ImacoFire Co.

Fire Fighting Equipment

Clean Agent fire suppression system

FM200

Description

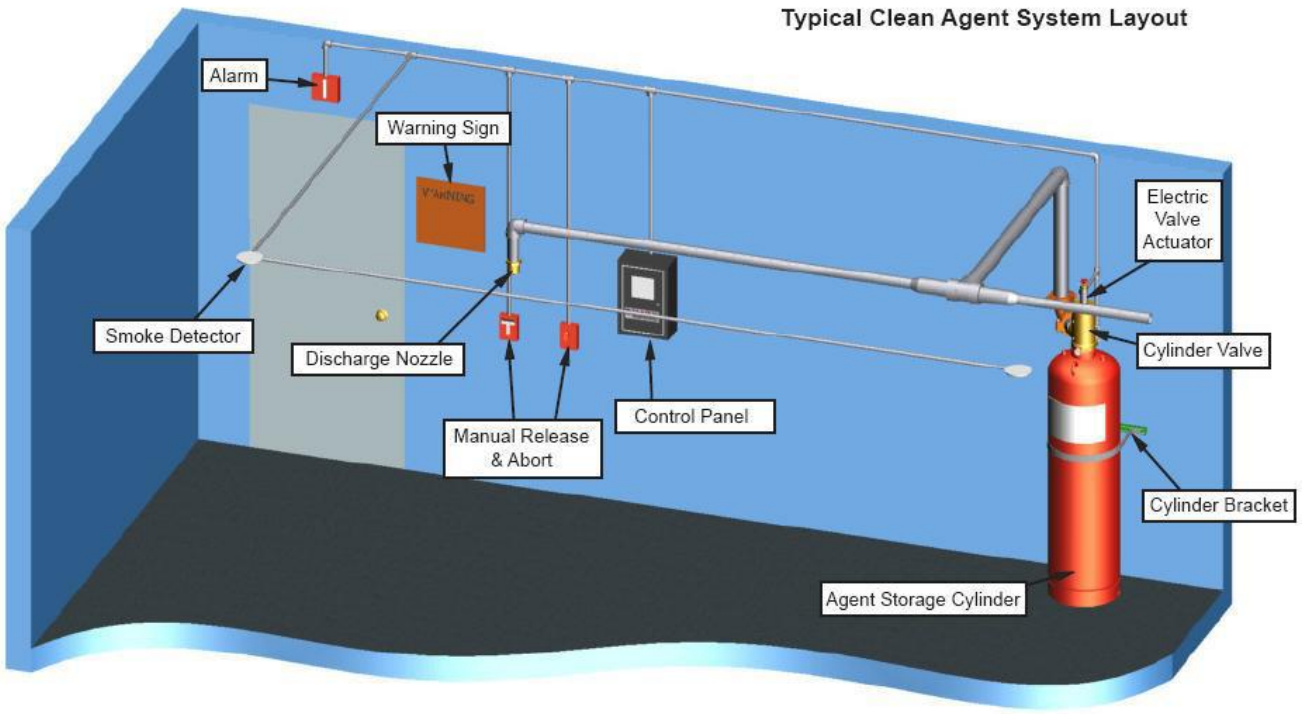
FM-200 is a clean, colorless, and environmentally friendly fire suppression agent that is electrically non-conductive and safe for humans. It extinguishes flames primarily through heat absorption, leaving no residue, thus minimizing downtime after a fire and making FM-200 suppression systems accepted and respected worldwide with over one hundred thousand installations in more than seventy countries.

Its effectiveness in such a range of circumstances is due to the extinguishing agent used, DuPont FM-200, which is suitable for flammable liquids, combustible solids and electrical hazards. The combination of the components of the kit enables the most reliable and cost-effective protection. This system is pressurized with dry nitrogen, providing different pressures depending on the requirements of the hazard. FM200 systems operate at 25 bars and 42 bars. The different working pressures adapt to variations in the installation properties, thus covering many different hazards with the highest performance quality.

Component of system

1. FM-200 Storage Components – Storage components consist of the cylinder assembly(s), which contains the FM-200 chemical agent, and the cylinder bracket(s), which holds the cylinder assembly securely in place.
2. FM-200 Distribution Components – Distribution components consist of the discharge nozzles used to introduce the FM-200 into a protected hazard along with the associated piping system used to connect the nozzles to the cylinder assembly.
3. Trim Components – Trim components complete the installation of the FM-200 system and consist of connection fittings, pressure gauge, low-pressure supervisory switch, electric valve actuator, and manual valve actuator.
4. Slave Arrangement Components – Slave arrangement components consist of the pneumatic valve actuator(s), actuation check valve, vent check, actuation hose, and fittings required for a multiple cylinder (slave) arrangement.
5. Supplemental Components – Supplemental components include the discharge pressure switch and manifold check valve. They supplement the core equipment or complete a specific multi-cylinder configuration.
6. Control Panel – This device monitors the condition of the electric actuator, detectors, warning devices, cylinder pressure, and any manual release and abort stations. All electric or electronic devices must connect to the control panel in order to function.
7. Early Warning Detection and Alarm Devices – Early warning detection devices coupled with manual release and abort stations maximize system efficiency while audible and visual alarm devices alert staff of alarm conditions.

Typical system layout



System capacity:

- 25 bar

Cylinders capacity (L)						
6.7	13.4	25	41	61	84	101
127	150	180	240	368	451	514

- 42 bar

Cylinders capacity (L)								
6.7	13.4	26.8	40.2	67	80	100	120	180

ImacoFire Co.
Website: www.imacofire.com , Email: info@imacofire.com,
Tel: (+98)21-88971614-5, Fax: (98)21-88334719, P.O.Box: 1439814448

Chemical Properties of FM-200

FM-200® (HFC-227ea) is formed from the elements carbon, fluorine and hydrogen (CF3CHFCF3 - heptafluoropropane). The primary extinguishing mechanism of FM-200® is heat absorption, with a secondary chemical contribution from the thermal decomposition of FM-200 in the flame.

FM-200 leaves no residue and is safe for use in occupied spaces.

Most common metals, such as aluminum, brass, steel, cast iron, lead, stainless steel, and copper, as well as rubber, plastic, and electronic components, are unaffected when exposed to FM-200

Safety Considerations

Although the EPA Significant New Alternative Program (SNAP) lists FM-200® as acceptable for occupied spaces, NFPA Standard 2001 and SNAP list the following guidelines for human exposure:

The discharge of FM-200® into a hazard may reduce visibility for a brief period. FM-200 may cause frostbite if liquid discharge or escaping vapor contacts the skin.

When FM-200® is exposed to temperatures greater than 1300°F (700°C), the by-product Hydrogen Fluoride (HF) will be formed. FM-200® systems are designed to discharge in 10 seconds or less in order to minimize the amount of HF formed.

The FM-200 Material Safety Datasheet (MSDS) should be read and understood prior to working with the agent.
A cylinder containing FM-200® should be handled carefully. The anti-recoil safety device must be in place at all times when the cylinder is not connected to the discharge piping and restrained.

Time for Safe Human Exposure at Stated Concentrations for FM-200 (HFC-227ea)

FM-200 Concentration		Maximum Human Exposure Time (Minutes)
% v/v	ppm	
9.0	90,000	5.00
9.5	95,000	5.00
10.0	100,000	5.00
10.5	105,000	5.00
11.0	110,000	1.13
11.5	115,000	0.60
12.0	120,000	0.49