

P/N 96-FE13MA-001  
October 2002

# FE-13™

## Fire Suppression Systems

### Owner's Manual



**LISTED**

UL Listing File No. EX 4674

 **Kidde**  
Fire Systems



**P/N 96-FE13MA-001**  
**October 2002**

**FE-13<sup>TM</sup>**  
**Fire Suppression**  
**Systems**

**Owner's Manual**

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# FOREWORD

This manual is written for those who own or are responsible for Kidde® FE-13™ Fire Suppression System cylinders.

## IMPORTANT

Kidde assumes no responsibility for the application of any systems other than those addressed in this manual. The technical data contained herein is limited strictly for information purposes only. Kidde believes this data to be accurate, but it is published and presented without any guarantee or warranty whatsoever. Kidde disclaims any liability for any use that may be made of the data and information contained herein by any and all other parties.

Kidde FE-13 Fire Series Fire Suppression Systems are to be designed, installed, inspected, maintained, tested and recharged by qualified, trained personnel in accordance with the following:

- Standard of the National Fire Protection Association No. 2001, titled *Clean Agent Fire Extinguishing Systems*.
- All instructions, limitations, etc. contained in this manual, P/N 96-FE13MA-000 and/or 96-FE13MA-002.
- All information contained on the system container nameplate(s).

Storage, handling, transportation, service, maintenance, recharge and test of agent storage containers shall be performed only by qualified and trained personnel in accordance with the information in this manual and Compressed Gas Association pamphlets C-1, C-6 and P-1:

- C-1, *Methods for Hydrostatic Testing of Compressed Gas Cylinders*.
- C-6, *Standards for Visual Inspection of Compressed Gas Cylinders*.
- P-1, *Safe Handling of Compressed Gases In Containers*.

CGA pamphlets are published by the Compressed Gas Association, Crystal Square Two, 1725 Jefferson Davis Highway, Arlington, VA 22202-4102.

Any questions concerning the information presented in this manual should be addressed to:

Kidde-Fenwal Inc.  
400 Main Street  
Ashland, MA 01721  
Phone: (508) 881-2000  
Fax: (508) 881-8920

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## ATTENTION INSTALLER

This form must be signed by the system owner indicating that he/she has received a copy of this Owner's Manual P/N 96-FE13MA-001. Have the system installer fill-out this form.

**Note:** Retain a copy of this form for your records.

1. System Installed:

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2. Listing of Major System Components:

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3. Description of Hazard Protected by System:

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\_\_\_\_\_  
Owner or Authorized Representative

\_\_\_\_\_  
Date

\_\_\_\_\_  
Title

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# SAFETY SUMMARY

Safety precautions are essential whenever electrical or mechanical equipment is involved. Take precautions when handling, servicing, and charging FE-13™ fire suppression systems cylinders. Using this equipment with the respect and caution demanded will considerably lessen the possibility of personal injury. If safety precautions are overlooked or ignored, personal injury or property damage may occur.

The following symbols are used throughout this manual. Always heed these precautions. They are essential to the safe use of the equipment described in this manual.

## WARNING

**The warning symbol identifies immediate hazards and provides specific instructions or procedures which if not correctly followed will result in severe personal injury or death.**

## CAUTION

**This caution symbol identifies specific instructions or procedures which if not correctly followed could result in minor personal injury or equipment or property damage.**

The following safety precautions should always be followed:

## WARNING

**Pressurized (charged) cylinders are extremely hazardous and if not handled properly are capable of causing bodily injury, death or property damage.**

1. Read and understand this manual and the other documents referenced herein.
2. The valve outlet safety cap and the actuation port protection cap **MUST** be installed on the cylinder valve at all times and only removed when performing charging, testing, or salvaging operations in accordance with the procedures contained in this manual.
3. Wear safety glasses when working with pressurized cylinders and charging equipment
4. Make sure that all control heads, pressure operated control heads, or other type of actuation devices have been removed from the cylinder valves. Ensure the protection caps are installed before performing any charging, leak tests or salvage operations.

**Don't get careless.** Never assume a cylinder is empty. Treat all cylinders as if they are fully charged.

Smoking is prohibited in FE-13 fill and charging areas.

