

# Safety Data Sheet

acc. to OSHA HCS

Printing date 10/29/2015

Reviewed on 10/29/2015

## 1 Identification

- **Product identifier**
- **Trade name:** QUICK FREEZE/SHUR FREEZ (ENVIRONMENTALLY SAFE)
- **Article number:** 72595, 72596
- **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: sgkcck@aol.com  
www.emsdiasum.com
- **Information department:** Product safety department
- **Emergency telephone number:**  
ChemTrec 1-800-424-9300 Contract CCN7661  
1-703-527-3887

## 2 Hazard(s) identification

- **Classification of the substance or mixture**  
Eye Irrit. 2B H320 Causes eye irritation.

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- **Label elements**
- **GHS label elements** The substance is classified and labeled according to the Globally Harmonized System (GHS).
- **Hazard pictograms** Void
- **Signal word** Warning
- **Hazard statements**  
Causes eye irritation.
- **Precautionary statements**  
Wash thoroughly after handling.  
If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
If eye irritation persists: Get medical advice/attention.  
Store away from flammable substances.  
Store in a well-ventilated place. Keep cool.  
Dispose of contents/container in accordance with local/regional/national/international regulations.
- **Classification system:**
- **NFPA ratings (scale 0 - 4)**



Health = 1  
Fire = 1  
Reactivity = 0

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**Trade name: QUICK FREEZE/SHUR FREEZ (ENVIRONMENTALLY SAFE)**

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· **HMIS-ratings (scale 0 - 4)**

HEALTH	1	Health = 1
FIRE	1	Fire = 1
REACTIVITY	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-Tetrafluorethan
- **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. If symptoms persist, consult a doctor.
- **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:** No special measures required.
- **Methods and material for containment and cleaning up:**  
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).  
Ensure adequate ventilation.
- **Reference to other sections**  
See Section 7 for information on safe handling.  
See Section 8 for information on personal protection equipment.

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See Section 13 for disposal information.

## 7 Handling and storage

- **Handling:**
- **Precautions for safe handling**  
*Ensure good ventilation/exhaustion at the workplace.  
 Prevent formation of aerosols.*
- **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:** *Keep receptacle tightly sealed.*
- **Specific end use(s)** *No further relevant information available.*

## 8 Exposure controls/personal protection

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

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

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

WEEL	Long-term value: 1000 ppm
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- **Additional information:** *The lists that were valid during the creation were used as basis.*
- **Exposure controls**
- **Personal protective equipment:**
- **General protective and hygienic measures:**  
*Keep away from foodstuffs, beverages and feed.  
 Immediately remove all soiled and contaminated clothing.  
 Wash hands before breaks and at the end of work.  
 Avoid contact with the eyes.  
 Avoid contact with the eyes and skin.*
- **Breathing equipment:**  
*In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use respiratory protective device that is independent of circulating air.  
 Use suitable respiratory protective device in case of insufficient ventilation.*
- **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.*

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**Trade name: QUICK FREEZE/SHUR FREEZ (ENVIRONMENTALLY SAFE)**

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- **Eye protection:**  
Safety glasses



Tightly sealed goggles

## 9 Physical and chemical properties

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

- **General Information**

- **Appearance:**

<b>Form:</b>	Aerosol
<b>Color:</b>	Clear
<b>Odor:</b>	Ether-like
<b>Odour 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 flammable.

- **Ignition temperature:**

<b>Decomposition temperature:</b>	Not determined.
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- **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):** 3.6 g/cm<sup>3</sup> (30.042 lbs/gal)

- **Relative density** Not determined.

- **Vapour density** Not determined.

- **Evaporation rate** Not determined.

- **Solubility in / Miscibility with**

<b>Water at 20 °C (68 °F):</b>	1.93 g/l
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- **Partition coefficient (n-octanol/water):** Not determined.

- **Viscosity:**

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

**Organic solvents:** 0.0 %

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

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**Trade name: QUICK FREEZE/SHUR FREEZ (ENVIRONMENTALLY SAFE)**

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## 10 Stability and reactivity

- **Reactivity**
- **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:** Irritating effect.
- **Sensitization:** No sensitizing effects known.
- **Additional toxicological information:**
- **Carcinogenic categories**

· **IARC (International Agency for Research on Cancer)**

Substance is not listed.

· **NTP (National Toxicology Program)**

Substance is not listed.

· **OSHA-Ca (Occupational Safety Health Administration)**

Substance is not listed.

## 12 Ecological information

- **Toxicity**
- **Aquatic toxicity:** No further relevant information available.
- **Persistence and degradability** No further relevant information available.
- **Behavior in environmental systems:**
- **Bioaccumulative potential** No further relevant information available.
- **Mobility in soil** No further relevant information available.
- **Additional ecological information:**
- **General notes:** Generally not hazardous for water
- **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.

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**Trade name: QUICK FREEZE/SHUR FREEZ (ENVIRONMENTALLY SAFE)**

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

## 14 Transport information

- |  |  |
|--|--|
| <b>· UN-Number</b>   | UN3159   |
| <b>· DOT, ADR, IMDG, IATA</b>  | UN3159   |
| <b>· UN proper shipping name</b>   | 1,1,1,2-Tetrafluoroethane  |
| <b>· DOT</b>   | 1,1,1,2-Tetrafluoroethane  |
| <b>· ADR</b>   | 3159 1,1,1,2-Tetrafluoroethane   |
| <b>· IMDG, IATA</b>  | 1,1,1,2-TETRAFLUOROETHANE (REFRIGERANT GAS R 134a)   |
| <b>· Transport hazard class(es)</b>  |  |
| <b>· DOT, ADR, IMDG, IATA</b>  |  |
| <b>· Class</b>   | 2.2  |
| <b>· Environmental hazards:</b>  |  |
| <b>· Marine pollutant:</b>   | No   |
| <b>· Special precautions for user</b>  | Not applicable.  |
| <b>· EMS Number:</b>   | F-C,S-V  |
| <b>· Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code</b> | Not applicable.  |
| <b>· Transport/Additional information:</b>                                       |  |
| <b>· ADR</b>   |  |
| <b>· Excepted quantities (EQ)</b>  | Code: E1<br>Maximum net quantity per inner packaging: 30 ml<br>Maximum net quantity per outer packaging: 1000 ml |
| <b>· UN "Model Regulation":</b>  | UN3159, 1,1,1,2-Tetrafluoroethane, 2.2   |

## 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.

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· **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** Void

· **Signal word** Warning

· **Hazard statements**

Causes eye irritation.

· **Precautionary statements**

Wash thoroughly after handling.

If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

If eye irritation persists: Get medical advice/attention.

Store away from flammable substances.

Store in a well-ventilated place. Keep cool.

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** 10/29/2015 / -

· **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)

Eye Irrit. 2B: Serious eye damage/eye irritation, Hazard Category 2B

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

Printing date 29.10.2015

Revision: 29.10.2015

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

- **Product identifier**

- **Trade name:** QUICK FREEZE/SHUR FREEZ (ENVIRONMENTALLY SAFE)

- **Article number:** 72595, 72596

- **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: sgkcck@aol.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 Hazards identification

- **Classification of the substance or mixture**



GHS07

Eye Irrit. 2 H319 Causes serious eye irritation.

- **Label elements**

- **GHS label elements**

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

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# Safety data sheet

according to 1907/2006/EC, Article 31

Printing date 29.10.2015

Revision: 29.10.2015

Trade name: **QUICK FREEZE/SHUR FREEZ (ENVIRONMENTALLY SAFE)**

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· **Hazard pictograms**

GHS07

· **Signal word** Warning· **Hazard statements***Causes serious eye irritation.*· **Precautionary statements***Wear eye protection / face protection.**Wash thoroughly after handling.**IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do.**Continue rinsing.**If eye irritation persists: Get medical advice/attention.**Store away from flammable substances.**Store in a well-ventilated place. Keep cool.**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/information on ingredients

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

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

· **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. If symptoms persist, consult a doctor.*· **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 Firefighting 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.

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## according to 1907/2006/EC, Article 31

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**Trade name: QUICK FREEZE/SHUR FREEZ (ENVIRONMENTALLY SAFE)**

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

### 6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures** Not required.
- **Environmental precautions:** No special measures required.
- **Methods and material for containment and cleaning up:**  
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).  
Ensure adequate ventilation.
- **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**  
Ensure good ventilation/exhaustion at the workplace.  
Prevent formation of aerosols.
- **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:** Keep container tightly sealed.
- **Specific end use(s)** No further relevant information available.

### 8 Exposure controls/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-Tetrafluorethan**

NES 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:**

Keep away from foodstuffs, beverages and feed.  
Immediately remove all soiled and contaminated clothing  
Wash hands before breaks and at the end of work.  
Avoid contact with the eyes.  
Avoid contact with the eyes and skin.

- **Respiratory protection:**

In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use self-contained respiratory protective device.  
Use suitable respiratory protective device in case of insufficient ventilation.

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**Trade name: QUICK FREEZE/SHUR FREEZ (ENVIRONMENTALLY SAFE)**

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· **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:**

Safety glasses



Tightly sealed goggles

## 9 Physical and chemical properties

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

· **General Information**

· **Appearance:**

Form: Aerosol

Colour: Clear

· **Odour:** Ether-like

· **Odour threshold:** Not determined.

· **pH-value:** Not determined.

· **Change in condition**

Melting point/Melting range: Undetermined.

Boiling point/Boiling range: -26.2 °C

· **Flash point:** Not applicable.

· **Flammability (solid, gaseous):** Not applicable.

