



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

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)
Class B: Flammable liquids and gases.	Reactive metals such as Lithium, Sodium, Potassium, Magnesium, Titanium, Zirconium, Uranium, and Plutonium
	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