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# CHAPTER 1

## GENERAL INFORMATION

### 1-1 INTRODUCTION

This document is provided to instruct and familiarize the owner with the Kidde® FE-13™ Fire Suppression System. This manual covers:

- Information about the system
- How the FE-13 system operates
- How FE-13 works
- Installation of the system
- Instructions in case of fire
- Post-operation instructions
- Inspection and maintenance of the system
- Responsibilities and related equipment requirements
- Additional specifications and documentation

**Note:** **IMPORTANT**—This owner's manual does not cover every detail of step-by-step installation procedures for the Kidde FE-13 Fire Suppression System.

The system consists of components tested within the limitations defined in the detailed design, installation, operation and maintenance manual (P/N 96-FE13MA-000 and -002) which is available from Kidde. The system designer must be consulted whenever changes are planned for the system or area of protection.

A certified Kidde distributor must be consulted after the system has been discharged.

The technical data contained herein is limited strictly for informational purposes only.

### CAUTION

**It is the owner's responsibility to read this manual and to ensure proper system operation and personnel safety.**

Follow the instructions in this manual and on the FE-13 cylinder nameplates. Review this information semi-annually, or as needed. Place this manual in an accessible place near the FE-13 system for ready reference.

Kidde believes this data to be accurate, however, it is published and presented without any guarantee or warranty whatsoever. Kidde disclaims any liability for the information contained herein by any, and all, other parties.

NAME OF KIDDE DISTRIBUTOR IS:

ENTER EMERGENCY NUMBER FOR THE LOCAL FIRE DEPARTMENT HERE:

Before handling Kidde products, all personnel must be thoroughly trained in the safe handling of the containers as well as in the proper procedures for installation, removal, filling and connection of other critical devices, such as solenoids, cable assemblies, pressure switches and safety caps. READ, UNDERSTAND and ALWAYS FOLLOW the operation and maintenance manuals, owner's manuals, service manuals, etc., that are provided with the individual systems.

### WARNING

**Pressurized (charged) containers are extremely hazardous and if not handled properly, are capable of violent discharge. This may result in serious bodily injury, death and property damage.**

The discharge of clean agent systems to extinguish a fire can result in a 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.

### 1-2 MOVING OF CONTAINERS

#### 1-2.1 Moving by Trucks

Containers must be shipped in the upright position and properly secured in place. Containers must not be rolled, dragged, slid or allowed to be slid from tailgates of vehicles. A suitable hand truck, fork truck, roll platform or similar device must be used.

#### 1-2.2 Rough Handling

Containers must not be dropped or permitted to strike violently against each other or other surfaces.

#### 1-2.3 Storage

Containers must be stored standing upright and secured in place.

## 1-3 SAFETY CAP



**These instructions must be followed in the exact sequence as written to prevent serious injury, death and/or property damage.**

Each FE-13 container is factory equipped with a safety cap installed on the container outlet and securely chained to the container to prevent loss. This device is a safety feature and will provide controlled, safe discharge when installed in the event the container is accidentally actuated.

The safety cap must be installed on the container outlet AT ALL TIMES except when the containers are connected to the system piping.

The safety cap is intentionally chained to the container to prevent loss while in service and must not be removed from its chain.

For additional information on safe handling of compressed gas containers, see CGA Pamphlet P1 titled "Safe Handling of Compressed Gases in Containers." (CGA pamphlets may be purchased from the Compressed Gas Association, Crystal Square Two, 1725 Jefferson Davis Highway, Arlington, VA, 22202).

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## 1-4 ABOUT THE SYSTEM

The FE-13 system is designed for suppression of Class A, B and C fires.

- Class A Surface Fires—cellulosic material (wood, paper, etc.)
- Class B—flammable liquids
- Class C—electrical equipment

Because FE-13 poses minimum risk to personnel due to low toxicity, it is used extensively where people normally occupy the fire hazard area. Examples of typical FE-13 system applications include:

- Industrial high ceiling spaces
- Locomotives
- Mining equipment
- Offshore oil platforms
- Oil and Gas processing facilities
- Pumping stations
- Refinery control area.

**Note: IMPORTANT**—Per NFPA 2001, FE-13 systems with use concentrations below the No Observed Adverse Effect Level (NOAEL, 30% v/v) are permitted for use in occupied areas. FE-13 systems with use concentrations above the NOAEL are not permitted for use in occupied areas.

