

**DuPont™ FE-36™ fire extinguishing agent**

Version 2.0

Revision Date 11/30/2010

Ref. 130000000697

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-36™ fire extinguishing agent
Tradename/Synonym : HFC-236fa
HEXAFLUOROPROPANE

MSDS Number : 130000000697

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.

Repeated exposure : Adverse effects from repeated inhalation may include:
Altered response to stimuli

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
1,1,1,3,3,3-Hexafluoropropane	690-39-1	>=99%

SECTION 4. FIRST AID MEASURES

Skin contact : Flush area with lukewarm water. Do not use hot water. If frostbite has occurred, call a physician.

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

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

Ingestion : Is not considered a potential route of exposure.



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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. FIRE-FIGHTING MEASURES

- Fire and Explosion Hazard : Not a fire or explosion hazard. Hazardous gases/vapors produced are: Hydrogen fluoride
- Suitable extinguishing media : This material is a fire extinguishing agent.
- Firefighting Instructions : Wear self-contained breathing apparatus (SCBA). Wear full protective equipment.

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) : Keep upwind of leak - evacuate until gas has dispersed.
- Accidental Release Measures : Do not enter places where used or stored until adequately ventilated.

SECTION 7. HANDLING AND STORAGE

- Handling (Personnel) : Do not breathe gas. Avoid contact with skin, eyes and clothing. Wash hands thoroughly after handling. Decomposition will occur when product comes in contact with open flame or electrical heating elements.
- Storage : Valve protection caps and valve outlet threaded plugs must remain in place unless container is secured with valve outlet piped to use point. Do not drag, slide or roll cylinders. Use a suitable hand truck for cylinder movement. Never attempt to lift cylinder by its cap. Use a pressure reducing regulator when connecting cylinder to lower pressure (>3000 psig) piping or systems. Use a check valve or trap in the discharge line to prevent hazardous

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back flow into the cylinder. Cylinders should be stored upright and firmly secured to prevent falling or being knocked over.
Separate full containers from empty containers. Keep at temperature not exceeding 52°C. Avoid area where salt or other corrosive materials are present.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

- Engineering controls : Use only with adequate ventilation especially for enclosed and low area where vapors can accumulate. Keep container tightly closed.
- Personal protective equipment
- Respiratory protection : Wear NIOSH approved respiratory protection as appropriate.
- Eye protection : Wear safety glasses or coverall chemical splash goggles.
- Skin and body protection : Where there is potential for skin contact, have available and wear as appropriate, impervious gloves, apron, pants, jacket, hood and boots.

Exposure Guidelines

Exposure Limit Values

1,1,1,3,3,3-Hexafluoropropane

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

- Form : Liquefied gas
- Color : colourless
- Odor : slight, ether-like
- Freezing point : -94 °C (-137 °F)
- Boiling point : -1.44 °C (29.41 °F)
- Vapour Pressure : 2,724 hPa at 25 °C (77 °F)
- Density : 1.3598 g/cm³ at 25 °C (77 °F)
(as liquid)

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Specific Gravity : 1.36 at 25 °C (77 °F)

SECTION 10. STABILITY AND REACTIVITY

Incompatibility : Strong bases metallic sodium, Potassium, lithium

Hazardous decomposition products : Hazardous gases/vapors produced are:, Hydrogen fluoride

Hazardous reactions : Polymerization will not occur.

SECTION 11. TOXICOLOGICAL INFORMATION

1,1,1,3,3,3-Hexafluoropropane

Dermal : not applicable

Oral : not applicable

Inhalation 4 h LC50 : > 457000 ppm , rat

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 : Does not cause skin sensitization., Not tested on animals
Not expected to cause sensitization based on expert review of the properties of the substance.

There are no reports of human respiratory sensitization.

Repeated dose toxicity : Inhalation
rat


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	Reversible, Altered response to stimuli
Carcinogenicity	: Overall weight of evidence indicates that the substance is not carcinogenic.
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 : 932751 mg/m3

SECTION 12. ECOLOGICAL INFORMATION

Aquatic Toxicity

1,1,1,3,3,3-Hexafluoropropane

96 h LC50 : Zebra fish 292 mg/l

96 h ErC50 : Pseudokirchneriella subcapitata > 186 mg/l

48 h EC50 : Daphnia magna (Water flea) 299 mg/l

Environmental Fate

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Biodegradability : 16 %

According to the results of tests of biodegradability this product is not readily biodegradable.

SECTION 13. DISPOSAL CONSIDERATIONS

Waste Disposal	: Can be used after re-conditioning. Reclaim by distillation, incinerate, or remove to permitted waste 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	: 3163
	Proper shipping name	: Liquefied gas, n.o.s. (1,1,1,3,3,3-Hexafluoropropane)
	Class	: 2.2
	Labelling No.	: 2.2
IATA_C	UN number	: 3163
	Proper shipping name	: Liquefied gas, n.o.s. (1,1,1,3,3,3-Hexafluoropropane)
	Class	: 2.2
	Labelling No.	: 2.2
IMDG	UN number	: 3163
	Proper shipping name	: Liquefied gas, n.o.s. (1,1,1,3,3,3-Hexafluoropropane)
	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

SECTION 16. OTHER INFORMATION

	HMIS
Health	: 1
Flammability	: 0
Reactivity/Physical hazard	: 1



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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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