

# Safety Data Sheet

acc. to OSHA HCS

Printing date 04/10/2017

Reviewed on 04/10/2017

## 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
- **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](mailto:info@emsdiasum.com)  
[www.emsdiasum.com](http://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**



STOT SE 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**  
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.  
Store locked up.  
Store in a well-ventilated place. Keep container tightly closed.  
Dispose of contents/container in accordance with local/regional/national/international regulations.

(Contd. on page 2)

US

# Safety Data Sheet

acc. to OSHA HCS

Printing date 04/10/2017

Reviewed on 04/10/2017

Trade name: **FROSTBITE RAPID COOLANT CAN**

(Contd. of page 1)

- **Classification system:**

- **NFPA ratings (scale 0 - 4)**



Health = 1

Fire = 0

Reactivity = 0

- **HMIS-ratings (scale 0 - 4)**

HEALTH	1
FIRE	0
REACTIVITY	0

Health = 1

Fire = 0

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

- **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:**

CO<sub>2</sub>, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.

- **Special hazards arising from the substance or mixture** No further relevant information available.

- **Advice for firefighters**

- **Protective equipment:** No special measures required.

### 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.

(Contd. on page 3)

# Safety Data Sheet

acc. to OSHA HCS

Printing date 04/10/2017

Reviewed on 04/10/2017

Trade name: **FROSTBITE RAPID COOLANT CAN**

(Contd. of page 2)

- **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**

· <b>PAC-1:</b>	8,000 ppm
· <b>PAC-2:</b>	13,000 ppm
· <b>PAC-3:</b>	27,000 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:** No special requirements.
- **Information about storage in one common storage facility:** Not required.
- **Further information about storage conditions:** None.
- **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**

· <b>Components with limit values that require monitoring at the workplace:</b>
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

- **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 be found out by the manufacturer of the protective gloves and has to be observed.

(Contd. on page 4)

# Safety Data Sheet

acc. to OSHA HCS

Printing date 04/10/2017

Reviewed on 04/10/2017

Trade name: **FROSTBITE RAPID COOLANT CAN**

(Contd. of page 3)

· **Eye protection:** Not required.

## 9 Physical and chemical properties

· **Information on basic physical and chemical properties**· **General Information**· **Appearance:**

<b>Form:</b>	Gaseous
<b>Color:</b>	Colorless
<b>Odor:</b>	Odorless
<b>Odor threshold:</b>	Not determined.

· **pH-value:** Not determined.· **Change in condition**

<b>Melting point/Melting range:</b>	Undetermined.
<b>Boiling point/Boiling range:</b>	-26.2 °C (-15 °F)

· **Flash point:** Not applicable.· **Flammability (solid, gaseous):** Not determined.· **Ignition temperature:****Decomposition temperature:** Not determined.· **Auto igniting:** Not determined.· **Danger of explosion:** Product does not present an explosion hazard.· **Explosion limits:**

<b>Lower:</b>	Not determined.
<b>Upper:</b>	Not determined.

· **Vapor pressure at 20 °C (68 °F):** 5716 hPa (4287 mm Hg)· **Density at 20 °C (68 °F):** 3.18 g/cm<sup>3</sup> (26.537 lbs/gal)· **Relative density** Not determined.· **Vapor density** Not determined.· **Evaporation rate** Not applicable.· **Solubility in / Miscibility with****Water at 20 °C (68 °F):** 1.93 g/l· **Partition coefficient (n-octanol/water):** Not determined.· **Viscosity:**

<b>Dynamic at 20 °C (68 °F):</b>	0.22 mPas
<b>Kinematic:</b>	Not determined.

· **Solvent content:**

<b>Organic solvents:</b>	0.0 %
<b>VOC content:</b>	0.0 g/l / 0.00 lb/gl

· **Other information** No further relevant information available.

## 10 Stability and reactivity

· **Reactivity** No further relevant information available.

(Contd. on page 5)

# Safety Data Sheet

acc. to OSHA HCS

Printing date 04/10/2017

Reviewed on 04/10/2017

Trade name: **FROSTBITE RAPID COOLANT CAN**

(Contd. of page 4)

- **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**

· <b>IARC (International Agency for Research on Cancer)</b>
---

Substance is not listed.
--------------------------

· <b>NTP (National Toxicology Program)</b>
--

Substance is not listed.
--------------------------

· <b>OSHA-Ca (Occupational Safety Health Administration)</b>
--

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 (Self-assessment): 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.

## 13 Disposal considerations

- **Waste treatment methods**
- **Recommendation:**
- Must not be disposed of together with household garbage. Do not allow product to reach sewage system.

(Contd. on page 6)

US

# Safety Data Sheet

acc. to OSHA HCS

Printing date 04/10/2017



Reviewed on 04/10/2017

Trade name: FROSTBITE RAPID COOLANT CAN

(Contd. of page 5)

- **Uncleaned packagings:**
- **Recommendation:** Disposal must be made according to official regulations.

## 14 Transport information

<ul style="list-style-type: none"> <li>· <b>UN-Number</b></li> <li>· <b>DOT, ADR, IMDG, IATA</b></li> </ul>	UN3159
<ul style="list-style-type: none"> <li>· <b>UN proper shipping name</b></li> <li>· <b>DOT</b></li> <li>· <b>ADR</b></li> <li>· <b>IMDG, IATA</b></li> </ul>	1,1,1,2-Tetrafluoroethane 3159 1,1,1,2-Tetrafluoroethane 1,1,1,2-TETRAFLUOROETHANE (REFRIGERANT GAS R 134a)
<ul style="list-style-type: none"> <li>· <b>Transport hazard class(es)</b></li> <li>· <b>DOT</b></li> </ul>	
<ul style="list-style-type: none"> <li>· <b>Class</b></li> </ul>	2 Gases
<ul style="list-style-type: none"> <li>· <b>ADR</b></li> <li>· <b>Class</b></li> </ul>	Void
<ul style="list-style-type: none"> <li>· <b>IMDG, IATA</b></li> </ul>	
<ul style="list-style-type: none"> <li>· <b>Class</b></li> </ul>	2 Gases
<ul style="list-style-type: none"> <li>· <b>Packing group</b></li> <li>· <b>ADR</b></li> </ul>	Void
<ul style="list-style-type: none"> <li>· <b>Environmental hazards:</b></li> </ul>	Not applicable.
<ul style="list-style-type: none"> <li>· <b>Special precautions for user</b></li> <li>· <b>Danger code (Kemler):</b></li> <li>· <b>EMS Number:</b></li> <li>· <b>Stowage Category</b></li> </ul>	Not applicable. 2 F-C,S-V A
<ul style="list-style-type: none"> <li>· <b>Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code</b></li> </ul>	Not applicable.
<ul style="list-style-type: none"> <li>· <b>Transport/Additional information:</b></li> </ul>	<hr style="border-top: 1px dashed #000;"/>
<ul style="list-style-type: none"> <li>· <b>ADR</b></li> <li>· <b>Excepted quantities (EQ)</b></li> </ul>	Code: E1 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 1000 ml
<ul style="list-style-type: none"> <li>· <b>UN "Model Regulation":</b></li> </ul>	Void

US

(Contd. on page 7)

# Safety Data Sheet

acc. to OSHA HCS

Printing date 04/10/2017

Reviewed on 04/10/2017

Trade name: **FROSTBITE RAPID COOLANT CAN**

(Contd. of page 6)

## 15 Regulatory information

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

· **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):**

Substance is listed.

· **Proposition 65**

· **Chemicals known to cause cancer:**

Substance is not listed.

· **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 established by ACGIH)**

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).

· **Hazard pictograms**



GHS07

· **Signal word** Warning

· **Hazard statements**

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.

Store locked up.

Store in a well-ventilated place. Keep container tightly closed.

Dispose of contents/container in accordance with local/regional/national/international regulations.

(Contd. on page 8)

# Safety Data Sheet

## acc. to OSHA HCS

Printing date 04/10/2017

Reviewed on 04/10/2017

**Trade name: FROSTBITE RAPID COOLANT CAN**

(Contd. of page 7)

· **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

### 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.*

· **Date of preparation / last revision** 04/10/2017 / -

· **Abbreviations and acronyms:**

ADR: Accord européen sur le transport 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

ACGIH: American Conference of Governmental Industrial Hygienists

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**

**STOT SE 3: Specific target organ toxicity (single exposure) – Category 3**

US



# Safety Data Sheet

## according to WHS Regulations

Printing date 10.04.2017

Revision: 10.04.2017

### 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
- **Relevant identified uses of the substance or mixture and uses advised against**  
No further relevant information available.
- **Application of the substance / the mixture** Laboratory chemicals
- **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
- ProSciTech Pty Ltd  
11 Carlton Street, Kirwan QLD 4817 Australia  
Telephone Number: (07) 4773 9444 - 8:30am - 5:00pm, Monday to Friday (excluding Public Holidays)  
Emergency Contact: (07) 4773 9444 - 8:30am - 5:00pm, Monday to Friday (excluding Public Holidays)
- Emgrid Australia Pty. Ltd.  
P.O. Box 118  
The Patch VIC 3792  
Australia  
Tel: 03 9752 1785  
Fax: 03 9752 1784  
Website: www.emgrid.com.au
- **Further information obtainable from:** 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**



STOT SE 3 H336 May cause drowsiness or dizziness.

- **Label elements**
- **GHS label elements**

The substance is classified and labelled according to the Globally Harmonised System (GHS).

(Contd. on page 2)

# Safety Data Sheet

## according to WHS Regulations

Printing date 10.04.2017

Revision: 10.04.2017

Trade name: **FROSTBITE RAPID COOLANT CAN**

(Contd. of page 1)

· **Hazard pictograms**

GHS07

· **Signal word** Warning· **Hazard statements***May cause drowsiness or dizziness.*· **Precautionary statements***Avoid breathing dust/fume/gas/mist/vapours/spray.**Use only outdoors or in a well-ventilated area.**IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.**Call a POISON CENTER/doctor if you feel unwell.**Store locked up.**Store in a well-ventilated place. Keep container tightly closed.**Dispose of contents/container in accordance with local/regional/national/international regulations.*· **Other hazards**· **Results of PBT and vPvB assessment**· **PBT:** Not applicable.· **vPvB:** Not applicable.

### 3 Composition and Information on Ingredients

· **Chemical characterisation: Substances**· **CAS No. Description**

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

· **Identification number(s)**· **EC number:** 212-377-0

### 4 First Aid Measures

· **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:**CO<sub>2</sub>, powder or water spray. Fight larger fires with water spray or alcohol resistant foam.· **Special hazards arising from the substance or mixture** No further relevant information available.

(Contd. on page 3)

# Safety Data Sheet

## according to WHS Regulations

Printing date 10.04.2017

Revision: 10.04.2017

**Trade name: FROSTBITE RAPID COOLANT CAN**

(Contd. of page 2)

- **Advice for firefighters**
- **Protective equipment:** No special measures required.

### 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.

### 7 Handling and Storage

- **Handling:**
- **Precautions for safe handling** No special precautions are necessary if used correctly.
- **Information about fire - and explosion protection:** No special measures required.
- **Conditions for safe storage, including any incompatibilities**
- **Storage:**
- **Requirements to be met by storerooms and receptacles:** No special requirements.
- **Information about storage in one common storage facility:** Not required.
- **Further information about storage conditions:** None.
- **Specific end use(s)** No further relevant information available.

### 8 Exposure controls and personal protection

- **Additional information about design of technical facilities:** No further data; see item 7.
- **Control parameters**

· **Ingredients with limit values that require monitoring at the workplace:**

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

WES | Long-term value: 4240 mg/m<sup>3</sup>, 1000 ppm

- **Additional information:** The lists valid during the making were used as basis.

- **Exposure controls**
- **Personal protective equipment:**
- **General protective and hygienic measures:** Wash hands before breaks and at the end of work.
- **Respiratory protection:** 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

- **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 be found out by the manufacturer of the protective gloves and has to be observed.

(Contd. on page 4)

# Safety Data Sheet

according to WHS Regulations

Printing date 10.04.2017

Revision: 10.04.2017

Trade name: **FROSTBITE RAPID COOLANT CAN**

(Contd. of page 3)

· **Eye protection:** Not required.

## 9 Physical and Chemical Properties

· **Information on basic physical and chemical properties**· **General Information**· **Appearance:**

<b>Form:</b>	Gaseous
<b>Colour:</b>	Colourless
<b>Odour:</b>	Odourless
<b>Odour threshold:</b>	Not determined.

· **pH-value:** Not determined.· **Change in condition**

<b>Melting point/freezing point:</b>	Undetermined.
<b>Initial boiling point and boiling range:</b>	-26.2 °C

· **Flash point:** Not applicable.· **Flammability (solid, gas):** Not determined.· **Ignition temperature:****Decomposition temperature:** Not determined.· **Auto-ignition temperature:** Not determined.· **Explosive properties:** Product does not present an explosion hazard.· **Explosion limits:**

<b>Lower:</b>	Not determined.
<b>Upper:</b>	Not determined.

· **Vapour pressure at 20 °C:** 5716 hPa

<b>Density at 20 °C:</b>	3.18 g/cm <sup>3</sup>
<b>Relative density</b>	Not determined.
<b>Vapour density</b>	Not determined.
<b>Evaporation rate</b>	Not applicable.

· **Solubility in / Miscibility with water at 20 °C:** 1.93 g/l· **Partition coefficient: n-octanol/water:** Not determined.· **Viscosity:**

<b>Dynamic at 20 °C:</b>	0.22 mPas
<b>Kinematic:</b>	Not determined.

· **Solvent content:**

<b>Organic solvents:</b>	0.0 %
<b>VOC (EC)</b>	0.00 %

· **Other information** No further relevant information available.

## 10 Stability and Reactivity

· **Reactivity** No further relevant information available.

(Contd. on page 5)

# Safety Data Sheet

## according to WHS Regulations

Printing date 10.04.2017

Revision: 10.04.2017

Trade name: **FROSTBITE RAPID COOLANT CAN**

(Contd. of page 4)

- **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:**
- **Skin corrosion/irritation** No irritant effect.
- **Serious eye damage/irritation** No irritating effect.
- **Respiratory or skin sensitisation** No sensitising effects known.

### 12 Ecological Information

- **Toxicity**
- **Aquatic toxicity:** No further relevant information available.
- **Persistence and degradability** No further relevant information available.
- **Behaviour 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 (German Regulation) (Self-assessment): 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.

### 13 Disposal considerations

- **Waste treatment methods**
- **Recommendation**  
Must not be disposed together with household garbage. Do not allow product to reach sewage system.
- **Uncleaned packaging:**
- **Recommendation:** Disposal must be made according to official regulations.

### 14 Transport information

- |                                  |   |
|----------------------------------|---|
| · <b>UN-Number</b>               |   |
| · <b>ADG, IMDG, IATA</b>         | UN3159  |
| · <b>ADN</b>                     | not regulated   |
| · <b>UN proper shipping name</b> |   |
| · <b>ADG</b>                     | 3159 1,1,1,2-TETRAFLUOROETHANE (REFRIGERANT GAS R 134a) |

(Contd. on page 6)

# Safety Data Sheet


according to WHS Regulations

Printing date 10.04.2017

Revision: 10.04.2017

Trade name: **FROSTBITE RAPID COOLANT CAN**

(Contd. of page 5)

· <b>ADN</b>	<i>not regulated</i>
· <b>IMDG, IATA</b>	<i>1,1,1,2-TETRAFLUOROETHANE (REFRIGERANT GAS R 134a)</i>
· <b>Transport hazard class(es)</b>	
· <b>ADG, ADN</b>	
· <b>Class</b>	<i>not regulated</i>
· <b>IMDG, IATA</b>	
	
· <b>Class</b>	<i>2 Gases.</i>
· <b>Packing group</b>	
· <b>ADG</b>	<i>not regulated</i>
· <b>Environmental hazards:</b>	<i>Not applicable.</i>
· <b>Special precautions for user</b>	<i>Not applicable.</i>
· <b>Danger code (Kemler):</b>	<i>2</i>
· <b>EMS Number:</b>	<i>F-C,S-V</i>
· <b>Stowage Category</b>	<i>A</i>
· <b>Transport in bulk according to Annex II of Marpol and the IBC Code</b>	<i>Not applicable.</i>
· <b>Transport/Additional information:</b>	
· <b>ADG</b>	
· <b>Limited quantities (LQ)</b>	<i>120 ml</i>
· <b>Excepted quantities (EQ)</b>	<i>Code: E1</i>
	<i>Maximum net quantity per inner packaging: 30 ml</i>
	<i>Maximum net quantity per outer packaging: 1000 ml</i>
· <b>UN "Model Regulation":</b>	<i>not regulated</i>

## 15 Regulatory information

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

· **Australian Inventory of Chemical Substances**

*Substance is listed.*

· **Standard for the Uniform Scheduling of Medicines and Poisons**

*Substance is not listed.*

· **GHS label elements**

*The substance is classified and labelled according to the Globally Harmonised System (GHS).*

· **Hazard pictograms**



GHS07

· **Signal word** *Warning*

(Contd. on page 7)

# Safety Data Sheet

## according to WHS Regulations

Printing date 10.04.2017

Revision: 10.04.2017

**Trade name: FROSTBITE RAPID COOLANT CAN**

(Contd. of page 6)

- **Hazard statements**

*May cause drowsiness or dizziness.*

- **Precautionary statements**

*Avoid breathing dust/fume/gas/mist/vapours/spray.*

*Use only outdoors or in a well-ventilated area.*

*IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.*

*Call a POISON CENTER/doctor if you feel unwell.*

*Store locked up.*

*Store in a well-ventilated place. Keep container tightly closed.*

*Dispose of contents/container in accordance with local/regional/national/international regulations.*

- **Directive 2012/18/EU**

- **Named dangerous substances - ANNEX I** Substance is not listed.

- **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

### 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.*

- **Abbreviations and acronyms:**

*ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)*

*IMDG: International Maritime Code for Dangerous Goods*

*IATA: International Air Transport Association*

*EINECS: European Inventory of Existing Commercial Chemical Substances*

*CAS: Chemical Abstracts Service (division of the American Chemical Society)*

*VOC: Volatile Organic Compounds (USA, EU)*

*PBT: Persistent, Bioaccumulative and Toxic*

*vPvB: very Persistent and very Bioaccumulative*

*STOT SE 3: Specific target organ toxicity (single exposure) – Category 3*

# Safety Data Sheet

acc. to OSHA HCS

Printing date 04/10/2017

Reviewed on 04/10/2017

## 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
- **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](mailto:info@emsdiasum.com)  
[www.emsdiasum.com](http://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**



GHS07

Specific Target Organ Toxicity - Single Exposure - Category 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**



GHS07

- **Signal word** Warning
- **Hazard statements**  
May cause drowsiness or dizziness.
- **Precautionary statements**  
Avoid breathing dust/fume/gas/mist/vapours/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.  
Store locked up.  
Store in a well-ventilated place. Keep container tightly closed.  
Dispose of contents/container in accordance with local/regional/national/international regulations.