## 1-5 FE-13 OVERVIEW

FE-13 suppression agent is a compound of carbon, fluorine and hydrogen (trifluoromethane  $\text{CHF}_3$ ). In its normal state, FE-13 is a colorless, odorless gas, which is electrically non-conductive. The agent is stored as a liquid under pressure.

When FE-13 is discharged, it expands throughout the distribution piping system and at the nozzle, returning to the gaseous state. In the proper concentration, FE-13 suppresses fire by breaking the chain reaction of the combustion process. FE-13 suppresses flame rapidly, helps prevent reignition, leaves no residue and requires no cleanup after discharge.

FE-13 will decompose upon contact with temperatures greater than approximately 1300°F (700°C). Decomposed FE-13 has a sharp, acrid odor, which is easily recognized even in small amounts. Decomposed products, including decomposed fuel, are toxic and minimized with rapid suppression of fire. FE-13 systems are designed to provide rapid discharge (normally 10 seconds or less) and flame suppression in order to minimize equipment damage and reduce danger to personnel.

## CHAPTER 2

# INSTALLATION AND MAINTENANCE

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### 2-1 INTRODUCTION

The FE-13™ Fire Suppression System is designed to discharge a specific amount of FE-13 through nozzles located within the hazard area. The amount of FE-13 necessary for the system has been carefully calculated to meet strict requirements set by Underwriters Laboratories and the National Fire Protection Association. Additional requirements may apply depending upon the application, design specifications and the Authority Having Jurisdiction.

Simply, the FE-13 Fire Suppression System consists of:

- FE-13 container(s), discharge piping and nozzles
- Actuation devices—electric, pneumatic, cable or manual
- Detection, alarm devices and control panel.

The system must be provided with means for manual operation using one or both of the following UL Listed devices:

- Electric actuation station
- Automatic detector (control panel required).

Automatic system operation (if provided) can be electric using UL Listed heat detectors, photoelectric, ionization smoke detectors or optical flame detectors.

An electrical control head is used to open the valve, which is part of the agent storage container. Pressure from the discharge may be used to open the container valves on additional containers.

If the system has a control panel, refer to the appropriate Kidde control panel manual as applicable.

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### 2-2 INSTALLATION

The Kidde FE-13 Fire Suppression System must be installed only by an authorized Kidde distributor. The system must be installed using genuine Kidde components and installation materials in accordance with the Design, Installation, Operation and Maintenance Manual (P/N 96-FE13MA-000 or -002).

**Note:** The installer must have a current Kidde installation certificate.

The following items must be checked after the system is installed:

- All areas requiring protection are protected.
- A means of manually discharging the FE-13 system is provided in a readily accessible location where it can be operated while leaving the vicinity of the hazard area. The manual control must be clearly labeled. The installer of the FE-13 system should answer any questions regarding the components and coverage of the system.

The installer must also demonstrate that the installed system conforms to the requirements of the Kidde FE-13 Design, Installation, Operation and Maintenance Manual, (P/N 96-FE13MA-000 or -002) and the requirements of the insurance carrier and the Authorities Having Jurisdiction in the area.

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### 2-3 INSTRUCTIONS IN CASE OF FIRE

1. Direct all occupants to leave the fire area immediately.

**Note: Important**—Operate the system manually using the manual release if required.

2. Suspend all operations in the fire area.
3. Have someone contact the fire department immediately, no matter how small the fire appears to be. **Post the STREET ADDRESS of the building and the fire department's phone number** beside each telephone. Be familiar with the location of the nearest fire department from outside.
4. Make sure all persons have evacuated the fire area in accordance with individual emergency procedures.

The remote manual release is a device which works electrically. Follow the instructions on the device, i.e., "LIFT COVER, PULL DOWN" etc. Exit the vicinity of the hazard immediately.

After the fire is suppressed, do not re-enter the fire area until the fire department arrives and gives approval.

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### 2-4 POST-OPERATION INSTRUCTIONS

After the system has discharged, contact the Kidde distributor to reset and recharge the system. Insist that the system be recharged immediately and with the proper type and quantity of agent.

## 2-5 INSPECTION AND MAINTENANCE OF THE SYSTEM

### CAUTION

The owner of the Kidde FE-13 Fire Suppression System must comply with these instructions. Failure to do so may result in inadequate system performance, property damage and personal injury.

See Kidde manual 96-FE13MA-000 or -002 for additional inspection information.

