

**SAFETY DATA SHEET****FRZ - GENERAL PURPOSE CIRCUIT CHILLER, AEROSOL**

According to Appendix D, OSHA Hazard Communication Standard 29 CFR §1910.1200

**1. Identification****Product identifier****Product name** FRZ - GENERAL PURPOSE CIRCUIT CHILLER, AEROSOL**Product number** MCC-FRZ**Synonyms; trade names** Micro Freeze Circuit Cooler**Recommended use of the chemical and restrictions on use****Uses advised against** No specific uses advised against are identified.**Details of the supplier of the safety data sheet****Supplier** MICROCARE CORPORATION**Manufacturer** MICROCARE CORPORATION  
595 John Downey Drive  
New Britain, CT 06051  
United States of America  
CAGE: OATV9  
Tel: + 1 800 638 0125, +1 860-827-0626  
Fax: +1 860-893-1930  
techsupport@microcare.com**Emergency telephone number****Emergency telephone** CHEMTREC 1-800-424-9300 (within the U.S.)  
+1 703-741-5970 (from anywhere in the world)**2. Hazard(s) identification****Classification of the substance or mixture****Physical hazards** Press. Gas, Compressed - H280**Health hazards** Not Classified**Environmental hazards** Not Classified**Human health** Prolonged or repeated contact with skin may cause irritation, redness and dermatitis. Mild dermatitis, allergic skin rash.**Physicochemical** Aerosol containers can explode when heated, due to excessive pressure build-up. Vapors are heavier than air and may travel along the floor and accumulate in the bottom of containers. Gas or vapor displaces oxygen available for breathing (asphyxiant). Not considered to be a significant hazard due to the small quantities used.**Label elements**

**FRZ - GENERAL PURPOSE CIRCUIT CHILLER, AEROSOL****Pictogram****Signal word**

Warning

**Hazard statements**

H280 Contains gas under pressure; may explode if heated.

**Precautionary statements**

P210 Keep away from heat, sparks, open flames and hot surfaces. No smoking.

P211 Do not spray on an open flame or other ignition source.

P251 Pressurized container: Do not pierce or burn, even after use

P410+P412 Protect from sunlight. Do not expose to temperatures exceeding 50°C /122°F.

P501 Dispose of contents/ container in accordance with local regulations.

**Supplemental label information**

Safety data sheet available on request. For use in industrial installations only.

**Other hazards**

This product does not contain any substances classified as PBT or vPvB.

**3. Composition/information on ingredients****Mixtures**

|                                                       |                |
|-------------------------------------------------------|----------------|
| <b>HFC-134a Tetrafluoroethane</b>                     | <b>60-100%</b> |
| CAS number: 811-97-2                                  |                |
| <b>Classification</b><br>Press. Gas, Liquefied - H280 |                |

The full text for all hazard statements is displayed in Section 16.

**Composition comments**

TSCA: The ingredients of this product are on the TSCA Inventory. The exact percentage (concentration) of composition has been withheld as a trade secret in accordance with paragraph (i) of CFR 1900.1200

**Composition****4. First-aid measures****Description of first aid measures****General information**

Contact with liquid form may cause frostbite. Never give anything by mouth to an unconscious person. Do not induce vomiting. Place unconscious person on their side in the recovery position and ensure breathing can take place. If breathing stops, provide artificial respiration. Keep out of the reach of children.

**Inhalation**

Move affected person to fresh air and keep warm and at rest in a position comfortable for breathing. When breathing is difficult, properly trained personnel may assist affected person by administering oxygen.

**Ingestion**

Do not induce vomiting. Rinse mouth thoroughly with water. Give plenty of water to drink. Consult a physician for specific advice.

**Skin Contact**

Contact with liquid form may cause frostbite. Remove contaminated clothing and rinse skin thoroughly with water.

**Eye contact**

Remove any contact lenses and open eyelids wide apart. Continue to rinse for at least 15 minutes. Consult a physician for specific advice.

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

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|                                                                                      |                                                                                                                                                           |
|--------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>General information</b>                                                           | Contact with liquid form may cause frostbite. The severity of the symptoms described will vary dependent on the concentration and the length of exposure. |
| <b>Inhalation</b>                                                                    | Vapors may cause headache, fatigue, dizziness and nausea.                                                                                                 |
| <b>Ingestion</b>                                                                     | Due to the physical nature of this material it is unlikely that swallowing will occur. Drowsiness, dizziness, disorientation, vertigo.                    |
| <b>Skin contact</b>                                                                  | Contact with liquefied gas might cause frostbites, in some cases with tissue damage.                                                                      |
| <b>Eye contact</b>                                                                   | Visual disturbances, including blurred vision.                                                                                                            |
| <b><u>Indication of immediate medical attention and special treatment needed</u></b> |                                                                                                                                                           |
| <b>Notes for the doctor</b>                                                          | No specific recommendations. If in doubt, get medical attention promptly.                                                                                 |

### 5. Fire-fighting measures

#### Extinguishing media

**Suitable extinguishing media** The product is not flammable. Use fire-extinguishing media suitable for the surrounding fire.