(Contd. on page 2)



# Safety Data Sheet

acc. to OSHA HCS

Printing date 04/10/2017

Reviewed on 04/10/2017

Trade name: **FROSTBITE RAPID COOLANT CAN**

(Contd. of page 1)

- **Hazard description:**
- **WHMIS-symbols:**  
A - Compressed gas



- **Classification system:**
- **NFPA ratings (scale 0 - 4)**



- **HMIS-ratings (scale 0 - 4)**

HEALTH	1	Health = 1
FIRE	0	Fire = 0
REACTIVITY	0	Reactivity = 0

### 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

- **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:**  
CO<sub>2</sub>, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
- **Special hazards arising from the substance or mixture** No further relevant information available.
- **Advice for firefighters**
- **Protective equipment:** No special measures required.

CA

(Contd. on page 3)

# Safety Data Sheet

acc. to OSHA HCS

Printing date 04/10/2017

Reviewed on 04/10/2017

Trade name: **FROSTBITE RAPID COOLANT CAN**

(Contd. of page 2)

## 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.

## 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:** No special requirements.
- **Information about storage in one common storage facility:** Not required.
- **Further information about storage conditions:** None.
- **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:** Not required.
- **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
- **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 be found out by the manufacturer of the protective gloves and has to be observed.
- **Eye protection:** Not required.

CA

(Contd. on page 4)

# Safety Data Sheet

acc. to OSHA HCS

Printing date 04/10/2017

Reviewed on 04/10/2017

Trade name: FROSTBITE RAPID COOLANT CAN

(Contd. of page 3)

## 9 Physical and chemical properties

· <b>Information on basic physical and chemical properties</b>	
· <b>General Information</b>	
· <b>Appearance:</b>	
Form:	Gaseous
Color:	Colorless
· <b>Odor:</b>	Odorless
· <b>Odor threshold:</b>	Not determined.
· <b>pH-value:</b>	Not determined.
· <b>Change in condition</b>	
Melting point/Melting range:	Undetermined.
Boiling point/Boiling range:	-26,2 °C
· <b>Flash point:</b>	Not applicable.
· <b>Flammability (solid, gaseous):</b>	Not determined.
· <b>Ignition temperature:</b>	
Decomposition temperature:	Not determined.
· <b>Auto igniting:</b>	Not determined.
· <b>Danger of explosion:</b>	Product does not present an explosion hazard.
· <b>Explosion limits:</b>	
Lower:	Not determined.
Upper:	Not determined.
· <b>Vapor pressure at 20 °C:</b>	5716 hPa
· <b>Density at 20 °C:</b>	3,18 g/cm <sup>3</sup>
· <b>Relative density</b>	Not determined.
· <b>Vapor density</b>	Not determined.
· <b>Evaporation rate</b>	Not applicable.
· <b>Solubility in / Miscibility with</b>	
Water at 20 °C:	1,93 g/l
· <b>Partition coefficient (n-octanol/water):</b> Not determined.	
· <b>Viscosity:</b>	
Dynamic at 20 °C:	0,22 mPas
Kinematic:	Not determined.
Organic solvents:	0,0 %
· <b>Other information</b>	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.

(Contd. on page 5)

CA

# Safety Data Sheet

acc. to OSHA HCS

Printing date 04/10/2017

Reviewed on 04/10/2017

Trade name: **FROSTBITE RAPID COOLANT CAN**

(Contd. of page 4)

· **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.

## 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 (Self-assessment): 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.

## 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.

## 14 Transport information

- **UN-Number**
- **DOT, TDG, IMDG, IATA** UN3159
- **ADN** Void

(Contd. on page 6)

CA

# Safety Data Sheet

acc. to OSHA HCS

Printing date 04/10/2017

Reviewed on 04/10/2017

Trade name: **FROSTBITE RAPID COOLANT CAN**

(Contd. of page 5)

· <b>UN proper shipping name</b>	
· <b>DOT</b>	1,1,1,2-Tetrafluoroethane
· <b>TDG</b>	3159 1,1,1,2-Tetrafluoroethane
· <b>ADN</b>	Void
· <b>IMDG, IATA</b>	1,1,1,2-TETRAFLUOROETHANE (REFRIGERANT GAS R 134a)

· **Transport hazard class(es)**· **DOT**

· <b>Class</b>	2 Gases
· <b>TDG, ADN</b>	
· <b>Class</b>	Void

· **IMDG, IATA**

· <b>Class</b>	2 Gases
----------------	---------

· **Packing group**

· <b>TDG</b>	Void
--------------	------

· <b>Environmental hazards:</b>	Not applicable.
---------------------------------	-----------------

· <b>Special precautions for user</b>	Not applicable.
---------------------------------------	-----------------

· <b>Danger code (Kemler):</b>	2
--------------------------------	---

· <b>EMS Number:</b>	F-C,S-V
----------------------	---------

· <b>Stowage Category</b>	A
---------------------------	---

· <b>Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code</b>	Not applicable.
--	-----------------

· **Transport/Additional information:**· **TDG**

· <b>Excepted quantities (EQ)</b>	Code: E1
	Maximum net quantity per inner packaging: 30 ml
	Maximum net quantity per outer packaging: 1000 ml

· <b>UN "Model Regulation":</b>	Void
---------------------------------	------

## 15 Regulatory information

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

· **Sara**

· <b>Section 355 (extremely hazardous substances):</b>
--

Substance is not listed.
--------------------------

· <b>Section 313 (Specific toxic chemical listings):</b>
--

Substance is not listed.
--------------------------

(Contd. on page 7)

CA

# Safety Data Sheet

acc. to OSHA HCS

Printing date 04/10/2017

Reviewed on 04/10/2017

**Trade name: FROSTBITE RAPID COOLANT CAN**

(Contd. of page 6)

· **TSCA (Toxic Substances Control Act):**

Substance is listed.

· **Canadian substance listings:**

· **Canadian Domestic Substances List (DSL)**

Substance is listed.

· **Canadian Ingredient Disclosure list (limit 0.1%)**

Substance is not listed.

· **Canadian Ingredient Disclosure list (limit 1%)**

Substance is not listed.

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

· **Hazard pictograms**



GHS07

· **Signal word** Warning

· **Hazard statements**

May cause drowsiness or dizziness.

· **Precautionary statements**

Avoid breathing dust/fume/gas/mist/vapours/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.

Store locked up.

Store in a well-ventilated place. Keep container tightly closed.

Dispose of contents/container in accordance with local/regional/national/international regulations.

· **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

## 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.

· **Date of preparation / last revision** 04/10/2017 / -

· **Abbreviations and acronyms:**

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)

WHMIS: Workplace Hazardous Materials Information System (Canada)

PBT: Persistent, Bioaccumulative and Toxic

vPvB: very Persistent and very Bioaccumulative

**Safety data sheet**  
according to 1907/2006/EC, Article 31

Printing date 10.04.2017

Revision: 10.04.2017

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

- **1.1 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
- **1.2 Relevant identified uses of the substance or mixture and uses advised against**  
No further relevant information available.
- **Application of the substance / the mixture** Laboratory chemicals
- **1.3 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
- **Further information obtainable from:** Product safety department
- **1.4 Emergency telephone number:**  
ChemTrec 1-800-424-9300 Contract CCN7661  
1-703-527-3887

### SECTION 2: Hazards identification

- **2.1 Classification of the substance or mixture**
- **Classification according to Regulation (EC) No 1272/2008**



GHS07

STOT SE 3 H336 May cause drowsiness or dizziness.

- **2.2 Label elements**
- **Labelling according to Regulation (EC) No 1272/2008**  
The substance is classified and labelled according to the CLP regulation.
- **Hazard pictograms**



GHS07

- **Signal word** Warning
- **Hazard statements**  
H336 May cause drowsiness or dizziness.
- **Precautionary statements**  
P261 Avoid breathing dust/fume/gas/mist/vapours/spray.  
P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.  
P312 Call a POISON CENTER/doctor if you feel unwell.  
P405 Store locked up.  
P403+P233 Store in a well-ventilated place. Keep container tightly closed.  
P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

(Contd. on page 2)

# Safety data sheet

according to 1907/2006/EC, Article 31

Printing date 10.04.2017

Revision: 10.04.2017

**Trade name: FROSTBITE RAPID COOLANT CAN**

(Contd. of page 1)

- **2.3 Other hazards**
- **Results of PBT and vPvB assessment**
- **PBT: Not applicable.**
- **vPvB: Not applicable.**

## SECTION 3: Composition/information on ingredients

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

## SECTION 4: First aid measures

- **4.1 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.
- **4.2 Most important symptoms and effects, both acute and delayed** No further relevant information available.
- **4.3 Indication of any immediate medical attention and special treatment needed**  
No further relevant information available.

## SECTION 5: Firefighting measures

- **5.1 Extinguishing media**
- **Suitable extinguishing agents:**  
CO<sub>2</sub>, powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
- **5.2 Special hazards arising from the substance or mixture** No further relevant information available.
- **5.3 Advice for firefighters**
- **Protective equipment:** No special measures required.

## SECTION 6: Accidental release measures

- **6.1 Personal precautions, protective equipment and emergency procedures** Not required.
- **6.2 Environmental precautions:** Do not allow to enter sewers/ surface or ground water.
- **6.3 Methods and material for containment and cleaning up:** No special measures required.
- **6.4 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.

## SECTION 7: Handling and storage

- **7.1 Precautions for safe handling** No special precautions are necessary if used correctly.
- **Information about fire - and explosion protection:** No special measures required.

(Contd. on page 3)



**Safety data sheet**  
according to 1907/2006/EC, Article 31

Printing date 10.04.2017

Revision: 10.04.2017

Trade name: **FROSTBITE RAPID COOLANT CAN**

(Contd. of page 2)

- 7.2 Conditions for safe storage, including any incompatibilities
- Storage:
- Requirements to be met by storerooms and receptacles: No special requirements.
- Information about storage in one common storage facility: Not required.
- Further information about storage conditions: None.
- 7.3 Specific end use(s) No further relevant information available.

### SECTION 8: Exposure controls/personal protection

- Additional information about design of technical facilities: No further data; see item 7.

#### · 8.1 Control parameters

- Ingredients with limit values that require monitoring at the workplace:

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

WEL Long-term value: 4240 mg/m<sup>3</sup>, 1000 ppm

- Additional information: The lists valid during the making were used as basis.

#### · 8.2 Exposure controls

- Personal protective equipment:
- General protective and hygienic measures: Wash hands before breaks and at the end of work.
- Respiratory protection: 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
- 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 be found out by the manufacturer of the protective gloves and has to be observed.
- Eye protection: Not required.

### SECTION 9: Physical and chemical properties

#### · 9.1 Information on basic physical and chemical properties

##### · General Information

##### · Appearance:

Form:	Gaseous
Colour:	Colourless
Odour:	Odourless
Odour threshold:	Not determined.

· pH-value: Not determined.

##### · Change in condition

Melting point/freezing point:	Undetermined.
Initial boiling point and boiling range:	-26.2 °C

· Flash point: Not applicable.

(Contd. on page 4)

**Safety data sheet**  
according to 1907/2006/EC, Article 31

Printing date 10.04.2017

Revision: 10.04.2017

Trade name: **FROSTBITE RAPID COOLANT CAN**

(Contd. of page 3)

· <b>Flammability (solid, gas):</b>	Not determined.
· <b>Ignition temperature:</b>	
<b>Decomposition temperature:</b>	Not determined.
· <b>Auto-ignition temperature:</b>	Not determined.
· <b>Explosive properties:</b>	Product does not present an explosion hazard.
· <b>Explosion limits:</b>	
<b>Lower:</b>	Not determined.
<b>Upper:</b>	Not determined.
· <b>Vapour pressure at 20 °C:</b>	5716 hPa
· <b>Density at 20 °C:</b>	3.18 g/cm <sup>3</sup>
· <b>Relative density</b>	Not determined.
· <b>Vapour density</b>	Not determined.
· <b>Evaporation rate</b>	Not applicable.
· <b>Solubility in / Miscibility with water at 20 °C:</b>	1.93 g/l
· <b>Partition coefficient: n-octanol/water:</b>	Not determined.
· <b>Viscosity:</b>	
<b>Dynamic at 20 °C:</b>	0.22 mPas
<b>Kinematic:</b>	Not determined.
· <b>Solvent content:</b>	
<b>Organic solvents:</b>	0.0 %
<b>VOC (EC)</b>	0.00 %
· <b>9.2 Other information</b>	No further relevant information available.

### SECTION 10: Stability and reactivity

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

### SECTION 11: Toxicological information

- **11.1 Information on toxicological effects**
- **Acute toxicity** Based on available data, the classification criteria are not met.
- **Primary irritant effect:**
- **Skin corrosion/irritation** Based on available data, the classification criteria are not met.
- **Serious eye damage/irritation** Based on available data, the classification criteria are not met.
- **Respiratory or skin sensitisation** Based on available data, the classification criteria are not met.
- **CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction)**
- **Germ cell mutagenicity** Based on available data, the classification criteria are not met.
- **Carcinogenicity** Based on available data, the classification criteria are not met.

(Contd. on page 5)

**Safety data sheet**  
according to 1907/2006/EC, Article 31

Printing date 10.04.2017

Revision: 10.04.2017

Trade name: FROSTBITE RAPID COOLANT CAN

(Contd. of page 4)

- **Reproductive toxicity** Based on available data, the classification criteria are not met.
- **STOT-single exposure**  
May cause drowsiness or dizziness.
- **STOT-repeated exposure** Based on available data, the classification criteria are not met.
- **Aspiration hazard** Based on available data, the classification criteria are not met.

### SECTION 12: Ecological information

- **12.1 Toxicity**
- **Aquatic toxicity:** No further relevant information available.
- **12.2 Persistence and degradability** No further relevant information available.
- **12.3 Bioaccumulative potential** No further relevant information available.
- **12.4 Mobility in soil** No further relevant information available.
- **Additional ecological information:**
- **General notes:**  
Water hazard class 1 (German Regulation) (Self-assessment): slightly hazardous for water  
Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.
- **12.5 Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.
- **12.6 Other adverse effects** No further relevant information available.

### SECTION 13: Disposal considerations

- **13.1 Waste treatment methods**
- **Recommendation**  
Must not be disposed together with household garbage. Do not allow product to reach sewage system.
- **Uncleaned packaging:**
- **Recommendation:** Disposal must be made according to official regulations.

### SECTION 14: Transport information

- |                                       |   |
|---------------------------------------|---|
| · <b>14.1 UN-Number</b>               |   |
| · <b>ADR, IMDG, IATA</b>              | UN3159  |
| · <b>ADN</b>                          | not regulated   |
|                                       |   |
| · <b>14.2 UN proper shipping name</b> |   |
| · <b>ADR</b>                          | 3159 1,1,1,2-TETRAFLUOROETHANE (REFRIGERANT GAS R 134a) |
| · <b>ADN</b>                          | not regulated   |
| · <b>IMDG, IATA</b>                   | 1,1,1,2-TETRAFLUOROETHANE (REFRIGERANT GAS R 134a)      |

(Contd. on page 6)

GB

**Safety data sheet**  
according to 1907/2006/EC, Article 31

Printing date 10.04.2017

Revision: 10.04.2017

Trade name: **FROSTBITE RAPID COOLANT CAN**

(Contd. of page 5)

· **14.3 Transport hazard class(es)**

· ADR, ADN

· Class not regulated

· **IMDG, IATA**



· Class 2 Gases.

· **14.4 Packing group**

· ADR not regulated

· **14.5 Environmental hazards:**

Not applicable.

· **14.6 Special precautions for user**

Not applicable.

· **Danger code (Kemler):**

2

· **EMS Number:**

F-C,S-V

· **Stowage Category**

A

· **14.7 Transport in bulk according to Annex II of Marpol and the IBC Code**

Not applicable.

· **Transport/Additional information:**

· ADR

· **Limited quantities (LQ)**

120 ml

· **Excepted quantities (EQ)**

Code: E1

Maximum net quantity per inner packaging: 30 ml

Maximum net quantity per outer packaging: 1000 ml

· **UN "Model Regulation":**

not regulated

### SECTION 15: Regulatory information

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

· **Directive 2012/18/EU**· **Named dangerous substances - ANNEX I Substance is not listed.**· **15.2 Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

### SECTION 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.

· **Abbreviations and acronyms:**

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods

IATA: International Air Transport Association

GHS: Globally Harmonised System of Classification and Labelling of Chemicals

EINECS: European Inventory of Existing Commercial Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

VOC: Volatile Organic Compounds (USA, EU)

PBT: Persistent, Bioaccumulative and Toxic

(Contd. on page 7)

**Safety data sheet**  
according to 1907/2006/EC, Article 31

Printing date 10.04.2017

Revision: 10.04.2017

**Trade name: FROSTBITE RAPID COOLANT CAN**

vPvB: very Persistent and very Bioaccumulative  
STOT SE 3: Specific target organ toxicity (single exposure) – Category 3

(Contd. of page 6)

GB

# 化学品安全技术说明书

据根根据据根T 16483-2008, GB/T 17519-2013

打印日期 2017.04.10

在 2017.04.10 审核

## 1 化学品及企业标识

- **产品识别者**
- **化学品中文名称/英文名称/化学品俗名或商品名:** FROSTBITE RAPID COOLANT CAN
- **商品编号:** 72594-01, 72594-10, 72594-20
- **编号/编号**  
811-97-2
- **欧盟编号:**  
212-377-0
- **相应纯物质或者混合物的相关下位用途及禁止用途** 无相关详细资料。
- **原材料的应用/准备工作进行** 实验室化学物
- **安全技术说明书内供应商详细信息**
- **企业名称:**  
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
- **可获取更多资料的部门:** Product safety department
- **紧急联系电话号码:**  
ChemTrec 1-800-424-9300 Contract CCN7661  
1-703-527-3887

## 2 危险性概述

- **紧急情况概述:**  
无色的, 气体的, 可引起昏睡或眩晕。

- **GHS危险性类别**



特定靶器官系统毒性 (单次接触) 第3类 H336 可引起昏睡或眩晕

- **标签因素**

- **GHS卷标元素** 本化学物质根据化学物质分类及标记全球协调制度(GHS)进行了分类及标记。

图示图示图示



GHS07

名称名称名称

- **危险字句**  
可引起昏睡或眩晕
- **警戒字句**
- **预防措施**  
避免吸入粉尘/烟/气体/烟雾/蒸气/喷雾
- **事故响应**  
如误吸入:将人转移到空气新鲜处,保持呼吸舒适体位  
如感觉不适,呼叫急救中心/医生
- **安全储存**  
存放处须加锁

(在 2 页继续)

# 化学品安全技术说明书

据根据据据T 16483-2008, GB/T 17519-2013

打印日期 2017.04.10

在 2017.04.10 审核

化学品中文名称: 化学品俗名或商品名: FROSTBITE RAPID COOLANT CAN

(在 1 页继续)

存放在通风良好的地方。保持容器密闭

· **废弃处置**

处置内装物/容器按照地方/区域/国家/国际规章

· **其他有害性**

· PBT(残留性、生物浓缩性、毒性物质) 及 vPvB(高残留性、高生物浓缩性物质)评价结果

· PBT(残留性、生物浓缩性、毒性物质) 不适用的

· vPvB(高残留性、高生物浓缩性物质): 不适用的

### 3 成分/组成信息

纯品 纯品 纯品

· **CAS号 化学名, 通用名**

811-97-2 1,1,1,2-四氟乙烷

· **鉴别编号:**

· **欧盟编号:** 212-377-0

### 4 急救措施

· **应急措施要领**

吸入 吸入 吸入 吸入 新鲜空气;如果病人感到不适时要询问医生.

