

# MATERIAL SAFETY DATA SHEET

## IDENTITY- RT-227

### SECTION I. Chemical Product and Company Identification

Product Name: RT-227 (registered trademark of RemTec International)  
Synonym: HFC-227ea, FM-200, Heptafluoropropane, Clean Gas  
Distributor: Buckeye Fire Equipment Company  
Manufacturer: RemTec International  
436 North Enterprise Drive  
Bowling Green, Ohio, 43402, USA  
Telephone: 419.867.8990  
Emergency: CHEMTREC 1.800.424.9300

Revision Date: 6/13

### SECTION II. Hazard Identification and Emergency Overview

*Emergency Overview:* Colorless highly volatile liquid with a slightly sweet, ether-like odor.

*Adverse Health Effects and Symptoms:* Based on animal data, exposure to RT-227 by inhalation may cause suffocation, if air is displaced by vapors, and irregular heart beat with sensation in the chest, "heart thumping", apprehension, lightheadedness, faint feeling, dizziness, and weakness, sometimes leading to lose of consciousness and death. In a study with human volunteers inhaling concentrations up to 8000 ppm, no clinically significant effects were observed for any of the measured laboratory parameters. Individuals with preexisting diseases of the cardiovascular system or nervous system may have increased susceptibility from excessive exposures.

Product may cause frostbite if liquid or escaping vapor contacts the skin or eyes.

Carcinogenic Information: None of the components present in this product at concentrations equal to or greater than 0.1% are listed by IARC, NTP, OSHA, or ACGIH as a carcinogen.

*Hazard Symbols:*

#### HMIS RATINGS:

Health 1  
Flammability 0  
Reactivity 0

Personal Protective Equipment: Appropriate respirator above exposure limits and eye protection.  
(See Section 8)

### SECTION III. Composition/Information on Ingredients

	<u>Weight %*</u>	<u>CAS #</u>
1,1,1,2,3,3,3-Heptafluoropropane	> 99	431-89-0

\* % is rounded to the nearest appropriate number. Values are not to be considered product specifications

### SECTION IV. First Aid Measures

*Inhalation:* If respiratory irritation or distress occurs, move victim to fresh air. Administer artificial respiration if breathing stops. Qualified personnel may administer oxygen. Seek medical attention if irritation develops or persists.

*Eye Exposure:* Irrigate eyes at eye wash station and repeat for 15 minutes or until pain free. Seek medical attention if irritation develops or persists, or if vision changes occur.

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*Skin Exposure:* If necessary, treat for frostbite by gently warming the affected area. Seek medical attention if irritation develops or persists.

*Ingestion:* Ingestion is not considered a potential route of exposure.

*Medical conditions possibly aggravated by exposure:* Inhalation of product may aggravate existing chronic respiratory problems such as asthma, emphysema, and bronchitis. Skin contact may aggravate existing skin diseases.

### SECTION V. Firefighting Measures

*Extinguishing Media:* N/A. This product is an extinguishing agent. At normal pressure and temperature this product is nonflammable and noncombustible.

*Unusual Fire and Explosion Hazards:* When heated by fire this product may decompose, releasing hydrogen fluoride or carbonyl fluoride.

*Sensitivity to Mechanical Impact or Static Discharge:* None

*Fire Fighting Instructions:* Self-contained breathing apparatus may be required if cylinders rupture or release under fire conditions. Keep cylinders cool with water spray applied from a safe distance.

### SECTION VI. Accidental Release Measures

Evacuate personnel and thoroughly ventilate the area. Use forced air ventilation to disperse vapors. Maintain evacuation until gas has dispersed. Use appropriate personal protective equipment for clean-up.

### SECTION VII. Handling and Storage

Avoid eye, respiratory, and skin exposure. Use the appropriate exposure controls (proper ventilation, etc.) when performing maintenance on extinguishers. Wash thoroughly after handling. Keep product in the original container or extinguisher. Containers are under pressure and present significant safety hazards. Periodically inspect the container for rust, damage, or any other condition that may compromise the container's integrity. Keep containers tightly closed. Store in a cool, dry place that is well-ventilated.

### SECTION VIII. Exposure Controls and Personal Protection

Use adequate ventilation to prevent unacceptable concentration levels.

*Respiratory Protection:* For extended periods of exposure at low concentrations, use an air-purifying respirator or powered air-purifying respirator with organic vapor cartridges or canisters. For high levels, use supplied air respirators or self-contained breathing apparatus.

*Eye Protection:* Wear chemical goggles whenever the potential for eye exposure exists.

*Skin Protection:* If product is expected to contact the skin, use neoprene, PVC, or PVA gloves and coveralls. Good personal hygiene practices are essential. Avoid food, tobacco products, or other hand-to-mouth contact after handling the product until thorough washing has been completed.

*Exposure Guidelines:* DuPont's Acceptable Exposure Level is 1000 ppm, 8 & 12 hour/TWA

### SECTION IX. Physical and Chemical Properties

*Appearance and Odor:* Colorless liquid with a slightly sweet, ether-like odor.

*Boiling Point:* -15.6° C (3.9° F)

*Melting Point:* -133° C (-207° F)

*Vapor Pressure:* 66.69 psia @ 25° C (77° F) (460.06 kPa)

*Liquid Density:* 1.386 g/cm<sup>3</sup> @ 25° C (77° F)

*Flash Point:* None

*Flammability:* nonflammable

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### SECTION X. Stability and Reactivity

*Stability:* Stable at normal temperatures and storage conditions.

*Incompatibles:* Strong reducing agents such as alkali metals (e.g., sodium & potassium), alkali earth-metals (e.g., magnesium & calcium), and powdered aluminum or zinc.

*Decomposition Products:* Heat of fire may release hydrofluoric acid, carbonyl fluorides, carbon monoxide, and carbon dioxide.

*Hazardous Polymerization:* Will not occur.

### SECTION XI. Toxicological Information

*Acute Toxicity:* LC<sub>50</sub> – Inhalation, 4 hour (rat): > 788,696 ppm (80%)  
Cardiac sensitization threshold (dog): NOAEL = 9.0%  
Lowest Observed Adverse Effect Level: 10.5%

*Reproductive Toxicity:* Tests have shown that this product does not cause genetic damage in bacterial and mammalian cell cultures. Tests in animals for carcinogenic or reproductive toxicity have not been conducted.

### SECTION XII. Considerations for Disposal

Treatment, storage, transportation, and disposal must be in accordance with applicable Federal, State, and Local regulations. Incinerate material in accordance with Federal, State, and Local regulations

### SECTION XIII. Transportation Information

Proper Shipping Name: Heptafluoropropane  
Hazard Class Number and Description: 2.2 (non-flammable gas)  
UN Number: UN3296  
DOT Label Required: Nonflammable Gas

### SECTION XIV. Regulatory Information

*U.S. Federal Regulatory Information:*

TSCA Inventory Status: Listed  
Title III Hazard Classification Sections 311, 312  
Acute: Yes  
Chronic: No  
Fire: No  
Reactivity: No  
Pressure: No

### SECTION XV. Other Information

*NFPA Rating:*

Health: 1  
Flammability: 0  
Reactivity: 1

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