· **Ignition temperature:**

Decomposition temperature: Not determined.

· **Self-igniting:** Not determined.

· **Danger of explosion:** Product does not present an explosion hazard.

· **Explosion limits:**

Lower: Not determined.

Upper: Not determined.

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

· **Density at 20 °C:** 3.6 g/cm<sup>3</sup>

· **Relative density** Not determined.

· **Vapour density** Not determined.

· **Evaporation rate** Not determined.

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**Safety data sheet**  
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Trade name: **QUICK FREEZE/SHUR FREEZ (ENVIRONMENTALLY SAFE)**

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- |   |  |
|---|--|
| · <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>   | 100.00 %                                   |
| · <b>Other information</b>                                | No further relevant information available. |

### 10 Stability and reactivity

- **Reactivity**
- **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** 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:** Generally not hazardous for water
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.
- **Other adverse effects** No further relevant information available.

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

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Revision: 29.10.2015

Trade name: **QUICK FREEZE/SHUR FREEZ (ENVIRONMENTALLY SAFE)**

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### 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>UN proper shipping name</b>	
· <b>ADG</b>	3159 1,1,1,2-TETRAFLUOROETHANE (REFRIGERANT GAS R 134a)
· <b>IMDG, IATA</b>	1,1,1,2-TETRAFLUOROETHANE (REFRIGERANT GAS R 134a)
· <b>Transport hazard class(es)</b>	
· <b>ADG, IMDG, IATA</b>	
· <b>Class</b>	2.2
· <b>Environmental hazards:</b>	
· <b>Marine pollutant:</b>	No
· <b>Special precautions for user</b>	Not applicable.
· <b>EMS Number:</b>	F-C,S-V
· <b>Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code</b>	Not applicable.
· <b>Transport/Additional information:</b>	
· <b>ADG</b>	
· <b>Limited quantities (LQ)</b>	120 ml
· <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>	UN3159, 1,1,1,2-TETRAFLUOROETHANE (REFRIGERANT GAS R 134a), 2.2

### 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).

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**Trade name: QUICK FREEZE/SHUR FREEZ (ENVIRONMENTALLY SAFE)**

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· **Hazard pictograms**



GHS07

· **Signal word** Warning

· **Hazard statements**

Causes serious eye irritation.

· **Precautionary statements**

Wear eye protection / face protection.

Wash thoroughly after handling.

**IF IN EYES:** Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do.

Continue rinsing.

If eye irritation persists: Get medical advice/attention.

Store away from flammable substances.

Store in a well-ventilated place. Keep cool.

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)

Eye Irrit. 2: Serious eye damage/eye irritation, Hazard Category 2

# Safety Data Sheet

acc. to OSHA HCS



Printing date 10/29/2015

Reviewed on 10/29/2015

## 1 Identification

- **Product identifier**
- **Trade name:** QUICK FREEZE/SHUR FREEZ (ENVIRONMENTALLY SAFE)
- **Article number:** 72595, 72596
- **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: sgkcck@aol.com  
www.emsdiasum.com
- **Information department:** Product safety department
- **Emergency telephone number:**  
ChemTrec 1-800-424-9300 Contract CCN7661  
1-703-527-3887

## 2 Hazard(s) identification

- **Classification of the substance or mixture**  
Eye Irrit. 2B H320 Causes eye irritation.
- **Classification according to Directive 67/548/EEC or Directive 1999/45/EC**  
Not applicable.
-  **Irritant**  
Irritating to eyes.
- **Information concerning particular hazards for human and environment:** Not applicable.
- **Label elements**
- **Labelling according to EU guidelines:**  
The product has been classified and marked in accordance with directives on hazardous materials.
- **Code letter and hazard designation of product:**
-  **Irritant**
- **Risk phrases:**  
Irritating to eyes.
- **Safety phrases:**  
Keep in a cool place.  
Do not breathe gas/fumes/vapour/spray (appropriate wording to be specified by the manufacturer).  
In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.  
This material and its container must be disposed of as hazardous waste.

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# Safety Data Sheet

acc. to OSHA HCS

Printing date 10/29/2015

Reviewed on 10/29/2015

**Trade name: QUICK FREEZE/SHUR FREEZ (ENVIRONMENTALLY SAFE)**

(Contd. of page 1)

- **Hazard description:**
- **WHMIS-symbols:**  
D2B - Toxic material causing other toxic effects



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



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

HEALTH	1	Health = 1
FIRE	1	Fire = 1
REACTIVITY	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-Tetrafluorethan
- **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. If symptoms persist, consult a doctor.
- **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.

(Contd. on page 3)



# Safety Data Sheet

acc. to OSHA HCS

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**Trade name: QUICK FREEZE/SHUR FREEZ (ENVIRONMENTALLY SAFE)**

(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:** No special measures required.
- **Methods and material for containment and cleaning up:**  
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).  
Ensure adequate ventilation.
- **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**  
Ensure good ventilation/exhaustion at the workplace.  
Prevent formation of aerosols.
- **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:** Keep receptacle tightly sealed.
- **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:**  
Keep away from foodstuffs, beverages and feed.  
Immediately remove all soiled and contaminated clothing.  
Wash hands before breaks and at the end of work.  
Avoid contact with the eyes.  
Avoid contact with the eyes and skin.
- **Breathing equipment:**  
In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use respiratory protective device that is independent of circulating air.  
Use suitable respiratory protective device in case of insufficient ventilation.
- **Protection of hands:**  
The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

(Contd. on page 4)

# Safety Data Sheet

acc. to OSHA HCS

Printing date 10/29/2015

Reviewed on 10/29/2015

**Trade name: QUICK FREEZE/SHUR FREEZ (ENVIRONMENTALLY SAFE)**

(Contd. of page 3)

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:**

Safety glasses



Tightly sealed goggles

## 9 Physical and chemical properties

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

· **General Information**

· **Appearance:**

Form: Aerosol

Color: Clear

· **Odor:** Ether-like

· **Odour threshold:** Not determined.

· **pH-value:** Not determined.

· **Change in condition**

Melting point/Melting range: Undetermined.

Boiling point/Boiling range: -26.2 °C

· **Flash point:** Not applicable.

· **Flammability (solid, gaseous):** Not flammable.

· **Ignition temperature:**

Decomposition temperature: Not determined.

· **Auto igniting:** Not determined.

· **Danger of explosion:** Product does not present an explosion hazard.

· **Explosion limits:**

Lower: Not determined.

Upper: Not determined.

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

· **Density at 20 °C:** 3.6 g/cm<sup>3</sup>

· **Relative density** Not determined.

· **Vapour density** Not determined.

· **Evaporation rate** Not determined.

· **Solubility in / Miscibility with**

Water at 20 °C: 1.93 g/l

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CA

# Safety Data Sheet

acc. to OSHA HCS

Printing date 10/29/2015

Reviewed on 10/29/2015

**Trade name: QUICK FREEZE/SHUR FREEZ (ENVIRONMENTALLY SAFE)**

(Contd. of page 4)

- **Partition coefficient (n-octanol/water):** Not determined.
- **Viscosity:**
  - Dynamic at 20 °C:** 0.22 mPas
  - Kinematic:** Not determined.
  - Organic solvents:** 0.0 %
- **Other information** No further relevant information available.

## 10 Stability and reactivity

- **Reactivity**
- **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:** Irritating effect.
- **Sensitization:** No sensitizing effects known.
- **Additional toxicological information:**
- **Carcinogenic categories**

· **IARC (International Agency for Research on Cancer)**

Substance is not listed.

· **NTP (National Toxicology Program)**

Substance is not listed.

· **OSHA-Ca (Occupational Safety Health Administration)**

Substance is not listed.

## 12 Ecological information

- **Toxicity**
- **Aquatic toxicity:** No further relevant information available.
- **Persistence and degradability** No further relevant information available.
- **Behavior in environmental systems:**
- **Bioaccumulative potential** No further relevant information available.
- **Mobility in soil** No further relevant information available.
- **Additional ecological information:**
- **General notes:** Generally not hazardous for water
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.

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# Safety Data Sheet

acc. to OSHA HCS

Printing date 10/29/2015

Reviewed on 10/29/2015

**Trade name: QUICK FREEZE/SHUR FREEZ (ENVIRONMENTALLY SAFE)**

(Contd. of page 5)

· **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

- |  |  |
|--|--|
| · <b>UN-Number</b>   |  |
| · <b>DOT, TDG, IMDG, IATA</b>  | UN3159   |
| · <b>UN proper shipping name</b>   |  |
| · <b>DOT</b>   | 1,1,1,2-Tetrafluoroethane  |
| · <b>TDG</b>   | 3159 1,1,1,2-Tetrafluoroethane   |
| · <b>IMDG, IATA</b>  | 1,1,1,2-TETRAFLUOROETHANE (REFRIGERANT GAS R 134a)   |
| · <b>Transport hazard class(es)</b>  |  |
| · <b>DOT, TDG, IMDG, IATA</b>  |  |
| · <b>Class</b>   | 2.2  |
| · <b>Environmental hazards:</b>  |  |
| · <b>Marine pollutant:</b>   | No   |
| · <b>Special precautions for user</b>  | Not applicable.  |
| · <b>EMS Number:</b>   | F-C,S-V  |
| · <b>Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code</b> | Not applicable.  |
| · <b>Transport/Additional information:</b>                                       |  |
| · <b>TDG</b>   |  |
| · <b>Excepted quantities (EQ)</b>  | Code: E1<br>Maximum net quantity per inner packaging: 30 ml<br>Maximum net quantity per outer packaging: 1000 ml |
| · <b>UN "Model Regulation":</b>  | UN3159, 1,1,1,2-Tetrafluoroethane, 2.2   |

## 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.

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# Safety Data Sheet

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Reviewed on 10/29/2015

**Trade name: QUICK FREEZE/SHUR FREEZ (ENVIRONMENTALLY SAFE)**

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· **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.