· **皮肤接触:** 一般的产品不会刺激皮肤.

· **眼睛接触:** 张开眼睛在流水下冲洗数分钟.

食入 食入 食入 食入 如果症状仍然持续,请咨询医生.

· **给医生的资料:**

· **最重要的急慢性症状及其影响** 无相关详细资料.

· **需要及时的医疗处理及特别处理的症状** 无相关详细资料.

### 5 消防措施

· **灭火方法**

· **灭火的方法和灭火剂:** 二氧化碳 (CO<sub>2</sub>)、灭火粉末或洒水. 使用洒水或抗酒精泡沫灭火剂扑灭较大的火种.

· **特别危险性** 无相关详细资料.

· **特殊灭火方法**

· **消防人员特殊的防护装备:** 没有要求特别的措施.

### 6 泄漏应急处理

· **保护措施** 没有要求.

· **环境保护措施:** 切勿让其进入下水道/水面或地下水.

· **密封及净化方法和材料:** 没有要求特别的措施.

· **参照其他部分**

有关安全处理的资料请参阅第 7 节.

有关个人防护装备的资料请参阅第 8 节.

有关弃置的资料请参阅第 13 节.

### 7 操作处置与储存

· **操作处置**

储存 储存 储存 储存 正确使用便不需特别的预防措施.

(在 3 页继续)

# 化学品安全技术说明书

据根根据据根T 16483-2008, GB/T 17519-2013

打印日期 2017.04.10

在 2017.04.10 审核

化学品中文名称: 产品名称: 俗名或商品名: FROSTBITE RAPID COOLANT CAN

(在 2 页继续)

- 有关火灾及防止爆炸的资料: 不需特别的措施.
- 混合危险性等安全储存条件
- 储存 储存 储存
- 储存库和容器须要达到的要求: 没有特别的要求.
- 有关使用一个普通的储存设施来储存的资料: 不需要.
- 有关储存条件的更多资料: 没有.
- 具体的最终用户 无相关详细资料.

## 8 接触控制和个体防护

- 工程控制方法: 没有进一步数据;见第 7 项.
- 控制变数
- 在工作场需要监控的限值成分 不要求.
- 额外的资料: 制作期间有效的清单将作为基础来使用.
- 泄漏控制
- 个人防护设备:
- 一般保护和卫生措施: 在休息之前和工作完毕后请清洗双手.
- 呼吸系统防护: 不需要.
- 手防护:
  - 手套的物料必须是不渗透性的, 且能抵抗该产品/物质/添加剂.
  - 基于缺乏测试, 对于产品/制剂/化学混合物, 并不会提供手套材料的建议
  - 选择手套材料时, 请注意材料的渗透时间, 渗透率和降解参数
- 手套材料 选择合适的手套不单取决于材料, 亦取决于质量特征, 以及来自哪一间生产厂家
- 渗入手套材料的时间 请向劳保手套生产厂家获取准确的破裂时间并观察实际的破裂时间
- 眼睛防护: 不要求

## 9 理化特性

### · 有关基本物理及化学特性的信息

#### · 一般说明

外观 外观 外观

形状 形状 形状

颜色 颜色 颜色

气味 气味 气味

· 嗅觉阈限

气体的

无色的

无气味的

未决定.

· pH值:

未决定.

#### · 条件的更改

熔点 熔点 熔点

沸点 沸点 沸点

闪点 闪点 闪点

未确定的

初沸点和沸程: -26.2 °C

不适用的

· 可燃性 (固体、气体): 未决定.

· 点火温度:

· 分解温度:

未决定.

· 自燃温度:

未决定.

· 爆炸的危险性:

该产品并没有爆炸的危险

(在 4 页继续)



# 化学品安全技术说明书

据根据据据T 16483-2008, GB/T 17519-2013

打印日期 2017.04.10

在 2017.04.10 审核

化学品中文名称: 化学品俗名或商品名: FROSTBITE RAPID COOLANT CAN

(在 3 页继续)

· 爆炸极限: 较低较低较低 较高较高较高	未决定. 未决定.
· 蒸气压 在 20 °C:	5716 hPa
密度密度密度 0 °C: · 相对密度 · 蒸气密度 · 蒸发速率	3.18 g/cm <sup>3</sup> 未决定. 未决定. 不适用的
溶解性 水 在 20 °C:	1.93 g/l
辛醇辛醇分配系数	未决定.
· 黏性: 动态动态动态 0 °C: 运动黏度的 · 其他信息	0.22 mPas 未决定. 0.0 % 无相关详细资料。

## 10 稳定性和反应性

- 稳定性: 无相关详细资料。
- 稳定性: 稳定
- 分解: 分解避免的情况: 如果遵照规格使用则不会分解。
- 有害性: 有害性可能: 未有已知的危险反应。
- 避免避免的条件: 无相关详细资料。
- 不相容的物质: 无相关详细资料。
- 危险的分解产物: 未知有危险的分解产品。

## 11 毒理学信息

- 对毒性学影响的信息
- 急性毒性:
- 重要的刺激影响:
- 皮肤: 皮肤皮肤有刺激性影响。
- 在眼睛上面: 眼睛有刺激的影响。
- 致敏: 致敏致敏作用有已知的敏化影响。

## 12 生态学信息

- 生态毒性
- 水生毒性: 无相关详细资料。
- 持久性和降解性: 持久性和降解性: 无相关详细资料。
- 环境系统习性:
- 潜在的累积: 潜在的累积: 无相关详细资料。
- 土壤: 土壤: 无相关详细资料。
- 额外的生态学资料:
- 总括注解:
- 水危害级别 1(德国规例) (通过名单进行自我评估): 对水是稍微危害的

(在 5 页继续)

# 化学品安全技术说明书

据根据据据T 16483-2008, GB/T 17519-2013

打印日期 2017.04.10

在 2017.04.10 审核

**化学品中文名称:** **化学品俗名或商品名:** FROSTBITE RAPID COOLANT CAN


(在 4 页继续)

不要让未稀释或大量的产品接触地下水、水道或者污水系统。  
 · PBT(残留性、生物浓缩性、毒性物质) 及 vPvB(高残留性、高生物浓缩性物质)评价结果  
 · PBT(残留性、生物浓缩性、毒性物质) 不适用的  
 · vPvB(高残留性、高生物浓缩性物质): 不适用的  
 其他其他其他用用用相关详细资料。

## 13 废弃处置

· **废弃处置方法**  
 建议建议建议能将该产品和家居垃圾一起丢弃. 不要让该产品接触污水系统.  
 · **受污染的容器和包装:**  
 建议建议建议须根据官方的规章来丢弃.

## 14 运输信息

<b>联合国危险货物编号(UN号)</b>	
· ADR, IMDG, IATA	UN3159
· ADN	无效
<b>适当适当船名</b>	
· ADR	3159 制冷气体 R 134a
· ADN	无效
· IMDG, IATA	1,1,1,2-TETRAFLUOROETHANE (REFRIGERANT GAS R 134a)
<b>运输运输危险等级</b>	
· ADR, ADN	
· 级别	无效
-----	
· IMDG, IATA	
	
· Class	2 气体
<b>包装组别</b>	
· ADR	无效
<b>危害环境:</b>	
	不适用的
<b>用户特别预防措施</b>	
	不适用的
<b>危险编码:</b>	
	2
<b>E号号码号码</b>	
	F-C,S-V
<b>Stowage Category</b>	
	A
<b>· MARPOL73/78(针对船舶引起的海洋污染预防协议附件书根据根据C国际国际船货物编码)大量大量</b>	
运送运送运送	不适用的

(在 6 页继续)

# 化学品安全技术说明书

据根据据据T 16483-2008, GB/T 17519-2013

打印日期 2017.04.10

在 2017.04.10 审核

化学品中文名称: 产品名称: 俗名或商品名: FROSTBITE RAPID COOLANT CAN

(在 5 页继续)

## 运输运输运输的资料:

· ADR	Code: E1
· Excepted quantities (EQ)	Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 1000 ml
· 标准标准标准规定	无效

## 15 法规信息

- 对相应纯物质或者混合物的安全、保健及环境法规/法律
- 新化学物质环境管理办法

### 国家国现存在学物质名录

有列出物质.

- GHS卷标元素 本化学物质根据化学物质分类及标记全球协调制度(GHS)进行了分类及标记。

图示图示图示



GHS07

### 名称名称名称

- **危险字句**  
可引起昏睡或眩晕
- **警戒字句**
- **预防措施**  
避免吸入粉尘/烟/气体/烟雾/蒸气/喷雾
- **事故响应**  
如误吸入: 将人转移到空气新鲜处, 保持呼吸舒适体位  
如感觉不适, 呼叫急救中心/医生
- **安全储存**  
存放处须加锁  
存放在通风良好的地方。保持容器密闭
- **废弃处置**  
处置内装物/容器按照地方/区域/国家/国际规章
- **化学物质安全性评价:** 尚未进行化学物质安全性评价

## 16 其他信息

该资料是基于我们目前的知识。然而, 这并不构成对任何特定产品特性的担保并且不建立一个法律上有效的合同关系。

### 缩写:

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)  
 IMDG: International Maritime Code for Dangerous Goods  
 IATA: International Air Transport Association  
 EINECS: European Inventory of Existing Commercial Chemical Substances  
 CAS: Chemical Abstracts Service (division of the American Chemical Society)  
 PBT: 持久性生物累积性有毒物质  
 vPvB: very Persistent and very Bioaccumulative  
 特定靶器官系统毒性 (单次接触) 第3类: Specific target organ toxicity (single exposure) – Category 3

# Veiligheidsinformatieblad

volgens 1907/2006/EG, Artikel 31

datum van de druk: 10.04.2017

Herziening van: 10.04.2017

## RUBRIEK 1: Identificatie van de stof of het mengsel en van de vennootschap/onderneming

- **1.1 Productidentificatie**
- **Handelsnaam:** FROSTBITE RAPID COOLANT CAN
- **Artikelnummer:** 72594-01, 72594-10, 72594-20
- **CAS-nummer:**  
811-97-2
- **EC-nummer:**  
212-377-0
- **1.2 Relevant geïdentificeerd gebruik van de stof of het mengsel en ontraden gebruik**  
Geen verdere relevante informatie verkrijgbaar.
- **Toepassing van de stof / van de bereiding** Laboratoriumchemicaliën
- **1.3 Details betreffende de verstrekker van het veiligheidsinformatieblad**
- **Fabrikant/leverancier:**  
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
- **Aurion**  
Binnenhaven 5  
6709 PD Wageningen  
The Netherlands  
Tel: 31 317 415094  
Fax: 31 317 415955  
email: info@aurion.nl
- **Inlichtingengevende sector:** Product safety department
- **1.4 Telefoonnummer voor noodgevallen:**  
ChemTrec 1-800-424-9300 Contract CCN7661  
1-703-527-3887

## RUBRIEK 2: Identificatie van de gevaren

- **2.1 Indeling van de stof of het mengsel**
- **Indeling overeenkomstig Verordening (EG) nr. 1272/2008**



STOT SE 3 H336 Kan slaperigheid of duizeligheid veroorzaken.

- **2.2 Etiketteringselementen**
- **Etikettering overeenkomstig Verordening (EG) nr. 1272/2008**  
De stof/product is geclassificeerd en geëtiketteerd volgens de CLP-verordening.
- **Gevarenpictogrammen**



- **Signaalwoord** Waarschuwing
- **Gevarenaanduidingen**  
H336 Kan slaperigheid of duizeligheid veroorzaken.

(Vervolg op blz. 2)

# Veiligheidsinformatieblad

## volgens 1907/2006/EG, Artikel 31

datum van de druk: 10.04.2017

Herziening van: 10.04.2017

**Handelsnaam: FROSTBITE RAPID COOLANT CAN**

(Vervolg van blz. 1)

- **Veiligheidsaanbevelingen**
- P261 Inademing van stof/rook/gas/nevel/damp/spuitnevel vermijden.
- P304+P340 NA INADEMING: de persoon in de frisse lucht brengen en ervoor zorgen dat deze gemakkelijk kan ademen.
- P312 Bij onwel voelen een ANTIGIFCENTRUM/arts raadplegen.
- P405 Achter slot bewaren.
- P403+P233 Op een goed geventileerde plaats bewaren. In goed gesloten verpakking bewaren.
- P501 De inhoud en de verpakking verwerken volgens de plaatselijke/regionale/nationale/internationale voorschriften.
- **2.3 Andere gevaren**
- **Resultaten van PBT- en zPzB-beoordeling**
- **PBT:** Niet bruikbaar.
- **zPzB:** Niet bruikbaar.

### RUBRIEK 3: Samenstelling en informatie over de bestanddelen

- **3.1 Chemische karakterisering: Stoffen**
- **CAS-Nr. omschrijving**  
811-97-2 1,1,1,2-tetrafluoroethane
- **Identificatienummer(s)**
- **EC-nummer:** 212-377-0

### RUBRIEK 4: Eerstehulpmaatregelen

- **4.1 Beschrijving van de eerstehulpmaatregelen**
- **Na het inademen:** Frisse lucht toedienen; bij klachten arts ontbieden.
- **Na huidcontact:** Over het algemeen is het produkt niet prikkelend voor de huid
- **Na oogcontact:** Ogen bij geopend ooglid meerdere minuten met stromend water spoelen
- **Na inslikken:** Als de klachten niet minderen, een arts raadplegen
- **4.2 Belangrijkste acute en uitgestelde symptomen en effecten** Geen verdere relevante informatie verkrijgbaar.
- **4.3 Vermelding van de vereiste onmiddellijke medische verzorging en speciale behandeling**  
Geen verdere relevante informatie verkrijgbaar.

### RUBRIEK 5: Brandbestrijdingsmaatregelen

- **5.1 Blusmiddelen**
- **Geschikte blusmiddelen:**  
CO<sub>2</sub>, bluspoeder of waterstraal. Grotere brand met waterstraal bestrijden of met schuim, dat tegen alcohol bestand is.
- **5.2 Speciale gevaren die door de stof of het mengsel worden veroorzaakt**  
Geen verdere relevante informatie verkrijgbaar.
- **5.3 Advies voor brandweerlieden**
- **Speciale beschermende kleding:** Geen bijzondere maatregelen nodig.

### RUBRIEK 6: Maatregelen bij het accidenteel vrijkomen van de stof of het mengsel

- **6.1 Persoonlijke voorzorgsmaatregelen, beschermde uitrusting en noodprocedures** Niet nodig.
- **6.2 Milieuvoorzorgsmaatregelen:** Niet in de riolering/het oppervlaktewater/het grondwater laten terechtkomen.
- **6.3 Insluitings- en reinigingsmethoden en -materiaal:** Geen bijzondere maatregelen noodzakelijk.
- **6.4 Verwijzing naar andere rubrieken**  
Informatie inzake veilig gebruik - zie hoofdstuk 7.

(Vervolg op blz. 3)

# Veiligheidsinformatieblad

## volgens 1907/2006/EG, Artikel 31

datum van de druk: 10.04.2017

Herziening van: 10.04.2017

**Handelsnaam: FROSTBITE RAPID COOLANT CAN**

(Vervolg van blz. 2)

Informatie inzake persoonlijke beschermingsuitrusting - zie hoofdstuk 8.  
Informatie inzake berging - zie hoofdstuk 13.

### RUBRIEK 7: Hantering en opslag

- **7.1 Voorzorgsmaatregelen voor het veilig hanteren van de stof of het mengsel**  
Bij een deskundig gebruik zijn geen bijzondere maatregelen vereist.
- **Informatie m.b.t. brand- en ontploffingsgevaar:** Geen bijzondere maatregelen noodzakelijk.
- **7.2 Voorwaarden voor een veilige opslag, met inbegrip van incompatibele producten**
- **Opslag:**
- **Eisen ten opzichte van opslagruimte en tanks:** Geen bijzondere eisen.
- **Noodzakelijk m.b.t. gezamenlijke opslag:** Niet noodzakelijk.
- **Verdere inlichtingen over eisen m.b.t. de opslag:** Geen.
- **7.3 Specifiek eindgebruik** Geen verdere relevante informatie verkrijgbaar.

### RUBRIEK 8: Maatregelen ter beheersing van blootstelling/persoonlijke bescherming

- **Aanvullende gegevens m.b.t. de inrichting van technische installaties:** Geen aanvullende gegevens. Zie 7.
- **8.1 Controleparameters**
- **Bestanddelen met grenswaarden die m.b.t. de werkruimte in acht genomen moeten worden:** Vervalt.
- **Aanvullende gegevens:** Als basis dienden lijsten die bij opstelling geldig waren.
- **8.2 Maatregelen ter beheersing van blootstelling**
- **Persoonlijke beschermingsvoorzieningen:**
- **Algemene beschermings- en gezondheidsmaatregelen:**  
Vóór de pauze en aan het einde van werktijd handen wassen.
- **Ademhalingsbescherming:** Niet noodzakelijk.
- **Handbescherming:**  
Het handschoenmateriaal moet ondoorlatend en bestand zijn tegen het product / de stof / de bereiding.  
Op grond van falende testen kan geen aanbeveling voor handschoenmateriaal voor het product / de bereiding / het chemicaliënmengsel afgegeven worden.  
Kies handschoenmateriaal rekening houdend met de penetratietijden, de permeatiegraden en de degradatie.
- **Handschoenmateriaal**  
De keuze van een geschikte handschoen is niet alleen afhankelijk van het materiaal, maar ook van andere kwaliteitskenmerken en verschilt van fabrikant tot fabrikant.
- **Doordringingstijd van het handschoenmateriaal**  
De precieze penetratietijd kunt u te weten komen bij de handschoenfabrikant; houd er rekening mee.
- **Oogbescherming:** Niet noodzakelijk.

### RUBRIEK 9: Fysische en chemische eigenschappen

- **9.1 Informatie over fysische en chemische basiseigenschappen**
- **Algemene gegevens**
- **Voorkomen:**
- **Vorm:** Gasvormig
- **Kleur:** Kleurloos
- **Geur:** Reukloos
- **Geurdrempelwaarde:** Niet bepaald.
- **pH-waarde:** Niet bepaald.

