

CHEMETRON

Fire Systems™

FM-200



A World of Protection



CHEMETRON Fire Systems™

Safe for People. Safe for Places.

How would your business survive a fire?

In this age of just-in-time business, a company simply cannot afford a major interruption to its operations and financial future.

If fire occurs, the first few seconds are critical. Your ability to recover quickly from a business disruption depends on choosing the best fire protection system and agent for your particular application. Many times, the cost of downtime far outweighs the loss of equipment and structures.

There is a critical need for a clean agent that will not contribute to further loss or downtime. The use of an efficient, environmentally acceptable, and people-safe extinguishing agent for occupied spaces is critical.

With a Chemetron Fire Systems FM-200® system in control, you are assured of fast, efficient and environmentally safe fire extinguishment.

FM-200® works to quench fires in seconds and hold damage to a minimum. No facility can afford the loss of time, money or productivity that occurs after a fire.

Chemetron FM-200® systems provide safe fire protection for occupied spaces and critical assets; they also make good economic sense. FM-200® is the agent of choice.

FM-200® Advantages

FM-200® is the clear choice for a fast, clean fire protection agent. Patented by Great Lakes Chemical Corporation as a Halon 1301 replacement in 1993, it has quickly gained acceptance as the world's leading clean gaseous fire extinguishing agent.

Chemetron has selected FM-200® as the most environmentally friendly clean agent for use in fire protection systems worldwide.

FM-200® is...

Effective. FM-200® is the clean agent protection for a range of sensitive applications, many where people are involved.

FM-200® extinguishes fires primarily by physically cooling the flame; removing heat from the flame to the extent that the combustion reaction cannot sustain itself.

FM-200® safeguards a wide range of applications:

- Telecommunication facilities
- Computer operations
- Control rooms
- Electronics and data processing equipment
- Shipboard (marine) systems
- Rare book libraries
- Record storage facilities
- Art galleries, museums
- Universities and colleges
- Petrochemical installations
- Pharmaceutical and medical facilities

Test after test supports the conclusion that FM-200® is as safe for humans as it is effective at fighting fires, leaving no harmful or messy residue.

FM-200® must be used with properly designed, installed and maintained equipment for maximum fire protection and coverage.

Fast-acting and Complete, with extinguishment capability within seconds via a combination of chemically-based fire inhibition and cooling at the flame front. Extinguishing concentration is reached in seconds.

Recognized by the top independent listing and approval agencies, FM-200® has been found to be an effective,





clean, cost-effective, non-toxic, rapid-acting fire suppression agent.

The National Fire Protection Association in their NFPA 2001 standard rates FM-200® as an effective substitute for Halon 1301.

In accordance with the U.S. EPA Significant New Alternative Program (SNAP), it states that FM-200® is an efficient, non-ozone depleting Halon 1301 replacement for use as a total flooding fire extinguishant for the protection of occupied spaces.

Safe, Non-toxic and environmentally acceptable for sensitive equipment, FM-200® extinguishes fires by physically removing heat energy from the flame.

FM-200® reacts quickly at low concentrations to eliminate a fire. In normally occupied areas, people can breathe FM-200® at extinguishing concentrations without fear.

The Material Safety Data Sheet (MSDS) covering FM-200® should be read and understood prior to working with the agent. A cylinder containing FM-200® should be carefully handled.

FM-200® does not deplete stratospheric ozone.

An FM-200® clean agent fire protection system allows for:

- minimized space and weight requirements
- faster installation and service
- ambient temperature storage

Chemetron Integrated System Extinguishing Performance

Chemetron is a single, dependable source for special hazard fire suppression systems. We design systems that protect people and property, integrating:

- Fire hazard evaluations
- Hardware
- Innovative computer software
- Advanced engineering, technical and service support
- A worldwide distribution and service network
- A commitment to environmental safety

Multiple Hazard Versatility

Chemetron FM-200® fire suppression systems work hand-in-hand with state-of-the-art control and detection components to identify and extinguish fires, long before substantial fire damage can occur.

Chemetron integrated systems protect hazards using FM-200® chemical agent and consist of four basic components and associated accessories:

■ **Storage and valve components**

These components consist of agent containers, valve assemblies, piping, and discharge nozzles.