· **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.

· **Product related hazard informations:**

The product has been classified and marked in accordance with directives on hazardous materials.

· **Hazard symbols:**



Irritant

· **Risk phrases:**

Irritating to eyes.

· **Safety phrases:**

Keep in a cool place.

Do not breathe gas/fumes/vapour/spray (appropriate wording to be specified by the manufacturer).

In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

This material and its container must be disposed of as hazardous waste.

· **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** 10/29/2015 / -

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# Safety Data Sheet

acc. to OSHA HCS

Printing date 10/29/2015

Reviewed on 10/29/2015

**Trade name: QUICK FREEZE/SHUR FREEZ (ENVIRONMENTALLY SAFE)**

(Contd. of page 7)

**· Abbreviations and acronyms:**

*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)*

*WHMIS: Workplace Hazardous Materials Information System (Canada)*

*Eye Irrit. 2B: Serious eye damage/eye irritation, Hazard Category 2B*

CA

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

Printing date 29.10.2015

Revision: 29.10.2015

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

- **1.1 Product identifier**
- **Trade name:** QUICK FREEZE/SHUR FREEZ (ENVIRONMENTALLY SAFE)
- **Article number:** 72595, 72596
- **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: sgkcck@aol.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

Eye Irrit. 2 H319 Causes serious eye irritation.

- **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**  
H319 Causes serious eye irritation.
- **Precautionary statements**  
P280 Wear protective gloves/protective clothing/eye protection/face protection.  
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
P337+P313 If eye irritation persists: Get medical advice/attention.  
P420 Store away from flammable substances.

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

Printing date 29.10.2015

Revision: 29.10.2015

**Trade name: QUICK FREEZE/SHUR FREEZ (ENVIRONMENTALLY SAFE)**

(Contd. of page 1)

P403+P235 Store in a well-ventilated place. Keep cool.  
P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

- **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-Tetrafluorethan
- **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. If symptoms persist, consult a doctor.
- **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:** No special measures required.
- **6.3 Methods and material for containment and cleaning up:**  
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).  
Ensure adequate ventilation.
- **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.

GB

(Contd. on page 3)



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

Printing date 29.10.2015

Revision: 29.10.2015

**Trade name: QUICK FREEZE/SHUR FREEZ (ENVIRONMENTALLY SAFE)**

(Contd. of page 2)

### SECTION 7: Handling and storage

- **7.1 Precautions for safe handling**  
Ensure good ventilation/exhaustion at the workplace.  
Prevent formation of aerosols.
- **Information about fire - and explosion protection:** No special measures required.
- **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:** Keep container tightly sealed.
- **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:**

<b>811-97-2 1,1,1,2-Tetrafluorethan</b>
---

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:**

- Keep away from foodstuffs, beverages and feed.
- Immediately remove all soiled and contaminated clothing
- Wash hands before breaks and at the end of work.
- Avoid contact with the eyes.
- Avoid contact with the eyes and skin.

- **Respiratory protection:**

- In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use self-contained respiratory protective device.
- Use suitable respiratory protective device in case of insufficient ventilation.

- **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:**

- Safety glasses

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

Printing date 29.10.2015

Revision: 29.10.2015

Trade name: **QUICK FREEZE/SHUR FREEZ (ENVIRONMENTALLY SAFE)**

(Contd. of page 3)



Tightly sealed goggles

### SECTION 9: Physical and chemical properties

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

##### · General Information

##### · Appearance:

Form:	Aerosol
Colour:	Clear
Odour:	Ether-like
Odour threshold:	Not determined.

· pH-value: Not determined.

##### · Change in condition

Melting point/Melting range:	Undetermined.
Boiling point/Boiling range:	-26.2 °C

· Flash point: Not applicable.

· Flammability (solid, gaseous): Not applicable.

##### · Ignition temperature:

Decomposition temperature: Not determined.

· Self-igniting: Not determined.

· Danger of explosion: Product does not present an explosion hazard.

##### · Explosion limits:

Lower:	Not determined.
Upper:	Not determined.

· Vapour pressure at 20 °C: 5716 hPa

· Density at 20 °C:	3.6 g/cm <sup>3</sup>
· Relative density	Not determined.
· Vapour density	Not determined.
· Evaporation rate	Not determined.

· Solubility in / Miscibility with water at 20 °C: 1.93 g/l

· Partition coefficient (n-octanol/water): Not determined.

##### · Viscosity:

Dynamic at 20 °C:	0.22 mPas
Kinematic:	Not determined.

##### · Solvent content:

Organic solvents:	0.0 %
VOC (EC)	100.00 %

· 9.2 Other information: No further relevant information available.

GB

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

Printing date 29.10.2015

Revision: 29.10.2015

**Trade name: QUICK FREEZE/SHUR FREEZ (ENVIRONMENTALLY SAFE)**

(Contd. of page 4)

### SECTION 10: Stability and reactivity

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

### 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:** Generally not hazardous for water
- **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

- **14.1 UN-Number**
- **ADR, IMDG, IATA** UN3159

(Contd. on page 6)

GB

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

Printing date 29.10.2015

Revision: 29.10.2015

**Trade name: QUICK FREEZE/SHUR FREEZ (ENVIRONMENTALLY SAFE)**

(Contd. of page 5)

· <b>14.2 UN proper shipping name</b>	
· <b>ADR</b>	3159 1,1,1,2-TETRAFLUOROETHANE (REFRIGERANT GAS R 134a)
· <b>IMDG, IATA</b>	1,1,1,2-TETRAFLUOROETHANE (REFRIGERANT GAS R 134a)
· <b>14.3 Transport hazard class(es)</b>	
· <b>ADR, IMDG, IATA</b>	
· <b>Class</b>	2.2
· <b>14.5 Environmental hazards:</b>	
· <b>Marine pollutant:</b>	No
· <b>14.6 Special precautions for user</b>	Not applicable.
· <b>EMS Number:</b>	F-C,S-V
· <b>14.7 Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code</b>	Not applicable.
· <b>Transport/Additional information:</b>	
· <b>ADR</b>	
· <b>Limited quantities (LQ)</b>	120 ml
· <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>	UN3159, 1,1,1,2-TETRAFLUOROETHANE (REFRIGERANT GAS R 134a), 2.2

### 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)

Eye Irrit. 2: Serious eye damage/eye irritation, Hazard Category 2

# Veiligheidsinformatieblad

volgens 1907/2006/EG, Artikel 31

datum van de druk: 29.10.2015

Herziening van: 29.10.2015

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

- **1.1 Productidentificatie**
- **Handelsnaam:** QUICK FREEZE/SHUR FREEZ (ENVIRONMENTALLY SAFE)
- **Artikelnummer:** 72595, 72596
- **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: sgkcck@aol.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**



Eye Irrit. 2 H319 Veroorzaakt ernstige oogirritatie.

- **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**  
H319 Veroorzaakt ernstige oogirritatie.

(Vervolg op blz. 2)

# Veiligheidsinformatieblad

## volgens 1907/2006/EG, Artikel 31

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Herziening van: 29.10.2015

**Handelsnaam: QUICK FREEZE/SHUR FREEZ (ENVIRONMENTALLY SAFE)**

(Vervolg van blz. 1)

- **Veiligheidsaanbevelingen**
- P280 *Beschermende handschoenen/beschermende kleding/oogbescherming/gelaatsbescherming dragen.*
- P305+P351+P338 *BIJ CONTACT MET DE OGEN: voorzichtig afspoelen met water gedurende een aantal minuten; contactlenzen verwijderen, indien mogelijk; blijven spoelen.*
- P337+P313 *Bij aanhoudende oogirritatie: een arts raadplegen.*
- P420 *Gescheiden brandbare stoffen bewaren.*
- P403+P235 *Op een goed geventileerde plaats bewaren. Koel 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-Tetrafluorethan
- **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:**  
*De ogen gedurende verscheidene minuten onder stromend water afspoelen terwijl de oogspleet geopend blijft. Bij aanhoudende klachten een dokter raadplegen.*
- **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:** *Geen speciale maatregelen noodzakelijk.*

(Vervolg op blz. 3)

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

datum van de druk: 29.10.2015

Herziening van: 29.10.2015

**Handelsnaam: QUICK FREEZE/SHUR FREEZ (ENVIRONMENTALLY SAFE)**

(Vervolg van blz. 2)

- **6.3 Insluitings- en reinigingsmethoden en -materiaal:**  
Met vloeistofbindend materiaal (zand, bergmeel, zuurbinder, universele binder, zaagmeel) opnemen.  
Voor voldoende ventilatie zorgen.
- **6.4 Verwijzing naar andere rubrieken**  
Informatie inzake veilig gebruik - zie hoofdstuk 7.  
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**  
Voor goede ventilatie/afzuiging op de werkplaatsen zorgen.  
Aërosolvorming vermijden.
- **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.
- **Informatie m.b.t. gezamenlijke opslag:** Niet noodzakelijk.
- **Verdere inlichtingen over eisen m.b.t. de opslag:** Tanks ondoordringbaar gesloten houden.
- **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:**  
Verwijderd houden van eet- en drinkwaren.  
Verontreinigde kleding onmiddellijk uittrekken.  
Vóór de pauze en aan het einde van werktijd handen wassen.  
Aanraking met de ogen vermijden.  
Aanraking met de ogen en de huid vermijden.
- **Ademhalingsbescherming:**  
Bij korte of geringe belasting ademfiltertoestel; bij intensieve resp. langdurige expositie een van de omringende lucht onafhankelijk ademhalingsstoestel gebruiken.  
Bij onvoldoende ventilatie ademhalingsbescherming.
- **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 chemicaliën-mengsel 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.

