DATA SHEET

HFC-125 CLEAN AGENT

APPROVALS:

- UL Listed
- ULC Listed
- FM Approved

DESCRIPTION

HFC-125 fire suppression agent is an environmentally acceptable replacement for Halon 1301. HFC-125 has a zero ozone depleting potential, a low global warming potential, and a short atmospheric lifetime. It is particularly useful where an environmentally acceptable agent is essential, where clean-up of other media presents a problem, where weight versus suppression potential is a factor, where an electrically non-conductive medium is needed, and where people compatibility is an overriding factor. HFC-125 can be used to protect a wide range of applications from sensitive electrical equipment to industrial applications. Consult the current NFPA Standard 2001 and/or ISO 14520 for specific applications. HFC-125 fire suppression agent is used with Fike's total flooding systems.

FEATURES AND BENEFITS

- Colorless, odorless, compressed gas
- Stored as a liquid
- Electrically non-conductive
- Discharges as a gaseous vapor (due to its relatively low boiling point)
- Zero ozone depleting potential
- Low global warming potential
- Leaves no residue
- Included on the U.S. EPA Significant New Alternative Policy (SNAP) rules

EXTINGUISHING METHOD - HFC-125

HFC-125 extinguishes a fire primarily through Heat Absorption that occurs as the agent changes from a liquid to a vapor during discharge. In addition, HFC-125 also disrupts the combustion reaction which aids in the extinguishment of a fire. It is important to note, HFC-125 does not use the depletion of oxygen to extinguish a fire.

USE AND LIMITATIONS – HFC-125

HFC-125 system shall be used on the following Class of Hazards:

Class A & C:	Electrical and Electronic Hazards Telecommunications Facilities High value assets, where the associated down-time would be costly
Class B:	Flammable liquids and gases

HFC-125 systems shall "**NOT**" be used on fires involving the following materials:

Chemicals or mixtures of chemicals that are capable of rapid oxidation in the absence of air. (Examples include: Cellulose Nitrate and Gunpowder
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	8.0% to 11.5%	5 minutes
Normally Un-Occupied Space	12.0% to 13.5%	30 seconds

Note: Fike does not recommend HFC-125 systems to be used in any normally occupied spaces where the design concentration required is above 11.5%

Warning: The discharge of clean agent systems to extinguish a fire can result in potential hazard to personnel from the natural form of the clean agent or from the products of combustion that result from exposure of the agent to the fire or hot surfaces. Unnecessary exposure of personnel either to the natural agent or to the products of decomposition shall be avoided.

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PHYSICAL PROPERTIES

Chemical Name/Formula	Pentafluoroethane / CHF_2CF_3
ASHRAE Designation	HFC-125
Trade Name:	FE-25™ (DuPont™)
CAS Number	354-33-6
Molecular Weight	120.02
Vapor Density @ 25°C (77°F) and atm, kg/m³ (lb/ft³)	4.982 m³ (0.3111)
Vapor Pressure, Saturated @ 25°C (77°F), bar (psia)	13 bar (200.4)
Boiling Point, 1 atm, °C (°F)	-48.14 (-54.7)
Freezing Point, °C (°F)	-103 (-153)
Solubility in Water in FE-25 @ 25°C (77°F), ppm	700
Critical Temperature, °C (°F)	66.25 (151.25)
Critical Pressure, bar (psia)	36 (526.6)
Critical Volume, cc/mole	210
Critical Density, kg/m³ (lb/ft³)	571.9 (35.70)
Specific Heat, Liquid (CP) @ 25°C (77°F), KJ/Kg- °C (Btu/lb°F)	1.37 (0.327)
Specific Heat, Vapor (CP) @ 25°C (77°F) KJ/Kg- °C (Btu/lb°F) and 1 atm	0.809 (0.193)
Heat of Vaporization @ Boiling Point KJ/Kg (Btu/lb)	164.4 (70.7)
Thermal Conductivity, Liquid @ 25°C (77°F), W/m- °C (Btu/hr-ft°F)	0.0652 (0.0377)
Thermal Conductivity, Vapor @ 25°C (77°F), W/m- °C (Btu/hr-ft°F)	0.0166 (0.0096)
Viscosity, Liquid @ 25°C (77°F), cP (lb/ft-hr)	0.137
Viscosity, Vapor @ 25°C (77°F), cP (lb/ft-hr)	0.013
Ozone Depletion Potential	0
Global Warming Potential (based on a 100-yr horizon relative to CO_2)	2800
Inhalation Exposure Limit (AEL-8 and 12hr. TWA), ppm	1000

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