

FC13-578E

1,2-(1,1,2,2-Tetrafluoroethoxy)ethane

Revised 12-November-2016

 1. PRODUCT AND COMPANY IDENTIFICATION

Material Identification

Product number: FC13-578E
 Chemical name: 1,2-(1,1,2,2-Tetrafluoroethoxy)ethane
 Synonym: HFE-578E

Company Identification

Distributor: **Fluoryx Labs**
 3650 Research Way, #22
 Carson City, NV 89706
 USA


Emergency call: +01-813-248-0585 (International)
 +1-800-255-3924 (USA)

 2. HAZARDS IDENTIFICATION

Emergency Overview:

OSHA Hazards Combustible Liquid, Irritant
 GHS Classification Flammable liquids (Category 4)
 Skin irritation (Category 2)
 Eye irritation (Category 2A)
 Specific target organ toxicity - single exposure
 (Category 3)

GHS Label elements, including precautionary statements

Pictogram	
Signal word	Warning
Hazard statement(s)	H227 Combustible liquid H315 Causes skin irritation. H319 Causes serious eye irritation. H335 May cause respiratory irritation.
Precautionary statement(s)	P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking. P261 Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray. P264 Wash skin thoroughly after handling. P271 Use only outdoors or in a well-ventilated area. P280 Wear protective gloves/ protective clothing/

eye protection/ face protection.
 P302 + P352 IF ON SKIN: Wash with plenty of soap and water.
 P304 + P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
 P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
 P312 Call a POISON CENTER or doctor/ physician if you feel unwell.
 P321 Specific treatment (see supplemental first aid instructions on this label).
 P332 + P313 If skin irritation occurs: Get medical advice/ attention.
 P337 + P313 If eye irritation persists: Get medical advice/ attention.
 P362 Take off contaminated clothing and wash before reuse.
 P370 + P378 In case of fire: Use dry sand, dry chemical or alcohol-resistant foam for extinction.
 P403 + P233 Store in a well-ventilated place. Keep container tightly closed.
 P403 + P235 Store in a well-ventilated place. Keep cool.
 P405 Store locked up.
 P501 Dispose of contents/ container to an approved waste disposal plant.

Potential Health Effects

Inhalation

May be harmful if inhaled. Causes respiratory tract irritation.

Skin

May be harmful if absorbed through skin. Causes skin irritation.

Eyes

Causes eye irritation.

Ingestion

May be harmful if swallowed.

3. COMPOSITION AND INFORMATION ON COMPONENTS

Chemical Formula:

HCF₂CF₂OCH₂CH₂OCF₂CF₂H
 C₆H₆F₈O₂

Molecular Weight

262.10 g/mol

Material	TSCA Listed	CAS #	EINECS #
1,2-(1,1,2,2-Tetrafluoroethoxy)ethane	No	358-39-4	None

4. FIRST AID MEASURES

General Advice

Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

If Inhaled

If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

In Case of Skin Contact

Wash off with soap and plenty of water.

In Case of Eye Contact

Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

If Swallowed

Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

5. FIRE FIGHTING MEASURES

Flash Point:	66 °C (closed cup)
Extinguishing Media:	For small (incipient) fires, use media such as "alcohol" foam, dry chemical, or carbon dioxide. For large fires, apply water from as far as possible. Use very large quantities (flooding) of water applied as a mist or spray; solid streams of water may be ineffective. Cool all affected containers with flooding quantities of water.
Special protective equipment for firefighters:	Wear self-contained breathing apparatus and protective clothing.
Hazardous Combustion Products:	Carbon dioxide, carbon monoxide, hydrogen fluoride, toxic gases or particles may be formed during combustion. These products may cause severe eye, nose, throat, and lung irritation or toxic effects.
Fire Fighting Instructions:	Evacuate personnel to a safe area. Wear self-contained breathing apparatus. Avoid breathing decomposition products.
Further Information:	Use water spray to cool unopened containers.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions	Use personal protective equipment. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapors accumulating to form explosive concentrations. Vapors can accumulate in low areas.
Environmental precautions	Prevent further leakage or spillage if safe to do so. Do not let product enter drains.
Methods and materials for containment and cleaning up	Contain spillage, and then collect with an electrically protected vacuum cleaner or by wet-brushing and place in container for disposal according to local regulations (see section 13). Keep in suitable, closed containers for disposal.

7. HANDLING AND STORAGE

Precautions for safe handling	Avoid contact with skin and eyes. Avoid inhalation of vapor or mist. Keep away from sources of ignition - No smoking. Take measures to prevent the build up of electrostatic charge.
Conditions for safe storage	Keep container tightly closed in a dry and well-ventilated place.

8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

Contains no substances with occupational exposure limit values.

