



HMIS CODE	
Health	1
Flammability	0
Reactivity	0
Personal Protection	x

MATERIAL SAFETY DATA SHEET

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Name : HFC-227ea Fire Extinguishing Agent

Intended Use : Streaming and Flooding Fire Protection

Manufacturer/Supplier Name and Address

Company's Name : LUKE ALEXANDER LLC

Address : 5 Centerpointe Dr. Suite 400
Portland, OR 97035, USA

Date of Issue : May 5, 2015

Information Contact : 1-503-204-0371

Emergency Contact : 1-800-424-9300 (CHEMTREC within USA and Canada)
1-703-527-3887 (CHEMTREC outside USA and Canada)

2. COMPOSITION / INFORMATION ON INGREDIENTS

Chemical Name	CAS #	% w/w
1,1,1,2,3,3,3-Heptafluoropropane	431-89-0	≥ 99.96%

3. HAZARDS IDENTIFICATION

3.1 EMERGENCY OVERVIEW

Physical Form : Liquified Gas
Odor : Odorless
Color : Colorless



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3.2 POTENTIAL HEALTH EFFECT

Acute Exposure

- Eye Contact : Contact with the eyes directly may result in cold burns or frostbite
- Skin Contact : Contact with the skin directly may result in cold burns or frostbite
- Inhalation : Prolonged or repeated exposure, above recommended guidelines, may be absorbed following inhalation and cause target organ effects
- Ingestion : No health effects are expected

Chronic Exposure : While chronic health effects are unknown, person with cardiac, respiratory or central nervous system disorder may be susceptible to the effects of an over exposure. The use of epinephrine or sympathomimetic drugs may increase susceptibility to cardiac irregularities upon exposure.

Carcinogenicity : None of the components present in this material at concentrations equal to or greater than 0.1% are listed by IARC, NTP or OSHA as carcinogen.

4. FIRST AID MEASURES

- Eye Contact : Flush eyes with plenty of water. If sign or symptom persists, get medical attention
- Skin Contact : Treat frostbite immediately by gently warming the affected area. If sign or symptom persists, get medical attention
- Inhalation : Move the person to get fresh air. If sign or symptom persists, get medical attention
- Ingestion : No information available

5. FIRE FIGHTING MEASURES

This is a product of fire extinguishing agent. Fire fighters should wear full protective equipment (Bunker Gear) and self-contained breathing apparatus (SCBA). See Section 10 (STABILITY AND REACTIVITY) for hazardous combustion and thermal decomposition information.



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6. ACCIDENTAL RELEASE MEASURES

6.1 PERSONAL PRECAUTIONS, PROTECTIVE EQUIPMENT AND EMERGENCY PROCEDURE

Ventilate the area with fresh air. For large spill, or spills in confined spaces, provide mechanical ventilation to disperse or exhaust vapors, in accordance with good industrial hygiene practice. Warning! A motor could be an ignition source and could cause flammable gases or vapors in the spill area to burn or explode.

6.2 ENVIRONMENTAL PRECAUTIONS

For larger spills, cover drains and build dikes to prevent entry into sewer systems or bodies of water. Place in a metal container approved for transportation by appropriate authorities. Dispose of collected material as soon as possible.

6.3 CLEAN-UP METHOD

Observe precautions from other sections. Contain spill. Working from around the edges of the spill inward, cover with bentonite, vermiculite, or commercially available inorganic absorbent material. Mix in sufficient absorbent until it appears dry. Collect as much of the spilled material as possible. Clean up residue. Seal the container.

In the event of a release of this material, the user should determine if the release qualifies as reportable according to local, state, and federal regulations.

7. HANDLING AND STORAGE

7.1 HANDLING

Avoid eye contact with vapors, mists, or spray. Avoid breathing of vapors, mists or spray. Contents may be under pressure, open carefully

7.2 STORAGE

Keep container in well-ventilated area. See incompatibility information in Heading 10 STABILITY AND REACTIVITY. Store in original container. Keep tightly closed until used. There is minimal danger to the environment from a storage release.