(Vervolg op blz. 4)

# Veiligheidsinformatieblad

## volgens 1907/2006/EG, Artikel 31

datum van de druk: 10.04.2017

Herziening van: 10.04.2017

**Handelsnaam: FROSTBITE RAPID COOLANT CAN**

(Vervolg van blz. 3)

· <b>Toestandsverandering</b>	
<b>Smelt-/vriespunt:</b>	Niet bepaald.
<b>Beginkookpunt en kooktraject:</b>	-26,2 °C
· <b>Vlampunt:</b>	Niet bruikbaar.
· <b>Ontvlambaarheid (vast, gas):</b>	Niet bepaald.
· <b>Ontstekingstemperatuur:</b>	
<b>Ontledingstemperatuur:</b>	Niet bepaald.
· <b>Zelfontbrandingstemperatuur:</b>	Niet bepaald.
· <b>Ontploffingseigenschappen:</b>	Het produkt is niet ontploffingsgevaarlijk.
· <b>Ontploffingsgrenzen:</b>	
<b>Onderste:</b>	Niet bepaald.
<b>Bovenste:</b>	Niet bepaald.
· <b>Dampspanning bij 20 °C:</b>	5716 hPa
· <b>Dichtheid bij 20 °C:</b>	3,18 g/cm <sup>3</sup>
· <b>Relatieve dichtheid</b>	Niet bepaald.
· <b>Dampdichtheid</b>	Niet bepaald.
· <b>Verdampingsnelheid</b>	Niet bruikbaar.
· <b>Oplosbaarheid in/mengbaarheid met Water bij 20 °C:</b>	1,93 g/l
· <b>Verdelingscoëfficiënt: n-octanol/water:</b>	Niet bepaald.
· <b>Viscositeit</b>	
<b>Dynamisch bij 20 °C:</b>	0,22 mPas
<b>Kinematisch:</b>	Niet bepaald.
· <b>Oplosmiddelgehalte:</b>	
<b>Organisch oplosmiddel:</b>	0,0 %
<b>VOC (EG)</b>	0,00 %
· <b>9.2 Overige informatie</b>	Geen verdere relevante informatie verkrijgbaar.

### RUBRIEK 10: Stabiliteit en reactiviteit

- **10.1 Reactiviteit** Geen verdere relevante informatie verkrijgbaar.
- **10.2 Chemische stabiliteit**
- **Thermische afbraak / te vermijden omstandigheden:** Geen afbraak bij gebruik volgens voorschrift.
- **10.3 Mogelijke gevaarlijke reacties** Geen gevaarlijke reacties bekend.
- **10.4 Te vermijden omstandigheden** Geen verdere relevante informatie verkrijgbaar.
- **10.5 Chemisch op elkaar inwerkende materialen:** Geen verdere relevante informatie verkrijgbaar.
- **10.6 Gevaarlijke ontledingsproducten:** Geen gevaarlijke ontbindingsproducten bekend.

### RUBRIEK 11: Toxicologische informatie

- **11.1 Informatie over toxicologische effecten**
- **Acute toxiciteit** Gebaseerd op beschikbare gegevens; aan de indelingscriteria is niet voldaan.
- **Primaire aandoening:**
- **Huidcorrosie/-irritatie** Gebaseerd op beschikbare gegevens; aan de indelingscriteria is niet voldaan.

(Vervolg op blz. 5)

# Veiligheidsinformatieblad

## volgens 1907/2006/EG, Artikel 31

datum van de druk: 10.04.2017

Herziening van: 10.04.2017

**Handelsnaam: FROSTBITE RAPID COOLANT CAN**

(Vervolg van blz. 4)

- **Ernstig oogletsel/oogirritatie** Gebaseerd op beschikbare gegevens; aan de indelingscriteria is niet voldaan.
- **Sensibilisatie van de luchtwegen/de huid**  
Gebaseerd op beschikbare gegevens; aan de indelingscriteria is niet voldaan.
- **CMR-effecten (kankerverwekkendheid, mutageniteit en giftigheid voor de voortplanting)**
- **Mutageniteit in geslachtscellen** Gebaseerd op beschikbare gegevens; aan de indelingscriteria is niet voldaan.
- **Kankerverwekkendheid** Gebaseerd op beschikbare gegevens; aan de indelingscriteria is niet voldaan.
- **Giftigheid voor de voortplanting** Gebaseerd op beschikbare gegevens; aan de indelingscriteria is niet voldaan.
- **STOT bij eenmalige blootstelling**  
Kan slaperigheid of duizeligheid veroorzaken.
- **STOT bij herhaalde blootstelling** Gebaseerd op beschikbare gegevens; aan de indelingscriteria is niet voldaan.
- **Gevaar bij inademing** Gebaseerd op beschikbare gegevens; aan de indelingscriteria is niet voldaan.

### RUBRIEK 12: Ecologische informatie

- **12.1 Toxiciteit**
- **Aquatische toxiciteit:** Geen verdere relevante informatie verkrijgbaar.
- **12.2 Persistentie en afbreekbaarheid** Geen verdere relevante informatie verkrijgbaar.
- **12.3 Bioaccumulatie** Geen verdere relevante informatie verkrijgbaar.
- **12.4 Mobiliteit in de bodem** Geen verdere relevante informatie verkrijgbaar.
- **Verdere ecologische informatie:**
- **Algemene informatie:**  
Waterbezwaarlijkheid (NL): B(4)  
Gevaar voor water klasse 1 (D) (Zelfclassificatie): gevaar voor water klein  
Niet onverdund of in grote hoeveelheden lozen in grondwater, in oppervlaktewater of in de riolering.
- **12.5 Resultaten van PBT- en zPzB-beoordeling**
- **PBT:** Niet bruikbaar.
- **zPzB:** Niet bruikbaar.
- **12.6 Andere schadelijke effecten** Geen verdere relevante informatie verkrijgbaar.

### RUBRIEK 13: Instructies voor verwijdering

- **13.1 Afvalverwerkingsmethoden**
- **Aanbeveling:** Mag niet tesamen met huisvuil gestort worden of in de riolering terechtkomen.
- **Niet gereinigde verpakkingen:**
- **Aanbeveling:** Afvalverwijdering volgens overheidsbepalingen.

### RUBRIEK 14: Informatie met betrekking tot het vervoer

- |  |  |
|--|--|
| · <b>14.1 VN-nummer</b>  |  |
| · <b>ADR, IMDG, IATA</b>   | UN3159   |
| · <b>ADN</b>   | Niet van toepassing                                |
| · <b>14.2 Juiste ladingnaam overeenkomstig de modelreglementen van de VN</b> |  |
| · <b>ADR</b>   | 3159 1,1,1,2-TETRAFLUORETHAAN (KOELGAS R 134a)     |
| · <b>ADN</b>   | Niet van toepassing                                |
| · <b>IMDG, IATA</b>  | 1,1,1,2-TETRAFLUOROETHANE (REFRIGERANT GAS R 134a) |

(Vervolg op blz. 6)



# Veiligheidsinformatieblad

volgens 1907/2006/EG, Artikel 31

datum van de druk: 10.04.2017

Herziening van: 10.04.2017

**Handelsnaam: FROSTBITE RAPID COOLANT CAN**

(Vervolg van blz. 5)

· **14.3 Transportgevaar(n)**

· ADR, ADN

· klasse

Niet van toepassing

· **IMDG, IATA**



· Class

2 Gassen

· **14.4 Verpakkingsgroep:**

· ADR

Niet van toepassing

· **14.5 Milieugevaar:**

Niet bruikbaar.

· **14.6 Bijzondere voorzorgen voor de gebruiker**

Niet bruikbaar.

· Kemler-getal:

2

· EMS-nummer:

F-C,S-V

· Stowage Category

A

· **14.7 Vervoer in bulk overeenkomstig bijlage II bij Marpol en de IBC-code**

Niet bruikbaar.

· **Transport/verdere gegevens:**

· ADR

· Beperkte hoeveelheden (LQ)

120 ml

· Uitgezonderde hoeveelheden (EQ)

Code: E1

Grootste netto hoeveelheid per binnenverpakking: 30 ml

Grootste netto hoeveelheid per buitenverpakking: 1000 ml

· VN "Model Regulation":

Niet van toepassing

## RUBRIEK 15: Regelgeving

· **15.1 Specifieke veiligheids-, gezondheids- en milieureglementen en -wetgeving voor de stof of het mengsel**

· **SZW-lijst van kankerverwekkende stoffen**

De stof is niet aanwezig.

· **SZW-lijst van mutagene stoffen**

De stof is niet aanwezig.

· **NIET-limitatieve lijst van voor de voortplanting giftige stoffen - Vruchtbaarheid**

De stof is niet aanwezig.

· **NIET-limitatieve lijst van voor de voortplanting giftige stoffen - Ontwikkeling**

De stof is niet aanwezig.

· **NIET-limitatieve lijst van voor de voortplanting giftige stoffen - Borstvoeding**

De stof is niet aanwezig.

· **Richtlijn 2012/18/EU**

· **Gevaarlijke stoffen die met naam genoemd worden - BIJLAGE I** De stof is niet aanwezig.

· **Nationale voorschriften:**

· **Gevaarklasse v. water: Waterbezwaarlijkheid (NL): B(4)**

(Vervolg op blz. 7)

**Veiligheidsinformatieblad**  
volgens 1907/2006/EG, Artikel 31

datum van de druk: 10.04.2017

Herziening van: 10.04.2017

**Handelsnaam: FROSTBITE RAPID COOLANT CAN**

(Vervolg van blz. 6)

· **15.2 Chemischeveiligheidsbeoordeling:** Een chemische veiligheidsbeoordeling is niet uitgevoerd.**RUBRIEK 16: Overige informatie**

Deze gegevens zijn gebaseerd op de huidige stand van onze kennis. Zij beschrijven echter geen garantie van produkteigenschappen en vestigen geen contractuele rechtsbetrekking.

· **Afkortingen en acroniemen:**

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods

IATA: International Air Transport Association

GHS: Globally Harmonised System of Classification and Labelling of Chemicals

EINECS: European Inventory of Existing Commercial Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

VOC: Volatile Organic Compounds (USA, EU)

PBT: Persistent, Bioaccumulative and Toxic

vPvB: very Persistent and very Bioaccumulative

STOT SE 3: Specifieke doelorgaantoxiciteit bij eenmalige blootstelling – Categorie 3

NL

# Fiche de données de sécurité

## selon 1907/2006/CE, Article 31

Date d'impression : 10.04.2017

Révision: 10.04.2017

### RUBRIQUE 1: Identification de la substance/du mélange et de la société/l'entreprise

- **1.1 Identificateur de produit**
- **Nom du produit:** FROSTBITE RAPID COOLANT CAN
- **Code du produit:** 72594-01, 72594-10, 72594-20
- **No CAS:**  
811-97-2
- **Numéro CE:**  
212-377-0
- **1.2 Utilisations identifiées pertinentes de la substance ou du mélange et utilisations déconseillées**  
*Pas d'autres informations importantes disponibles.*
- **Emploi de la substance / de la préparation** Produits chimiques pour laboratoires
- **1.3 Renseignements concernant le fournisseur de la fiche de données de sécurité**
- **Producteur/fournisseur:**  
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
- **Service chargé des renseignements:** Product safety department
- **1.4 Numéro d'appel d'urgence:**  
ChemTrec 1-800-424-9300 Contract CCN7661  
1-703-527-3887

### RUBRIQUE 2: Identification des dangers

- **2.1 Classification de la substance ou du mélange**
- **Classification selon le règlement (CE) n° 1272/2008**



GHS07

STOT SE 3 H336 Peut provoquer somnolence ou vertiges.

- **2.2 Éléments d'étiquetage**
- **Étiquetage selon le règlement (CE) n° 1272/2008** La substance est classifiée et étiquetée selon le règlement CLP.
- **Pictogrammes de danger**



GHS07

- **Mention d'avertissement** Attention
- **Mentions de danger**  
H336 Peut provoquer somnolence ou vertiges.
- **Conseils de prudence**  
P261 Éviter de respirer les poussières/fumées/gaz/brouillards/vapeurs/aérosols.  
P304+P340 EN CAS D'INHALATION: transporter la personne à l'extérieur et la maintenir dans une position où elle peut confortablement respirer.  
P312 Appeler un CENTRE ANTIPOISON/un médecin en cas de malaise.  
P405 Garder sous clef.  
P403+P233 Stocker dans un endroit bien ventilé. Maintenir le récipient fermé de manière étanche.

(suite page 2)

# Fiche de données de sécurité

## selon 1907/2006/CE, Article 31

Date d'impression : 10.04.2017

Révision: 10.04.2017

**Nom du produit: FROSTBITE RAPID COOLANT CAN**

(suite de la page 1)

P501 Éliminer le contenu/récipient conformément à la réglementation locale/régionale/nationale/internationale.

- **2.3 Autres dangers**
- **Résultats des évaluations PBT et vPvB**
- **PBT:** Non applicable.
- **vPvB:** Non applicable.

### RUBRIQUE 3: Composition/informations sur les composants

- **3.1 Caractérisation chimique: Substances**
- **No CAS Désignation**  
811-97-2 1,1,1,2-tetrafluoroethane
- **Code(s) d'identification**
- **Numéro CE:** 212-377-0

### RUBRIQUE 4: Premiers secours

- **4.1 Description des premiers secours**
- **Après inhalation:** Donner de l'air frais, consulter un médecin en cas de troubles.
- **Après contact avec la peau:** En règle générale, le produit n'irrite pas la peau.
- **Après contact avec les yeux:**  
Rincer les yeux, sous l'eau courante, pendant plusieurs minutes, en écartant bien les paupières.
- **Après ingestion:** Si les troubles persistent, consulter un médecin.
- **4.2 Principaux symptômes et effets, aigus et différés** Pas d'autres informations importantes disponibles.
- **4.3 Indication des éventuels soins médicaux immédiats et traitements particuliers nécessaires**  
Pas d'autres informations importantes disponibles.

### RUBRIQUE 5: Mesures de lutte contre l'incendie

- **5.1 Moyens d'extinction**
- **Moyens d'extinction:**  
CO<sub>2</sub>, poudre d'extinction ou eau pulvérisée. Combattre les foyers importants avec de l'eau pulvérisée ou de la mousse résistant à l'alcool.
- **5.2 Dangers particuliers résultant de la substance ou du mélange**  
Pas d'autres informations importantes disponibles.
- **5.3 Conseils aux pompiers**
- **Équipement spécial de sécurité:** Aucune mesure particulière n'est requise.

### RUBRIQUE 6: Mesures à prendre en cas de dispersion accidentelle

- **6.1 Précautions individuelles, équipement de protection et procédures d'urgence** Pas nécessaire.
- **6.2 Précautions pour la protection de l'environnement:**  
Ne pas rejeter dans les canalisations, dans les eaux de surface et dans les nappes d'eau souterraines.
- **6.3 Méthodes et matériel de confinement et de nettoyage:** Aucune mesure particulière n'est requise.
- **6.4 Référence à d'autres rubriques**  
Afin d'obtenir des informations pour une manipulation sûre, consulter le chapitre 7.  
Afin d'obtenir des informations sur les équipements de protection personnels, consulter le chapitre 8.  
Afin d'obtenir des informations sur l'élimination, consulter le chapitre 13.

FR

(suite page 3)

# Fiche de données de sécurité

## selon 1907/2006/CE, Article 31

Date d'impression : 10.04.2017

Révision: 10.04.2017

Nom du produit: **FROSTBITE RAPID COOLANT CAN**

(suite de la page 2)

### RUBRIQUE 7: Manipulation et stockage

- **7.1 Précautions à prendre pour une manipulation sans danger**  
Aucune mesure particulière n'est nécessaire en cas de bonne utilisation.
- **Préventions des incendies et des explosions:** Aucune mesure particulière n'est requise.
- **7.2 Conditions d'un stockage sûr, y compris d'éventuelles incompatibilités**
- **Stockage:**
- **Exigences concernant les lieux et conteneurs de stockage:** Aucune exigence particulière.
- **Indications concernant le stockage commun:** Pas nécessaire.
- **Autres indications sur les conditions de stockage:** Néant.
- **7.3 Utilisation(s) finale(s) particulière(s)** Pas d'autres informations importantes disponibles.

### RUBRIQUE 8: Contrôles de l'exposition/protection individuelle

- **Indications complémentaires pour l'agencement des installations techniques:**  
Sans autre indication, voir point 7.
- **8.1 Paramètres de contrôle**
- **Composants présentant des valeurs-seuil à surveiller par poste de travail:** Néant
- **Remarques supplémentaires:**  
Le présent document s'appuie sur les listes en vigueur au moment de son élaboration.
- **8.2 Contrôles de l'exposition**
- **Équipement de protection individuel:**
- **Mesures générales de protection et d'hygiène:** Se laver les mains avant les pauses et en fin de travail.
- **Protection respiratoire:** N'est pas nécessaire.
- **Protection des mains:**  
Le matériau des gants doit être imperméable et résistant au produit / à la substance / à la préparation.  
À cause du manque de tests, aucune recommandation pour un matériau de gants pour le produit / la préparation / le mélange de produits chimiques ne peut être donnée.  
Choix du matériau des gants en fonction des temps de pénétration, du taux de perméabilité et de la dégradation.
- **Matériau des gants**  
Le choix de gants appropriés ne dépend pas seulement du matériau, mais également d'autres critères de qualité qui peuvent varier d'un fabricant à l'autre.
- **Temps de pénétration du matériau des gants**  
Le temps de pénétration exact est à déterminer par le fabricant des gants de protection et à respecter.
- **Protection des yeux:** Pas nécessaire.

### RUBRIQUE 9: Propriétés physiques et chimiques

- **9.1 Informations sur les propriétés physiques et chimiques essentielles**
- **Indications générales**
- **Aspect:**
- **Forme:** Gazeuse
- **Couleur:** Incolore
- **Odeur:** Inodore
- **Seuil olfactif:** Non déterminé.
- **valeur du pH:** Non déterminé.
- **Changement d'état**
- **Point de fusion/point de congélation:** Non déterminé.

(suite page 4)

# Fiche de données de sécurité

## selon 1907/2006/CE, Article 31

Date d'impression : 10.04.2017

Révision: 10.04.2017

**Nom du produit: FROSTBITE RAPID COOLANT CAN**

(suite de la page 3)

<b>Point initial d'ébullition et intervalle d'ébullition:</b> -26,2 °C	
· <b>Point d'éclair</b>	Non applicable.
· <b>Inflammabilité (solide, gaz):</b>	Non déterminé.
· <b>Température d'inflammation:</b>	
<b>Température de décomposition:</b>	Non déterminé.
· <b>Température d'auto-inflammabilité:</b>	Non déterminé.
· <b>Propriétés explosives:</b>	Le produit n'est pas explosif.
· <b>Limites d'explosion:</b>	
<b>Inférieure:</b>	Non déterminé.
<b>Supérieure:</b>	Non déterminé.
· <b>Pression de vapeur à 20 °C:</b>	5716 hPa
· <b>Densité à 20 °C:</b>	3,18 g/cm <sup>3</sup>
· <b>Densité relative</b>	Non déterminé.
· <b>Densité de vapeur:</b>	Non déterminé.
· <b>Taux d'évaporation:</b>	Non applicable.
· <b>Solubilité dans/miscibilité avec l'eau à 20 °C:</b>	1,93 g/l
· <b>Coefficient de partage: n-octanol/eau:</b>	Non déterminé.
· <b>Viscosité:</b>	
<b>Dynamique à 20 °C:</b>	0,22 mPas
<b>Cinématique:</b>	Non déterminé.
· <b>Teneur en solvants:</b>	
<b>Solvants organiques:</b>	0,0 %
<b>VOC (CE)</b>	0,00 %
· <b>9.2 Autres informations</b>	Pas d'autres informations importantes disponibles.

