

SF 1230™ Fire Protection Fluid

Description

SF 1230 is a colorless, clear fluid (see Physical Properties Table for additional information). It is stored as a liquid and dispensed into the hazard as an electrically non-conductive gaseous vapor that is clear and does not obscure vision. It leaves no residue and has acceptable toxicity for use in occupied spaces at design concentration.

Extinguishing Method

SF 1230 fluid extinguishes a fire by heat absorption. The gaseous mixture created when SF 1230 discharges into air has a much higher heat capacity than air alone. The gaseous mixture absorbs large amounts of heat due to the high heat capacity and extinguishes fires by sufficiently cooling the combustion zone. It is important to note, SF 1230 fluid does not use the depletion or displacement of oxygen to extinguish a fire and therefore is safe for use in occupied spaces.

Approvals

- Underwriters Laboratories (UL)
- Underwriters Laboratories of Canada (ULC)
- Factory Mutual (FM)
- United States EPA Significant New Alternative Policy (SNAP) report
For exact certification listings, please reference the respective agency web site.

Use and Limitations

SF 1230 fluid can 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

SF 1230 fluid 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, such as 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 such as Organic Peroxides and Hydrazine

Exposure Limitations

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.

Hazard Type	Design Concentration	Maximum Human Exposure Time
Class A / Class C Fire, Normally Occupied Space	4.5% to 10%	5 minutes
Class B Fire, Normally Occupied Space ¹	4.5%-5.9% to 10%	5 minutes

¹ Class B Minimum Design Concentration varies according to fuel source.

Fike does not recommend SF 1230 systems to be used in any normally occupied spaces where the design concentration required is above 10%

Physical Properties

Chemical Name	Dodecafluoro-2-methylpentan-3-one
ASHRAE Designation	FK-5-1-12
Chemical Formula	CF ₃ CF ₂ C(O)CF(CF ₃) ₂
CAS No.	756-13-8
Molecular Wt.	316.04
Boiling Point @ 1 atm (760 mmHg), °C (°F)	49 (120.2)
Melting Point, °C (°F)	-108 (-162.4)
Critical Temperature, °C (°F)	168.66 (335.6)
Critical Pressure, kPa (psia)	1865 (270.44)
Critical Density, kg/m ³ (lb/ft ³)	639.1 (39.91)
Density, Sat. Liquid, g/ml (lb/ft ³)	1.60 (99.9)
Density, Gas @ 1 atm, g/ml (lb/ft ³)	0.0136 (0.851)
Specific Heat, Liquid (Cp) @ 25°C (77°F), kJ/kg-°C (Btu/lb-°F)	1.103 (0.2634)
Specific Heat, Vapor (Cp) @ 25°C (77°F), kJ/kg-°C (Btu/lb-°F) and 1 ATM	0.891 (0.2127)
Vapor Pressure @ 25°C (77°F), kPa (psia)	40.4 (5.85)
Heat of Vaporization @ Boiling Point, kJ/kg (Btu/lb)	88 (37.8)
Thermal Conductivity, Liquid @ 25°C (77°F), W/m-°C (Btu/hr-ft-°F)	0.059 (0.034)
Viscosity, Liquid (lb/ft-hr) @ 25°C (77°F), cP (lb/ft-hr)	0.6 (1.45)
Relative dielectric strength @ 1atm, 25°C (N ₂ =1)	2.3
Solubility in Water @ 70°F, ppm	Nil
Ozone Depletion Potential	0
Global Warming Potential, GWP (100 yr. ITH. For CO ₂ , GWP = 1)	≤1

Contact Information

Fike Corporation – Global Headquarters
 704 SW 10th Street
 Blue Springs, MO 64015
 Telephone: +1-816-229-3405
www.fike.com/contact-us for global offices

Authorized distributor

DSI - Detección y Supresión Inteligentes, S.A. de C.V.
 Gral. José Moran No. 73,
 San Miguel Chapultepec, Miguel Hidalgo, C.P. 11850,
 Ciudad de México
 Telephone: 55 5207 6512
www.dsimexico.com

