

## SAFETY DATA SHEET

1,1,1,3,3,3-HEXAFLUOROPROPANE (FC-236FA)

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Compilation date: 23/01/2007

Revision date: 07/10/2015

Revision No: 4

### Section 1: Identification of the substance/mixture and of the company/undertaking

#### 1.1. Product identifier

**Product name:** 1,1,1,3,3,3-HEXAFLUOROPROPANE (FC-236FA)

**CAS number:** 690-39-1

**Product code:** PC4788

**Synonyms:** 2H,2H-PERFLUOROPROPANE

#### 1.2. Relevant identified uses of the substance or mixture and uses advised against

#### 1.3. Details of the supplier of the safety data sheet

**Company name:** Apollo Scientific Ltd

Units 3 & 4

Parkway

Denton

Manchester

M34 3SG

UK

**Tel:** 0161 337 9971

**Fax:** 0161 336 6932

**Email:** david.tideswell@apolloscientific.co.uk

#### 1.4. Emergency telephone number

### Section 2: Hazards identification

#### 2.1. Classification of the substance or mixture

**Classification under CLP:** Press. Gas: H280

**Most important adverse effects:** Contains gas under pressure; may explode if heated.

#### 2.2. Label elements

**Label elements:**

**Hazard statements:** H280: Contains gas under pressure; may explode if heated.

**Signal words:** Warning

**Hazard pictograms:** GHS04: Gas cylinder



**Precautionary statements:** P251: Do not pierce or burn, even after use.

P260: Do not breathe gas.

P280: Wear protective gloves/protective clothing/eye protection/face protection.

[cont...]

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## 2.3. Other hazards

**PBT:** This product is not identified as a PBT/vPvB substance.

## Section 3: Composition/information on ingredients

### 3.1. Substances

**Chemical identity:** 1,1,1,3,3,3-HEXAFLUOROPROPANE (FC-236FA)

**CAS number:** 690-39-1

## Section 4: First aid measures

### 4.1. Description of first aid measures

**Skin contact:** Wash immediately with plenty of soap and water.

**Eye contact:** Bathe the eye with running water for 15 minutes. Consult a doctor.

**Ingestion:** Wash out mouth with water. Unlikely route of exposure.

**Inhalation:** Remove casualty from exposure ensuring one's own safety whilst doing so. If unconscious, check for breathing and apply artificial respiration if necessary. If unconscious and breathing is OK, place in the recovery position. Consult a doctor.

### 4.2. Most important symptoms and effects, both acute and delayed

**Skin contact:** Frost-bite may occur causing the affected area to become white and numb.

**Eye contact:** There may be irritation and redness.

**Ingestion:** There may be soreness and redness of the mouth and throat.

**Inhalation:** May be harmful if inhaled. There may be irritation of the throat with a feeling of tightness in the chest. Exposure may cause coughing or wheezing. Vapours may cause drowsiness and dizziness.

**Delayed / immediate effects:** Immediate effects can be expected after short-term exposure.

### 4.3. Indication of any immediate medical attention and special treatment needed

**Immediate / special treatment:** Show this safety data sheet to the doctor in attendance.

## Section 5: Fire-fighting measures

### 5.1. Extinguishing media

**Extinguishing media:** Use water spray to cool containers. Move cylinder away from fire if there is no risk.

### 5.2. Special hazards arising from the substance or mixture

**Exposure hazards:** Explosion risk in case of fire. Fight fire remotely due to the risk of explosion. In combustion emits toxic fumes of carbon dioxide / carbon monoxide. Hydrogen fluoride (HF).

### 5.3. Advice for fire-fighters

**Advice for fire-fighters:** Wear self-contained breathing apparatus. Wear protective clothing to prevent contact with skin and eyes.

[cont...]

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## Section 6: Accidental release measures

### 6.1. Personal precautions, protective equipment and emergency procedures

**Personal precautions:** Refer to section 8 of SDS for personal protection details. Eliminate all sources of ignition. If outside keep bystanders upwind and away from danger point.

### 6.2. Environmental precautions

**Environmental precautions:** Alert the neighbourhood to the presence of fumes or gas.

### 6.3. Methods and material for containment and cleaning up

**Clean-up procedures:** Ventilate area.

### 6.4. Reference to other sections

**Reference to other sections:** Refer to section 8 of SDS.

## Section 7: Handling and storage

### 7.1. Precautions for safe handling

**Handling requirements:** Content under pressure Do not breathe vapour. Ensure there is sufficient ventilation of the area. Do not handle in a confined space. Only use in fume hood.

### 7.2. Conditions for safe storage, including any incompatibilities

**Storage conditions:** Store in a cool, well ventilated area. Keep container tightly closed. Keep away from sources of ignition.