### RUBRIQUE 10: Stabilité et réactivité

- **10.1 Réactivité** Pas d'autres informations importantes disponibles.
- **10.2 Stabilité chimique**
- **Décomposition thermique/conditions à éviter:** Pas de décomposition en cas d'usage conforme.
- **10.3 Possibilité de réactions dangereuses** Aucune réaction dangereuse connue.
- **10.4 Conditions à éviter** Pas d'autres informations importantes disponibles.
- **10.5 Matières incompatibles:** Pas d'autres informations importantes disponibles.
- **10.6 Produits de décomposition dangereux:** Pas de produits de décomposition dangereux connus

### RUBRIQUE 11: Informations toxicologiques

- **11.1 Informations sur les effets toxicologiques**
- **Toxicité aiguë** Compte tenu des données disponibles, les critères de classification ne sont pas remplis.
- **Effet primaire d'irritation:**
- **Corrosion cutanée/irritation cutanée**  
Compte tenu des données disponibles, les critères de classification ne sont pas remplis.
- **Lésions oculaires graves/irritation oculaire**  
Compte tenu des données disponibles, les critères de classification ne sont pas remplis.

(suite page 5)

# Fiche de données de sécurité

## selon 1907/2006/CE, Article 31

Date d'impression : 10.04.2017

Révision: 10.04.2017

**Nom du produit: FROSTBITE RAPID COOLANT CAN**

(suite de la page 4)

- **Sensibilisation respiratoire ou cutanée**  
Compte tenu des données disponibles, les critères de classification ne sont pas remplis.
- **Effets CMR (cancérogène, mutagène et toxique pour la reproduction)**
- **Mutagenicité sur les cellules germinales**  
Compte tenu des données disponibles, les critères de classification ne sont pas remplis.
- **Cancérogénicité** Compte tenu des données disponibles, les critères de classification ne sont pas remplis.
- **Toxicité pour la reproduction**  
Compte tenu des données disponibles, les critères de classification ne sont pas remplis.
- **Toxicité spécifique pour certains organes cibles - exposition unique**  
Peut provoquer somnolence ou vertiges.
- **Toxicité spécifique pour certains organes cibles - exposition répétée**  
Compte tenu des données disponibles, les critères de classification ne sont pas remplis.
- **Danger par aspiration** Compte tenu des données disponibles, les critères de classification ne sont pas remplis.

### RUBRIQUE 12: Informations écologiques

- **12.1 Toxicité**
- **Toxicité aquatique:** Pas d'autres informations importantes disponibles.
- **12.2 Persistance et dégradabilité** Pas d'autres informations importantes disponibles.
- **12.3 Potentiel de bioaccumulation** Pas d'autres informations importantes disponibles.
- **12.4 Mobilité dans le sol** Pas d'autres informations importantes disponibles.
- **Autres indications écologiques:**
- **Indications générales:**  
Catégorie de pollution des eaux 1 (D) (Classification propre): peu polluant  
Ne pas laisser le produit, non dilué ou en grande quantité, pénétrer la nappe phréatique, les eaux ou les canalisations.
- **12.5 Résultats des évaluations PBT et VPVB**
- **PBT:** Non applicable.
- **vPvB:** Non applicable.
- **12.6 Autres effets néfastes** Pas d'autres informations importantes disponibles.

### RUBRIQUE 13: Considérations relatives à l'élimination

- **13.1 Méthodes de traitement des déchets**
- **Recommandation:** Ne doit pas être évacué avec les ordures ménagères. Ne pas laisser pénétrer dans les égouts.
- **Emballages non nettoyés:**
- **Recommandation:** Evacuation conformément aux prescriptions légales.

### RUBRIQUE 14: Informations relatives au transport

- |   |   |
|---|---|
| <ul style="list-style-type: none"> <li>· <b>14.1 Numéro ONU</b></li> <li>· <b>ADR, IMDG, IATA</b></li> <li>· <b>ADN</b></li> </ul>  | <p style="margin: 0;">UN3159<br/>néant</p>  |
| <ul style="list-style-type: none"> <li>· <b>14.2 Désignation officielle de transport de l'ONU</b></li> <li>· <b>ADR</b></li> <li>· <b>ADN</b></li> <li>· <b>IMDG, IATA</b></li> </ul> | <p style="margin: 0;">3159 TÉTRAFLUORO-1,1,1,2 ÉTHANE (GAZ RÉFRIGÉRANT R 134a)<br/>néant<br/>1,1,1,2-TETRAFLUOROETHANE (REFRIGERANT GAS R 134a)</p> |

(suite page 6)




**Fiche de données de sécurité**  
selon 1907/2006/CE, Article 31

Date d'impression : 10.04.2017

Révision: 10.04.2017

Nom du produit: **FROSTBITE RAPID COOLANT CAN**

(suite de la page 5)

· <b>14.3 Classe(s) de danger pour le transport</b>	
· <b>ADR, ADN</b>	
· <b>Classe</b>	néant
· <b>IMDG, IATA</b>	
	
· <b>Class</b>	2 Gaz.
· <b>14.4 Groupe d'emballage</b>	
· <b>ADR</b>	néant
· <b>14.5 Dangers pour l'environnement:</b>	
	Non applicable.
· <b>14.6 Précautions particulières à prendre par l'utilisateur</b>	
	Non applicable.
· <b>Indice Kemler:</b>	2
· <b>No EMS:</b>	F-C,S-V
· <b>Stowage Category</b>	A
· <b>14.7 Transport en vrac conformément à l'annexe II de la convention Marpol et au recueil IBC</b>	
	Non applicable.
· <b>Indications complémentaires de transport:</b>	
· <b>ADR</b>	
· <b>Quantités limitées (LQ)</b>	120 ml
· <b>Quantités exceptées (EQ)</b>	Code: E1 Quantité maximale nette par emballage intérieur: 30 ml Quantité maximale nette par emballage extérieur: 1000 ml
· <b>"Règlement type" de l'ONU:</b>	néant

### RUBRIQUE 15: Informations relatives à la réglementation

- **15.1 Réglementations/législation particulières à la substance ou au mélange en matière de sécurité, de santé et d'environnement**
- **Directive 2012/18/UE**
- **Substances dangereuses désignées - ANNEXE I** la substance n'est pas comprise
- **15.2 Évaluation de la sécurité chimique:** Une évaluation de la sécurité chimique n'a pas été réalisée.

### RUBRIQUE 16: Autres informations

Ces indications sont fondées sur l'état actuel de nos connaissances, mais ne constituent pas une garantie quant aux propriétés du produit et ne donnent pas lieu à un rapport juridique contractuel.

· **Acronymes et abréviations:**

ADR: Accord européen sur le transport des marchandises dangereuses par Route  
 IMDG: International Maritime Code for Dangerous Goods  
 IATA: International Air Transport Association  
 GHS: Globally Harmonised System of Classification and Labelling of Chemicals  
 EINECS: European Inventory of Existing Commercial Chemical Substances  
 CAS: Chemical Abstracts Service (division of the American Chemical Society)

(suite page 7)



**Fiche de données de sécurité**  
**selon 1907/2006/CE, Article 31**

Date d'impression : 10.04.2017

Révision: 10.04.2017

**Nom du produit: FROSTBITE RAPID COOLANT CAN**

VOC: Volatile Organic Compounds (USA, EU)

PBT: Persistent, Bioaccumulative and Toxic

vPvB: very Persistent and very Bioaccumulative

STOT SE 3: Toxicité spécifique pour certains organes cibles (exposition unique) – Catégorie 3

(suite de la page 6)

FR

# Sicherheitsdatenblatt

## gemäß 1907/2006/EG, Artikel 31

Druckdatum: 10.04.2017

überarbeitet am: 10.04.2017

### ABSCHNITT 1: Bezeichnung des Stoffs beziehungsweise des Gemischs und des Unternehmens

· **1.1 Produktidentifikator**

· **Handelsname:** FROSTBITE RAPID COOLANT CAN

· **Artikelnummer:** 72594-01, 72594-10, 72594-20

· **CAS-Nummer:**

811-97-2

· **EG-Nummer:**

212-377-0

· **1.2 Relevante identifizierte Verwendungen des Stoffs oder Gemischs und Verwendungen, von denen abgeraten wird**

Keine weiteren relevanten Informationen verfügbar.

· **Verwendung des Stoffes / des Gemisches Laborchemikalien**

· **1.3 Einzelheiten zum Lieferanten, der das Sicherheitsdatenblatt bereitstellt**

· **Hersteller/Lieferant:**

Electron Microscopy Sciences

1560 Industry Road

USA-Hatfield, PA 19440

Tel: 215-412-8400 Fax: 215-412-8450

email: [info@emsdiasum.com](mailto:info@emsdiasum.com)

[www.emsdiasum.com](http://www.emsdiasum.com)

Science Services GmbH

Unterhachinger Str. 75

81737 München Germany

Tel: +49(0)89 18 93 668-0

[safety@scienceservices.de](mailto:safety@scienceservices.de)

24h Giftnotruf Munchen: +49 (0)89 19240

Toxikologische Abteilung der II. Medizinischen Klinik

rechts der Isar, Munchen. - [www.toxinfo.org](http://www.toxinfo.org)

· **Auskunftgebender Bereich:** Product safety department

· **1.4 Notrufnummer:**

ChemTrec 1-800-424-9300 Contract CCN7661

1-703-527-3887

### ABSCHNITT 2: Mögliche Gefahren

· **2.1 Einstufung des Stoffs oder Gemischs**

· **Einstufung gemäß Verordnung (EG) Nr. 1272/2008**



GHS07

STOT SE 3 H336 Kann Schläfrigkeit und Benommenheit verursachen.

· **2.2 Kennzeichnungselemente**

· **Kennzeichnung gemäß Verordnung (EG) Nr. 1272/2008**

Der Stoff ist gemäß CLP-Verordnung eingestuft und gekennzeichnet.

(Fortsetzung auf Seite 2)

# Sicherheitsdatenblatt

## gemäß 1907/2006/EG, Artikel 31

Druckdatum: 10.04.2017

überarbeitet am: 10.04.2017

**Handelsname: FROSTBITE RAPID COOLANT CAN**

(Fortsetzung von Seite 1)

**· Gefahrenpiktogramme**


GHS07

**· Signalwort Achtung**
**· Gefahrenhinweise**
*H336 Kann Schläfrigkeit und Benommenheit verursachen.*
**· Sicherheitshinweise**
*P261 Einatmen von Staub/Rauch/Gas/Nebel/Dampf/Aerosol vermeiden.*
*P304+P340 BEI EINATMEN: Die Person an die frische Luft bringen und für ungehinderte Atmung sorgen.*
*P312 Bei Unwohlsein GIFTINFORMATIONSZENTRUM/Arzt anrufen.*
*P405 Unter Verschluss aufbewahren.*
*P403+P233 An einem gut belüfteten Ort aufbewahren. Behälter dicht verschlossen halten.*
*P501 Entsorgung des Inhalts / des Behälters gemäß den örtlichen / regionalen / nationalen / internationalen Vorschriften.*
**· 2.3 Sonstige Gefahren**
**· Ergebnisse der PBT- und vPvB-Beurteilung**
**· PBT:** Nicht anwendbar.

**· vPvB:** Nicht anwendbar.

### ABSCHNITT 3: Zusammensetzung/Angaben zu Bestandteilen

**· 3.1 Chemische Charakterisierung: Stoffe**
**· CAS-Nr. Bezeichnung**
*811-97-2 1,1,1,2-Tetrafluorethan*
**· Identifikationsnummer(n)**
**· EG-Nummer:** 212-377-0

### ABSCHNITT 4: Erste-Hilfe-Maßnahmen

**· 4.1 Beschreibung der Erste-Hilfe-Maßnahmen**
**· Nach Einatmen:** Frischluftzufuhr, bei Beschwerden Arzt aufsuchen.

**· Nach Hautkontakt:** Im allgemeinen ist das Produkt nicht hautreizend.

**· Nach Augenkontakt:** Augen bei geöffnetem Lidspalt mehrere Minuten mit fließendem Wasser spülen.

**· Nach Verschlucken:** Bei anhaltenden Beschwerden Arzt konsultieren.

**· 4.2 Wichtigste akute und verzögert auftretende Symptome und Wirkungen**
*Keine weiteren relevanten Informationen verfügbar.*
**· 4.3 Hinweise auf ärztliche Soforthilfe oder Spezialbehandlung**
*Keine weiteren relevanten Informationen verfügbar.*

### ABSCHNITT 5: Maßnahmen zur Brandbekämpfung

**· 5.1 Löschmittel**
**· Geeignete Löschmittel:**
*CO<sub>2</sub>, Löschpulver oder Wassersprühstrahl. Größeren Brand mit Wassersprühstrahl oder alkoholbeständigem Schaum bekämpfen.*
**· 5.2 Besondere vom Stoff oder Gemisch ausgehende Gefahren**
*Keine weiteren relevanten Informationen verfügbar.*

(Fortsetzung auf Seite 3)

# Sicherheitsdatenblatt

## gemäß 1907/2006/EG, Artikel 31

Druckdatum: 10.04.2017

überarbeitet am: 10.04.2017

**Handelsname: FROSTBITE RAPID COOLANT CAN**

(Fortsetzung von Seite 2)

- **5.3 Hinweise für die Brandbekämpfung**
- **Besondere Schutzausrüstung:** Keine besonderen Maßnahmen erforderlich.

### ABSCHNITT 6: Maßnahmen bei unbeabsichtigter Freisetzung

- **6.1 Personenbezogene Vorsichtsmaßnahmen, Schutzausrüstungen und in Notfällen anzuwendende Verfahren**  
Nicht erforderlich.
- **6.2 Umweltschutzmaßnahmen:** Nicht in die Kanalisation/Oberflächenwasser/Grundwasser gelangen lassen.
- **6.3 Methoden und Material für Rückhaltung und Reinigung:** Keine besonderen Maßnahmen erforderlich.
- **6.4 Verweis auf andere Abschnitte**  
Informationen zur sicheren Handhabung siehe Abschnitt 7.  
Informationen zur persönlichen Schutzausrüstung siehe Abschnitt 8.  
Informationen zur Entsorgung siehe Abschnitt 13.

### ABSCHNITT 7: Handhabung und Lagerung

- **7.1 Schutzmaßnahmen zur sicheren Handhabung**  
Bei sachgemäßer Verwendung keine besonderen Maßnahmen erforderlich.
- **Hinweise zum Brand- und Explosionsschutz:** Keine besonderen Maßnahmen erforderlich.
- **7.2 Bedingungen zur sicheren Lagerung unter Berücksichtigung von Unverträglichkeiten**
- **Lagerung:**
- **Anforderung an Lagerräume und Behälter:** Keine besonderen Anforderungen.
- **Zusammenlagerungshinweise:** Nicht erforderlich.
- **Weitere Angaben zu den Lagerbedingungen:** Keine.
- **Lagerklasse:**
- **Klassifizierung nach Betriebssicherheitsverordnung (BetrSichV):** -
- **7.3 Spezifische Endanwendungen** Keine weiteren relevanten Informationen verfügbar.

### ABSCHNITT 8: Begrenzung und Überwachung der Exposition/Persönliche Schutzausrüstungen

- **Zusätzliche Hinweise zur Gestaltung technischer Anlagen:** Keine weiteren Angaben, siehe Abschnitt 7.
- **8.1 Zu überwachende Parameter**

- **Bestandteile mit arbeitsplatzbezogenen, zu überwachenden Grenzwerten:**

**811-97-2 1,1,1,2-Tetrafluorethan**

AGW	Langzeitwert: 4200 mg/m <sup>3</sup> , 1000 ml/m <sup>3</sup> 8(II);DFG, Y
-----	---

- **Zusätzliche Hinweise:** Als Grundlage dienen die bei der Erstellung gültigen Listen.
- **8.2 Begrenzung und Überwachung der Exposition**
- **Persönliche Schutzausrüstung:**
- **Allgemeine Schutz- und Hygienemaßnahmen:** Vor den Pausen und bei Arbeitsende Hände waschen.
- **Atemschutz:** Nicht erforderlich.
- **Handschutz:**  
Das Handschuhmaterial muss undurchlässig und beständig gegen das Produkt / den Stoff / die Zubereitung sein.  
Aufgrund fehlender Tests kann keine Empfehlung zum Handschuhmaterial für das Produkt / die Zubereitung / das Chemikaliengemisch abgegeben werden.  
Auswahl des Handschuhmaterials unter Beachtung der Durchbruchzeiten, Permeationsraten und der Degradation.

(Fortsetzung auf Seite 4)

# Sicherheitsdatenblatt

## gemäß 1907/2006/EG, Artikel 31

Druckdatum: 10.04.2017

überarbeitet am: 10.04.2017

**Handelsname: FROSTBITE RAPID COOLANT CAN**

(Fortsetzung von Seite 3)

- **Handschuhmaterial**  
Die Auswahl eines geeigneten Handschuhs ist nicht nur vom Material, sondern auch von weiteren Qualitätsmerkmalen abhängig und von Hersteller zu Hersteller unterschiedlich.
- **Durchdringungszeit des Handschuhmaterials**  
Die genaue Durchbruchzeit ist beim Schutzhandschuhhersteller zu erfahren und einzuhalten.
- **Augenschutz:** Nicht erforderlich.

### ABSCHNITT 9: Physikalische und chemische Eigenschaften

#### · 9.1 Angaben zu den grundlegenden physikalischen und chemischen Eigenschaften

##### · Allgemeine Angaben

##### · Aussehen:

Form: Gasförmig

Farbe: Farblos

· Geruch: Geruchlos

· Geruchsschwelle: Nicht bestimmt.

· pH-Wert: Nicht bestimmt.

##### · Zustandsänderung

Schmelzpunkt/Gefrierpunkt: Nicht bestimmt.

Siedebeginn und Siedebereich: -26,2 °C

· Flammpunkt: Nicht anwendbar.

· Entzündbarkeit (fest, gasförmig): Nicht bestimmt.

##### · Zündtemperatur:

Zersetzungstemperatur: Nicht bestimmt.

· Selbstentzündungstemperatur: Nicht bestimmt.

· Explosive Eigenschaften: Das Produkt ist nicht explosionsgefährlich.

##### · Explosionsgrenzen:

Untere: Nicht bestimmt.

Obere: Nicht bestimmt.

· Dampfdruck bei 20 °C: 5716 hPa

· Dichte bei 20 °C: 3,18 g/cm<sup>3</sup>

· Relative Dichte: Nicht bestimmt.

· Dampfdichte: Nicht bestimmt.

· Verdampfungsgeschwindigkeit: Nicht anwendbar.

##### · Löslichkeit in / Mischbarkeit mit

Wasser bei 20 °C: 1,93 g/l

· Verteilungskoeffizient: n-Octanol/Wasser: Nicht bestimmt.

##### · Viskosität:

Dynamisch bei 20 °C: 0,22 mPas

Kinematisch: Nicht bestimmt.