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8. EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 EXPOSURE LIMIT

Chemical Name	TWA Limit
1,1,1,2,3,3,3-Heptafluoropropane	1000 ppm

8.2 EXPOSURE CONTROL

8.2.1 Respiratory Protection

Avoid breathing of vapors, mists or spray

Under normal use conditions, airborne concentrations are not expected to be significant enough to require respiratory protection

If thermal decomposition occurs, wear supplied air respiratory protection (e.g. NIOSH approved respirators, OSHA regulations)

8.2.2 Skin Protection

Use gloves

8.2.3 Eye Protection

While the use of wear safety glass (google) is not mandatory, it is recommended to use it

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	: Clear, colorless liquefied gas
Odor	: Odorless
Molecular weight	: 170.03
Boiling point at 760 mm Hg	: 2.7°F (-16.3°C)
Freezing point	: -204°F (-131°C)
Flash point	: Not Applicable



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pH	: Not Applicable
Specific gravity (Water = 1)	: 1.46
Solubility in water at 68°F (20°C)	: 260 mg/L
Evaporation rate (Butyl Acetate = 1)	: No Information Available
Vapor density (Air = 1)	: 6.04
Viscosity	: No Information Available
Auto-ignition temperature	: Not Applicable

10. STABILITY AND REACTIVITY

Stability	: Stable
Conditions to avoid	: Avoid source of heat and open flame
Materials to avoid	: Alkali metals, Alkaline earth metals, powdered aluminum or zinc
Hazardous Polymerization	: Will NOT Occur
Hazardous Decomposition	: Thermal decomposition may produce hydrogen fluoride, carbon monoxide and carbon dioxide

11. TOXICOLOGICAL INFORMATION

Toxicological Data:

Inhalation 4 hours, LC50 > 788,698 ppm (rats)



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12. ECOLOGICAL INFORMATION

12.1 Ecotoxicity

Not determined

12.2 Degradability

Photolytic half-life is 34.2 years

12.1 Bioaccumulative potential

Not determined

12.2 Others

Ozone Depletion Potential : 0

Global Warming Potential : 3,220 for a 100-year time horizon

13. DISPOSAL CONSIDERATIONS

Incinerate in industrial or commercial facility. Facility must be capable of handling halogenated materials. As a disposal alternative, dispose of waste product in a facility permitted to accept chemical waste. Reclaim if feasible. For information of product return, contact your distributor.

It is strongly recommended to consult and follow the local applicable regulations/authorities for disposal

14. TRANSPORTATION INFORMATION

Hazard Class or Division : 2.2 Non-flammable gas

Label : No special label required

UN Number : UN3296



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15. REGULATORY INFORMATION

U.S. Federal Regulations

SARA Title III Hazard Classifications under Sections 313

16. OTHER INFORMATION

NFPA HAZARD CLASSIFICATION

Health : 1 Reactivity : 1
Flammability : 0 Special Hazard : None

National Fire Protection Association (NFPA) hazard ratings are designed for use by emergency response personnel to address the hazards that are presented by short-term, acute exposure to materials under conditions of fire, spill or similar emergencies. Hazard ratings are primarily based on the inherent physical and toxic properties of the material but also include the toxic properties of combustion or decomposition products that are known to be generated in significant quantities.

HMIS HAZARD CLASSIFICATION

Health : 1 Reactivity : 0
Flammability : 0 PPE : X (Section 8)

Hazardous Material Identification System (HMIS) hazard ratings are designed to inform employees of chemical hazard in the workplace. The provided ratings are based on the inherent properties of the material under expected conditions of normal use and are not intended for use in emergency situations. HMIS ratings are to be used with a fully implemented HMIS program.

NFPA/HMIS HAZARD DEFINITION

- 4 - Severe Hazard
- 3 - Serious Hazard
- 2 - Moderate Hazard
- 1 - Slight Hazard
- 0 - Minimal Hazard

The data in this Material Safety Data Sheet relates only to the specific material designated herein. It does not relate to use in combination with any other material or in any process.

To the best of our knowledge, the information contained herein is accurate. However, the above named manufacturer, supplier or any of its subsidiaries assumes any liability whatsoever for the accuracy or completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.