#### Special hazards arising from the substance or mixture

**Specific hazards** Keep away from heat, sparks and open flame. Thermal decomposition or combustion products may include the following substances: Toxic and corrosive gases or vapors. Aerosol containers can explode when heated, due to excessive pressure build-up.

**Hazardous combustion products** Oxides of carbon. Thermal decomposition or combustion may liberate carbon oxides and other toxic gases or vapors.

#### Advice for firefighters

**Protective actions during firefighting** Move containers from fire area if it can be done without risk. Bursting aerosol containers may be propelled from a fire at high speed.

**Special protective equipment for firefighters** Wear positive-pressure self-contained breathing apparatus (SCBA) and appropriate protective clothing.

### 6. Accidental release measures

#### Personal precautions, protective equipment and emergency procedures

**Personal precautions** Warn everybody of potential hazards and evacuate if necessary. Provide adequate ventilation. Avoid inhalation of vapors. Use approved respirator if air contamination is above an acceptable level.

#### Environmental precautions

**Environmental precautions** Contain spillage with sand, earth or other suitable non-combustible material. Avoid release to the environment.

#### Methods and material for containment and cleaning up

**Methods for cleaning up** Wear suitable protective equipment, including gloves, goggles/face shield, respirator, boots, clothing or apron, as appropriate. Eliminate all sources of ignition. No smoking, sparks, flames or other sources of ignition near spillage. Provide adequate ventilation.

### 7. Handling and storage

#### Precautions for safe handling

**Usage precautions** Provide adequate ventilation. Avoid inhalation of vapors/spray and contact with skin and eyes. Keep away from heat, sparks and open flame. Thermal decomposition or combustion products may include the following substances: Toxic and corrosive gases or vapors. Keep out of the reach of children.

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### Conditions for safe storage, including any incompatibilities

**Storage precautions** Aerosol cans: Must not be exposed to direct sunlight or temperatures above 50°C.

### Specific end uses(s)

**Reference to other sections.** Store away from incompatible materials (see Section 10).

## 8. Exposure controls/Personal protection

### Control parameters

### Occupational exposure limits

#### HFC-134a Tetrafluoroethane

Long-term exposure limit (8-hour TWA): OES 4240 mg/m<sup>3</sup>

### **Additional Occupational Exposure Limits**

**Ingredient comments** Threshold Limit Values (2005), ACGIH, by the American Conference on Governmental Industrial Hygienists.

### Exposure controls

#### Protective equipment



#### **Appropriate engineering controls**

No specific ventilation requirements. This product must not be handled in a confined space without adequate ventilation.

#### **Eye/face protection**

Eyewear complying with an approved standard should be worn if a risk assessment indicates eye contact is possible. Unless the assessment indicates a higher degree of protection is required, the following protection should be worn: Tight-fitting safety glasses.

#### **Hand protection**

Chemical-resistant, impervious gloves complying with an approved standard should be worn if a risk assessment indicates skin contact is possible.

#### **Other skin and body protection**

Wear suitable protective clothing as protection against splashing or contamination.

#### **Hygiene measures**

No specific hygiene procedures recommended but good personal hygiene practices should always be observed when working with chemical products. When using do not eat, drink or smoke.

#### **Respiratory protection**

Vapors are heavier than air and may travel along the floor and accumulate in the bottom of containers. In confined or poorly-ventilated spaces, a supplied-air respirator must be worn. Wear self-contained breathing apparatus with full facepiece.

## 9. Physical and chemical properties

### Information on basic physical and chemical properties

|                       |                           |
|-----------------------|---------------------------|
| <b>Appearance</b>     | Liquid. Gas Aerosol.      |
| <b>Color</b>          | Colorless.                |
| <b>Odor</b>           | Slight. Ether.            |
| <b>Odor threshold</b> | No information available. |
| <b>pH</b>             | No information available. |
| <b>Melting point</b>  | No information available. |