##### · Lösemittelgehalt:

Organische Lösemittel: 0,0 %

VOC (EU) 0,00 %

(Fortsetzung auf Seite 5)

# Sicherheitsdatenblatt

## gemäß 1907/2006/EG, Artikel 31

Druckdatum: 10.04.2017

überarbeitet am: 10.04.2017

**Handelsname: FROSTBITE RAPID COOLANT CAN**

(Fortsetzung von Seite 4)

**· 9.2 Sonstige Angaben**

Keine weiteren relevanten Informationen verfügbar.

### ABSCHNITT 10: Stabilität und Reaktivität

- **10.1 Reaktivität** Keine weiteren relevanten Informationen verfügbar.
- **10.2 Chemische Stabilität**
- **Thermische Zersetzung / zu vermeidende Bedingungen:**  
Keine Zersetzung bei bestimmungsgemäßer Verwendung.
- **10.3 Möglichkeit gefährlicher Reaktionen** Keine gefährlichen Reaktionen bekannt.
- **10.4 Zu vermeidende Bedingungen** Keine weiteren relevanten Informationen verfügbar.
- **10.5 Unverträgliche Materialien:** Keine weiteren relevanten Informationen verfügbar.
- **10.6 Gefährliche Zersetzungsprodukte:** Keine gefährlichen Zersetzungsprodukte bekannt.

### ABSCHNITT 11: Toxikologische Angaben

- **11.1 Angaben zu toxikologischen Wirkungen**
- **Akute Toxizität** Aufgrund der verfügbaren Daten sind die Einstufungskriterien nicht erfüllt.
- **Primäre Reizwirkung:**
- **Ätz-/Reizwirkung auf die Haut** Aufgrund der verfügbaren Daten sind die Einstufungskriterien nicht erfüllt.
- **Schwere Augenschädigung/-reizung** Aufgrund der verfügbaren Daten sind die Einstufungskriterien nicht erfüllt.
- **Sensibilisierung der Atemwege/Haut** Aufgrund der verfügbaren Daten sind die Einstufungskriterien nicht erfüllt.
- **CMR-Wirkungen (krebserzeugende, erbgutverändernde und fortpflanzungsgefährdende Wirkung)**
- **Keimzell-Mutagenität** Aufgrund der verfügbaren Daten sind die Einstufungskriterien nicht erfüllt.
- **Karzinogenität** Aufgrund der verfügbaren Daten sind die Einstufungskriterien nicht erfüllt.
- **Reproduktionstoxizität** Aufgrund der verfügbaren Daten sind die Einstufungskriterien nicht erfüllt.
- **Spezifische Zielorgan-Toxizität bei einmaliger Exposition**  
Kann Schläfrigkeit und Benommenheit verursachen.
- **Spezifische Zielorgan-Toxizität bei wiederholter Exposition**  
Aufgrund der verfügbaren Daten sind die Einstufungskriterien nicht erfüllt.
- **Aspirationsgefahr** Aufgrund der verfügbaren Daten sind die Einstufungskriterien nicht erfüllt.

### ABSCHNITT 12: Umweltbezogene Angaben

- **12.1 Toxizität**
- **Aquatische Toxizität:** Keine weiteren relevanten Informationen verfügbar.
- **12.2 Persistenz und Abbaubarkeit** Keine weiteren relevanten Informationen verfügbar.
- **12.3 Bioakkumulationspotenzial** Keine weiteren relevanten Informationen verfügbar.
- **12.4 Mobilität im Boden** Keine weiteren relevanten Informationen verfügbar.
- **Weitere ökologische Hinweise:**
- **Allgemeine Hinweise:**  
Wassergefährdungsklasse 1 (Selbsteinstufung): schwach wassergefährdend  
Nicht unverdünnt bzw. in größeren Mengen in das Grundwasser, in Gewässer oder in die Kanalisation gelangen lassen.
- **12.5 Ergebnisse der PBT- und vPvB-Beurteilung**
- **PBT:** Nicht anwendbar.
- **vPvB:** Nicht anwendbar.
- **12.6 Andere schädliche Wirkungen** Keine weiteren relevanten Informationen verfügbar.

DE

(Fortsetzung auf Seite 6)

# Sicherheitsdatenblatt

## gemäß 1907/2006/EG, Artikel 31

Druckdatum: 10.04.2017

überarbeitet am: 10.04.2017


Handelsname: FROSTBITE RAPID COOLANT CAN

(Fortsetzung von Seite 5)

### ABSCHNITT 13: Hinweise zur Entsorgung

- **13.1 Verfahren der Abfallbehandlung**
- **Empfehlung:** Darf nicht zusammen mit Hausmüll entsorgt werden. Nicht in die Kanalisation gelangen lassen.
- **Ungereinigte Verpackungen:**
- **Empfehlung:** Entsorgung gemäß den behördlichen Vorschriften.

### ABSCHNITT 14: Angaben zum Transport

<ul style="list-style-type: none"> <li>· <b>14.1 UN-Nummer</b></li> <li>· <b>ADR, IMDG, IATA</b></li> <li>· <b>ADN</b></li> </ul>	<p>UN3159 entfällt</p>
<ul style="list-style-type: none"> <li>· <b>14.2 Ordnungsgemäße UN-Versandbezeichnung</b></li> <li>· <b>ADR</b></li> <li>· <b>ADN</b></li> <li>· <b>IMDG, IATA</b></li> </ul>	<p>3159 1,1,1,2-TETRAFLUORETHAN (GAS ALS KÄLTEMITTEL R 134a) entfällt 1,1,1,2-TETRAFLUOROETHANE (REFRIGERANT GAS R 134a)</p>
<ul style="list-style-type: none"> <li>· <b>14.3 Transportgefahrenklassen</b></li> <li>· <b>ADR, ADN</b></li> <li>· <b>Klasse</b></li> </ul>	<p>entfällt</p>
<ul style="list-style-type: none"> <li>· <b>IMDG, IATA</b></li> </ul>	
<div style="text-align: center;">  </div>	
<ul style="list-style-type: none"> <li>· <b>Class</b></li> </ul>	<p>2 Gase</p>
<ul style="list-style-type: none"> <li>· <b>14.4 Verpackungsgruppe</b></li> <li>· <b>ADR</b></li> </ul>	<p>entfällt</p>
<ul style="list-style-type: none"> <li>· <b>14.5 Umweltgefahren:</b></li> </ul>	<p>Nicht anwendbar.</p>
<ul style="list-style-type: none"> <li>· <b>14.6 Besondere Vorsichtsmaßnahmen für den Verwender</b></li> <li>· <b>Kemler-Zahl:</b></li> <li>· <b>EMS-Nummer:</b></li> <li>· <b>Stowage Category</b></li> </ul>	<p>Nicht anwendbar. 2 F-C,S-V A</p>
<ul style="list-style-type: none"> <li>· <b>14.7 Massengutbeförderung gemäß Anhang II des MARPOL-Übereinkommens und gemäß IBC-Code</b></li> </ul>	<p>Nicht anwendbar.</p>
<ul style="list-style-type: none"> <li>· <b>Transport/weitere Angaben:</b></li> </ul>	
<ul style="list-style-type: none"> <li>· <b>ADR</b></li> <li>· <b>Begrenzte Menge (LQ)</b></li> <li>· <b>Freigestellte Mengen (EQ)</b></li> </ul>	<p>120 ml Code: E1 Höchste Nettomenge je Innenverpackung: 30 ml Höchste Nettomenge je Außenverpackung: 1000 ml</p>

(Fortsetzung auf Seite 7)

**Sicherheitsdatenblatt**  
gemäß 1907/2006/EG, Artikel 31

Druckdatum: 10.04.2017

überarbeitet am: 10.04.2017

**Handelsname: FROSTBITE RAPID COOLANT CAN**

(Fortsetzung von Seite 6)

· UN "Model Regulation": entfällt

### **ABSCHNITT 15: Rechtsvorschriften**

- **15.1 Vorschriften zu Sicherheit, Gesundheits- und Umweltschutz/spezifische Rechtsvorschriften für den Stoff oder das Gemisch**
- **Richtlinie 2012/18/EU**
- **Namentlich aufgeführte gefährliche Stoffe - ANHANG I** Der Stoff ist nicht enthalten.
- **Nationale Vorschriften:**
- **Wassergefährdungsklasse: WGK 1 (Selbsteinstufung):** schwach wassergefährdend.
- **15.2 Stoffsicherheitsbeurteilung:** Eine Stoffsicherheitsbeurteilung wurde nicht durchgeführt.

### **ABSCHNITT 16: Sonstige Angaben**

Die Angaben stützen sich auf den heutigen Stand unserer Kenntnisse, sie stellen jedoch keine Zusicherung von Produkteigenschaften dar und begründen kein vertragliches Rechtsverhältnis.

· **Abkürzungen und Akronyme:**

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods

IATA: International Air Transport Association

GHS: Globally Harmonised System of Classification and Labelling of Chemicals

EINECS: European Inventory of Existing Commercial Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

VOC: Volatile Organic Compounds (USA, EU)

PBT: Persistent, Bioaccumulative and Toxic

vPvB: very Persistent and very Bioaccumulative

STOT SE 3: Spezifische Zielorgan-Toxizität (einmalige Exposition) – Kategorie 3

DE



**Scheda di dati di sicurezza**  
ai sensi del regolamento 1907/2006/CE, Articolo 31

Stampato il: 10.04.2017

Revisione: 10.04.2017

### SEZIONE 1: Identificazione della sostanza o della miscela e della società/impresa

· **1.1 Identificatore del prodotto**

· **Denominazione commerciale:** FROSTBITE RAPID COOLANT CAN

· **Articolo numero:** 72594-01, 72594-10, 72594-20

· **Numero CAS:**

811-97-2

· **Numeri CE:**

212-377-0

· **1.2 Usi identificati pertinenti della sostanza o della miscela e usi sconsigliati**

Non sono disponibili altre informazioni.

· **Utilizzazione della Sostanza / del Preparato** Prodotti chimici per laboratorio

· **1.3 Informazioni sul fornitore della scheda di dati di sicurezza**

· **Produttore/fornitore:**

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

Societa Italiana Chimici

Via Rio Nell Ellba 140

00138 Rome, Italy

Tel: 39 06 8800211

Fax: 39 30 06 8815313

Web: www.sichim.com

· **Informazioni fornite da:** Product safety department

· **1.4 Numero telefonico di emergenza:**

ChemTrec 1-800-424-9300 Contract CCN7661

1-703-527-3887

### SEZIONE 2: Identificazione dei pericoli

· **2.1 Classificazione della sostanza o della miscela**

· **Classificazione secondo il regolamento (CE) n. 1272/2008**



GHS07

STOT SE 3 H336 Può provocare sonnolenza o vertigini.

· **2.2 Elementi dell'etichetta**

· **Etichettatura secondo il regolamento (CE) n. 1272/2008**

La sostanza è classificata ed etichettata conformemente al regolamento CLP.

· **Pittogrammi di pericolo**



GHS07

· **Avvertenza** Attenzione

· **Indicazioni di pericolo**

H336 Può provocare sonnolenza o vertigini.

(continua a pagina 2)

**Scheda di dati di sicurezza**  
ai sensi del regolamento 1907/2006/CE, Articolo 31

Stampato il: 10.04.2017

Revisione: 10.04.2017

**Denominazione commerciale: FROSTBITE RAPID COOLANT CAN**

(Segue da pagina 1)

· **Consigli di prudenza**

- P261 Evitare di respirare la polvere/i fumi/i gas/la nebbia/i vapori/gli aerosol.
- P304+P340 IN CASO DI INALAZIONE: trasportare l'infortunato all'aria aperta e mantenerlo a riposo in posizione che favorisca la respirazione.
- P312 Contattare un CENTRO ANTIVELENI/un medico in caso di malessere.
- P405 Conservare sotto chiave.
- P403+P233 Tenere il recipiente ben chiuso e in luogo ben ventilato.
- P501 Smaltire il prodotto/recipiente in conformità con le disposizioni locali / regionali / nazionali / internazionali.

· **2.3 Altri pericoli**

· **Risultati della valutazione PBT e vPvB**

- **PBT:** Non applicabile.
- **vPvB:** Non applicabile.

**SEZIONE 3: Composizione/informazioni sugli ingredienti**

· **3.1 Caratteristiche chimiche: Sostanze**

- **Numero CAS**  
811-97-2 1,1,1,2-tetrafluoroethane
- **Numeri di identificazione**
- **Numeri CE:** 212-377-0

**SEZIONE 4: Misure di primo soccorso**

· **4.1 Descrizione delle misure di primo soccorso**

- **Inalazione:** Portare in zona ben areata, in caso di disturbi consultare il medico.
- **Contatto con la pelle:** Generalmente il prodotto non è irritante per la pelle.
- **Contatto con gli occhi:** Lavare con acqua corrente per alcuni minuti tenendo le palpebre ben aperte.
- **Ingestione:** Se il dolore persiste consultare il medico.
- **4.2 Principali sintomi ed effetti, sia acuti che ritardati** Non sono disponibili altre informazioni.
- **4.3 Indicazione dell'eventuale necessità di consultare immediatamente un medico e di trattamenti speciali**  
Non sono disponibili altre informazioni.

**SEZIONE 5: Misure antincendio**

· **5.1 Mezzi di estinzione**

· **Mezzi di estinzione idonei:**

CO<sub>2</sub>, polvere o acqua nebulizzata. Estinguere gli incendi di grosse dimensioni con acqua nebulizzata o con schiuma resistente all'alcool.

· **5.2 Pericoli speciali derivanti dalla sostanza o dalla miscela** Non sono disponibili altre informazioni.

· **5.3 Raccomandazioni per gli addetti all'estinzione degli incendi**

· **Mezzi protettivi specifici:** Non sono richiesti provvedimenti particolari.

**SEZIONE 6: Misure in caso di rilascio accidentale**

· **6.1 Precauzioni personali, dispositivi di protezione e procedure in caso di emergenza** Non necessario.

· **6.2 Precauzioni ambientali:** Impedire infiltrazioni nella fognatura/nelle acque superficiali/nelle acque freatiche.

· **6.3 Metodi e materiali per il contenimento e per la bonifica:** Non sono richiesti provvedimenti particolari.

· **6.4 Riferimento ad altre sezioni**

Per informazioni relative ad un manipolazione sicura, vedere capitolo 7.

Per informazioni relative all'equipaggiamento protettivo ad uso personale vedere Capitolo 8.

(continua a pagina 3)

**Scheda di dati di sicurezza**  
**ai sensi del regolamento 1907/2006/CE, Articolo 31**

Stampato il: 10.04.2017

Revisione: 10.04.2017

**Denominazione commerciale: FROSTBITE RAPID COOLANT CAN**

(Segue da pagina 2)

Per informazioni relative allo smaltimento vedere Capitolo 13.

### **SEZIONE 7: Manipolazione e immagazzinamento**

- **7.1 Precauzioni per la manipolazione sicura** Per un uso corretto non sono necessari provvedimenti particolari.
- **Indicazioni in caso di incendio ed esplosione:** Non sono richiesti provvedimenti particolari.
- **7.2 Condizioni per lo stoccaggio sicuro, comprese eventuali incompatibilità**
- **Stoccaggio:**
- **Requisiti dei magazzini e dei recipienti:** Non sono richiesti requisiti particolari.
- **Indicazioni sullo stoccaggio misto:** Non necessario.
- **Ulteriori indicazioni relative alle condizioni di immagazzinamento:** Nessuno.
- **7.3 Usi finali particolari** Non sono disponibili altre informazioni.

### **SEZIONE 8: Controllo dell'esposizione/protezione individuale**

- **Ulteriori indicazioni sulla struttura di impianti tecnici:** Nessun dato ulteriore, vedere punto 7.
- **8.1 Parametri di controllo**
- **Componenti i cui valori limite devono essere tenuti sotto controllo negli ambienti di lavoro:** Non Necessario.
- **Ulteriori indicazioni:** Le liste valide alla data di compilazione sono state usate come base.
- **8.2 Controlli dell'esposizione**
- **Mezzi protettivi individuali:**
- **Norme generali protettive e di igiene del lavoro:** Lavarsi le mani prima dell'intervallo o a lavoro terminato.
- **Maschera protettiva:** Non necessario.
- **Guanti protettivi:**
- **Il materiale dei guanti deve essere impermeabile e stabile contro il prodotto/ la sostanza/ la formulazione.**  
A causa della mancanza di tests non può essere consigliato alcun tipo di materiale per i guanti con cui manipolare il prodotto / la formulazione / la miscela di sostanze chimiche.  
Scelta del materiale dei guanti in considerazione dei tempi di passaggio, dei tassi di permeazione e della degradazione.
- **Materiale dei guanti**  
La scelta dei guanti adatti non dipende soltanto dal materiale bensì anche da altre caratteristiche di qualità variabili da un produttore a un altro.
- **Tempo di permeazione del materiale dei guanti**  
Richiedere dal fornitore dei guanti il tempo di passaggio preciso il quale deve essere rispettato.
- **Occhiali protettivi:** Non necessario.

### **SEZIONE 9: Proprietà fisiche e chimiche**

- **9.1 Informazioni sulle proprietà fisiche e chimiche fondamentali**
- **Indicazioni generali**
- **Aspetto:**
- **Forma:** Gassoso
- **Colore:** Incolore
- **Odore:** Inodore
- **Soglia olfattiva:** Non definito.
- **valori di pH:** Non definito.

(continua a pagina 4)

**Scheda di dati di sicurezza**  
ai sensi del regolamento 1907/2006/CE, Articolo 31

Stampato il: 10.04.2017

Revisione: 10.04.2017

**Denominazione commerciale: FROSTBITE RAPID COOLANT CAN**

(Segue da pagina 3)

· <b>Cambiamento di stato</b>	
Punto di fusione/punto di congelamento:	Non definito.
Punto di ebollizione iniziale e intervallo di ebollizione:	-26,2 °C
· <b>Punto di infiammabilità:</b>	Non applicabile.
· <b>Infiammabilità (solidi, gas):</b>	Non definito.
· <b>Temperatura di accensione:</b>	
Temperatura di decomposizione:	Non definito.
· <b>Temperatura di autoaccensione:</b>	Non definito.
· <b>Proprietà esplosive:</b>	Prodotto non esplosivo.
· <b>Limiti di infiammabilità:</b>	
Inferiore:	Non definito.
Superiore:	Non definito.
· <b>Tensione di vapore a 20 °C:</b>	5716 hPa
· <b>Densità a 20 °C:</b>	3,18 g/cm <sup>3</sup>
· <b>Densità relativa</b>	Non definito.
· <b>Densità di vapore:</b>	Non definito.
· <b>Velocità di evaporazione</b>	Non applicabile.
· <b>Solubilità in/Miscibilità con acqua a 20 °C:</b>	1,93 g/l
· <b>Coefficiente di ripartizione: n-ottanolo/acqua:</b>	Non definito.
· <b>Viscosità:</b>	
Dinamica a 20 °C:	0,22 mPas
Cinematica:	Non definito.
· <b>Tenore del solvente:</b>	
Solventi organici:	0,0 %
VOC (CE)	0,00 %
· <b>9.2 Altre informazioni</b>	Non sono disponibili altre informazioni.

