: No further relevant information available.
- · Hazardous decomposition products: No dangerous decomposition products known.

11 Toxicological information

· Information on toxicological effects

- · Acute toxicity:
- Primary irritant effect:
- on the skin: No irritant effect.
- on the eye: No irritating effect.
- Sensitization: No sensitizing effects known.
- Additional toxicological information:
- · Carcinogenic categories
- · IARC (International Agency for Research on Cancer)

Substance is not listed.

· NTP (National Toxicology Program)

Substance is not listed.

· OSHA-Ca (Occupational Safety Health Administration)

Substance is not listed.

12 Ecological information

· Toxicity

- · Aquatic toxicity: No further relevant information available.
- · Persistence and degradability No further relevant information available.
- · Behavior in environmental systems:
- · Bioaccumulative potential No further relevant information available.
- · Mobility in soil No further relevant information available.
- · Additional ecological information:

· General notes:

Water hazard class 1 (Assessment by list): slightly hazardous for water

Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.

- · Results of PBT and vPvB assessment
- · **PBT:** Not applicable.
- · vPvB: Not applicable.
- · Other adverse effects No further relevant information available.

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13 Disposal considerations

· Waste treatment methods

· Recommendation:

Must not be disposed of together with household garbage. Do not allow product to reach sewage system.

· Uncleaned packagings:

• Recommendation: Disposal must be made according to official regulations.

· UN-Number · DOT, ADR, IMDG, IATA	UN3159
· UN proper shipping name	
$\cdot DOT$	1,1,1,2-Tetrafluoroethane
ADR	3159 1,1,1,2-TETRAFLUOROETHANE (REFRIGERANT GAS
IMDG, IATA	134a) 1,1,1,2-TETRAFLUOROETHANE (REFRIGERANT GAS R 134a
• Transport hazard class(es)	
DOT	
Class	2 Gases
Label	2
ADR	
· Class	2 2A Gases
· Label	2
- IMDG, IATA	
· Class	2 Gases
· Label	2
· Packing group · DOT, ADR, IMDG, IATA	Void
Environmental hazards:	Not applicable.
· Special precautions for user · Hazard identification number (Kemler code):	Warning: Gases 2
· EMS Number:	F-C,S-V

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· Stowage Category	A
• Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code	Not applicable.
· Transport/Additional information:	
· ADR	
· Excepted quantities (EQ)	Code: E1
	Maximum net quantity per inner packaging: 30 ml
	Maximum net quantity per outer packaging: 1000 ml
· UN "Model Regulation":	UN 3159 1,1,1,2-TETRAFLUOROETHANE (REFRIGERANT GAS R 134A), 2

15 Regulatory information

- Safety, health and environmental regulations/legislation specific for the substance or mixture No further relevant information available.
- · Sara
- · Section 355 (extremely hazardous substances):

Substance is not listed.

- · Section 313 (Specific toxic chemical listings):
- Substance is not listed.
- · TSCA (Toxic Substances Control Act):

· Hazardous Air Pollutants

Substance is not listed.

· Proposition 65

· Chemicals known to cause cancer:

Substance is not listed.

 \cdot Chemicals known to cause reproductive toxicity for females:

Substance is not listed.

· Chemicals known to cause reproductive toxicity for males:

Substance is not listed.

· Chemicals known to cause developmental toxicity:

Substance is not listed.

· Carcinogenic categories

· EPA (Environmental Protection Agency)

Substance is not listed.

· TLV (Threshold Limit Value)

Substance is not listed.

· NIOSH-Ca (National Institute for Occupational Safety and Health)

Substance is not listed.

• GHS label elements The substance is classified and labeled according to the Globally Harmonized System (GHS). (Contd. on page 8)

– US

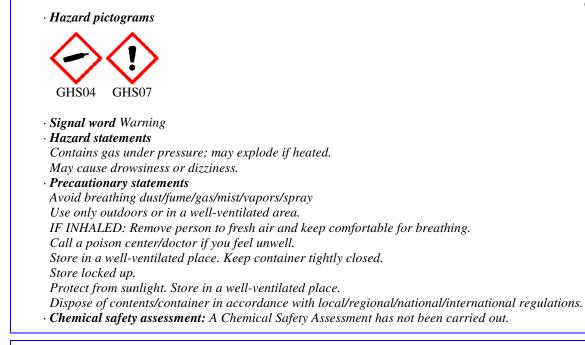
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16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

· Contact:

· Date of preparation / last revision 11/04/2022 / -· Abbreviations and acronyms: ADR: Accord relatif au transport international des marchandises dangereuses par route (European Agreement Concerning the International Carriage of Dangerous Goods by Road) IMDG: International Maritime Code for Dangerous Goods DOT: US Department of Transportation IATA: International Air Transport Association EINECS: European Inventory of Existing Commercial Chemical Substances CAS: Chemical Abstracts Service (division of the American Chemical Society) NFPA: National Fire Protection Association (USA) HMIS: Hazardous Materials Identification System (USA) VOC: Volatile Organic Compounds (USA, EU) PBT: Persistent, Bioaccumulative and Toxic vPvB: very Persistent and very Bioaccumulative NIOSH: National Institute for Occupational Safety OSHA: Occupational Safety Health TLV: Threshold Limit Value PEL: Permissible Exposure Limit **REL:** Recommended Exposure Limit Gases under Pressure - Liquefied gas: Gases under pressure - Liquefied gas Specific Target Organ Toxicity - Single Exposure 3: Specific target organ toxicity (single exposure) - Category 3