(Vervolg op blz. 4)

# Veiligheidsinformatieblad

volgens 1907/2006/EG, Artikel 31

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**Handelsnaam: QUICK FREEZE/SHUR FREEZ (ENVIRONMENTALLY SAFE)**

(Vervolg van blz. 3)

- **Oogbescherming:**  
Veiligheidsbril



Nauw aansluitende veiligheidsbril

## RUBRIEK 9: Fysische en chemische eigenschappen

### · 9.1 Informatie over fysische en chemische basiseigenschappen

#### · Algemene gegevens

#### · Voorkomen:

Vorm:	Aërosol
Kleur:	Helder
· Reuk:	Etherachtig
· Geurdrempelwaarde:	Niet bepaald.

· **pH-waarde:** Niet bepaald.

#### · Toestandsverandering

Smeltpunt/smeltbereik:	Niet bepaald.
Kookpunt/kookpuntbereik:	-26,2 °C

· **Vlampunt:** Niet bruikbaar.

· **Ontvlambaarheid (vast, gasvormig):** Niet bruikbaar.

#### · Ontstekingstemperatuur:

Ontbindingstemperatuur: Niet bepaald.

· **Zelfonsteking:** Niet bepaald.

· **Ontploffingsgevaar:** Het produkt is niet ontploffingsgevaarlijk.

#### · Ontploffingsgrenzen:

Onderste:	Niet bepaald.
Bovenste:	Niet bepaald.

· **Dampspanning bij 20 °C:** 5716 hPa

· **Dichtheid bij 20 °C:** 3,6 g/cm<sup>3</sup>

· **Relatieve dichtheid:** Niet bepaald.

· **Dampdichtheid:** Niet bepaald.

· **Verdampingsnelheid:** Niet bepaald.

#### · Oplosbaarheid in/mengbaarheid met

Water bij 20 °C: 1,93 g/l

· **Verdelingscoëfficiënt (n-octanol/water):** Niet bepaald.

#### · Viscositeit

Dynamisch bij 20 °C:	0,22 mPas
Kinematisch:	Niet bepaald.

#### · Oplosmiddelgehalte:

Organisch oplosmiddel:	0,0 %
VOC (EG)	100,00 %

(Vervolg op blz. 5)



# Veiligheidsinformatieblad

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(Vervolg van blz. 4)

**· 9.2 Overige informatie**

Geen verdere relevante informatie verkrijgbaar.

### RUBRIEK 10: Stabiliteit en reactiviteit

- **10.1 Reactiviteit**
- **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**
- **Primaire aandoening:**
- **Huidcorrosie/-irritatie** Geen prikkelend effect.
- **Ernstig oogletsel/oogirritatie** Prikkeling
- **Sensibilisatie van de luchtwegen/de huid** Geen effect van overgevoeligheid bekend.

### 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) 10: Kan in het aquatisch milieu op lange termijn schadelijke effecten veroorzaken.  
Over het algemeen geen gevaar voor water
- **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.

NL

(Vervolg op blz. 6)

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**Handelsnaam: QUICK FREEZE/SHUR FREEZ (ENVIRONMENTALLY SAFE)**

(Vervolg van blz. 5)

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

· 14.1 VN-nummer	
· ADR, IMDG, IATA	UN3159
· 14.2 Juiste ladingnaam overeenkomstig de modelreglementen van de VN	
· ADR	3159 1,1,1,2-TETRAFLUORETHAAN (KOELGAS R 134a)
· IMDG, IATA	1,1,1,2-TETRAFLUOROETHANE (REFRIGERANT GAS R 134a)
· 14.3 Transportgevarenklasse(n)	
· ADR, IMDG, IATA	
· klasse	2.2
· 14.5 Milieugevaren:	
· Marine pollutant:	Neen
· 14.6 Bijzondere voorzorgen voor de gebruiker	Niet bruikbaar.
· EMS-nummer:	F-C,S-V
· 14.7 Vervoer in bulk overeenkomstig bijlage II bij MARPOL 73/78 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":	UN3159, 1,1,1,2-TETRAFLUORETHAAN (KOELGAS R 134a), 2.2

**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) 10: Saneringsinspanning A

(Vervolg op blz. 7)

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

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Herziening van: 29.10.2015

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(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)

Eye Irrit. 2: Serious eye damage/eye irritation, Hazard Category 2

NL

# Fiche de données de sécurité

## selon 1907/2006/CE, Article 31

Date d'impression : 29.10.2015

Révision: 29.10.2015

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

- **1.1 Identificateur de produit**
- **Nom du produit:** QUICK FREEZE/SHUR FREEZ (ENVIRONMENTALLY SAFE)
- **Code du produit:** 72595, 72596
- **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: sgkcck@aol.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

### SECTION 2: Identification des dangers

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



GHS07

*Eye Irrit. 2 H319 Provoque une sévère irritation des yeux.*

- **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**  
H319 Provoque une sévère irritation des yeux.
- **Conseils de prudence**
  - P280 Porter des gants de protection/des vêtements de protection/un équipement de protection des yeux/du visage.
  - P305+P351+P338 **EN CAS DE CONTACT AVEC LES YEUX:** rincer avec précaution à l'eau pendant plusieurs minutes. Enlever les lentilles de contact si la victime en porte et si elles peuvent être facilement enlevées. Continuer à rincer.
  - P337+P313 Si l'irritation oculaire persiste: consulter un médecin.
  - P420 Stocker à l'écart des matières inflammables.

(suite page 2)

# Fiche de données de sécurité

## selon 1907/2006/CE, Article 31

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**Nom du produit: QUICK FREEZE/SHUR FREEZ (ENVIRONMENTALLY SAFE)**

(suite de la page 1)

P403+P235 Stocker dans un endroit bien ventilé. Tenir au frais.  
 P501 Éliminer le contenu/réceptacle conformément à la réglementation locale/régionale/nationale/internationale.

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

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

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

### SECTION 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, pendant plusieurs minutes, sous l'eau courante en écartant bien les paupières. Si les troubles persistent, consulter un médecin.
- **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.

### SECTION 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.

### SECTION 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:** Aucune mesure particulière n'est requise.
- **6.3 Méthodes et matériel de confinement et de nettoyage:**  
Recueillir les liquides à l'aide d'un produit absorbant (sable, kieselguhr, neutralisant d'acide, liant universel, sciure).  
Assurer une aération suffisante.
- **6.4 Référence à d'autres sections**  
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.

(suite page 3)

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

Date d'impression : 29.10.2015

Révision: 29.10.2015

**Nom du produit: QUICK FREEZE/SHUR FREEZ (ENVIRONMENTALLY SAFE)**

(suite de la page 2)

Afin d'obtenir des informations sur l'élimination, consulter le chapitre 13.

### SECTION 7: Manipulation et stockage

- **7.1 Précautions à prendre pour une manipulation sans danger**  
Veiller à une bonne ventilation/aspiration du poste de travail.  
Eviter la formation d'aérosols.
- **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:** Tenir les emballages hermétiquement fermés.
- **7.3 Utilisation(s) finale(s) particulière(s)** Pas d'autres informations importantes disponibles.

### SECTION 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**
- **Equipement de protection individuel:**
- **Mesures générales de protection et d'hygiène:**  
Tenir à l'écart des produits alimentaires, des boissons et de la nourriture pour animaux.  
Retirer immédiatement les vêtements souillés ou humectés.  
Se laver les mains avant les pauses et en fin de travail.  
Eviter tout contact avec les yeux.  
Eviter tout contact avec les yeux et avec la peau.
- **Protection respiratoire:**  
En cas d'exposition faible ou de courte durée, utiliser un filtre respiratoire; en cas d'exposition intense ou durable, utiliser un appareil de respiration indépendant de l'air ambiant.  
Utiliser un appareil de protection respiratoire si la ventilation est insuffisante.
- **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.

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- **Protection des yeux:**  
Lunettes de protection



Lunettes de protection hermétiques

### SECTION 9: Propriétés physiques et chimiques

#### · 9.1 Informations sur les propriétés physiques et chimiques essentielles

##### · Indications générales

##### · Aspect:

Forme:	Aérosol
Couleur:	Transparent
Odeur:	Genre éther
Seuil olfactif:	Non déterminé.

· valeur du pH: Non déterminé.

##### · Changement d'état

Point de fusion:	Non déterminé.
Point d'ébullition:	-26,2 °C

· Point d'éclair Non applicable.

· Inflammabilité (solide, gazeux): Non applicable.

##### · Température d'inflammation:

Température de décomposition: Non déterminé.

· Auto-inflammation: Non déterminé.

· Danger d'explosion: Le produit n'est pas explosif.

##### · Limites d'explosion:

Inférieure:	Non déterminé.
Supérieure:	Non déterminé.

· Pression de vapeur à 20 °C: 5716 hPa

Densité à 20 °C:	3,6 g/cm <sup>3</sup>
Densité relative	Non déterminé.
Densité de vapeur.	Non déterminé.
Vitesse d'évaporation	Non déterminé.

· Solubilité dans/miscibilité avec l'eau à 20 °C: 1,93 g/l

· Coefficient de partage (n-octanol/eau): Non déterminé.

