

# REEDFOX FM200™ FIRE SUPPRESSION AGENT

## FEATURES

- Non-ozone depletion
- Safe for total flooding of occupied spaces
- Clean – no residue to clean up
- Non-damaging to hazard contents
- Active fire suppression agent
- UL component recognized
- FM approved
- RoHS complaint
- Fast acting

## EXTINGUISHING AGENT

FM200 Agent (1,1,1,2,3,3,3-heptafluoropropane) is a compound of carbon, fluorine and hydrogen (CF<sub>3</sub>CHFCF<sub>3</sub>). It is colorless, odorless and electrically non-conductive. It suppresses fire by a combination of chemical and physical mechanisms without affecting the available oxygen. This allows personnel to see and breathe, permitting them to leave the fire area safely. FM200 Agent has acceptable toxicity for use in occupied spaces when used as specified in the United States Environmental Protection Agency (U.S. EPA) Significant New Alternative Policy (SNAP) program rules. Although FM200 Agent is considered nontoxic to humans in concentrations necessary to extinguish most fires, certain safety considerations should be observed when applying and handling the agent. The discharge of FM200 Agent may create a hazard to personnel from the undecomposed agent itself and from the decomposition products which result when the agent is exposed to fire and other hot surfaces. Exposure to the agent is generally of less concern than is exposure to the decomposition products. Unnecessary exposure to the agent or the decomposition products should be avoided.

## USE

FM-200® Agent is used in total flooding fire suppression systems. It is stored in steel containers, and is super-pressurized with nitrogen to aid in expelling the agent. The discharge time is 10 seconds or less. The maximum fill density of the agent storage is 70 lb./ft.

## CLEANLINESS

FM200 Agent is clean, leaves no residue, thereby eliminating costly after-fire clean-up, and keeping expensive "down-time" to a minimum. Most materials such as steel, stainless steel, aluminum, brass, and other metals as well as plastics rubber and electronic components are unaffected by exposure to FM200 Agent.

## APPROVALS

FM-200® Agent complies with the NFPA Standard 2001: Standard for Clean Agent Fire Extinguishing Systems, EPA SNAP Program (Significant New Alternate Policy), Underwriters Laboratories, Inc. (UL) and Factory Mutual Research Corporation (FMRC).

## TOXICITY

In tests, the acute toxicity of FM200 Agent was shown to be equivalent to that of Halon 1301. FM200 Agent has been evaluated for cardiac sensitization through test protocols approved by the US EPA. The EPA's SNAP Program classifies FM200 Agent as acceptable for use as a total flooding agent in occupied spaces. Refer to the SNAP program rules for more information.

Table 1: Toxicity Properties.

NOAEL (No Observable Adverse Effect Level)	9.0 %
LOAEL (Lowest Observable Adverse Effect Level)	10.5 %



This literature is provided for informational purposes only. ReedFOX assumes no responsibility for the product's suitability for a particular application. The product must be properly applied to work correctly. If you need more information on this product, or if you have a particular problem or question, contact PT. ReedFOX Fire Indonesia.

Table 2: Physical Properties.

Chemical name	Heptafluoropropane
Chemical formula	CF <sub>3</sub> CHFCF <sub>3</sub>
CAS number	431-89-0
Molecular weight	170.03
Boiling point, 1 atm	-15.6 °C
Freezing point	-133 °C
Critical temperature	101.7 °C
Critical pressure	2930.6 kPa
Critical volume	274 cc/mole
Critical density	621 kg/m³
Liquid density @ 25 °C	1386 kg/m³
Vapor density @ 25 °C	7.148 kg/m³
Specific heat, liquid @ 25 °C	1.247 kJ/kg-°C
Specific heat, vapor (Cp) @ 25 °C	0.8136 kJ/kg-°C
Vapor pressure, saturated @ 25 °C	453.3 kPa
Heat of vaporization @ B.P.	132.6 kJ/kg-°C
Thermal conductivity, liquid @ 25 °C	0.0533 W/m-°C
Thermal conductivity, vapor @ 25 °C	0.0127 (0.0073) W/m-°C
Viscosity, liquid (lb/ft-hr) @ 25° C	0.2442.cP
Relative dielectric strength @ 1 atm, 25 °C (N2=1)	2.00
Solubility of water in HFC-227ea @ 20 °C	600 ppm
Ozone depletion potential	0.0
GWP (100yr. ITH for CO2, GWP=1)	2900

Table 3: Analysis Results.

Items	Unit	Index	Inspection Results
Appearance		Colorless and no turbid	Qualified
Odor		No strange stench	Qualified
Purity	% (≥)	99.6	99.93
Moisture	(≤)	0.0010	0.0009
Acidity	(as HCL) %	0.0001	<0.0001
Vapor residue	% (≤)	0.010	<0.01
Conclusion		Qualified	

Table 4: Storage Tank Specification.

UN number	3296
Class	2.2 (Non-flammable, non-toxic gas)
Material	EN 13322-1 (Transportable gas cylinders; Refillable welded steel gas cylinders)
Pressure	36 bar
Thickness	2.5 mm
Valve outlet	Dia. 1/4" inch (liquid/vapor)
Diameter	37 cm
Height	74.5 cm
Agent weight	50 kg
Empty weight	18.5 kg
Gross weight	68.5 cm

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## PT. REEDFOX ULTIMATE INDONESIA

Fire Suppression Systems Specialist, Maintenance, Services, Authorized Distributor, Fire & Life Safety Equipment Importer, Refilling APAR; FM-200; EFKA™5112; RF-36; Inert Gas; CO2.