### SEZIONE 10: Stabilità e reattività

- **10.1 Reattività** Non sono disponibili altre informazioni.
- **10.2 Stabilità chimica**
- **Decomposizione termica/ condizioni da evitare:** Il prodotto non si decompone se utilizzato secondo le norme.
- **10.3 Possibilità di reazioni pericolose** Non sono note reazioni pericolose.
- **10.4 Condizioni da evitare** Non sono disponibili altre informazioni.
- **10.5 Materiali incompatibili:** Non sono disponibili altre informazioni.
- **10.6 Prodotti di decomposizione pericolosi:** Non sono noti prodotti di decomposizione pericolosi.

### SEZIONE 11: Informazioni tossicologiche

- **11.1 Informazioni sugli effetti tossicologici**
- **Tossicità acuta** Basandosi sui dati disponibili i criteri di classificazione non sono soddisfatti.

(continua a pagina 5)

**Scheda di dati di sicurezza**  
**ai sensi del regolamento 1907/2006/CE, Articolo 31**

Stampato il: 10.04.2017

Revisione: 10.04.2017

**Denominazione commerciale: FROSTBITE RAPID COOLANT CAN**

(Segue da pagina 4)

- **Irritabilità primaria:**
- **Corrosione/irritazione cutanea** Basandosi sui dati disponibili i criteri di classificazione non sono soddisfatti.
- **Lesioni oculari gravi/irritazioni oculari gravi**  
Basandosi sui dati disponibili i criteri di classificazione non sono soddisfatti.
- **Sensibilizzazione respiratoria o cutanea**  
Basandosi sui dati disponibili i criteri di classificazione non sono soddisfatti.
- **Effetti CMR (cancerogenicità, mutagenicità e tossicità per la riproduzione)**
- **Mutagenicità delle cellule germinali**  
Basandosi sui dati disponibili i criteri di classificazione non sono soddisfatti.
- **Cancerogenicità** Basandosi sui dati disponibili i criteri di classificazione non sono soddisfatti.
- **Tossicità per la riproduzione** Basandosi sui dati disponibili i criteri di classificazione non sono soddisfatti.
- **Tossicità specifica per organi bersaglio (STOT) - esposizione singola**  
Può provocare sonnolenza o vertigini.
- **Tossicità specifica per organi bersaglio (STOT) - esposizione ripetuta**  
Basandosi sui dati disponibili i criteri di classificazione non sono soddisfatti.
- **Pericolo in caso di aspirazione** Basandosi sui dati disponibili i criteri di classificazione non sono soddisfatti.

### SEZIONE 12: Informazioni ecologiche

- **12.1 Tossicità**
- **Tossicità acquatica:** Non sono disponibili altre informazioni.
- **12.2 Persistenza e degradabilità** Non sono disponibili altre informazioni.
- **12.3 Potenziale di bioaccumulo** Non sono disponibili altre informazioni.
- **12.4 Mobilità nel suolo** Non sono disponibili altre informazioni.
- **Ulteriori indicazioni in materia ambientale:**
- **Ulteriori indicazioni:**  
Pericolosità per le acque classe 1 (D) (Autoclassificazione): poco pericoloso  
Non immettere nelle acque freatiche, nei corsi d'acqua o nelle fognature non diluito o in grandi quantità.
- **12.5 Risultati della valutazione PBT e vPvB**
- **PBT:** Non applicabile.
- **vPvB:** Non applicabile.
- **12.6 Altri effetti avversi** Non sono disponibili altre informazioni.

### SEZIONE 13: Considerazioni sullo smaltimento

- **13.1 Metodi di trattamento dei rifiuti**
- **Consigli:** Non smaltire il prodotto insieme ai rifiuti domestici Non immettere nelle fognature.
- **Imballaggi non puliti:**
- **Consigli:** Smaltimento in conformità con le disposizioni amministrative.

### SEZIONE 14: Informazioni sul trasporto

- |   |   |
|---|---|
| · <b>14.1 Numero ONU</b>                  |   |
| · <b>ADR, IMDG, IATA</b>                  | UN3159  |
| · <b>ADN</b>                              | non applicabile   |
| · <b>14.2 Nome di spedizione dell'ONU</b> |   |
| · <b>ADR</b>                              | 3159 1,1,1,2-TETRAFLUOROETANO (GAS REFRIGERANTE R 134a) |

(continua a pagina 6)


**Scheda di dati di sicurezza**  
ai sensi del regolamento 1907/2006/CE, Articolo 31

Stampato il: 10.04.2017

Revisione: 10.04.2017

**Denominazione commerciale: FROSTBITE RAPID COOLANT CAN**

(Segue da pagina 5)

· <b>ADN</b>	<i>non applicabile</i>
· <b>IMDG, IATA</b>	<b>1,1,1,2-TETRAFLUOROETHANE (REFRIGERANT GAS R 134a)</b>
· <b>14.3 Classi di pericolo connesso al trasporto</b>	
· <b>ADR, ADN</b>	
· <b>Classe</b>	<i>non applicabile</i>
· <b>IMDG, IATA</b>	
	
· <b>Class</b>	<b>2 Gas</b>
· <b>14.4 Gruppo di imballaggio</b>	
· <b>ADR</b>	<i>non applicabile</i>
· <b>14.5 Pericoli per l'ambiente:</b>	<i>Non applicabile.</i>
· <b>14.6 Precauzioni speciali per gli utilizzatori</b>	<i>Non applicabile.</i>
· <b>Numero Kemler:</b>	<b>2</b>
· <b>Numero EMS:</b>	<b>F-C,S-V</b>
· <b>Stowage Category</b>	<b>A</b>
· <b>14.7 Trasporto di rifiuti secondo l'allegato II di MARPOL ed il codice IBC</b>	<i>Non applicabile.</i>
· <b>Trasporto/ulteriori indicazioni:</b>	
· <b>ADR</b>	
· <b>Quantità limitate (LQ)</b>	<b>120 ml</b>
· <b>Quantità esenti (EQ)</b>	<b>Codice: E1</b>
	<i>Quantità massima netta per imballaggio interno: 30 ml</i>
	<i>Quantità massima netta per imballaggio esterno: 1000 ml</i>
· <b>UN "Model Regulation":</b>	<i>non applicabile</i>

### SEZIONE 15: Informazioni sulla regolamentazione

- **15.1 Disposizioni legislative e regolamentari su salute, sicurezza e ambiente specifiche per la sostanza o la miscela**
- **Direttiva 2012/18/UE**
- **Sostanze pericolose specificate - ALLEGATO I** La sostanza non è contenuta
- **15.2 Valutazione della sicurezza chimica:** Una valutazione della sicurezza chimica non è stata effettuata.

### SEZIONE 16: Altre informazioni

*I dati sono riportati sulla base delle nostre conoscenze attuali, non rappresentano tuttavia alcuna garanzia delle caratteristiche del prodotto e non motivano alcun rapporto giuridico contrattuale.*

- **Abbreviazioni e acronimi:**

*ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)*

*IMDG: International Maritime Code for Dangerous Goods*

*IATA: International Air Transport Association*

*GHS: Globally Harmonised System of Classification and Labelling of Chemicals*

(continua a pagina 7)

**Scheda di dati di sicurezza**  
**ai sensi del regolamento 1907/2006/CE, Articolo 31**

Stampato il: 10.04.2017

Revisione: 10.04.2017

**Denominazione commerciale: FROSTBITE RAPID COOLANT CAN**

(Segue da pagina 6)

*EINECS: European Inventory of Existing Commercial Chemical Substances**CAS: Chemical Abstracts Service (division of the American Chemical Society)**VOC: Volatile Organic Compounds (USA, EU)**PBT: Persistent, Bioaccumulative and Toxic**vPvB: very Persistent and very Bioaccumulative**STOT SE 3: Tossicità specifica per organi bersaglio (esposizione singola) – Categoria 3*

IT

# 물질안전보건자료

GHS에 따라라따

기압점: 2017.04.10

개정: 2017.04.10

## 1 화학제품과 회사에 관한 정보

### 제품제품제명

- **제품명:** FROSTBITE RAPID COOLANT CAN
- **상품번호:** 72594-01, 72594-10, 72594-20
- **번호번호번호**  
811-97-2
- **EC 의번호:**  
212-377-0

해당 해당 물질이나 혼합물 관련 권고 및 사용금지용도 추가적인 정보가 존재하지 않습니다.

- **제품의 권고 용도와 사용 제한** 제한사항 실화 학품
- **안전데이터표(Safety Data Sheet)내 공급업체 권고사항** 정보
- **제조사/수입자/유통업체 정보**  
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

Samchang Commercial Co., Ltd.  
Yeo Eui Do  
PO Box 1110  
Seoul, Korea  
Tel: 82 2 703 3040  
Fax: 82 2 717 3298

- **추가적인 정보** 제품안전부 department
- **비상연락 전화번호:**  
ChemTrec 1-800-424-9300 Contract CCN7661  
1-703-527-3887

## 2 유해성·위험성

- **순물질 또는 혼합물** 분류분류



특정표적장기 독성 - 1회 노출 - 구분 3 H336 졸음 또는 현기증을 일으킬 수 있음

- **라벨표가 요소요소**
- **라벨라벨라벨 요소**

본 화학물질은 화학물질의 분류 및 표기에 관한 국제조화시스템(GHS)에 따라 분류 및 표기되었습니다.

- **그림문자**



GHS07

- **신호어 경고**
- **유해** 유해유해유해 문구  
졸음 또는 현기증을 일으킬 수 있음
- **예방조치** 문구문구

(분진·흙·가스·미스트·증기·스프레이)의 흡입을 피하십시오.  
흡입하면 신선한 공기가 있는 곳으로 옮기고 호흡하기 쉬운 자세로 안정을 취하십시오.

(2 쪽에 계속)





# 물질안전보건자료 GHS에 따라라따

기압점: 2017.04.10

개정: 2017.04.10

**제품명: FROSTBITE RAPID COOLANT CAN**

(2 쪽부터 계속)

## 7 취급 및 저장방법

취급 취급 취급

안전안전을 위한 예방 조치를 올바르게 사용할 경우에는 특별한 주의가 필요없다.  
화재 화재를 예방하기 위해 화재 대피에 관한 정보와 정보를 특별한 조치가 필요없음.

- 혼합 위험성 물질의 저장 조건
- 보관 조건
- 안전장치의 특별한 요구사항이 없음.
- 하중을 운반할 때의 특별한 주의사항이 없음
- 보관 조건에 관한 추가적인 정보 없음
- 구매처 최종 사용자 추가적인 정보가 존재하지 않습니다.

## 8 노출방지 및 개인보호구

- 첨단시설 디자인에 대한 추가 정보: 더 이상 의 자료는 없음. 항 목 7 을 참고하시 오.

통제 물질의 변수

- 화학물질의 노출기준, 생물학적 노출기준 등:

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

WEEL (US) 장기간의값: 1000 ppm

- 추가 정보: 보호할 당시에 유효한 목록을 기초로 사용했다.

노출 통제 통제

개인 개인 보호구

- 일반적 보호 조치 및 위생 조치: 휴 식 전 이 나 작업이 끝날 때 마다 손 을 씻는다.
- 호흡기 보호: 필요 없음.

노출 보호 보호

장갑재질은 제품 / 원료 / 조제를 투과시키지 않아야 하고, 내구성이 있어야 한다.  
테스트를 하지 않았기 때문에 제품 / 조제 / 화학 혼합물에 적합한 장갑재질에 대한 추천이 없다.  
투과 시간, 침투율과 저하를 고려해서 장갑 재료를 선택한다.

· 장갑의 재료

적합한 장갑의 선정은 재질 차이뿐만 아니라 품질 기준의 차이도 고려하여 이루어져야 하고 제조업자에 따라서도 다르게 선정되어야 한다.

- 장갑 재료의 투과 시간: 정확한 관통 시간은 보호 장갑 제조자에 의하여 인 지 되고, 준수 되어야 한다.

노출 보호: 필요 없음.

## 9 물리화학적 특성

기본 물리화학적 특성에 대한 정보

· 일반 정보

외형 외형의 형

· 물리적 상태

가스 형태의

· 색:

색소가 없는

냄새 냄새 냄새

· 무취의

· 후각역치

알맞지 않다.

· pH:

알맞지 않다.

· 상태 변화

· 녹는 점/어는 점:

· 맞지 않는

· 초기 끓는점과 끓는점 범위: -26.2 °C

(4 쪽에 계속)

# 물질안전보건자료 GHS에 따라라

기압점: 2017.04.10

개정: 2017.04.10

**제품명: FROSTBITE RAPID COOLANT CAN**

(3 쪽부터계속)

· 인화점:	해당사항 없음.
· 인화성에 고체/기체/기체	알맞지않다.
· 점화온도:	
분해온도	알맞지않다.
· 자기점화:	알맞지않다.
· 폭발위험:	이제품은폭발위험성이없다
인화 안전정보폭발폭발 위험성상한상한	하한
아래로:	알맞지않다.
위로위로위로	알맞지않다.
· 증기압 의경우 20 °C:	5716 hPa
밀도 밀도 밀도경우 20 °C:	3.18 g/cm <sup>3</sup>
비중 비중 비중	알맞지않다.
· 증기밀도:	알맞지않다.
증발 증발 증발 속도	해당사항 없음.
· 용해도:	
물 의경우 20 °C:	1.93 g/l
· n 옥탄올/물 분배계수:	알맞지않다.
점도 점도 점도	
역확성 의경우 20 °C:	0.22 mPas
등점성:	알맞지않다.
· 용매내용물	
유기용매:	0.0 %
VOC (EU)	0.00 %
기타 정보 정보 정보	추가적인 정보가 존재하지 않습니다.

### 10 안정성 및 반응성

- 반응성 추가적인 정보가 존재하지 않습니다.
- 화학적 안정성
- 화학적 안정성 및 유해 반응의 가능성 / 피해 야할 조건 조건에 따라 사용할 경우 해체는 없다
- 유해 반응 가능성 위험한 반응으로는 알려지지 않았다.
- 피해 야할 조건 조건에 대한 정보가 존재하지 않습니다.
- 혼합 혼합 혼합 혼합 혼합 추가적인 정보가 존재하지 않습니다.
- 유해 분해 물질: 위험성 있는 분해 물들은 알려지지 않았다.

### 11 독성에 관한 정보

- 독성학적 영향에 대한 정보
- 급성 독성 독성 독성
- 입체적 자극 과 효과
- 피부 피부 피부 자극 또는 자극성: 무자극
- 심한 심한 심한 심한 심한 자극성: 무자극.

(5 쪽에 계속)

# 물질안전보건자료

## GHS에 따라라따

기압점: 2017.04.10

개정: 2017.04.10

**제품명: FROSTBITE RAPID COOLANT CAN**

(4 쪽부터계속)

· **갑각화:** 민감한영향이없는것으로알려져있다.

### 12 환경에 미치는 영향

**독성독성독성**

- **수생독성:** 추가적인 정보가 존재하지 않습니다.
- **지속성 및 분해성** 추가적인 정보가 존재하지 않습니다.
- **환경 시스템에서의 행동:**
- **생물농축 잠재성** 추가적인 정보가 존재하지 않습니다.
- **토양내 이동성** 추가적인 정보가 존재하지 않습니다.
- **추가적인 생태학 정보정보**

**일반 열안정성특징**

- 수질오염등급 1 (자체등급분류): 약하게수질오염이된
- 희석시키지않은채대량으로지하수나, 하천으로그리고하수도망에도달하지않게한다.
- PBT(**잔류성, 생물농축성, 물질분해성**)vPvB(**고 잔류성, 고 생물농축성, 물질분해성**)과 결과
- PBT(**잔류성, 생물농축성, 물질분해성**)당사항 없음.
- vPvB(**고 잔류성, 고 생물농축성, 물질분해성**)당사항 없음.
- 기타기타 **부작용** 추가적인 정보가 존재하지 않습니다.

### 13 폐기시 주의사항

- **폐기물처리방법**
- 권고권고 **생물**쓰레기와함께처리되어서는안된다. 하수도망으로유입되어서는안된다.
- **비위생적 포장포장**
- 권고권고 **생물**의지침에입각한쓰레기처리.

### 14 운송에 필요한 정보

**유엔 유엔번호**

- ADR, IMDG, IATA UN3159
- ADN 누락되다

**정정적정정명**

- ADR 3 1 5 9 1, 1, 1, 2-TETRAFLUOROETHANE (REFRIGERANT GAS R 134a)
- ADN 누락되다
- IMDG, IATA 1,1,1,2-TETRAFLUOROETHANE (REFRIGERANT GAS R 134a)

**교통 교통위험 클래스**

- ADR, ADN 누락되다

**등급등급등급**

- IMDG, IATA



- Class 2 가스

(6 쪽에계속)

# 물질안전보건자료

## GHS에 따라라따

기압점: 2017.04.10

개정: 2017.04.10

**제품명: FROSTBITE RAPID COOLANT CAN**

(5 쪽부터계속)

<ul style="list-style-type: none"> <li>· 용기등급</li> <li>· ADR</li> </ul>	<p style="text-align: right;">누락되다</p>
<ul style="list-style-type: none"> <li>· 환경적 유해물질:</li> </ul>	<p style="text-align: right;">해당사항 없음.</p>
<ul style="list-style-type: none"> <li>· 이동시 특별 취급 조치</li> </ul>	<p style="text-align: right;">해당사항 없음.</p>
<ul style="list-style-type: none"> <li>· 위험위험양분 코드</li> <li>· E 번호</li> <li>· Stowage Category</li> </ul>	<p style="text-align: right;">2 F-C,S-V A</p>
<ul style="list-style-type: none"> <li>· MARPOL73/78(선박으로부터의 해양오염방지협약) 부속서2 및 IBC Code(국제선적화물코드)에 따른 벌크물질 운송 운송</li> </ul>	<p style="text-align: right;">해당사항 없음.</p>
<ul style="list-style-type: none"> <li>· 운송/추가정보</li> </ul>	<p style="text-align: right;">-----</p>
<ul style="list-style-type: none"> <li>· ADR</li> <li>· Excepted quantities (EQ)</li> </ul>	<p style="text-align: right;">120 ml Code: E1 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 1000 ml</p>
<ul style="list-style-type: none"> <li>· GHS 위험대응 조치</li> </ul>	<p style="text-align: right;">누락되다</p>