##### · Viscosité:

Dynamique à 20 °C:	0,22 mPas
Cinématique:	Non déterminé.

##### · Teneur en solvants:

Solvants organiques:	0,0 %
VOC (CE)	100,00 %

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· **9.2 Autres informations** Pas d'autres informations importantes disponibles.

### SECTION 10: Stabilité et réactivité

- **10.1 Réactivité**
- **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

### SECTION 11: Informations toxicologiques

- **11.1 Informations sur les effets toxicologiques**
- **Toxicité aiguë**
- **Effet primaire d'irritation:**
- **Corrosion cutanée/irritation cutanée** Pas d'effet d'irritation.
- **Lésions oculaires graves/irritation oculaire** Effet d'irritation.
- **Sensibilisation respiratoire ou cutanée** Aucun effet de sensibilisation connu.

### SECTION 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:** En général non polluant
- **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.

### SECTION 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.

### SECTION 14: Informations relatives au transport

- **14.1 No ONU**
- **ADR, IMDG, IATA** UN3159

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· 14.2 Nom d'expédition des Nations unies	
· ADR	3159 TÉTRAFLUORO-1,1,1,2 ÉTHANE (GAZ RÉFRIGÉRANT R 134a)
· IMDG, IATA	1,1,1,2-TETRAFLUOROETHANE (REFRIGERANT GAS R 134a)
· 14.3 Classe(s) de danger pour le transport	
· ADR, IMDG, IATA	
· Classe	2.2
· 14.5 Dangers pour l'environnement:	
· Marine Pollutant:	Non
· 14.6 Précautions particulières à prendre par l'utilisateur	Non applicable.
· No EMS:	F-C,S-V
· 14.7 Transport en vrac conformément à l'annexe II de la convention Marpol 73/78 et au recueil IBC	Non applicable.
· Indications complémentaires de transport:	
· ADR	
· Quantités limitées (LQ)	120 ml
· Quantités exceptées (EQ)	Code: E1 Quantité maximale nette par emballage intérieur: 30 ml Quantité maximale nette par emballage extérieur: 1000 ml
· "Règlement type" de l'ONU:	UN3159, TÉTRAFLUORO-1,1,1,2 ÉTHANE (GAZ RÉFRIGÉRANT R 134a), 2.2

### SECTION 15: Informations réglementaires

- 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.

### SECTION 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)

VOC: Volatile Organic Compounds (USA, EU)

Eye Irrit. 2: Serious eye damage/eye irritation, Hazard Category 2

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### ABSCHNITT 1: Bezeichnung des Stoffs bzw. des Gemischs und des Unternehmens

- **1.1 Produktidentifikator**
- **Handelsname:** QUICK FREEZE/SHUR FREEZ (ENVIRONMENTALLY SAFE)
- **Artikelnummer:** 72595, 72596
- **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: sgkcck@aol.com  
www.emsdiasum.com  
  
Science Services GmbH  
Unterhachinger Str. 75  
81737 München Germany  
Tel: +49(0)89 18 93 668-0  
safety@scienceservices.de  
  
24h Giftnotruf Munchen: +49 (0)89 19240  
Toxikologische Abteilung der II. Medizinischen Klinik  
rechts der Isar, Munchen. - 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

Eye Irrit. 2 H319 Verursacht schwere Augenreizung.

- **2.2 Kennzeichnungselemente**
- **Kennzeichnung gemäß Verordnung (EG) Nr. 1272/2008**  
Der Stoff ist gemäß CLP-Verordnung eingestuft und gekennzeichnet.
- **Gefahrenpiktogramme**



GHS07

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- **Signalwort** Achtung
- **Gefahrenhinweise**  
H319 Verursacht schwere Augenreizung.
- **Sicherheitshinweise**  
P280 Schutzhandschuhe/Schutzkleidung/Augenschutz/Gesichtsschutz tragen.  
P305+P351+P338 **BEI KONTAKT MIT DEN AUGEN:** Einige Minuten lang behutsam mit Wasser spülen.  
Eventuell vorhandene Kontaktlinsen nach Möglichkeit entfernen. Weiter spülen.  
P337+P313 Bei anhaltender Augenreizung: Ärztlichen Rat einholen/ärztliche Hilfe hinzuziehen.  
P420 Von brennbaren Stoffen getrennt lagern.  
P403+P235 An einem gut belüfteten Ort aufbewahren. Kühl 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 mehrere Minuten bei geöffnetem Lidspalt unter fließendem Wasser spülen. Bei anhaltenden Beschwerden Arzt konsultieren.
- **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.
- **5.3 Hinweise für die Brandbekämpfung**
- **Besondere Schutzausrüstung:** Keine besonderen Maßnahmen erforderlich.

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### ABSCHNITT 6: Maßnahmen bei unbeabsichtigter Freisetzung

- **6.1 Personenbezogene Vorsichtsmaßnahmen, Schutzausrüstungen und in Notfällen anzuwendende Verfahren**  
Nicht erforderlich.
- **6.2 Umweltschutzmaßnahmen:** Keine besonderen Maßnahmen erforderlich.
- **6.3 Methoden und Material für Rückhaltung und Reinigung:**  
Mit flüssigkeitsbindendem Material (Sand, Kieselgur, Säurebinder, Universalbinder, Sägemehl) aufnehmen.  
Für ausreichende Lüftung sorgen.
- **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**  
Für gute Belüftung/Absaugung am Arbeitsplatz sorgen.  
Aerosolbildung vermeiden.
- **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:** Behälter dicht geschlossen halten.
- **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
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- **Zusätzliche Hinweise:** Als Grundlage dienen die bei der Erstellung gültigen Listen.
- **8.2 Begrenzung und Überwachung der Exposition**
- **Persönliche Schutzausrüstung:**
- **Allgemeine Schutz- und Hygienemaßnahmen:**  
Von Nahrungsmitteln, Getränken und Futtermitteln fernhalten.  
Beschmutzte, getränkte Kleidung sofort ausziehen.  
Vor den Pausen und bei Arbeitsende Hände waschen.  
Berührung mit den Augen vermeiden.  
Berührung mit den Augen und der Haut vermeiden.
- **Atemschutz:**  
Bei kurzzeitiger oder geringer Belastung Atemfiltergerät; bei intensiver bzw. längerer Exposition unluftunabhängiges Atemschutzgerät verwenden.

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Bei unzureichender Belüftung Atemschutz.

· **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.

· **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:**

Schutzbrille



Dichtschließende Schutzbrille

### ABSCHNITT 9: Physikalische und chemische Eigenschaften

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

· **Allgemeine Angaben**

· **Aussehen:**

<b>Form:</b>	Aerosol
<b>Farbe:</b>	Klar
· <b>Geruch:</b>	Etherartig
· <b>Geruchsschwelle:</b>	Nicht bestimmt.

· **pH-Wert:** Nicht bestimmt.

· **Zustandsänderung**

<b>Schmelzpunkt/Schmelzbereich:</b>	Nicht bestimmt.
<b>Siedepunkt/Siedebereich:</b>	-26,2 °C

· **Flammpunkt:** Nicht anwendbar.

· **Entzündlichkeit (fest, gasförmig):** Nicht anwendbar.

· **Zündtemperatur:**

**Zersetzungstemperatur:** Nicht bestimmt.

· **Selbstentzündlichkeit:** Nicht bestimmt.

· **Explosionsgefahr:** Das Produkt ist nicht explosionsgefährlich.

· **Explosionsgrenzen:**

<b>Untere:</b>	Nicht bestimmt.
<b>Obere:</b>	Nicht bestimmt.

· **Dampfdruck bei 20 °C:** 5716 hPa

<b>Dichte bei 20 °C:</b>	3,6 g/cm <sup>3</sup>
· <b>Relative Dichte</b>	Nicht bestimmt.
· <b>Dampfdichte</b>	Nicht bestimmt.
· <b>Verdampfungsgeschwindigkeit</b>	Nicht bestimmt.

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- |  |  |
|--|--|
| · <b>Löslichkeit in / Mischbarkeit mit Wasser bei 20 °C:</b> | 1,93 g/l   |
| · <b>Verteilungskoeffizient (n-Octanol/Wasser):</b>          | Nicht bestimmt.                                    |
| · <b>Viskosität:</b>   |  |
| <b>Dynamisch bei 20 °C:</b>                                  | 0,22 mPas  |
| <b>Kinematisch:</b>  | Nicht bestimmt.                                    |
| · <b>Lösemittelgehalt:</b>                                   |  |
| <b>Organische Lösemittel:</b>                                | 0,0 %  |
| <b>VOC (EU)</b>  | 100,00 %   |
| · <b>9.2 Sonstige Angaben</b>                                | Keine weiteren relevanten Informationen verfügbar. |

### ABSCHNITT 10: Stabilität und Reaktivität

- **10.1 Reaktivität**
- **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**
- **Primäre Reizwirkung:**
- **Ätz-/Reizwirkung auf die Haut** Keine Reizwirkung.
- **Schwere Augenschädigung/-reizung** Reizwirkung.
- **Sensibilisierung der Atemwege/Haut** Keine sensibilisierende Wirkung bekannt.

### 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:** Im allgemeinen nicht wassergefährdend
- **12.5 Ergebnisse der PBT- und vPvB-Beurteilung**
- **PBT:** Nicht anwendbar.
- **vPvB:** Nicht anwendbar.
- **12.6 Andere schädliche Wirkungen** Keine weiteren relevanten Informationen verfügbar.