### 2-5.1 Monthly

1. Inspect all system components, nozzles, distribution piping and conduit runs for physical damage and/or displacement.
2. Inspect all detectors and control panels for evidence of damage or missing components. Have damaged or missing parts replaced immediately (contact the Kidde distributor). Refer to applicable control panel manual for additional pertinent inspection procedures.
3. Inspect each container. Container(s) must not show evidence of corrosion or damage.
4. Inspect remote manual release. For electric manual release devices, check visually to ensure the device is in the normal or ready position. The path to the remote release must be clear and unobstructed.

If any discrepancies are noted while making this inspection, **SUSPEND ALL OPERATIONS IN THE PROTECTED AREA**. Contact the Kidde distributor for service and/or repair.

### 2-5.2 Semi-Annual Inspection

The system must be thoroughly inspected on a semi-annual basis by a certified Kidde distributor. As part of the semi-annual inspection, the system must be functionally tested per the instructions in the Kidde FE-13 Fire Suppression System Design, Installation, Operation and Maintenance Manual (P/N 96-FE13MA-000 or -002). These instructions call for functional test of the system and verification of the agent quantity in each container. Agent will not be discharged as a part of the inspection.

For more information regarding inspection and maintenance, contact the Kidde distributor or Kidde directly.

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## 2-6 ADDITIONAL REQUIREMENTS

Portable fire extinguishers are required in addition to the FE-13 system and for areas not protected by the system. Consult with the insurance carrier, local Authorities Having Jurisdiction and the portable fire extinguisher distributor for sizes, types, spacing and location requirements.

Read, understand and follow the instructions in this manual and on the container nameplates. Review these instructions with employees semi-annually, or more frequently. Place this manual in an accessible area near the FE-13 system for ready reference. Post the name, phone number and address of the Kidde distributor near the telephone. Also, post the emergency telephone number of the fire department and the building street address near all telephones.

If any condition exists which would render the FE-13 system inoperative or ineffective, **SUSPEND ALL OPERATIONS IN THE PROTECTED AREA IMMEDIATELY**. Have the condition corrected by the Kidde distributor before resuming operations.

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## 2-7 ADDITIONAL SPECIFICATIONS AND DOCUMENTATION

The system must be designed, installed, operated and maintained only in accordance with the following documents and specifications:

- Kidde FE-13 Design, Installation, Operation and Maintenance Manual, P/N 96-FE13MA-000 or -002, available from the Kidde distributor or Kidde.  
  
Kidde-Fenwal, Inc.  
400 Main Street  
Ashland, MA 01721  
Phone: 508-881-2000  
Fax: 508-881-8920
- National Fire Protection Association Standard No. 2001, current edition, available from:  
  
National Fire Protection Association  
1 Batterymarch Park  
Quincy, MA 02269
- Copies of the Material Safety Data Sheet (MSDS) for FE-13 are available in the back of this manual (Appendix A).



# APPENDIX A

## MATERIAL SAFETY DATASHEETS

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The MSDS format adheres to the standards and regulatory requirements of the United States and may not meet regulatory requirements in other countries.

DuPont  
Material Safety Data Sheet

Page 1

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3017FR FE-13  
Revised 5-OCT-2001  
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-----  
CHEMICAL PRODUCT/COMPANY IDENTIFICATION  
-----

Material Identification

Corporate MSDS Number : DU001064  
CAS Number : 75-46-7  
Formula : CHF3  
CAS Name : Trifluoromethane

Company Identification

MANUFACTURER/DISTRIBUTOR

DuPont Fluoroproducts  
1007 Market Street  
Wilmington, DE 19898

PHONE NUMBERS

Product Information : 1-800-441-7515 (outside the U.S.  
302-774-1000)  
Transport Emergency : CHEMTREC 1-800-424-9300(outside U.S.  
703-527-3887)  
Medical Emergency : 1-800-441-3637 (outside the U.S.  
302-774-1000)

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COMPOSITION/INFORMATION ON INGREDIENTS  
-----

Components

Material	CAS Number	%
METHANE, TRIFLUORO-	75-46-7	100

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HAZARDS IDENTIFICATION  
-----

Potential Health Effects

Inhalation of high concentrations of vapor is harmful and may cause heart irregularities, unconsciousness, or death. Intentional misuse or deliberate inhalation may cause death without warning. Vapor reduces oxygen available for breathing and is heavier than air. Liquid contact can cause frostbite.