### 15 법적 규제 현황

<ul style="list-style-type: none"> <li>· 산업안전보건법에 의한 위험대응 조치</li> </ul>	<p style="text-align: right;">제조제조물질:</p> <p style="text-align: right;">성분이포함되어있지않다</p>
<ul style="list-style-type: none"> <li>· 허가대상물질:</li> </ul>	<p style="text-align: right;">성분이포함되어있지않다</p>
<ul style="list-style-type: none"> <li>· 관리대상유해물질:</li> </ul>	<p style="text-align: right;">성분이포함되어있지않다</p>
<p>해당 해당 물질 또는 혼합물 에 대한 유해물질 분류 및 관리에 관한 법률</p>	
<ul style="list-style-type: none"> <li>· Korean Existing Chemical Inventory</li> </ul>	<p style="text-align: right;">KE-33426</p>
<ul style="list-style-type: none"> <li>· 화학물질관리법</li> </ul>	<p style="text-align: right;">사고대비물질</p> <p style="text-align: right;">성분이포함되어있지않다</p>
<ul style="list-style-type: none"> <li>· 금지물질</li> </ul>	<p style="text-align: right;">성분이포함되어있지않다</p>
<ul style="list-style-type: none"> <li>· 제한물질</li> </ul>	<p style="text-align: right;">성분이포함되어있지않다</p>
<ul style="list-style-type: none"> <li>· 유독물질</li> </ul>	<p style="text-align: right;">성분이포함되어있지않다</p>
<ul style="list-style-type: none"> <li>· 허가물질</li> </ul>	<p style="text-align: right;">성분이포함되어있지않다</p>
<ul style="list-style-type: none"> <li>· GHS 위험대응 조치</li> </ul>	
<p>본 화학물질은 화학물질의 분류 및 표기에 관한 국제조화시스템(GHS)에 따라 분류 및 표기되었습니다.</p>	

(7 쪽에계속)

# 물질안전보건자료 GHS에 따라라따

기압점: 2017.04.10

개정: 2017.04.10

**제품명: FROSTBITE RAPID COOLANT CAN**

(6 쪽부터계속)

· **그림문자**



GHS07

· **신호어 경고**

유해 ~~유해~~ ~~유해~~ ~~유해~~ 문구  
졸음 또는 현기증을 일으킬 수 있음

· **예방조치** 문구문구

- (분진·흙·가스·미스트·증기·스프레이)의 흡입을 피하십시오.
- 흡입하면 신선한 공기가 있는 곳으로 옮기고 호흡하기 쉬운 자세로 안정을 취하십시오.
- 몸에 이상이 있을 시 독성물질 센터/병원 연락 필요.
- 잠금장치가 있는 저장장소에 저장하십시오.
- 용기는 환기가 잘 되는 곳에 단단히 밀폐하여 저장하십시오.
- 현지/지역/국가/국제 규정에 따라서 내용물/용기 노출

· **화학물질 안전성 평가** 화학물질 안전성 평가가 수행되지 않음

## 16 그 밖의 참고사항

이보고는우리지식에대한오늘날의상태에대하여평가하고있다, 하지만이보고서는생산특성에관한보증은 기술하지않았으며계약적인법률관계에기반을두고있지도않다

최초 ~~최초~~ ~~최초~~ ~~최초~~ **작성일자:** 2017.04.10

개정 ~~개정~~ ~~개정~~ ~~개정~~ ~~개정~~ **일자:** 1 / 2017.04.10

· **약어와 두문자어:**

- ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
- IMDG: International Maritime Code for Dangerous Goods
- IATA: International Air Transport Association
- EINECS: European Inventory of Existing Commercial Chemical Substances
- CAS: Chemical Abstracts Service (division of the American Chemical Society)
- VOC: Volatile Organic Compounds (USA, EU)
- PBT: Persistent, Bioaccumulative and Toxic
- vPvB: very Persistent and very Bioaccumulative

# Ficha de datos de seguridad

## según 1907/2006/CE, Artículo 31

fecha de impresión 10.04.2017

Revisión: 10.04.2017

### SECCIÓN 1: Identificación de la sustancia o la mezcla y de la sociedad o la empresa

#### · 1.1 Identificador del producto

· **Nombre comercial:** FROSTBITE RAPID COOLANT CAN

· **Número del artículo:** 72594-01, 72594-10, 72594-20

· **Número CAS:**  
811-97-2

· **Número CE:**  
212-377-0

· **1.2 Usos pertinentes identificados de la sustancia o de la mezcla y usos desaconsejados**  
No existen más datos relevantes disponibles.

· **Utilización del producto / de la elaboración** Sustancias químicas de laboratorio

#### · 1.3 Datos del proveedor de la ficha de datos de seguridad

##### · **Fabricante/distribuidor:**

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

##### Aname

C/ Perez Galdos no. 2  
28693 Quijorna  
Madrid, Spain  
Tel: +34.91.816.89.50  
Fax: +34.91.816.85.94  
email: ventas@aname.es

· **Área de información:** Product safety department

#### · 1.4 Teléfono de emergencia:

ChemTrec 1-800-424-9300 Contract CCN7661  
1-703-527-3887

### SECCIÓN 2: Identificación de los peligros

#### · 2.1 Clasificación de la sustancia o de la mezcla

· **Clasificación con arreglo al Reglamento (CE) n° 1272/2008**



GHS07

STOT SE 3 H336 Puede provocar somnolencia o vértigo.

#### · 2.2 Elementos de la etiqueta

· **Etiquetado con arreglo al Reglamento (CE) n° 1272/2008**

La sustancia se ha clasificado y etiquetado de conformidad con el reglamento CLP.

· **Pictogramas de peligro**



GHS07

· **Palabra de advertencia** Atención

· **Indicaciones de peligro**

H336 Puede provocar somnolencia o vértigo.

( se continua en página 2 )

# Ficha de datos de seguridad

## según 1907/2006/CE, Artículo 31

fecha de impresión 10.04.2017

Revisión: 10.04.2017

**Nombre comercial: FROSTBITE RAPID COOLANT CAN**

( se continua en página 1 )

· **Consejos de prudencia**

- P261 Evitar respirar el polvo/el humo/el gas/la niebla/los vapores/el aerosol.
- P304+P340 **EN CASO DE INHALACIÓN:** Transportar a la persona al aire libre y mantenerla en una posición que le facilite la respiración.
- P312 Llamar a un CENTRO DE TOXICOLOGÍA/médico si la persona se encuentra mal.
- P405 Guardar bajo llave.
- P403+P233 Almacenar en un lugar bien ventilado. Mantener el recipiente cerrado herméticamente.
- P501 Eliminar el contenido o el recipiente conforme a la reglamentación local/regional/nacional/internacional.

· **2.3 Otros peligros**

· **Resultados de la valoración PBT y mPmB**

- **PBT:** No aplicable.
- **mPmB:** No aplicable.

### SECCIÓN 3: Composición/información sobre los componentes

· **3.1 Caracterización química: Sustancias**

- **Denominación N° CAS**  
811-97-2 1,1,1,2-tetrafluoroethane
- **Número(s) de identificación**
- **Número CE:** 212-377-0

### SECCIÓN 4: Primeros auxilios

· **4.1 Descripción de los primeros auxilios**

- **En caso de inhalación del producto:** Suministrar aire fresco. En caso de trastornos, consultar al médico.
- **En caso de contacto con la piel:** Por regla general, el producto no irrita la piel.
- **En caso de con los ojos:** Limpiar los ojos abiertos durante varios minutos con agua corriente.
- **En caso de ingestión:** Consultar un médico si los trastornos persisten.
- **4.2 Principales síntomas y efectos, agudos y retardados** No existen más datos relevantes disponibles.
- **4.3 Indicación de toda atención médica y de los tratamientos especiales que deban dispensarse inmediatamente**  
No existen más datos relevantes disponibles.

### SECCIÓN 5: Medidas de lucha contra incendios

· **5.1 Medios de extinción**

· **Sustancias extintoras apropiadas:**

CO<sub>2</sub>, polvo extintor o chorro de agua rociada. Combatir incendios mayores con chorro de agua rociada o espuma resistente al alcohol.

- **5.2 Peligros específicos derivados de la sustancia o la mezcla** No existen más datos relevantes disponibles.
- **5.3 Recomendaciones para el personal de lucha contra incendios**
- **Equipo especial de protección:** No se requieren medidas especiales.

### SECCIÓN 6: Medidas en caso de vertido accidental

- **6.1 Precauciones personales, equipo de protección y procedimientos de emergencia** No es necesario.
- **6.2 Precauciones relativas al medio ambiente:**  
Evitar que penetre en la canalización /aguas de superficie /agua subterráneas.
- **6.3 Métodos y material de contención y de limpieza:** No se requieren medidas especiales.
- **6.4 Referencia a otras secciones**  
Ver capítulo 7 para mayor información sobre una manipulación segura.

( se continua en página 3 )



# Ficha de datos de seguridad

## según 1907/2006/CE, Artículo 31

fecha de impresión 10.04.2017

Revisión: 10.04.2017

**Nombre comercial: FROSTBITE RAPID COOLANT CAN**

( se continua en página 2 )

Ver capítulo 8 para mayor información sobre el equipo personal de protección.  
Para mayor información sobre cómo desechar el producto, ver capítulo 13.

### SECCIÓN 7: Manipulación y almacenamiento

- **7.1 Precauciones para una manipulación segura**  
Si se manipulan correctamente, no se requieren medidas especiales.
- **Prevención de incendios y explosiones:** No se requieren medidas especiales.
- **7.2 Condiciones de almacenamiento seguro, incluidas posibles incompatibilidades**
- **Almacenamiento:**
- **Exigencias con respecto al almacén y los recipientes:** No se requieren medidas especiales.
- **Normas en caso de un almacenamiento conjunto:** No es necesario.
- **Indicaciones adicionales sobre las condiciones de almacenamiento:** Ningunos, -as.
- **7.3 Usos específicos finales** No existen más datos relevantes disponibles.

### SECCIÓN 8: Controles de exposición/protección individual

- **Instrucciones adicionales para el acondicionamiento de instalaciones técnicas:**  
Sin datos adicionales, ver punto 7.
- **8.1 Parámetros de control**
- **Componentes con valores límite admisibles que deben controlarse en el puesto de trabajo:** Nulo.
- **Indicaciones adicionales:** Como base se han utilizado las listas vigentes en el momento de la elaboración.
- **8.2 Controles de la exposición**
- **Equipo de protección individual:**
- **Medidas generales de protección e higiene:** Lavarse las manos antes de las pausas y al final del trabajo.
- **Protección respiratoria:** No es necesario.
- **Protección de manos:**  
El material del guante deberá ser impermeable y resistente al producto / sustancia / preparado.  
Ante la ausencia de tests específicos, no se puede recomendar ningún material específico para guantes de protección contra el producto / preparado / mezcla de sustancias químicas.  
Selección del material de los guantes en función de los tiempos de rotura, grado de permeabilidad y degradación.
- **Material de los guantes**  
La elección del guante adecuado no depende únicamente del material, sino también de otras características de calidad, que pueden variar de un fabricante a otro.
- **Tiempo de penetración del material de los guantes**  
El tiempo de resistencia a la penetración exacto deberá ser pedido al fabricante de los guantes. Este tiempo debe ser respetado.
- **Protección de ojos:** No es necesario.

### SECCIÓN 9: Propiedades físicas y químicas

- **9.1 Información sobre propiedades físicas y químicas básicas**
- **Datos generales**
- **Aspecto:**
- **Forma:** Gaseiforme
- **Color:** Incoloro
- **Olor:** Inodoro
- **Umbral olfativo:** No determinado.

( se continua en página 4 )

# Ficha de datos de seguridad

## según 1907/2006/CE, Artículo 31

fecha de impresión 10.04.2017

Revisión: 10.04.2017

Nombre comercial: FROSTBITE RAPID COOLANT CAN

( se continua en página 3 )

· <b>valor pH:</b>	No determinado.
· <b>Cambio de estado</b> Punto de fusión/punto de congelación: Punto inicial de ebullición e intervalo de ebullición:	Indeterminado. -26,2 °C
· <b>Punto de inflamación:</b>	No aplicable.
· <b>Inflamabilidad (sólido, gas):</b>	No determinado.
· <b>Temperatura de ignición:</b>	
<b>Temperatura de descomposición:</b>	No determinado.
· <b>Temperatura de auto-inflamación:</b>	No determinado.
· <b>Propiedades explosivas:</b>	El producto no es explosivo.
· <b>Límites de explosión:</b> Inferior: Superior:	No determinado. No determinado.
· <b>Presión de vapor a 20 °C:</b>	5716 hPa
· <b>Densidad a 20 °C:</b> · <b>Densidad relativa</b> · <b>Densidad de vapor</b> · <b>Tasa de evaporación:</b>	3,18 g/cm <sup>3</sup> No determinado. No determinado. No aplicable.
· <b>Solubilidad en / miscibilidad con agua a 20 °C:</b>	1,93 g/l
· <b>Coefficiente de reparto: n-octanol/agua:</b>	No determinado.
· <b>Viscosidad:</b> Dinámica a 20 °C: Cinemática:	0,22 mPas No determinado.
· <b>Concentración del disolvente:</b> Disolventes orgánicos: VOC (CE)	0,0 % 0,00 %
· <b>9.2 Otros datos</b>	No existen más datos relevantes disponibles.

### SECCIÓN 10: Estabilidad y reactividad

- **10.1 Reactividad** No existen más datos relevantes disponibles.
- **10.2 Estabilidad química**
- **Descomposición térmica / condiciones que deben evitarse:** No se descompone al emplearse adecuadamente.
- **10.3 Posibilidad de reacciones peligrosas** No se conocen reacciones peligrosas.
- **10.4 Condiciones que deben evitarse** No existen más datos relevantes disponibles.
- **10.5 Materiales incompatibles:** No existen más datos relevantes disponibles.
- **10.6 Productos de descomposición peligrosos:** No se conocen productos de descomposición peligrosos.

### SECCIÓN 11: Información toxicológica

- **11.1 Información sobre los efectos toxicológicos**
- **Toxicidad aguda** A la vista de los datos disponibles, no se cumplen los criterios de clasificación.

( se continua en página 5 )

# Ficha de datos de seguridad

## según 1907/2006/CE, Artículo 31

fecha de impresión 10.04.2017

Revisión: 10.04.2017

**Nombre comercial: FROSTBITE RAPID COOLANT CAN**

( se continua en página 4 )

- **Efecto estimulante primario:**
- **Corrosión o irritación cutáneas** A la vista de los datos disponibles, no se cumplen los criterios de clasificación.
- **Lesiones o irritación ocular graves**  
A la vista de los datos disponibles, no se cumplen los criterios de clasificación.
- **Sensibilización respiratoria o cutánea**  
A la vista de los datos disponibles, no se cumplen los criterios de clasificación.
- **Efectos CMR (carcinogenicidad, mutagenicidad y toxicidad para la reproducción)**
- **Mutagenicidad en células germinales**  
A la vista de los datos disponibles, no se cumplen los criterios de clasificación.
- **Carcinogenicidad** A la vista de los datos disponibles, no se cumplen los criterios de clasificación.
- **Toxicidad para la reproducción** A la vista de los datos disponibles, no se cumplen los criterios de clasificación.
- **Toxicidad específica en determinados órganos (STOT) – exposición única**  
Puede provocar somnolencia o vértigo.
- **Toxicidad específica en determinados órganos (STOT) – exposición repetida**  
A la vista de los datos disponibles, no se cumplen los criterios de clasificación.
- **Peligro de aspiración** A la vista de los datos disponibles, no se cumplen los criterios de clasificación.

### SECCIÓN 12: Información ecológica

- **12.1 Toxicidad**
- **Toxicidad acuática:** No existen más datos relevantes disponibles.
- **12.2 Persistencia y degradabilidad** No existen más datos relevantes disponibles.
- **12.3 Potencial de bioacumulación** No existen más datos relevantes disponibles.
- **12.4 Movilidad en el suelo** No existen más datos relevantes disponibles.
- **Indicaciones medioambientales adicionales:**
- **Indicaciones generales:**  
Nivel de riesgo para el agua 1 (autoclasiificación): escasamente peligroso para el agua  
En estado no diluido o no neutralizado, no dejar que se infiltre en aguas subterráneas, aguas superficiales o en alcantarillados.
- **12.5 Resultados de la valoración PBT y mPmB**
- **PBT:** No aplicable.
- **mPmB:** No aplicable.
- **12.6 Otros efectos adversos** No existen más datos relevantes disponibles.

### SECCIÓN 13: Consideraciones relativas a la eliminación

- **13.1 Métodos para el tratamiento de residuos**
- **Recomendación:** No debe desecharse con la basura doméstica. No debe llegar al alcantarillado.
- **Embalajes sin limpiar:**
- **Recomendación:** Eliminar conforme a las disposiciones oficiales.

### SECCIÓN 14: Información relativa al transporte

- **14.1 Número ONU**
- **ADR, IMDG, IATA** UN3159
- **ADN** suprimido
- **14.2 Designación oficial de transporte de las Naciones Unidas**
- **ADR** 3159 1,1,1,2-TETRAFLUOROETANO (GAS REFRIGERANTE R 134a)

( se continua en página 6 )

# Ficha de datos de seguridad


## según 1907/2006/CE, Artículo 31

fecha de impresión 10.04.2017

Revisión: 10.04.2017

Nombre comercial: FROSTBITE RAPID COOLANT CAN

( se continua en página 5 )

· ADN	suprimido
· IMDG, IATA	1,1,1,2-TETRAFLUOROETHANE (REFRIGERANT GAS R 134a)
· 14.3 Clase(s) de peligro para el transporte	
· ADR, ADN	
· Clase	suprimido
· IMDG, IATA	
	
· Class	2 Gases
· 14.4 Grupo de embalaje	
· ADR	suprimido
· 14.5 Peligros para el medio ambiente:	No aplicable.
· 14.6 Precauciones particulares para los usuarios	No aplicable.
· Número Kemler:	2
· Número EMS:	F-C,S-V
· Stowage Category	A
· 14.7 Transporte a granel con arreglo al anexo II del Convenio MARPOL y el Código IBC	No aplicable.
· Transporte/datos adicionales:	
· ADR	
· Cantidades limitadas (LQ)	120 ml
· Cantidades exceptuadas (EQ)	Código: E1 Cantidad neta máxima por envase interior: 30 ml Cantidad neta máxima por embalaje exterior: 1000 ml
· "Reglamentación Modelo" de la UNECE:	suprimido

### SECCIÓN 15: Información reglamentaria

- 15.1 Reglamentación y legislación en materia de seguridad, salud y medio ambiente específicas para la sustancia o la mezcla
- Directiva 2012/18/UE
- Sustancias peligrosas nominadas - ANEXO I No contiene la sustancia.
- 15.2 Evaluación de la seguridad química: Una evaluación de la seguridad química no se ha llevado a cabo.

### SECCIÓN 16: Otra información

Los datos se fundan en el estado actual de nuestros conocimientos, pero no constituyen garantía alguna de cualidades del producto y no generan ninguna relación jurídica contractual.

#### · Abreviaturas y acrónimos:

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods

IATA: International Air Transport Association

GHS: Globally Harmonised System of Classification and Labelling of Chemicals

( se continua en página 7 )

**Ficha de datos de seguridad**  
**según 1907/2006/CE, Artículo 31**

fecha de impresión 10.04.2017

Revisión: 10.04.2017

**Nombre comercial: FROSTBITE RAPID COOLANT CAN**

( se continua en página 6 )

*EINECS: European Inventory of Existing Commercial Chemical Substances**CAS: Chemical Abstracts Service (division of the American Chemical Society)**VOC: Volatile Organic Compounds (USA, EU)**PBT: Persistent, Bioaccumulative and Toxic**vPvB: very Persistent and very Bioaccumulative**STOT SE 3: Toxicidad específica en determinados órganos ( exposición única) – Categoría 3*

ES