Personal protective equipment

Respiratory protection

Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Hand protection

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Eye protection

Safety glasses with side-shields conforming to EN166 Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin and body protection

Impervious clothing, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Hygiene measures

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

9. PHYSICAL AND CHEMICAL PROPERTIES

Form	Clear liquid
Color	None
Melting Point	Not determined
Boiling Point	142 °C @ 760 mm Hg
Decomposition Temperature	Not determined
Flash Point	66 °C (closed cup)
Explosive Properties	Not determined
Vapor Pressure	Not determined
Oxidizing Properties	Not applicable.
Density	1.480 g/m @ 25 °C
Refractive Index	1.305 @ 25 °C
Solubility	Not determined. Fat: No data.
Ozone Depletion Potential	Not determined
Vapor Density (Air = 1)	> 1
Viscosity	Not determined

10. STABILITY AND REACTIVITY

Chemical Stability:

Stable at normal temperatures and storage conditions.

Possibility of Hazardous Reactions:	No data available
Conditions to Avoid:	Heat, flames and sparks, extremes of temperature and direct sunlight.
Materials to Avoid:	Strong oxidizing agents. Strong acids.
Hazardous Decomposition Products:	May evolve carbon dioxide, carbon monoxide, and hydrogen fluoride and fluorophosgene.
Hazardous Polymerization:	Will not occur.
Other Information:	The vapor is heavier than air and disperses at ground level and displaces oxygen.

11. TOXICOLOGICAL INFORMATION

Acute toxicity	
Oral LD50	No data available
Inhalation LC50	No data available
Dermal LD50	No data available
Other information on acute toxicity	No data available
Skin corrosion/irritation	No data available
Serious eye damage/eye irritation	No data available
Respiratory or skin sensitization	No data available
Germ cell mutagenicity	No data available
Carcinogenicity	
IARC:	No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
ACGIH:	No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.
NTP:	No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
OSHA:	No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.
Reproductive toxicity	no data available
Teratogenicity	no data available
Specific target organ toxicity - single exposure (Globally Harmonized System)	Inhalation - May cause respiratory irritation.
Specific target organ toxicity - repeated exposure (Globally Harmonized System)	No data available
Aspiration hazard	No data available
Potential health effects	
Inhalation	May be harmful if inhaled. Causes respiratory tract irritation.
Ingestion	May be harmful if swallowed.
Skin	May be harmful if absorbed through skin. Causes skin irritation.

Eyes	Causes eye irritation.
Signs and Symptoms of Exposure	To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.
Synergistic effects	No data available
Additional Information RTECS	Not available

12. ECOLOGICAL INFORMATION

Toxicity	No data available
Persistence and Degradability	No data available
Bioaccumulative Potential	No data available
Mobility in Soil	No data available
PBT and vPvB Assessment	No data available
Other Adverse Effects	No data available

13. DISPOSAL CONSIDERATIONS

Product	This combustible material may be burned in a chemical incinerator equipped with an afterburner and scrubber. Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material.
Contaminated Packaging	Dispose of as unused product.

14. TRANSPORT INFORMATION

DOT (US)	NA-Number: 1993 Class: CBL Packing group: III Proper shipping name: Combustible liquid, n.o.s. (1,2-(1,1,2,2-Tetrafluoroethoxy)ethane) Marine Pollutant: No Poison Inhalation Hazard: No
IMDG	Not dangerous goods
IATA	Not dangerous goods

15. REGULATORY INFORMATION

OSHA Hazards	Combustible Liquid, Irritant
SARA 302 Components	No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.
SARA 313 Components	This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

SARA 311/312 Hazards	Fire Hazard, Acute Health Hazard
Massachusetts Right To Know Components	No components are subject to the Massachusetts Right to Know Act.
Pennsylvania Right To Know Components	No components are subject to the Pennsylvania Right to Know Act.
New Jersey Right To Know Components	No components are subject to the New Jersey Right to Know Act.
California Prop. 65 Components	This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.
National Regulations (US) TSCA Inventory 8(b):	No.

16. OTHER INFORMATION

HMIS Classification

Health hazard :	2
Flammability :	2
Physical hazards :	0

NFPA Rating

Health hazard :	2
Fire :	2
Reactivity Hazard :	0

Legal Disclaimer:

For R&D use only. Not for drug, household, or other uses. The previous information is based upon our current knowledge and experience of our product and is not exhaustive. It applies to the product as defined by the specifications. In case of combinations or mixtures, one must confirm that no new hazards are likely to exist. In any case, the user is not exempt from observing all legal, administrative and regulatory procedures relating to the product, personal hygiene, and integrity of the work environment. Unless noted to the contrary, the technical information applies only to pure product.

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End of MSDS