

3100 N.W. 36th Street
Miami, FL, 33142
(833) 423-0432
www.gcelectronics.com

SAFETY DATA SHEET

Complies with OSHA Hazard Communication Standard 29 CFR 1910.1200

Product Name: GC FREEZE MIST

SECTION 1- PRODUCT AND COMPANY IDENTIFICATION

Product Type: Freeze Mist
Product Name: **GC FREEZE MIST**
Part Number(s): **19-8410-HFO**
Emergency Contact: **Chemtrec**
Phone: **(800) 424-9300**

COMMON NAME (used on label)(Trade Name & Synonyms): **GC FREEZE MIST**

Synonyms: trans-1,3,3,3-Tetrafluoroprop-1-ene

Recommended use of the chemical and restriction on use

Use of Substance/Mixture: Electronic component freeze spray

SECTION 2- HAZARDS IDENTIFICATION

Classification of the substance or mixture

Gases Under Pressure -Liquefied Gas, H280

GHS label elements

Warning



Contains gas under pressure; may explode if heated

Protect from sunlight. Store in a well-ventilated place.

Other hazards which do not result in classification

Rapid evaporation of the liquid may cause frostbite. Vapors are heavier than air and can cause suffocation by reducing available oxygen. May cause cardiac arrhythmia. Misuse or intentional inhalation can be fatal as a result of effects on the heart, without alarming symptoms.

Note: This product is a consumer product and is labeled in accordance with the US Consumer Product Safety Commission regulations which take precedence over OSHA Hazard Communication labeling. The actual container label will not include the label elements above. The labeling above applies to industrial/professional products.

SECTION 3- COMPOSITION / INFORMATION ON INGREDIENTS

Description	CAS Number	EINECS Number	%	Note
trans-1,3,3,3-Tetrafluoroprop-1-ene (Active ingredient)	29118-24-9		100	

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SECTION 4- FIRST AID MEASURES

Description of necessary first-aid measures

Eye Contact: For liquid contact, irrigate with running water for minimum of 15 minutes. Seek medical attention.

Skin Contact: For liquid contact, warm areas gradually and get medical attention if there is evidence of frost bite or tissue damage. Flush area with lukewarm water. Do not rub affected area. If blistering occurs, apply a sterile dressing. Seek medical attention.

Inhalation: Remove to fresh air. Artificial respiration and/or oxygen may be necessary. Consult a physician.

Ingestion: This material is a gas under normal atmospheric conditions and ingestion is unlikely.

Most important symptoms/effects, acute and delayed

Acute: Anesthetic effects at high concentrations.

Delayed: None known or anticipated. See Section 11 for information on effects from chronic exposure, if any.

Indication of immediate medical attention and special treatment needed, if necessary

Notes to Physician: Epinephrine and other sympathomimetic drugs may initiate cardiac arrhythmias in persons exposed to high concentrations (e.g., in enclosed spaces or with deliberate abuse). The use of other drugs with less arrhythmogenic potential should be considered. If sympathomimetic drugs are administered, observe for the development of cardiac arrhythmias.

SECTION 5- FIRE FIGHTING MEASURES

Suitable extinguishing media

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. Water Mist, Dry Powder, Foam, Carbon Dioxide.

Specific hazards arising from the chemical

Unusual Fire and Explosion Hazards: If container is not properly cooled, it can rupture in the heat of a fire. Drains can be plugged and valves made inoperable by the formation of ice if rapid evaporation of large quantities of the liquefied gas occurs.

Hazardous Combustion Products: Hazardous decomposition products may include: Hydrogen Fluoride, Carbonyl fluoride. Carbon Oxides.

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SECTION 5- FIRE FIGHTING MEASURES (CONTINUED)

Special protective actions for fire-fighters

Self-contained breathing apparatus (SCBA) is required if containers rupture and contents are released under fire conditions. Cool containers/ tanks with water spray. Product is not combustible under normal conditions. However, this material can ignite when mixed with air under pressure and exposed to strong ignition sources. Do not allow run-off from fire fighting to enter drains or water courses. Vapors are heavier than air and can cause suffocation by reducing oxygen available for breathing. Some risk may be expected of corrosive and toxic decomposition products. Fire may cause evolution of: Hydrogen fluoride

SECTION 6- ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Evacuate personnel, thoroughly ventilate area, use self-contained breathing apparatus. Keep upwind of leak -evacuate until gas has dispersed.

Environmental precautions

Stop spill/release if it can be done safely. Water spray may be useful in minimizing or dispersing vapors. If spill occurs on water notify appropriate authorities and advise shipping of any hazard.

Methods and materials for containment and cleaning up

Ventilate area using forced ventilation, especially low or enclosed places where heavy vapors might collect. Notify relevant authorities in accordance with all applicable regulations. Recommended measures are based on the most likely spillage scenarios for this material; however local conditions and regulations may influence or limit the choice of appropriate actions to be taken.

NOTE: Review FIRE FIGHTING MEASURES and HANDLING (PERSONNEL) sections before proceeding with cleanup. Use appropriate PERSONAL PROTECTIVE EQUIPMENT during clean-up.

