

**DuPont™ FE-13® fire extinguishing agent HFC-23**

Version 2.2

Revision Date 07/21/2011

Ref. 130000000355

This SDS adheres to the standards and regulatory requirements of the United States and may not meet the regulatory requirements in other countries.

SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Product name : DuPont™ FE-13® fire extinguishing agent HFC-23
Tradename/Synonym : Trifluoromethane
Fluoroform
HFC-23
R23
FE-13

MSDS Number : 130000000355

Product Use : Fire extinguishing agent

Manufacturer : DuPont
1007 Market Street
Wilmington, DE 19898

Product Information : 1-800-441-7515 (outside the U.S. 1-302-774-1000)
Medical Emergency : 1-800-441-3637 (outside the U.S. 1-302-774-1139)
Transport Emergency : CHEMTREC: 1-800-424-9300 (outside the U.S. 1-703-527-3887)

SECTION 2. HAZARDS IDENTIFICATION

Emergency Overview

Misuse or intentional inhalation abuse may lead to death without warning.
Vapours are heavier than air and can cause suffocation by reducing oxygen available for breathing.
Rapid evaporation of the liquid may cause frostbite.

Potential Health Effects

Skin : Contact with liquid or refrigerated gas can cause cold burns and frostbite.

Eyes : Contact with liquid or refrigerated gas can cause cold burns and frostbite.

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Inhalation : Misuse or intentional inhalation abuse may cause death without warning symptoms, due to cardiac effects.
Other symptoms potentially related to misuse or inhalation abuse are: Anaesthetic effects, Light-headedness, dizziness, confusion, incoordination, drowsiness, or unconsciousness, irregular heartbeat with a strange sensation in the chest, heart thumping, apprehension, feeling of fainting, dizziness or weakness.
Vapours are heavier than air and can cause suffocation by reducing oxygen available for breathing.

Carcinogenicity

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

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Component	CAS-No.	Concentration
Trifluoromethane	75-46-7	100 %

SECTION 4. FIRST AID MEASURES

Skin contact : In case of contact, immediately flush skin with plenty of water for at least 15 minutes. Take off all contaminated clothing immediately. Consult a physician. Wash contaminated clothing before re-use. Treat for frostbite if necessary by gently warming affected area.

Eye contact : In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Consult a physician if necessary.

Inhalation : Remove from exposure, lie down. Move to fresh air. Keep patient warm and at rest. Artificial respiration and/or oxygen may be necessary. Consult a physician.

Ingestion : Is not considered a potential route of exposure.

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- General advice : Never give anything by mouth to an unconscious person. When symptoms persist or in all cases of doubt seek medical advice.
- Notes to physician : Because of possible disturbances of cardiac rhythm, catecholamine drugs, such as epinephrine, that may be used in situations of emergency life support should be used with special caution.

SECTION 5. FIREFIGHTING MEASURES

- Flammable Properties
- Flash point : does not flash
- Lower explosion limit : Method : None per ASTM E681
- Upper explosion limit : Method : None per ASTM E681
- Fire and Explosion Hazard : The product is not flammable. Hazardous decomposition products Hydrogen fluoride Not a fire or explosion hazard.
- Suitable extinguishing media : This material is a fire extinguishing agent.

SECTION 6. ACCIDENTAL RELEASE MEASURES

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

- Safeguards (Personnel) : Wear self-contained breathing apparatus and protective suit.
- Accidental Release Measures : Ventilate area, especially low or enclosed places where heavy vapours might collect. Self-contained breathing apparatus (SCBA) is required if a large release occurs.

SECTION 7. HANDLING AND STORAGE

- Handling (Personnel) : CAUTION: High pressure gas and liquid. Avoid contact of liquid with eyes



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and prolonged skin exposure. Use sufficient ventilation to keep employee exposure below recommended limits. Decomposition will occur when product comes in contact with open flame or electrical heating elements.

Storage : Store in a clean, dry place.

Storage temperature : < 52 °C (< 126 °F)

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering controls : Normal ventilation for standard 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
Respiratory protection : Under normal manufacturing conditions, no respiratory protection is required when using this product.

Hand protection : Additional protection: Impervious gloves

Eye protection : Wear safety glasses with side shields. Additionally wear a face shield where the possibility exists for face contact due to splashing, spraying or airborne contact with this material.