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|                                                     |                                                                           |
|-----------------------------------------------------|---------------------------------------------------------------------------|
| <b>Initial boiling point and range</b>              | -26°C/-16°F                                                               |
| <b>Flash point</b>                                  | No information available.                                                 |
| <b>Evaporation rate</b>                             | No information available.                                                 |
| <b>Evaporation factor</b>                           | No information available.                                                 |
| <b>Flammability (solid, gas)</b>                    | No information available.                                                 |
| <b>Upper/lower flammability or explosive limits</b> | Upper flammable/explosive limit: n/a Lower flammable/explosive limit: n/a |
| <b>Other flammability</b>                           | The product is not flammable.                                             |
| <b>Vapor pressure</b>                               | 96 PSIA @ 20°C                                                            |
| <b>Vapor density</b>                                | 3.6 @ 25 C / 77 F                                                         |
| <b>Relative density</b>                             | No information available.                                                 |
| <b>Bulk density</b>                                 | No information available.                                                 |
| <b>Solubility(ies)</b>                              | Slightly soluble in water.                                                |
| <b>Partition coefficient</b>                        | No information available.                                                 |
| <b>Auto-ignition temperature</b>                    | No information available.                                                 |
| <b>Decomposition Temperature</b>                    | No information available.                                                 |
| <b>Viscosity</b>                                    | No information available.                                                 |
| <b>Explosive properties</b>                         | No information available.                                                 |
| <b>Comments</b>                                     | Aerosol.                                                                  |
| <b>Refractive index</b>                             | No information available.                                                 |
| <b>Particle size</b>                                | No information available.                                                 |
| <b>Molecular weight</b>                             | No information available.                                                 |
| <b>Volatility</b>                                   | 100%                                                                      |
| <b>Saturation concentration</b>                     | No information available.                                                 |
| <b>Critical temperature</b>                         | No information available.                                                 |
| <b>Volatile organic compound</b>                    | This product contains a maximum VOC content of Zero .                     |
| <b>Flammability</b>                                 | The product is not flammable.                                             |

**10. Stability and reactivity**

|                                           |                                                                                                                                                                                                                                                |
|-------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Reactivity</b>                         | There are no known reactivity hazards associated with this product.                                                                                                                                                                            |
| <b>Stability</b>                          | Stable at normal ambient temperatures and when used as recommended.                                                                                                                                                                            |
| <b>Possibility of hazardous reactions</b> | Will not polymerize.                                                                                                                                                                                                                           |
| <b>Conditions to avoid</b>                | Avoid exposing aerosol containers to high temperatures or direct sunlight. Keep away from heat, sparks and open flame. Thermal decomposition or combustion products may include the following substances: Toxic and corrosive gases or vapors. |

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|                                         |                                                                                                                                                                                              |
|-----------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Materials to avoid</b>               | Alkali metals. Alkaline earth metals. Powdered metal.                                                                                                                                        |
| <b>Hazardous decomposition products</b> | Heating may generate the following products: Toxic and corrosive gases or vapors. Halogenated hydrocarbons. Hydrogen fluoride (HF). Carbon monoxide (CO). Carbon dioxide (CO <sub>2</sub> ). |

### 11. Toxicological information

#### Information on toxicological effects

|                             |                                                                                                                          |
|-----------------------------|--------------------------------------------------------------------------------------------------------------------------|
| <b>Other health effects</b> | There is no evidence that the product can cause cancer.                                                                  |
| <b>Inhalation</b>           | Vapors irritate the respiratory system. May cause coughing and difficulties in breathing.                                |
| <b>Ingestion</b>            | May cause stomach pain or vomiting. May cause nausea, headache, dizziness and intoxication.                              |
| <b>Skin Contact</b>         | Product has a defatting effect on skin. May cause allergic contact eczema. Contact with liquid form may cause frostbite. |
| <b>Eye contact</b>          | May cause temporary eye irritation.                                                                                      |

#### Toxicological information on ingredients.

##### HFC-134a Tetrafluoroethane

|                                                               |                                                                                             |
|---------------------------------------------------------------|---------------------------------------------------------------------------------------------|
| <b>Other health effects</b>                                   | There is no evidence that the product can cause cancer.                                     |
| <b><u>Acute toxicity - inhalation</u></b>                     |                                                                                             |
| <b>Acute toxicity inhalation (LC<sub>50</sub> gases ppmV)</b> | 567,000.0                                                                                   |
| <b>Species</b>                                                | Rat                                                                                         |
| <b>ATE inhalation (gases ppm)</b>                             | 567,000.0                                                                                   |
| <b>Inhalation</b>                                             | Vapors irritate the respiratory system. May cause coughing and difficulties in breathing.   |
| <b>Ingestion</b>                                              | May cause stomach pain or vomiting. May cause nausea, headache, dizziness and intoxication. |
| <b>Skin Contact</b>                                           | May cause allergic contact eczema. Contact with liquid form may cause frostbite.            |
| <b>Eye contact</b>                                            | May cause temporary eye irritation.                                                         |

### 12. Ecological information

|                    |                                                       |
|--------------------|-------------------------------------------------------|
| <b>Ecotoxicity</b> | There are no data on the ecotoxicity of this product. |
| <b>Toxicity</b>    | Not considered toxic to fish.                         |