SECTION 7- HANDLING AND STORAGE

Precautions for safe handling

Comply with state and local regulations. Avoid contact with skin, eyes and clothing. Avoid breathing vapors. Wash hands thoroughly after handling. Wash clothing after use. Decomposition will occur when product comes in contact with open flame or electrical heating elements. Use good personal hygiene practices and wear appropriate personal protective equipment (see section 8).

Contents are under pressure. Gases can accumulate in confined spaces and limit oxygen available for breathing. Use only with adequate ventilation. Do not enter confined spaces such as tanks or pits without following proper entry procedures such as ASTM D-4276 and 29CFR 1910.146.

Conditions for safe storage, including any incompatibilities

Keep container(s) tightly closed and properly labeled. Use and store this material in cool, dry, well ventilated areas away from heat, direct sunlight. Store only in approved containers. Protect container(s) against physical damage. "Empty" containers retain residue and may be dangerous.

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SECTION 8- EXPOSURE CONTROLS / PERSONAL PROTECTION

Control parameters

Component	ACIGH TLV (TWA)	ACIGH TLV (STEL)	OSHA PEL (TWA)	OTHER PEL
trans-1,3,3,3-Tetrafluoroprop-1-ene				800 ppm Honeywell AEL

Appropriate engineering controls

Use only with adequate ventilation. Keep container tightly closed.

Individual protection measures

Eye/Face Protection:

The use of eye protection (such as splash goggles) that meets or exceeds ANSI Z.87.1 is recommended when there is potential liquid contact to the eye. Depending on conditions of use, a face shield may be necessary.

Respiratory Protection:

Wear NIOSH approved respiratory protection as appropriate.

Suggestions provided in this section for exposure control and specific types of protective equipment are based on readily available information. Users should consult with the specific manufacturer to confirm the performance of their protective equipment. Specific situations may require consultation with industrial hygiene, safety, or engineering professionals.

SECTION 9- PHYSICAL AND CHEMICAL PROPERTIES

Physical and chemical properties

Appearance & Odor:	Clear, colorless liquefied gas with a slight ethereal odor.
Odor Threshold:	No Data
pH:	Not Applicable
Melting/ Freezing Point:	No Data
Flash Point (Method) :	None per ASTM E681
Lower Explosion Limit:	None < 28°C
Vapor Pressure @ 70 °F:	49 PSIG
Specific Gravity (H2O = 1.00):	1.19
Percent Volatile by Volume:	100%
Initial Boiling Point/ Range:	-19 °C
Evaporation Rate:	> 1 (Ethyl Ether= 1.0)
Upper Explosion Limit:	None < 28°C
Vapor Density (air= 1.00):	3.9
Solubility in Water @ 70 °F:	0.0373%
Auto-ignition temperature:	368 °C
Decomposition Data:	No Data
Viscosity:	No Data

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SECTION 10- STABILITY AND REACTIVITY DATA

Chemical stability

Stable at normal temperatures and conditions

Possibility of hazardous reactions

Does not occur

Conditions to avoid

When pressurized with air or oxygen, the mixture may become flammable. Certain mixtures of HCFCs or HFCs with chlorine may become flammable or reactive under certain conditions. To avoid thermal decomposition, do not overheat.

Incompatible materials

Alkali or Alkaline Earth Metals. Powdered Metal. Powdered Metal Salts.

Hazardous decomposition products

Carbon oxides, Hydrogen fluoride, Carbonyl fluoride, Fluorocarbons.

SECTION 11- TOXICOLOGICAL INFORMATION

Toxicological (health) effects

Effects of Over Exposure

Ingestion:

Aspiration hazard!

Inhalation:

Inhalation of vapor may produce anesthetic effects and feeling of euphoria. Prolonged overexposure can cause rapid breathing, headache, dizziness, narcosis, unconsciousness, and death from asphyxiation, depending on concentration and time of exposure.

Skin Contact:

Contact with evaporating liquid can cause frostbite.

Eye Contact:

Liquid can cause severe irritation, redness, tearing, blurred vision, and possible freeze burns.

Specific Target Organ Toxicity

(Single Exposure):

Not expected to cause organ effects from single exposure.

Specific Target Organ Toxicity

(Repeated Exposure):

Not expected to cause organ effects from repeated exposure.

Carcinogenicity:

Not expected to cause cancer. This substance is not listed as a carcinogen by IARC, NTP or OSHA.

Germ Cell Mutagenicity:

Not expected to cause heritable genetic effects.

Reproductive Toxicity:

Not expected to cause reproductive toxicity.

Other Comments:

High concentrations may reduce the amount of oxygen available for breathing, especially in confined spaces. Hypoxia (inadequate oxygen) during pregnancy may have adverse effects on the developing fetus.

Information on Toxicological Effects of Components

trans-1,3,3,3-Tetrafluoropro-1-ene

Acute inhalation toxicity:

Species: mouse

Note: Acute (4-Hour) Inhalation Toxicity Screening Study (mouse): No lethality at >100,000 ppm.