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### 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

· <b>14.1 UN-Nummer</b> · <b>ADR, IMDG, IATA</b>	UN3159
· <b>14.2 Ordnungsgemäße UN-Versandbezeichnung</b> · <b>ADR</b>	3159 1,1,1,2-TETRAFLUORETHAN (GAS ALS KÄLTEMITTEL R 134a)
· <b>IMDG, IATA</b>	1,1,1,2-TETRAFLUOROETHANE (REFRIGERANT GAS R 134a)
· <b>14.3 Transportgefahrenklassen</b> · <b>ADR, IMDG, IATA</b> · <b>Klasse</b>	2.2
· <b>14.5 Umweltgefahren:</b> · <b>Marine pollutant:</b>	Nein
· <b>14.6 Besondere Vorsichtsmaßnahmen für den Verwender</b> · <b>EMS-Nummer:</b>	Nicht anwendbar. F-C,S-V
· <b>14.7 Massengutbeförderung gemäß Anhang II des MARPOL-Übereinkommens 73/78 und gemäß IBC-Code</b>	Nicht anwendbar.
· <b>Transport/weitere Angaben:</b>	
· <b>ADR</b> · <b>Begrenzte Menge (LQ)</b> · <b>Freigestellte Mengen (EQ)</b>	120 ml Code: E1 Höchste Nettomenge je Innenverpackung: 30 ml Höchste Nettomenge je Außenverpackung: 1000 ml
· <b>UN "Model Regulation":</b>	UN3159, 1,1,1,2-TETRAFLUORETHAN (GAS ALS KÄLTEMITTEL R 134a), 2.2

### 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:** Im allgemeinen nicht wassergefährdend.

(Fortsetzung auf Seite 7)

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

Druckdatum: 29.10.2015

überarbeitet am: 29.10.2015

**Handelsname: QUICK FREEZE/SHUR FREEZ (ENVIRONMENTALLY SAFE)**

(Fortsetzung von Seite 6)

· **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)

Eye Irrit. 2: Serious eye damage/eye irritation, Hazard Category 2

DE



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

Stampato il: 29.10.2015

Revisione: 29.10.2015

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

· **1.1 Identificatore del prodotto**

· **Denominazione commerciale:** QUICK FREEZE/SHUR FREEZ (ENVIRONMENTALLY SAFE)

· **Articolo numero:** 72595, 72596

· **Numero CAS:**

811-97-2

· **Numeri CE:**

212-377-0

· **1.2 Usi pertinenti identificati della sostanza o 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: sgkcck@aol.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

Eye Irrit. 2 H319 Provoca grave irritazione oculare.

· **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**

H319 Provoca grave irritazione oculare.

(continua a pagina 2)

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

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**Denominazione commerciale: QUICK FREEZE/SHUR FREEZ (ENVIRONMENTALLY SAFE)**

(Segue da pagina 1)

· **Consigli di prudenza**

- P280 *Indossare guanti/indumenti protettivi/Proteggere gli occhi/il viso.*  
 P305+P351+P338 *IN CASO DI CONTATTO CON GLI OCCHI: sciacquare accuratamente per parecchi minuti. Togliere le eventuali lenti a contatto se è agevole farlo. Continuare a sciacquare.*  
 P337+P313 *Se l'irritazione degli occhi persiste, consultare un medico.*  
 P420 *Conservare lontano da sostanze infiammabili.*  
 P403+P235 *Conservare in luogo fresco e 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-Tetrafluorethan  
 · **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 diversi minuti tenendo le palpebre ben aperte. Se persiste il dolore consultare il medico.*  
 · **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 della 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:** Non sono richiesti provvedimenti particolari.  
 · **6.3 Metodi e materiali per il contenimento e per la bonifica:**  
 Raccogliere il liquido con materiale assorbente (sabbia, tripoli, legante di acidi, legante universale, segatura).

(continua a pagina 3)

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

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**Denominazione commerciale: QUICK FREEZE/SHUR FREEZ (ENVIRONMENTALLY SAFE)**

(Segue da pagina 2)

Provvedere ad una sufficiente areazione.

· **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.

Per informazioni relative allo smaltimento vedere Capitolo 13.

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

· **7.1 Precauzioni per la manipolazione sicura**

Accurata ventilazione/aspirazione nei luoghi di lavoro.

Evitare la formazione di aerosol.

· **Indicazioni in caso di incendio ed esplosione:** Non sono richiesti provvedimenti particolari.

· **7.2 Condizioni per l'immagazzinamento 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:** Mantenere i recipienti ermeticamente chiusi.

· **7.3 Usi finali specifici** 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:**

Tenere lontano da cibo, bevande e foraggi.

Togliere immediatamente gli abiti contaminati.

Lavarsi le mani prima dell'intervallo o a lavoro terminato.

Evitare il contatto con gli occhi.

Evitare il contatto con gli occhi e la pelle.

· **Maschera protettiva:**

Nelle esposizioni brevi e minime utilizzare la maschera; nelle esposizioni più intense e durature indossare l'autorespiratore.

In ambienti non sufficientemente ventilati utilizzare la maschera protettiva.

· **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.

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

Stampato il: 29.10.2015

Revisione: 29.10.2015

**Denominazione commerciale: QUICK FREEZE/SHUR FREEZ (ENVIRONMENTALLY SAFE)**

(Segue da pagina 3)

- **Occhiali protettivi:**  
Occhiali protettivi



Occhiali protettivi a tenuta

### SEZIONE 9: Proprietà fisiche e chimiche

#### · 9.1 Informazioni sulle proprietà fisiche e chimiche fondamentali

##### · Indicazioni generali

##### · Aspetto:

· <b>Forma:</b>	Aerosol
· <b>Colore:</b>	Chiaro
· <b>Odore:</b>	Simile all'etere
· <b>Soglia olfattiva:</b>	Non definito.

· **valori di pH:** Non definito.

##### · Cambiamento di stato

· <b>Temperatura di fusione/ambito di fusione:</b>	Non definito.
· <b>Temperatura di ebollizione/ambito di ebollizione:</b>	-26,2 °C

· **Punto di infiammabilità:** Non applicabile.

· **Infiammabilità (solido, gassoso):** Non applicabile.

##### · Temperatura di accensione:

· **Temperatura di decomposizione:** Non definito.

· **Autoaccensione:** Non definito.

· **Pericolo di esplosione:** Prodotto non esplosivo.

##### · Limiti di infiammabilità:

· <b>Inferiore:</b>	Non definito.
· <b>Superiore:</b>	Non definito.

· **Tensione di vapore a 20 °C:** 5716 hPa

· <b>Densità a 20 °C:</b>	3,6 g/cm <sup>3</sup>
· <b>Densità relativa</b>	Non definito.
· <b>Densità del vapore</b>	Non definito.
· <b>Velocità di evaporazione</b>	Non definito.

· **Solubilità in/Miscibilità con acqua a 20 °C:** 1,93 g/l

· **Coefficiente di distribuzione (n-Octanol/acqua):** Non definito.

##### · Viscosità:

· <b>Dinamica a 20 °C:</b>	0,22 mPas
· <b>Cinematica:</b>	Non definito.

##### · Tenore del solvente:

· <b>Solventi organici:</b>	0,0 %
· <b>VOC (CE)</b>	100,00 %

(continua a pagina 5)

**Scheda di dati di sicurezza**  
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Stampato il: 29.10.2015

Revisione: 29.10.2015

**Denominazione commerciale: QUICK FREEZE/SHUR FREEZ (ENVIRONMENTALLY SAFE)**

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· 9.2 Altre informazioni

Non sono disponibili altre informazioni.

### **SEZIONE 10: Stabilità e reattività**

- 10.1 Reattività
- 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
- Irritabilità primaria:
- Corrosione/irritazione cutanea Non ha effetti irritanti.
- Lesioni oculari gravi/irritazioni oculari gravi Irritante.
- Sensibilizzazione respiratoria o cutanea Non si conoscono effetti sensibilizzanti.

### **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: Generalmente non pericoloso
- 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**

- 14.1 Numero ONU
- ADR, IMDG, IATA

UN3159

(continua a pagina 6)

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

Stampato il: 29.10.2015

Revisione: 29.10.2015

**Denominazione commerciale: QUICK FREEZE/SHUR FREEZ (ENVIRONMENTALLY SAFE)**

(Segue da pagina 5)

· <b>14.2 Nome di spedizione dell'ONU</b>	
· <b>ADR</b>	3159 1,1,1,2-TETRAFLUOROETANO (GAS REFRIGERANTE R 134a)
· <b>IMDG, IATA</b>	1,1,1,2-TETRAFLUOROETHANE (REFRIGERANT GAS R 134a)
· <b>14.3 Classi di pericolo connesso al trasporto</b>	
· <b>ADR, IMDG, IATA</b>	
· <b>Classe</b>	2.2
· <b>14.5 Pericoli per l'ambiente:</b>	
· <b>Marine pollutant:</b>	No
· <b>14.6 Precauzioni speciali per gli utilizzatori</b>	Non applicabile.
· <b>Numero EMS:</b>	F-C,S-V
· <b>14.7 Trasporto di rinfuse secondo l'allegato II di MARPOL 73/78 ed il codice IBC</b>	Non applicabile.
· <b>Trasporto/ulteriori indicazioni:</b>	
· <b>ADR</b>	
· <b>Quantità limitate (LQ)</b>	120 ml
· <b>Quantità esenti (EQ)</b>	Codice: E1 Quantità massima netta per imballaggio interno: 30 ml Quantità massima netta per imballaggio esterno: 1000 ml
· <b>UN "Model Regulation":</b>	UN3159, 1,1,1,2-TETRAFLUOROETANO (GAS REFRIGERANTE R 134a), 2.2