HUMAN HEALTH EFFECTS:

Overexposure by inhalation may include nonspecific discomfort such as nausea, headache, or weakness; temporary nervous system depression with anesthetic effects such as dizziness, headache, confusion, incoordination, and loss of consciousness; or with gross overexposure (>20%), possibly

## (HAZARDS IDENTIFICATION - Continued)

temporary alteration of the heart's electrical activity with irregular pulse, palpitations, or inadequate circulation.

Individuals with preexisting diseases of the central nervous or cardiovascular system may have increased susceptibility to the toxicity of excessive exposures. Eye or skin contact with the liquid may cause frostbite.

## Carcinogenicity Information

None of the components present in this material at concentrations equal to or greater than 0.1% are listed by IARC, NTP, OSHA or ACGIH as a carcinogen.

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FIRST AID MEASURES  
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## First Aid

## INHALATION

Immediately remove to fresh air. Keep person calm. Call a physician. If not breathing, give artificial respiration. If breathing is difficult, give oxygen.

## SKIN CONTACT

Flush with water. Treat for frostbite if necessary by gently warming affected areas.

## EYE CONTACT

In case of liquid contact, immediately flush eyes with plenty of water for 15 minutes. Call a physician.

## INGESTION

Ingestion is not considered a potential route of exposure.

## Notes to Physicians

Because of possible disturbances of cardiac rhythm, catecholamine drugs, such as epinephrine, should be considered only as a last resort in life-threatening emergencies.

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FIRE FIGHTING MEASURES  
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## # Flammable Properties

Flash Point: No flash point

Flammable Limits in air, % by Volume:

LEL : None per ASTM E681

UEL : None per ASTM E681

Autoignition: Not determined

## (FIRE FIGHTING MEASURES - Continued)

## Fire and Explosion Hazards:

Containers may rupture under fire conditions. Decomposition may occur.

Contact of welding or soldering torch flame with high concentrations of refrigerant can result in visible changes in the size and color of torch flames. This flame effect will only occur in concentrations of product well above the recommended exposure limits, therefore, stop all work and ventilate to disperse refrigerant vapors from the work area before using any open flames.

HFC-23 is not flammable in air at temperatures up to 100 deg. C (212 deg. F) at atmospheric pressure. However, mixtures of HFC-23 with high concentrations of air at elevated pressure and/or temperature can become combustible in the presence of an ignition source. HFC-23 can also become combustible in an oxygen enriched environment (oxygen concentrations greater than that in air). Whether a mixture containing HFC-23 and air, or HFC-23 in an oxygen enriched atmosphere become combustible depends on the inter-relationship of 1) the temperature, 2) the pressure, and 3) the proportion of oxygen in the mixture. In general, HFC-23 should not be allowed to exist with air above atmospheric pressure or at high temperatures; or in an oxygen enriched environment. For example, HFC-23 should NOT be mixed with air under pressure for leak testing or other purposes.

## Extinguishing Media

As appropriate for combustibles in area.

## Fire Fighting Instructions

Use water spray or fog to cool containers. Self-contained breathing apparatus (SCBA) is required if cylinders rupture or release under fire conditions. Water runoff should be contained and neutralized prior to release.

-----  
ACCIDENTAL RELEASE MEASURES  
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## Safeguards (Personnel)

NOTE: Review FIRE FIGHTING MEASURES and HANDLING (PERSONNEL) sections before proceeding with clean-up. Use appropriate PERSONAL PROTECTIVE EQUIPMENT during clean-up.

## (ACCIDENTAL RELEASE MEASURES - Continued)

## Accidental Release Measures

Material evaporates at atmospheric pressure (vaporizes). Ventilate area, especially low places where heavy vapors might collect. Remove open flames. Wear self-contained breathing apparatus (SCBA) for large spills or when a release occurs.

DuPont Fire Emergency Exposure Limits (FEEL) are established to facilitate the safe release of a fire extinguishant into spaces normally occupied by people to extinguish a fire or prevent an explosion and specify airborne concentrations of brief durations which should not result in permanent adverse health effects or interfere with escape. For more information on the applicability of FEEL's, contact DuPont. The DuPont Fire Emergency Exposure Limit (FEEL) for this material is 20% v/v for up to 15 minutes with a 1 minute not-to-exceed ceiling of 23% v/v.

