

HFC-227ea CLEAN EXTINGUISHING AGENT

DESCRIPTION

NAFFCO HFC-227ea is included in the NFPA 2001 Standard on Clean Agent Fire Extinguishing Systems. At the concentrations of use NAFFCO HFC-227ea can be safely used to protect normally occupied areas. It is a clean agent and it does not leave residues after discharge and it is electrically non-conductive; it can be used to protect electronic and delicate equipment. NAFFCO HFC-227ea does not deplete the ozone layer and the Low Global Warming Potential makes it an overall environmentally acceptable product. NAFFCO HFC-227ea is US EPA Approved and UL Recognized.

FEATURES

- Colorless, odorless, liquefied compressed gas, stored as a liquid.
- Electrically-nonconductive.
- Discharge as gaseous vapor (due to its relatively low boiling point).
- Creates a homogeneous agent/air mix throughout the enclosure.
- Zero ozone depleting potential.
- Low global warming potential.
- Included on the U.S. EPA Significant New Alternative Policy (SNAP) rules.

PHYSICAL PROPERTIES

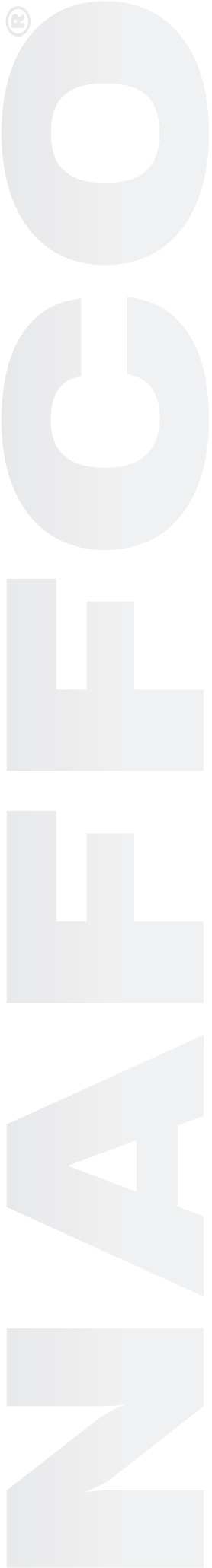
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|---|--|
| Chemical Name | Heptafluoropropane (CF ₃ CHFCF ₃) |
| Molecular Weight | 170.03 |
| Boiling Point @ 760 mm Hg (@14.7 psia) | 3°F |
| Critical Temperature | 214°F |
| Critical Pressure | 422 psi |
| Critical Density | 38.76 |
| Vapour Pressure @ 20°C (68°F) | 66.28 psia |
| Freezing Point | -204 °F |
| Viscosity of Liquid @ 25°C, (77°F) | 0.433 lb/ft/hr |
| Solubility of Water in Agent @ 21°C, (71°F) % by weight (ppm) | 0.06 |
| Specific Heat of Liquid @ 25°C, (77°F) kJ/kg°C | 0.282 Btu/lb°F |
| Specific Heat, Vapor @ constant pressure of 1 ATM @ 77°F (25°C) | 0.1932 Btu/lb°F |
| Thermal Conductivity of Liquid @ 77°F (25°C) | 0.040 BTU/h ft°F |
| Heat of Vaporization @ Boiling Point at 25°C, (77°F) kJ/kg | 56.7 Btu/lb |
| Ozone Depletion Potential | 0 |
| Estimated Atmospheric Lifetime (years) | 31-41 |
| LC50 (Rats; 4hrs - ppm) | >788,000 |

DESIGN CONCENTRATIONS

NAFFCO HFC-227ea can be used to extinguishing Class A fuels (surface fires of ordinary combustible materials), Class B fuels (flammable liquids and gases)

and Class C fuels (fire involving energized equipment) occurring within a confined space.

| Hazard Type | % by volume | W/V, lb/ft ³ @ 700F |
|---|-------------|--------------------------------|
| Class A (Surface fires), including plastic materials typically found in electrical/electronic equipment | 6.6 | 0.032 |
| Class B Flammable Liquids | 8.6 | 0.043 |
| Class C Electrical | 7.0 | 0.034 |



USE AND LIMITATIONS

| HFC-227ea system shall be used on the following Class of Hazards: | HFC-227ea systems shall "NOT" be used on fire involving the following materials: |
|--|---|
| Class A & C: Electrical and Electronic Hazards Telecommunication Facilities High value assets, where the associated down-time would be costly. | Chemicals or mixtures of chemicals that are capable of rapid oxidation in the absence of air. (Examples include: Cellulo Nitrate and Gunpowder) |
| | Reactive metals such as Lithium, Sodium, Potassium, Magnesium, Titanium, Zirconium, Uranium, and Plutonium |
| Class B: Flammable liquids and gases. | Metal hydrides such as Sodium Hydride and Lithium Aluminum Hydride. |
| | Chemicals capable of undergoing auto-thermal decomposition. (Examples: Organic Peroxides and Hydrazine) |

EXPOSURE LIMITATIONS

| Hazard Type | Design Concentration | Maximum Human Expose Time |
|-----------------------------|----------------------|---------------------------|
| Normally Occupied Space | 6.25% to 10.5% | 5 minutes |
| Not Normally Occupied Space | 11.0% to 12.0% | 30 seconds |



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In line with NAFFCO policy for continuous product development, NAFFCO has the right to change specifications without prior notice.