**Suitable packaging:** Must only be kept in original packaging.

### 7.3. Specific end use(s)

**Specific end use(s):** No data available.

## Section 8: Exposure controls/personal protection

### 8.1. Control parameters

**Workplace exposure limits:** No data available.

### DNEL/PNEC Values

**DNEL / PNEC** No data available.

### 8.2. Exposure controls

**Engineering measures:** Ensure there is sufficient ventilation of the area.

**Respiratory protection:** Self-contained breathing apparatus must be available in case of emergency.

**Hand protection:** Protective gloves.

**Eye protection:** Safety glasses. Ensure eye bath is to hand.

**Skin protection:** Protective clothing.

## Section 9: Physical and chemical properties

[cont...]

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### 9.1. Information on basic physical and chemical properties

**State:** Liquified gas

**Colour:** Colourless

**Boiling point/range °C:** -1.1

**Melting point/range °C:** -93.6

**Vapour pressure:** 1956mmHg@25°C

**Relative density:** 1.371 g/cm<sup>3</sup>

### 9.2. Other information

**Other information:** No data available.

## Section 10: Stability and reactivity

### 10.1. Reactivity

**Reactivity:** Stable under recommended transport or storage conditions.

### 10.2. Chemical stability

**Chemical stability:** Stable under normal conditions.

### 10.3. Possibility of hazardous reactions

**Hazardous reactions:** Hazardous reactions will not occur under normal transport or storage conditions.

### 10.4. Conditions to avoid

**Conditions to avoid:** Heat. Sources of ignition.

### 10.5. Incompatible materials

**Materials to avoid:** Strong oxidising agents. Strong acids.

### 10.6. Hazardous decomposition products

**Haz. decomp. products:** In combustion emits toxic fumes of carbon dioxide / carbon monoxide. Hydrogen fluoride (HF).

## Section 11: Toxicological information

### 11.1. Information on toxicological effects

**Toxicity values:** No data available.

### Symptoms / routes of exposure

**Skin contact:** Frost-bite may occur causing the affected area to become white and numb.

**Eye contact:** There may be irritation and redness.

**Ingestion:** There may be soreness and redness of the mouth and throat.

**Inhalation:** May be harmful if inhaled. There may be irritation of the throat with a feeling of tightness in the chest. Exposure may cause coughing or wheezing. Vapours may cause drowsiness and dizziness.

**Delayed / immediate effects:** Immediate effects can be expected after short-term exposure.

## Section 12: Ecological information

[cont...]

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### 12.1. Toxicity

**Ecotoxicity values:** No data available.

### 12.2. Persistence and degradability

**Persistence and degradability:** No data available.

### 12.3. Bioaccumulative potential

**Bioaccumulative potential:** No data available.

### 12.4. Mobility in soil

**Mobility:** No data available.

### 12.5. Results of PBT and vPvB assessment

**PBT identification:** This product is not identified as a PBT/vPvB substance.

### 12.6. Other adverse effects

**Other adverse effects:** No data available.

## Section 13: Disposal considerations

### 13.1. Waste treatment methods

**Disposal operations:** MATERIAL SHOULD BE DISPOSED OF IN ACCORDANCE WITH LOCAL, STATE AND FEDERAL REGULATIONS

**Disposal of packaging:** Dispose of as special waste in compliance with local and national regulations Observe all federal, state and local environmental regulations.

**NB:** The user's attention is drawn to the possible existence of regional or national regulations regarding disposal.

## Section 14: Transport information

### 14.1. UN number

**UN number:** UN3163

### 14.2. UN proper shipping name

**Shipping name:** LIQUEFIED GAS, N.O.S.  
(1,1,1,3,3,3-Hexafluoropropane (FC-236fa))

### 14.3. Transport hazard class(es)

**Transport class:** 2

### 14.4. Packing group

### 14.5. Environmental hazards

**Environmentally hazardous:** No

**Marine pollutant:** No

### 14.6. Special precautions for user

**Special precautions:** No special precautions.

[cont...]

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Tunnel code: C/E

Transport category: 3

## Section 15: Regulatory information

### 15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

### 15.2. Chemical Safety Assessment

**Chemical safety assessment:** A chemical safety assessment has not been carried out for the substance or the mixture by the supplier.

## Section 16: Other information

### Other information

**Other information:** This safety data sheet is prepared in accordance with Commission Regulation (EU) No 453/2010.

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\* Data predicted using computational software. Toxtree - Toxic Hazard Estimation by decision tree approach. <http://ecb.jrc.ec.europa.eu/qsar/qsar-tools/index.php?c=TOXTREE>

~ Data predicted using computational software ACD/ToxSuite v 2.95.1 Copyright 1994-2009 ACD/labs, Copyright 2001-2009 Pharma Algorithms, Inc, Advanced Chemistry Development, Inc (ACD/Labs). [http://www.acdlabs.com/products/pc\\_admet/tox/tox/](http://www.acdlabs.com/products/pc_admet/tox/tox/)

**Phrases used in s.2 and s.3:** H280: Contains gas under pressure; may explode if heated.

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