### SEZIONE 15: Informazioni sulla regolamentazione

- **15.1 Norme e legislazione 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

EINECS: European Inventory of Existing Commercial Chemical Substances

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

VOC: Volatile Organic Compounds (USA, EU)

Eye Irrit. 2: Serious eye damage/eye irritation, Hazard Category 2

# 안전지침서

## 제31조의 1907/2006/EC에 따라

기압점: 2015.10.29

개정: 2015.10.29

### 1 화학제품과 회사에 관한 정보

- 제품 식별자
- 제품명: QUICK FREEZE/SHUR FREEZ (ENVIRONMENTALLY SAFE)
- 상품번호: 72595, 72596
- CAS-번호  
811-97-2
- EC 의번호:  
212-377-0
- 해당 순물질이나 혼합물의 관련 하위용도 및 사용금지용도 추가적인 정보가 존재하지 않습니다.
- 제품의 권고 용도와 사용상의 제한: 실험실 화학품
- 안전데이터표(Safety Data Sheet)내 공급업체 관련 상세 정보
- 제조자/수입자/유통업자 정보:  
Electron Microscopy Sciences  
1560 Industry Road  
USA-Hatfield, PA 19440  
Tel: 215-412-8400 Fax: 215-412-8450  
email: sgkcck@aol.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 획득 가능: Product safety department
- 비상연락 전화번호:  
ChemTrec 1-800-424-9300 Contract CCN7661  
1-703-527-3887

### 2 유해성.위험성

- 순물질 또는 혼합물의 분류



심한 눈 손상/자극성 구분2 H319 눈에 심한 자극을 일으킴

- 라벨표기 요소
- GHS 라벨 요소  
본 화학물질은 화학물질의 분류 및 표기에 관한 국제조화시스템(GHS)에 따라 분류 및 표기되었습니다.
- 그림문자



GHS07

- 신호어 경고
- 유해.위험 문구  
눈에 심한 자극을 일으킴
- 예방조치 문구  
(보호장갑·보호의·보안경·안면보호구)를(을) 착용하십시오.  
눈에 묻으면 몇 분간 물로 조심해서 씻으십시오. 가능하면콘택트렌즈를 제거하십시오. 계속 씻으십시오.

(2 쪽에 계속)

# 안전지침서

## 제31조의 1907/2006/EC에 따라

기압점: 2015.10.29

개정: 2015.10.29

**제품명: QUICK FREEZE/SHUR FREEZ (ENVIRONMENTALLY SAFE)**

(1 쪽부터계속)

- 눈에 자극이 지속되면 의학적인 조치·조언을 구하십시오.  
 화염성 물질과 떨어진 곳에 보관.  
 환기가 잘 되는 곳에 보관하고 저온으로 유지하십시오  
 현지/지역/국가/국제 규정에 따라서 내용물/용기 노출
- 기타 유해성
  - PBT(잔류성, 생물농축성, 독성 물질) 및 vPvB(고 잔류성, 고 생물농축성 물질) 평가 결과
  - PBT(잔류성, 생물농축성, 독성 물질): 해당사항 없음.
  - vPvB(고 잔류성, 고 생물농축성 물질): 해당사항 없음.

### 3 구성성분의 명칭 및 함유량

- 화학적 특성: 화학물질
- CAS-번호표시  
811-97-2 1,1,1,2-Tetrafluoroethan
- 식별 번호
- EC 의번호: 212-377-0

### 4 응급조치 요령

- 응급조치요령 내용
- 흡입했을 때: 신선한 공기를 쉰고, 통증이 있을 때는 의료진의 도움을 구한다.
- 피부에 접촉했을 때: 일반적으로 이제품은 피부에 자극적이지 않다.
- 눈에 들어갔을 때: 흐르는 물에 눈을 몇분동안 씻어내고나서, 증상이 지속될 경우에는 의사와 상담한다
- 먹었을 때: 증상이 지속될 경우에는 의사와 상담한다.
- 기타 의사의 주의사항:
- 가장 중요한 급·만성 증상 및 영향 추가적인 정보가 존재하지 않습니다.
- 즉각적인 의료처리 및 특별치료가 필요함을 시사하는 징후 추가적인 정보가 존재하지 않습니다.

### 5 폭발·화재시 대처방법

- 소화제
- 적절한 소화제:  
이산화탄소, 진화용 석회 가루 또는 물 방사를 사용하고, 더 큰 화재는 물을 분사하거나 알코올이 함유된 거품으로 끈다.
- 본 화학물질이나 혼합물에서 발생하는 특별 유해성 추가적인 정보가 존재하지 않습니다.
- 소방관에 대한 권고사항
- 화재 진압 시 착용할 보호구 및 예방조치: 특별한 조치가 필요없음.

### 6 누출 사고 시 대처방법

- 개인적 예방조치, 보호장비 및 응급처리 절차 필요없음.
- 환경 관련 예방조치: 특별한 조치가 필요없음.
- 밀폐 및 정화 방법과 소재:  
액체가 혼합된 물질(모래, 규조토, 산성 결합물, 일반 결합물, 톱밥)에 흡입되도록 한다.  
충분한 환기가 되도록 한다.
- 타 섹션 참조
- 안전 관리에 대한 정보는 제7장을 참고하십시오.
- 개인 보호 장비에 대한 정보는 제8장을 참고하십시오.

(3 쪽에계속)



# 안전지침서

## 제31조의 1907/2006/EC에 따라

기압점: 2015.10.29

개정: 2015.10.29

**제품명: QUICK FREEZE/SHUR FREEZ (ENVIRONMENTALLY SAFE)**

(2 쪽부터계속)

쓰레기 처리에 대한 정보는 제13 장을 참고하십시오.

### 7 취급 및 저장방법

- 취급:
- **안전 취급을 위한 예방조치**  
작업장에서는 통풍이 잘 되고/습기 제거가 잘 되게 주의한다.  
연무질이 형성되는 것을 피한다.
- **화재 및 폭발 사고 예방대책에 관한 정보:** 특별한 조치가 필요없음.
- **혼합위험성 등 안전 저장 조건**
- **보관:**
- **안전한 저장 방법:** 특별한 요구사항이 없음.
- **하나의 공동 보관 시설에 대한 보관 관련 정보:** 필요없음
- **보관 조건에 관한 추가적인 정보:** 용기를 새지 않게 밀폐한 채 보관한다.
- **구체적 최종 사용자** 추가적인 정보가 존재하지 않습니다.

### 8 노출방지 및 개인보호구

- **첨단시설 디자인에 대한 추가정보:** 더 이상 의 자료는 없음. 항목 7 을 참고하십시오.

· 통제 변수

· **화학물질의 노출기준, 생물학적 노출기준 등:**

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

WEEL (USA) 장기간의값: 1000 ppm

- **추 가 정보:** 제 조 할 당 시에 유 효 한 목 록 을 기 초 로 사 용 했 다.

· **노출 통제**

· **개인 보호구**

· **일반적보호조치및위생조치:**

- 식료품, 음료수와 사료로부터 멀리 떨어져 뜨려 놓는다.
- 더러워지거나 음료수가 묻은 옷은 즉시 탈의한다.
- 휴식 전이나 작업이 끝날때마다 손을 씻는다.
- 눈과의 접촉을 피한다.
- 눈과 피부와의 접촉은 피한다.

· **호흡기 보호:**

- 단 시간 또는 경미한 오염의 경우에는 호흡여과기를 사용한다. 심각한 또는 장기간 노출시에는 호흡보호장비를 사용한다.
- 환기가 충분하지 않을 때는 호흡 보호 장비를 사용한다.

· **손 보호:**

- 장갑재질은 제품 / 원료 / 조제를 통과시키지 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.

· **장갑의재료**

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

- **장갑재료의 투과시간** 정확한 관통 시간은 보호장갑 제조자에 의하여 인지도고, 준수되어야 한다.

(4 쪽에계속)

# 안전지침서

## 제31조의 1907/2006/EC에 따라

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개정: 2015.10.29

**제품명: QUICK FREEZE/SHUR FREEZ (ENVIRONMENTALLY SAFE)**

· **눈 보호:**  
보호안경

(3 쪽부터계속)



팍조이는보안경

### 9 물리화학적 특성

· <b>기본 물리 및 화학적 특성에 대한 정보</b>	
· 일반정보	
· 외형	
· 물리적 상태:	에어로졸
· 색:	밝은
· 냄새:	에테르종류의
· 후각역치	알맞지않다.
· pH:	알맞지않다.
· <b>상태변화</b>	
· 녹는점/어는점:	맞지않는
· 초기 끓는점과 끓는점 범위:	-26.2 °C
· 인화점:	해당사항 없음.
· 인화성(고체, 기체):	해당사항 없음.
· <b>점화온도:</b>	
· 분해 온도:	알맞지않다.
· 자기점화:	알맞지않다.
· 폭발위험:	이제품은폭발위험성이없다
· <b>인화 또는 폭발 범위의 상한/하한</b>	
· 아래로:	알맞지않다.
· 위로:	알맞지않다.
· 증기압 의경우 20 °C:	5716 hPa
· 밀도 의경우 20 °C:	3.6 g/cm <sup>3</sup>
· 비중:	알맞지않다.
· 증기밀도:	알맞지않다.
· 증발 속도:	알맞지않다.
· 용해도:	
· 물 의경우 20 °C:	1.93 g/l
· n 옥탄올/물 분배계수:	알맞지않다.
· 점도:	
· 역학성 의경우 20 °C:	0.22 mPas
· 동점성:	알맞지않다.
· <b>용매내용물</b>	
· 유기용매:	0.0 %
· VOC (EU)	100.00 %