#### Ecological information on ingredients.

##### HFC-134a Tetrafluoroethane

|                                      |                                             |
|--------------------------------------|---------------------------------------------|
| <b><u>Acute aquatic toxicity</u></b> |                                             |
| <b>Acute toxicity - fish</b>         | LC <sub>50</sub> , 96 hours: 450 mg/l, Fish |

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**Acute toxicity - aquatic invertebrates**      EC<sub>50</sub>, 48 hours: 980 mg/l, Daphnia magna

### Persistence and degradability

**Persistence and degradability**    There are no data on the degradability of this product.

### Bioaccumulative potential

**Bio-Accumulative Potential**      No data available on bioaccumulation.

**Partition coefficient**              No information available.

### Ecological information on ingredients.

#### HFC-134a Tetrafluoroethane

**Partition coefficient**              Pow: 1.06

### Mobility in soil

**Mobility**                              Not applicable.

### Other adverse effects

**Other adverse effects**              The product contains a substance or substances that will contribute to global warming (greenhouse effect).

## 13. Disposal considerations

### Waste treatment methods

**General information**              Waste should be treated as controlled waste.

**Disposal methods**                  Dispose of waste to licensed waste disposal site in accordance with the requirements of the local Waste Disposal Authority.

## 14. Transport information

### UN Number

**UN No. (IMDG)**                      1950

**UN No. (ICAO)**                      1950

### UN proper shipping name

**Proper shipping name (TDG)**    LIMITED QUANTITY

**Proper shipping name (IMDG)**   UN1950 AEROSOLS, NON-FLAMMABLE, 2.2, LIMITED QUANTITY

**Proper shipping name (ICAO)**   UN1950 AEROSOLS, NON-FLAMMABLE, 2.2, LIMITED QUANTITY

**Proper shipping name (DOT)**    LIMITED QUANTITY

### Transport hazard class(es)

**IMDG Class**                           2.2 LIMITED QUANTITY

**ICAO class/division**               2.2 LIMITED QUANTITY

### Packing group

**Packing group (International)**   Not applicable.

**ICAO packing group**               Not Applicable

### Environmental hazards

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### Environmentally Hazardous Substance

No.

Transport in bulk according to Not applicable.

Annex II of MARPOL 73/78

and the IBC Code

### 15. Regulatory information

#### Guidance

Workplace Exposure Limits EH40.

Introduction to Local Exhaust Ventilation HS(G)37.

#### US Federal Regulations

##### SARA Section 302 Extremely Hazardous Substances Tier II Threshold Planning Quantities

Not listed.

##### CERCLA/Superfund, Hazardous Substances/Reportable Quantities (EPA)

Not listed.

##### SARA Extremely Hazardous Substances EPCRA Reportable Quantities

Not listed.

##### SARA 313 Emission Reporting

Not listed.

##### CAA Accidental Release Prevention

Not listed.

##### SARA (311/312) Hazard Categories

Pressure

#### US State Regulations

##### California Proposition 65 Carcinogens and Reproductive Toxins

Not listed.

##### California Air Toxics "Hot Spots" (A-I)

Not listed.

##### California Air Toxics "Hot Spots" (A-II)

Not listed.

##### Massachusetts "Right To Know" List

Not listed.

##### Rhode Island "Right To Know" List

Not listed.

##### New Jersey "Right To Know" List

Not listed.

##### Pennsylvania "Right To Know" List

Not listed.

#### Inventories

##### Canada - DSL/NDSL

DSL

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Yes

**US - TSCA 12(b) Export Notification**

Not listed.

**Australia - AICS**

Not listed.

**Korea - KECI**

Not listed.

**China - IECSC**

None of the ingredients are listed.

**Philippines - PICCS**

Not listed.

**New Zealand - NZIOC**

Not listed.

**Taiwan - NECI**

Not listed.

**16. Other information**

|                                  |                                                                                        |
|----------------------------------|----------------------------------------------------------------------------------------|
| <b>Revision comments</b>         | NOTE: Lines within the margin indicate significant changes from the previous revision. |
| <b>Revision date</b>             | 10/19/2018                                                                             |
| <b>Revision</b>                  | 48                                                                                     |
| <b>Supersedes date</b>           | 10/11/2018                                                                             |
| <b>SDS No.</b>                   | AEROSOL - FRZ                                                                          |
| <b>SDS status</b>                | Approved.                                                                              |
| <b>Hazard statements in full</b> | H280 Contains gas under pressure; may explode if heated.                               |

This information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process. Such information is, to the best of the company's knowledge and belief, accurate and reliable as of the date indicated. However, no warranty, guarantee or representation is made to its accuracy, reliability or completeness. It is the user's responsibility to satisfy himself as to the suitability of such information for his own particular use.