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HANDLING AND STORAGE  
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## Handling (Personnel)

Avoid breathing high concentrations of vapor. Avoid contact of liquid with eyes and prolonged skin exposure. Use with sufficient ventilation to keep employee exposure below recommended limits.

## Storage

Clean, dry area. Do not heat above 51.7 deg C (125 deg F).

-----  
EXPOSURE CONTROLS/PERSONAL PROTECTION  
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## Engineering Controls

Normal ventilation for routine manufacturing procedures is generally adequate. Local exhaust should be used when large amounts are released. Mechanical ventilation should be used in low or enclosed places.

## Personal Protective Equipment

Impervious gloves should be used when handling liquid. Chemical splash goggles should be worn when handling liquid. Under normal manufacturing conditions, no respiratory protection is required when using this product. Self-contained breathing apparatus (SCBA) is required if a large spill or release occurs.

## Exposure Guidelines

## Exposure Limits

FE-13  
PEL (OSHA) : None Established  
TLV (ACGIH) : None Established  
AEL \* (DuPont) : 1000 ppm, 8 & 12 Hr. TWA

\* AEL is DuPont's Acceptable Exposure Limit. Where governmentally imposed occupational exposure limits which are lower than the AEL are in effect, such limits shall take precedence.

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PHYSICAL AND CHEMICAL PROPERTIES  
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## Physical Data

Boiling Point : -82.1 C (-115.8 F)  
Vapor Pressure : 686 psig at 25 deg C (77 deg F)  
Vapor Density : 2.4 (Air = 1)  
% Volatiles : 100 WT%  
Solubility in Water : 0.1 WT% @ 25 C (77 F)  
Odor : Slight ethereal  
Form : Compressed gas or liquefied gas  
Color : Clear, colorless  
Density : 1.44 g/cc at -82 deg C (-115.7 deg F)

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STABILITY AND REACTIVITY  
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## Chemical Stability

Material is stable. However, avoid open flames and high temperatures.

## Incompatibility with Other Materials

Incompatible with alkali or alkaline earth metals - powdered Al, Zn, Be, etc.

## Decomposition

Decomposition products are hazardous. This material can be decomposed by high temperatures (open flames, glowing metal surfaces, etc.) forming HF, COF<sub>2</sub>, or CO. These materials are toxic and irritating. Contact should be avoided.

## Polymerization

Polymerization will not occur.

-----  
TOXICOLOGICAL INFORMATION  
-----

## Animal Data

Inhalation 4-hour LC50: >663,000 ppm in rats

HFC-23 is untested for skin and eye irritancy, and for animal sensitization.

Effects from single high inhalation exposure to HFC-23 include anaesthetic effects, and nonspecific effects such as weight loss were observed at concentrations >22%. No cardiac sensitization was observed in dogs after breathing 800,000 ppm for periods of 5-10 minutes following epinephrine challenge. In another test, dogs exposed to up to 30% or up to 50% (with additional oxygen), had no positive responses. No cardiac sensitization occurred in baboons exposed by inhalation to 10%, 30%, 50%, or 70% HFC-23 before or after an epinephrine challenge; there was a dose-related decrease in heart rates and differences in respiratory rates during exposure.

No animal tests are available to define the carcinogenic hazards of HFC-23. The maternal and developmental NOAEL was 50,000 ppm. HFC-23 is not considered a unique developmental hazard to the conceptus. There were no developmental or reproductive effects.

Tests have shown that HFC-23 does not produce genetic damage in bacterial or mammalian cell cultures. It has not produced genetic damage in tests on animals.

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DISPOSAL CONSIDERATIONS  
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## Waste Disposal

Reclaim by distillation or remove to permitted waste facility. Dispose of in accordance with all Federal, State, and local regulations.

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TRANSPORTATION INFORMATION  
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## Shipping Information

DOT/IMO/IATA  
Proper Shipping Name : Trifluoromethane  
Hazard Class : 2.2  
UN No. : 1984  
DOT/IMO Label : Nonflammable Gas



## (TRANSPORTATION INFORMATION - Continued)

Shipping Containers

Cylinders  
Ton Tanks  
Tank Trucks-----  
REGULATORY INFORMATION  
-----

## U.S. Federal Regulations

TSCA Inventory Status : Reported/Included.