■ **Control panel**

The control panel is the brains of the system and is used to monitor the detection and accessories.

■ **Detection, alarm devices, and accessories**

These are the external devices that act as the eyes and voice of the system as they give audible or visual signals.

■ **Completer Kits**

This system component consists of warning signs, hoses, connection fittings, pressure gauge, solenoid valve, and the actuator required to manually operate the cylinder valve.

There are three types of actuation:

- automatic
- manual
- remote manual

Without changing your current control panel or detection systems, an existing system can easily be converted to FM-200®.





The Chemetron Difference

With more experience and more applications, Chemetron provides a full range of hardware, design, specification, installation and support services worldwide.

Thousands of companies around the world have confidence to protect their businesses with Chemetron FM-200® integrated systems.

With our single-source responsibility for suppression, control and support, Chemetron continues to invest and renew research and development to meet changing requirements.

An Extra Measure of Safety

With over 50 years experience and commitment, we are ready to meet any special hazard specification...today or in the future.

Our recommendations, capabilities and commitment to our customers continues to make a world of difference.

Chemetron. Your Single Source Solution.

FM-200® Physical and Chemical Properties and Quality Standards

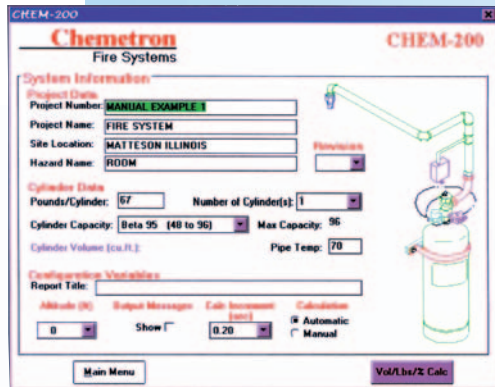
FM-200® ($\text{CF}_3\text{CH}_2\text{CF}_3$ - heptafluoropropane) is a compound that consists of carbon, fluorine and hydrogen. It is colorless, odorless, electrically non-conductive, and suppresses fire by interrupting the combustion process and removing heat energy from the fire to the extent that the combustion process cannot sustain itself.

FM-200® is clean, efficient, environmentally acceptable, and leaves no residue, thus minimizing any downtime after a fire. If exposed to temperatures greater than 1300°F, toxic products of decomposition (hydrogen fluoride) are formed. Most materials contained in areas protected by FM-200®, such as aluminum, brass, rubber, plastics, steel, and electronic components, are unaffected when exposed to FM-200®.