Protective measures : Self-contained breathing apparatus (SCBA) is required if a large release occurs.

Exposure Guidelines
Exposure Limit Values
Trifluoromethane
AEL * (DUPONT) 1,000 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.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

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Form	: Liquefied gas
Color	: colourless
Odor	: slight, ether-like
Boiling point	: -82.0 °C (-115.6 °F)
% Volatile	: 100 %
Vapour Pressure	: 46,986 hPa at 25 °C (77 °F)
Density	: 0.380 g/cm ³ at 25 °C (77 °F) (as liquid)
Density	: 1.42 g/cm ³ at -75 °C (-103 °F) (as liquid)
Water solubility	: 1.0 g/l at 25 °C (77 °F) at 1,013 hPa
Vapour density	: 2.4 at 25 °C (77 °F) and 1013 hPa (Air=1.0)

SECTION 10. STABILITY AND REACTIVITY

Conditions to avoid	: Stable at normal temperatures and storage conditions.
Incompatibility	: Alkali metals Alkaline earth metals, Powdered metals, Powdered metal salts
Hazardous decomposition products	: Hazardous decomposition products , Hydrogen fluoride , Carbonyl fluoride, Carbon monoxide
Hazardous reactions	: Polymerization will not occur.

SECTION 11. TOXICOLOGICAL INFORMATION

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Carcinogenicity	: Did not show carcinogenic effects in animal experiments.
Reproductive toxicity	: Did not show mutagenic or teratogenic effects in animal experiments.
Trifluoromethane	
Dermal	: not applicable
Oral	: not applicable
Inhalation 4 h LC50	: > 663000 ppm , rat



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- Inhalation : dog
Cardiac sensitization
- Skin irritation : No skin irritation, Not tested on animals
Not expected to cause skin irritation based on expert review of the properties of the substance.
- Eye irritation : No eye irritation, Not tested on animals
Not expected to cause eye irritation based on expert review of the properties of the substance.
- Skin sensitization : Not tested on animals
Not expected to cause sensitization based on expert review of the properties of the substance.
- Mutagenicity : Did not cause genetic damage in animals.
Did not cause genetic damage in cultured mammalian cells.
Did not cause genetic damage in cultured bacterial cells.
- Teratogenicity : Animal testing showed no developmental toxicity.
- Further information : Cardiac sensitisation threshold limit : > 172414 mg/m3

SECTION 12. ECOLOGICAL INFORMATION

Additional ecological information : no data available

SECTION 13. DISPOSAL CONSIDERATIONS

- Waste Disposal : Can be used after re-conditioning. Recover by distillation or remove to a permitted waste disposal facility. Comply with applicable Federal, State/Provincial and Local Regulations.
- Environmental Hazards : Empty pressure vessels should be returned to the supplier.


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SECTION 14. TRANSPORT INFORMATION

DOT	UN number	: 1984
	Proper shipping name	: Trifluoromethane
	Class	: 2.2
	Labelling No.	: 2.2
IATA_C	UN number	: 1984
	Proper shipping name	: Trifluoromethane
	Class	: 2.2
	Labelling No.	: 2.2
IMDG	UN number	: 1984
	Proper shipping name	: Trifluoromethane
	Class	: 2.2
	Labelling No.	: 2.2

SECTION 15. REGULATORY INFORMATION

SARA 313 Regulated Chemical(s)	: SARA 313: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.
California Prop. 65	: Chemicals known to the State of California to cause cancer, birth defects or any other harm: none known
PA Right to Know Regulated Chemical(s)	: Substances on the Pennsylvania Hazardous Substances List present at a concentration of 1% or more (0.01% for Special Hazardous Substances): Trifluoromethane
NJ Right to Know Regulated Chemical(s)	: Substances on the New Jersey Workplace Hazardous Substance List present at a concentration of 1% or more (0.1% for substances identified as carcinogens, mutagens or teratogens): Trifluoromethane



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SECTION 16. OTHER INFORMATION

HMIS

Health	:	1
Flammability	:	0
Reactivity/Physical hazard	:	1
PPE	:	Personal Protection rating to be supplied by user depending on use conditions.

Before use read DuPont's safety information.

For further information contact the local DuPont office or DuPont's nominated distributors.

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The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

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