TITLE III HAZARD CLASSIFICATIONS SECTIONS 311, 312

Acute : Yes  
Chronic : No  
Fire : No  
Reactivity : No  
Pressure : Yes

## HAZARDOUS CHEMICAL LISTS

SARA Extremely  
Hazardous Substance - No  
CERCLA Hazardous Substance - No  
SARA Toxic Chemical - No-----  
OTHER INFORMATION  
-----

## NFPA, NPCA-HMIS

NPCA-HMIS Rating  
Health : 1  
Flammability : 0  
Reactivity : 1

Personal Protection rating to be supplied by user depending on use conditions.

-----  
The data in this Material Safety Data Sheet relates only to the specific material designated herein and does not relate to use in combination with any other material or in any process.Responsibility for MSDS : MSDS Coordinator  
> : DuPont Fluoroproducts  
Address : Wilmington, DE 19898  
Telephone : (800) 441-7515

# Indicates updated section.

(Continued)

This information is based upon technical information believed to be reliable. It is subject to revision as additional knowledge and experience is gained.

End of MSDS

# TECHNICAL MANUAL USER FEEDBACK FORM

(Use this report to indicate deficiencies, user remarks and recommendations relating to the publication. Fold on dotted line, tape and mail to  
**KIDDE-FENWAL, Inc., 400 Main Street, Ashland, MA 01721, Attn. Documentation Manager** or FAX to 508-881-8920)

**DATE:** \_\_\_\_\_

<b>1. PART NUMBER</b>	<b>2. VOLUME NO.</b>	<b>3. TITLE (NOMENCLATURE)</b>
-----------------------	----------------------	--------------------------------

<b>4. CHANGE NO. OR REV. DATE</b>	<b>5. SYSTEM/EQUIPMENT</b>	<b>6. PRIORITY OF COMMENT</b>
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**7. USER EVALUATION**

MANUAL IS:      EXCELLENT      GOOD      FAIR      POOR      COMPLETE      INCOMPLETE

**8.**    PROBLEM      QUESTION      SUGGESTION      COMMENT: (check one)

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**9. RECOMMENDED CHANGE TO PUBLICATION**

PAGE NO.	PARAGRAPH NO.	LINE NO.	FIGURE NO.	TABLE NO.	RECOMMENDED CHANGES AND REASON (Use Blank Continuation Sheets as Required)

<b>10. ORIGINATOR</b>	<b>11. COMPANY NAME</b>
-----------------------	-------------------------

**12. ADDRESS**

---

**13. KIDDE-FENWAL USE ONLY**

<b>a. Received</b>	<b>b. Action Necessity</b>	<b>c. Priority</b>	<b>d. Comments</b>

FOLD

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Place  
Stamp  
Here

KIDDE-FENWAL, Inc.  
400 Main Street  
Ashland, MA 01721

Attn. Documentation Manager

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**LIMITED WARRANTY STATEMENT**

Kidde-Fenwal, Inc. represents that this product is free from defects in material and workmanship, and it will repair or replace any product or part thereof which proves to be defective in workmanship or material for a period of twelve (12) months from the date of purchase but not to exceed eighteen (18) months after shipment by Kidde-Fenwal Inc. For a full description of Kidde-Fenwal's LIMITED WARRANTY, which, among other things, EXCLUDES warranties of MERCHANTABILITY and FITNESS FOR A PARTICULAR PURPOSE and liability for CONSEQUENTIAL DAMAGES, please read the entire LIMITED WARRANTY on the Kidde-Fenwal Quotation, Acceptance of Order and/or Original Invoice which will become part of your sales agreement. Please contact Kidde-Fenwal directly for a return material authorization (RMA) number before returning material to the factory at Ashland, Massachusetts, shipment prepaid. Kidde-Fenwal will repair or replace and ship prepaid.

Kidde is a registered trademark of Kidde-Fenwal, Inc.  
FE-13 is a trademark of DuPont.



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These instructions do not purport to cover all the details or variations in the equipment described, nor do they provide for every possible contingency to be met in connection with installation, operation and maintenance. All specifications subject to change without notice. Should further information be desired or should particular problems arise which are not covered sufficiently for the purchaser's purposes, the matter should be referred to KIDDE-FENWAL INC., Ashland, Massachusetts