

**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

HFC-134a Tetrafluoroethane

60-100%

CAS number: 811-97-2

Classification

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

FRZ - GENERAL PURPOSE CIRCUIT CHILLER, AEROSOL

General information	Contact with liquid form may cause frostbite. The severity of the symptoms described will vary dependent on the concentration and the length of exposure.
Inhalation	Vapors may cause headache, fatigue, dizziness and nausea.
Ingestion	Due to the physical nature of this material it is unlikely that swallowing will occur. Drowsiness, dizziness, disorientation, vertigo.
Skin contact	Contact with liquefied gas might cause frostbites, in some cases with tissue damage.
Eye contact	Visual disturbances, including blurred vision.

Indication of immediate medical attention and special treatment needed

Notes for the doctor	No specific recommendations. If in doubt, get medical attention promptly.
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5. Fire-fighting measures

Extinguishing media

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

Environmental precautions	Contain spillage with sand, earth or other suitable non-combustible material. Avoid release to the environment.
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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.
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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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FRZ - GENERAL PURPOSE CIRCUIT CHILLER, AEROSOL

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/m³

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

Appearance	Liquid. Gas Aerosol.
Color	Colorless.
Odor	Slight. Ether.
Odor threshold	No information available.
pH	No information available.
Melting point	No information available.

FRZ - GENERAL PURPOSE CIRCUIT CHILLER, AEROSOL

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

10. Stability and reactivity

Reactivity	There are no known reactivity hazards associated with this product.
Stability	Stable at normal ambient temperatures and when used as recommended.
Possibility of hazardous reactions	Will not polymerize.
Conditions to avoid	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.

FRZ - GENERAL PURPOSE CIRCUIT CHILLER, AEROSOL

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

11. Toxicological information

Information on toxicological effects

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

Toxicological information on ingredients.

HFC-134a Tetrafluoroethane

Other health effects	There is no evidence that the product can cause cancer.
<u>Acute toxicity - inhalation</u>	
Acute toxicity inhalation (LC₅₀ gases ppmV)	567,000.0
Species	Rat
ATE inhalation (gases ppm)	567,000.0
Inhalation	Vapors irritate the respiratory system. May cause coughing and difficulties in breathing.
Ingestion	May cause stomach pain or vomiting. May cause nausea, headache, dizziness and intoxication.
Skin Contact	May cause allergic contact eczema. Contact with liquid form may cause frostbite.
Eye contact	May cause temporary eye irritation.

12. Ecological information

Ecotoxicity	There are no data on the ecotoxicity of this product.
Toxicity	Not considered toxic to fish.
<u>Ecological information on ingredients.</u>	

HFC-134a Tetrafluoroethane

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

FRZ - GENERAL PURPOSE CIRCUIT CHILLER, AEROSOL

Acute toxicity - aquatic invertebrates EC₅₀, 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

FRZ - GENERAL PURPOSE CIRCUIT CHILLER, AEROSOL

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/NDL

DSL

FRZ - GENERAL PURPOSE CIRCUIT CHILLER, AEROSOL**US - TSCA**

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

Revision comments	NOTE: Lines within the margin indicate significant changes from the previous revision.
Revision date	10/19/2018
Revision	48
Supersedes date	10/11/2018
SDS No.	AEROSOL - FRZ
SDS status	Approved.
Hazard statements in full	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.