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SECTION 11- TOXICOLOGICAL INFORMATION (CONTINUED)

	LC50: > 207000 ppm
	Exposure time: 4 h
Skin irritation:	Species: rat
	Species: rabbit
	Result: No skin irritation
	Method: OECD Test Guideline 404
Sensitisation:	Cardiac sensitization
	Species: dogs
	Result: Did not cause sensitisation on laboratory animals.
Repeated dose toxicity:	Species: rat
	Application Route: Inhalation
	Exposure time: 13 Weeks
	Note: Causes mild effects on the heart. NOEL 5,000 ppm
Genotoxicity in vitro:	Test Method: Chromosome aberration test in vitro
	Cell type: Human lymphocytes
	Result: negative
	Test Method: Ames test
	Result: negative
Genotoxicity in vivo:	Test Method: Mutagenicity (in vivo mammalian bone-marrow cytogenetic test, chromosomal analysis)
	Species: mouse
	Cell type: Micronucleus
	Application Route: Inhalation
	Result: negative
Teratogenicity:	Species: rabbit
	Method: Prenatal Developmental Inhalation Toxicity Study
	Note: Did not show teratogenic effects in animal experiments.
	Species: rat
	Method: Prenatal Developmental Inhalation Toxicity Study
	Note: Did not show teratogenic effects in animal experiments.
Further information:	Note: Excessive exposure may cause central nervous system effects including drowsiness and dizziness. Excessive exposure may also cause cardiac arrhythmia. Rapid evaporation of the liquid may cause frostbite.
Other adverse effects	
None anticipated	
trans-1,3,3,3-Tetrafluoropro-1-ene:	GWP 6

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SECTION 12- ECOLOGICAL INFORMATION

Toxicity

Ecotoxicity effects

Toxicity to fish: NOEC: > 117 mg/l
Exposure time: 96 h
Species: Cyprinus carpio (Carp)

Toxicity to daphnia and other aquatic invertebrates: ECSO: > 160 mg/l
Exposure time: 48 h
Species: Daphnia magna (Water flea)

Toxicity to algae: Growth inhibition
NOEC: > 170 mg/l
Exposure time: 72 h
Species: Algae

Persistence and degradability

Aerobic Result: Not readily biodegradable. Further information on ecology

Additional ecological Information: no data available

Bioaccumulative potential

Not expected as having the potential to bioaccumulate.

Mobility in soil

Due to the extreme volatility of liquefied gases, air is the only environmental compartment in which they will be found.

SECTION 13- DISPOSAL CONSIDERATIONS

Disposal methods

Waste Disposal

Reclaim by distillation, incinerate, or remove to a permitted waste facility.

Environmental Hazards

Empty pressure vessels should be returned to the supplier.

**Comply With All State and Local Regulations **

SECTION 14- TRANSPORT INFORMATION

UN Number

UN3163

UN Proper Shipping Name

Liquefied Gas, N.O.S., 2.2

(trans-1,3,3,3-Tetrafluoroprop-1-ene)

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SECTION 14- TRANSPORT INFORMATION (CONTINUED)

Transport hazard class(es)

2.2

Packaging Exceptions: DOT-SP 11516: In accordance with this special permit, this product is not subject to labeling requirements unless offered for transportation by air. This product is not subject to placarding requirements. Outside packaging must be marked with proper shipping description and 'DOT-SP 11516'

SECTION 15- REGULATORY INFORMATION

Safety, health and environmental regulations specific for the product in question

Regulatory Information

Chemical Inventories

USA TSCA: All components of this product are listed on the TSCA Inventory.

SARA Title III: CERCLA/SARA (Section 302) Extremely Hazardous Substances and TPQs (in pounds): This material does not contain any chemicals subject to the reporting requirements of SARA 302 and 40 CFR 372.

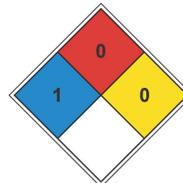
SARA (311, 312) Hazard Class: Acute Health: Yes
 Chronic Health: No
 Fire Hazard: No
 Pressure Hazard: Yes

SARA (313) Chemicals: Not listed

California Proposition 65: This material does not contain any chemicals which are known to the State of California to cause cancer, birth defects or other reproductive harm at concentrations that trigger the warning requirements of California Proposition 65. trans-1,3,3,3-Tetrafluoroprop-1-ene is excluded from the regulatory definition of volatile organic compounds or VOC.

Other Information:

HEALTH	1
FLAMMABILITY	0
PHYSICAL HAZARD	0
PERSONAL PROTECTION	



SECTION 16- OTHER INFORMATION

GC Electronics believes that the information contained herein is accurate and reliable as of the date of this material safety data sheet, but no representation guarantee or warranty, express or implied, is made as to the accuracy, reliability or completeness of the information. Persons receiving information are encouraged to make their own determination as to the information's suitability and completeness for their particular application. NO INFORMATION CONTAINED HEREIN CONSTITUTES A PRODUCT WARRANTY OF ANY KIND, WHETHER EXPRESS OR IMPLIED; AND ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND OF FITNESS FOR A PARTICULAR PURPOSE ARE HEREBY DISCLAIMED BY GC ELECTRONICS.