

HFC 227ea • Safety Data

for use with

FSL Chemical Gas Systems

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

Product information

Product name: FSL-227 Fire Extinguishing Agent
Synonyms: HFC-227 (Trade names FM-200™ FE-227™ from DuPont)
Use of the Substance/Preparation: Fire extinguishing agent

2. HAZARDS IDENTIFICATION

Rapid evaporation of the liquid may cause frostbite.

Vapours are heavier than air and can cause suffocation by reducing oxygen available for breathing.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name: 1,1,1,2,3,3,3-Heptafluoropropane CAS-No. 431-89-0 EC-No207-079-2
Classification Concentration [%] >= 99

4. FIRST AID MEASURES

General advice: If unconscious, place in recovery position and seek medical advice. Never give anything by mouth to an unconscious person. If breathing is irregular or stopped, administer artificial respiration. If symptoms persist, call a physician.

Inhalation: Move to fresh air. Keep patient warm and at rest. Artificial respiration and/or oxygen may be necessary.

Skin contact: Wash off with warm water. Take off all contaminated clothing immediately.

Eye contact: Rinse thoroughly with plenty of water, also under the eyelids. Consult a physician.

Notes to physician

Treatment: Do not give adrenaline or similar drugs.

5. FIRE-FIGHTING MEASURES

Specific hazards during fire fighting: pressure build-up

Special protective equipment for fire-fighters: In the event of fire, wear self-contained breathing apparatus.

Further information: Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. Cool containers / tanks with water spray.

6. ACCIDENTAL RELEASE MEASURES

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

Environmental precautions: Should not be released into the environment.

Methods for cleaning up: Evaporates.

7. HANDLING AND STORAGE

Handling

Advice on safe handling: Provide sufficient air exchange and/or exhaust in work rooms. For personal protection see section 8.

Advice on protection against fire and explosion: No special protective measures against fire required.

Storage

Requirements for storage areas and containers: Keep container tightly closed in a dry and well-ventilated place. Store in the original container.

Advice on common storage: No materials to be especially mentioned.

German storage class: 2A: Compressed, liquefied or pressurised gas



8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering measures:	Ensure adequate ventilation, especially in confined areas.
<i>Personal protective equipment</i>	
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:	Heat insulating gloves
Eye protection:	Safety glasses
Hygiene measures:	Handle in accordance with good industrial hygiene and safety practice.

9. PHYSICAL AND CHEMICAL PROPERTIES

Form:	Liquefied gas,
Colour:	colourless,
Odour:	slight, ether-like,
pH:	neutral
Melting point/range:	-133 - -131 °C
Boiling point/boiling range:	-17 - -15 °C at 1 013 hPa
Flash point:	does not flash
Explosive properties:	Not explosive
Vapour pressure:	4 468 hPa at 25 °C
Vapour pressure:	4 000 hPa at 20 °C
Density:	1,4 - 1,5 g/cm ³ at 25 °C, (as liquid)
Density:	0,0076 g/cm ³ at 0 °C (1 013 hPa)
Density:	0,0070 g/cm ³ at 25 °C (1 013 hPa)
Relative vapour density:	5,87

10. STABILITY AND REACTIVITY

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.
Materials to avoid:	Alkali metals, Alkaline earth metals, powdered metals, Powdered metal salts
Hazardous decomposition products:	Hydrogen halides, Carbon dioxide (CO ₂), Carbon monoxide, I Fluorocarbons, Carbonyl halides

11. TOXICOLOGICAL INFORMATION

Acute inhalation toxicity

1,1,1,2,3,3,3- Heptafluoropropane:	LC50/ 4 h/ rat : 5 485 mg/l
Carcinogenicity assessment:	Did not show carcinogenic effects in animal experiments.
Toxicity to reproduction assessment:	Did not show mutagenic or teratogenic effects in animal experiments.
Human experience:	Excessive exposures may affect human health, as follows: Inhalation: Severe shortness of breath, narcosis, Irregular cardiac activity
Further information:	Rapid evaporation of the liquid may cause frostbite.

12. ECOLOGICAL INFORMATION

Ozone depletion potential:	0
Global warming potential (GWP):	3 500

13. DISPOSAL CONSIDERATIONS

Product:	Can be used after re-conditioning.
Contaminated packaging:	Empty pressure vessels should be returned to the supplier.



14. TRANSPORT INFORMATION

ADR

Class:	2
Classification Code:	2A
HI No.:	20
UN-Number:	3296
Labelling No.:	2.2
Proper shipping name:	Heptafluoropropane

IATA_C

Class:	2.2
UN-Number:	3296
Labelling No.:	2.2
Proper shipping name:	Heptafluoropropane

IMDG

Class:	2.2
UN-Number:	3296
Labelling No.:	2.2
Proper shipping name:	Heptafluoropropane

15. REGULATORY INFORMATION

Labelling according to EC Directives

Special labelling of certain preparations: Contains fluorinated greenhouse gas covered by the Kyoto Protocol.

16. OTHER INFORMATION

Further information

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 above information relates only to the specific material(s) designated herein and may not be valid for such material(s) used in combination with any other materials or in any process or if the material is altered or processed, unless specified in the text.

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