(5 쪽에계속)



# 안전지침서

## 제31조의 1907/2006/EC에 따라

기압점: 2015.10.29

개정: 2015.10.29

**제품명: QUICK FREEZE/SHUR FREEZ (ENVIRONMENTALLY SAFE)**

(5 쪽부터계속)

### 14 운송에 필요한 정보

· 유엔 번호 · ADR, IMDG, IATA	UN3159
· UN 적정 선적명 · ADR · IMDG, IATA	3 1 5 9 1, 1, 1, 2-TETRAFLUOROETHANE (REFRIGERANT GAS R 134a) 1,1,1,2-TETRAFLUOROETHANE (REFRIGERANT GAS R 134a)
· 교통 위험 클래스 · ADR, IMDG, IATA · 등급	2.2
· 환경적 유해물질: · 해양오염물질:	아니오
· 이용자 특별 예방조치 · EMS-번호:	해당사항 없음. F-C,S-V
· MARPOL73/78(선박으로부터의 해양오염방지협약) 부속서2 및 IBC Code(국제선적화물코드)에 따른 벌크(bulk) 운송	해당사항 없음.
· 운 송/추가 정보: · ADR · 한정 수량 (LQ) · Excepted quantities (EQ)	120 ml Code: E1 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 1000 ml
· UN "모범 규제":	UN3159, 1,1,1,2-TETRAFLUOROETHANE (REFRIGERANT GAS R 134a), 2.2

### 15 법적 규제현황

· 해당 순물질 또는 혼합물에 대한 안전, 보건 및 환경 규제/법률

· Korean Existing Chemical Inventory		
811-97-2	1,1,1,2-Tetrafluorethan	KE-33426

· GHS 라벨 요소

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

· 위험 도표



GHS07

· 표지어 경고

· 위험 문구

눈에 심한 자극을 일으킴

· 주의 문구

(보호장갑·보호의·보안경·안면보호구)를(을) 착용하시오.

눈에 들으면 몇 분간 물로 조심해서 씻으시오. 가능하면콘택트렌즈를 제거하시오. 계속 씻으시오.

(7 쪽에계속)

# 안전지침서

## 제31조의 1907/2006/EC에 따라

기압점: 2015.10.29

개정: 2015.10.29

**제품명: QUICK FREEZE/SHUR FREEZ (ENVIRONMENTALLY SAFE)**

(6 쪽부터계속)

- 눈에 자극이 지속되면 의학적인 조치·조언을 구하십시오.
- 화염성 물질과 떨어진 곳에 보관.
- 환기가 잘 되는 곳에 보관하고 저온으로 유지하십시오
- 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 작성일자:** 2015.10.29
- **개정 횟수 및 최종 개정일자:** 1 / 2015.10.29
- **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)
  - 심한 눈 손상/자극성 구분2: Serious eye damage/eye irritation, Hazard Category 2

KR

# Ficha de datos de seguridad

## según 1907/2006/CE, Artículo 31

fecha de impresión 29.10.2015

Revisión: 29.10.2015

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

#### · 1.1 Identificador del producto

· **Nombre comercial:** QUICK FREEZE/SHUR FREEZ (ENVIRONMENTALLY SAFE)

· **Número del artículo:** 72595, 72596

· **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: sgkcck@aol.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

Eye Irrit. 2 H319 Provoca irritación ocular grave.

· **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**

H319 Provoca irritación ocular grave.

( se continua en página 2 )

# Ficha de datos de seguridad

## según 1907/2006/CE, Artículo 31

fecha de impresión 29.10.2015

Revisión: 29.10.2015

**Nombre comercial: QUICK FREEZE/SHUR FREEZ (ENVIRONMENTALLY SAFE)**

( se continua en página 1 )

· **Consejos de prudencia**

- P280 Llevar guantes/prendas/gafas/máscara de protección.  
 P305+P351+P338 **EN CASO DE CONTACTO CON LOS OJOS:** Aclarar cuidadosamente con agua durante varios minutos. Quitar las lentes de contacto, si lleva y resulta fácil. Seguir aclarando.  
 P337+P313 Si persiste la irritación ocular: Consultar a un médico.  
 P420 Almacenar alejado de materiales inflamables.  
 P403+P235 Almacenar en un lugar bien ventilado. Mantener en lugar fresco.  
 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-Tetrafluorethan  
 · **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 trastornos persistentes consultar un médico.  
 · **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:** No se requieren medidas especiales.

· **6.3 Métodos y material de contención y de limpieza:**

Quitar con material absorbente (arena, kieselgur, aglutinante de ácidos, aglutinante universal, aserrín).

( se continua en página 3 )

# Ficha de datos de seguridad

## según 1907/2006/CE, Artículo 31

fecha de impresión 29.10.2015

Revisión: 29.10.2015

**Nombre comercial: QUICK FREEZE/SHUR FREEZ (ENVIRONMENTALLY SAFE)**

( se continua en página 2 )

Asegurar suficiente ventilación.

· **6.4 Referencia a otras secciones**

Ver capítulo 7 para mayor información sobre una manipulación segura.

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**

Asegurar suficiente ventilación /aspiración en el puesto de trabajo.

Evitar la formación de aerosoles.

· **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:**

Mantener el recipiente cerrado herméticamente.

· **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:**

Mantener alejado de alimentos, bebidas y alimentos para animales.

Quitarse de inmediato la ropa ensuciada o impregnada.

Lavarse las manos antes de las pausas y al final del trabajo.

Evitar el contacto con los ojos.

Evitar el contacto con los ojos y la piel.

· **Protección respiratoria:**

Si la exposición va a ser breve o de poca intensidad, colocarse una máscara respiratoria. Para una exposición más intensa o de mayor duración, usar un aparato de respiración autónomo.

Si la ventilación es insuficiente, usar protección respiratoria.

· **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.

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- **Protección de ojos:**  
Gafas de protección



Gafas de protección herméticas

## SECCIÓN 9: Propiedades físicas y químicas

### · 9.1 Información sobre propiedades físicas y químicas básicas

#### · Datos generales

#### · Aspecto:

Forma: Aerosol

Color: Claro

· Olor: Etéreo

· Umbral olfativo: No determinado.

· valor pH: No determinado.

#### · Cambio de estado

Punto de fusión /campo de fusión: Indeterminado.

Punto de ebullición /campo de ebullición: -26,2 °C

· Punto de inflamación: No aplicable.

· Inflamabilidad (sólido, gaseiforme): No aplicable.

#### · Temperatura de ignición:

Temperatura de descomposición: No determinado.

· Autoinflamabilidad: No determinado.

· Peligro de explosión: El producto no es explosivo.

#### · Límites de explosión:

Inferior: No determinado.

Superior: No determinado.

· Presión de vapor a 20 °C: 5716 hPa

· Densidad a 20 °C: 3,6 g/cm<sup>3</sup>

· Densidad relativa: No determinado.

· Densidad de vapor: No determinado.

· Velocidad de evaporación: No determinado.

· Solubilidad en / miscibilidad con  
agua a 20 °C:

1,93 g/l

· Coeficiente de reparto (n-octanol/agua): No determinado.

#### · Viscosidad:

Dinámica a 20 °C: 0,22 mPas

Cinemática: No determinado.

#### · Concentración del disolvente:

Disolventes orgánicos: 0,0 %

VOC (CE) 100,00 %

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· **9.2 Información adicional** No existen más datos relevantes disponibles.

### SECCIÓN 10: Estabilidad y reactividad

- **10.1 Reactividad**
- **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**
- **Efecto estimulante primario:**
- **Corrosión o irritación cutáneas** No produce irritaciones.
- **Lesiones o irritación ocular graves** Produce irritaciones.
- **Sensibilización respiratoria o cutánea** No se conoce ningún efecto sensibilizante.

### 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:** Por regla general, no es peligroso para el agua
- **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 UN**
- **ADR, IMDG, IATA** UN3159

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· <b>14.2 Designación oficial de transporte de las Naciones Unidas</b>	
· <b>ADR</b>	3159 1,1,1,2-TETRAFLUOROETANO (GAS REFRIGERANTE R 134a)
· <b>IMDG, IATA</b>	1,1,1,2-TETRAFLUOROETHANE (REFRIGERANT GAS R 134a)
· <b>14.3 Clase(s) de peligro para el transporte</b>	
· <b>ADR, IMDG, IATA</b>	
· <b>Clase</b>	2.2
· <b>14.5 Peligros para el medio ambiente:</b>	
· <b>Contaminante marino:</b>	No
· <b>14.6 Precauciones particulares para los usuarios</b>	No aplicable.
· <b>Número EMS:</b>	F-C,S-V
· <b>14.7 Transporte a granel con arreglo al anexo II del Convenio Marpol 73/78 y del Código IBC</b>	No aplicable.
· <b>Transporte/datos adicionales:</b>	
· <b>ADR</b>	
· <b>Cantidades limitadas (LQ)</b>	120 ml
· <b>Cantidades exceptuadas (EQ)</b>	Código: E1 Cantidad neta máxima por envase interior: 30 ml Cantidad neta máxima por embalaje exterior: 1000 ml
· <b>"Reglamentación Modelo" de la UNECE:</b>	UN3159, 1,1,1,2-TETRAFLUOROETANO (GAS REFRIGERANTE R 134a), 2.2

### 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

EINECS: European Inventory of Existing Commercial Chemical Substances

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

VOC: Volatile Organic Compounds (USA, EU)

Eye Irrit. 2: Serious eye damage/eye irritation, Hazard Category 2