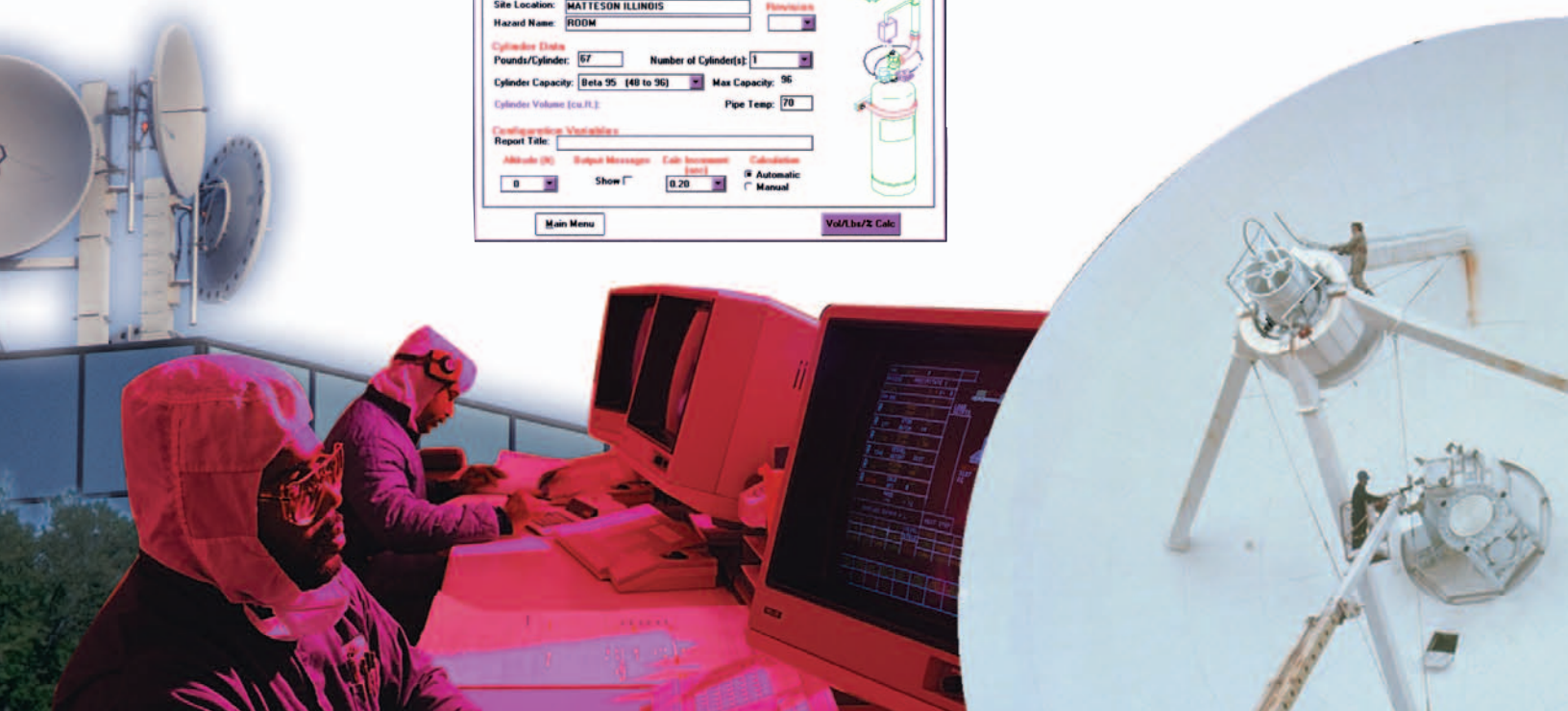
FM-200® is stored as a liquid in steel containers and super-pressurized with nitrogen to 360 psig (2482 kPa) to increase its discharge flow characteristics. When discharged, FM-200® will vaporize at the discharge nozzles and effectively mix with the air throughout the protected area.

FM-200® is produced under ISO 9002 guidelines to strict manufacturing specifications insuring product purity. These safeguards give you total confidence that FM-200® will leave no residue or oil deposits in your sensitive application area.

It has been proven safe on a global scale, without restriction.



System Information Screen



P E R F O R M A N C E



FM-200





A World of Protection

Worldwide Applications

FM-200®

- Telecommunication Facilities
- Computer Operations
- Control Rooms
- Shipboard (Marine) Systems
- Rare Book Libraries
- Universities and Museums
- Art Galleries
- Record & Storage Facilities
- Petrochemical Installations
- Pharmaceutical & Medical Facilities
- Electronics & Data Processing Equipment

WATER MIST

- Gas Turbines
- Machinery Spaces

CO₂

- Power Generation
 - Base Load Plants
 - Co-generation & Combined Cycle Plants
 - Power Peaking Units
 - Upgrading Existing Plants with:
 - Coal Conversions
 - Coal Storage/Handling/Pulverizing
- Cement Plant/Blast Furnace Indirect Coal Firing Systems
- Metals Production and Processing
 - Electric Furnaces
 - Continuous Casters
 - Rolling Mills (Steel & Aluminum)
 - Coating Lines
- Printing
 - Newspaper Production
 - Periodical Printing
 - Packaging

- Automotive
 - Assembly: Paint Application, Mixing & Storage
 - Parts: Machining, Heat Treating
- Electronics Operations
 - Computer Areas
 - Automated Information Storage Systems
- Production
 - Wet Benches
 - Wave Soldering Machines
- Food Processing
- Research Facilities
 - Test Facilities
 - Anechoic Chambers
- Shipboard (Marine) Systems
- Automated Storage and Retrieval Facilities

CHEMETRON

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Chemetron. Your Single Source Solution