

**DuPont™ FE-25® fire extinguishing agent**

Version 2.0

Revision Date 10/22/2010

Ref. 130000000363

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-25® fire extinguishing agent
MSDS Number : 130000000363

Product Use : Fire extinguishing agent

Manufacturer : DuPont
1007 Market Street
Wilmington, DE 19898

Product Information : 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

Rapid evaporation of the liquid may cause frostbite.

Potential Health Effects

Skin

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

Eyes

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

Inhalation

Pentafluoroethane : May cause: Central nervous system depression, Anaesthetic effects, 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

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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
Pentafluoroethane	354-33-6	100 %

SECTION 4. FIRST AID MEASURES

- Skin contact : Take off all contaminated clothing immediately. Flush area with lukewarm water. Do not use hot water. If frostbite has occurred, call a physician.
- Eye contact : In case of eye contact Hold eyelids apart and flush eyes with plenty of water for at least 15 minutes. Get medical attention.
- 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.
- 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.

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SECTION 5. FIRE-FIGHTING 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 : pressure build-up
Hazardous thermal decomposition products:
Carbon oxides
Hydrogen fluoride
Carbonyl fluoride
Fluorocarbons

Firefighting Instructions : In the event of fire, wear self-contained breathing apparatus.
Wear neoprene gloves during cleaning up work after a fire.
Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. Cool containers / tanks with water spray.

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) : Evacuate personnel to safe areas. Ventilate the area. Refer to protective measures listed in sections 7 and 8.

Spill Cleanup : Evaporates.

Accidental Release Measures : Should not be released into the environment.

SECTION 7. HANDLING AND STORAGE

Handling (Personnel) : Avoid breathing vapours or mist. Avoid contact with skin, eyes and clothing. Provide sufficient air exchange and/or exhaust in work rooms. For personal


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protection see section 8.
Handle in accordance with good industrial hygiene and safety practice.

Handling (Physical Aspects) : No special protective measures against fire required.

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. Never attempt to lift cylinder by its cap. Use a check valve or trap in the discharge line to prevent hazardous 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. Do not store near combustible materials. Keep container tightly closed in a dry and well-ventilated place. Store in original container. Protect from contamination.

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

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering controls : Ensure adequate ventilation, especially in confined areas. Local exhaust should be used when large amounts are released.

Personal protective equipment
Respiratory protection : For rescue and maintenance work in storage tanks use self-contained breathing apparatus. Vapours are heavier than air and can cause suffocation by reducing oxygen available for breathing.

Hand protection : Additional protection: Impervious gloves

Eye protection : 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. Wear safety glasses or coverall chemical splash goggles.

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

Exposure Guidelines
Exposure Limit Values
Pentafluoroethane
AEL *

(DUPONT) 1,000 ppm 8 & 12 hr. TWA

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* 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	: ether-like
Boiling point	: -48.1 °C (-54.6 °F) at 1,013 hPa
% Volatile	: 100 %
Vapour Pressure	: 13,779 hPa at 25 °C (77 °F)
Density	: 1.22 g/cm ³ at 20 °C (68 °F) (as liquid)
Water solubility	: 0.9 g/l at 25 °C (77 °F) at 1,013 hPa
Vapour density	: 4.2 (Air = 1.0)

SECTION 10. STABILITY AND REACTIVITY

Stability	: Stable under recommended storage conditions.
Conditions to avoid	: The product is not flammable in air under ambient conditions of temperature and pressure. When pressurised with air or oxygen, the mixture may become flammable. Certain mixtures of HCFCs or HFCs with chlorine may become flammable or reactive under certain conditions.
Incompatibility	: Alkali metals Alkaline earth metals, Powdered metals, Powdered metal salts
Hazardous decomposition products	: Hazardous thermal decomposition products: Carbon oxides, Hydrogen fluoride, Carbonyl fluoride, Fluorocarbons

SECTION 11. TOXICOLOGICAL INFORMATION

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Carcinogenicity : Animal testing did not show any carcinogenic effects.

Reproductive toxicity : Did not show mutagenic or teratogenic effects in animal experiments.


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Further information	:	Cardiac sensitisation threshold limit : > 245400 mg/m ³ Anaesthetic effects threshold limit : 490800 mg/m ³ Rapid evaporation of the liquid may cause frostbite.
Pentafluoroethane		
Inhalation 4 h LC50	:	800000 ppm , rat Cardiac sensitization
Repeated dose toxicity	:	Inhalation rat No toxicologically significant effects were found.
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.

SECTION 12. ECOLOGICAL INFORMATION
SECTION 13. DISPOSAL CONSIDERATIONS

Waste Disposal	:	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.

SECTION 14. TRANSPORT INFORMATION

DOT	UN number	:	3220
	Proper shipping name	:	Pentafluoroethane
	Class	:	2.2
	Labelling No.	:	2.2
IATA_C	UN number	:	3220

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	Proper shipping name	: Pentafluoroethane
	Class	: 2.2
	Labelling No.	: 2.2
IMDG	UN number	: 3220
	Proper shipping name	: Pentafluoroethane
	Class	: 2.2
	Labelling No.	: 2.2

SECTION 15. REGULATORY INFORMATION

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

Before use read DuPont's safety information.
For further information contact the local DuPont office or DuPont's nominated distributors.
® DuPont's registered trademark

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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