

**SAFETY DATA SHEET**  
PERFLUOROETHANE (FC-116) 99%

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Compilation date: 09/11/2009

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Revision No: 4

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

**1.1. Product identifier**

**Product name:** PERFLUOROETHANE (FC-116) 99%

**CAS number:** 76-16-4

**EINECS number:** 200-939-8

**Product code:** PC4680

**Synonyms:** HEXAFLUOROETHANE(FC-116)

**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:** Skin Irrit. 2: H315; Eye Irrit. 2: H319; STOT SE 3: H335; STOT SE 3: H336; Press. Gas: H280

**Most important adverse effects:** Contains gas under pressure; may explode if heated. Causes skin irritation. Causes serious eye irritation. May cause respiratory irritation. May cause drowsiness or dizziness.

**2.2. Label elements**

**Label elements:**

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

H315: Causes skin irritation.

H319: Causes serious eye irritation.

H335: May cause respiratory irritation.

H336: May cause drowsiness or dizziness.

[cont...]

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**Signal words:** Warning

**Hazard pictograms:** GHS04: Gas cylinder

GHS07: Exclamation mark



**Precautionary statements:** P271: Use only outdoors or in a well-ventilated area.

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

**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:** PERFLUOROETHANE (FC-116) 99%

**CAS number:** 76-16-4

**EINECS number:** 200-939-8

**Section 4: First aid measures**

**4.1. Description of first aid measures**

**Skin contact:** Remove all contaminated clothes and footwear immediately unless stuck to skin. 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. Consult a doctor.

**Inhalation:** Remove casualty from exposure ensuring one's own safety whilst doing so. Consult a doctor.

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

**Skin contact:** There may be irritation and redness at the site of contact.

**Eye contact:** There may be irritation and redness. The eyes may water profusely.

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

**Inhalation:** There may be irritation of the throat with a feeling of tightness in the chest. Exposure may cause coughing or wheezing.

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

**Section 5: Fire-fighting measures**

**5.1. Extinguishing media**

**Extinguishing media:** Carbon dioxide, dry chemical powder, foam. Suitable extinguishing media for the surrounding fire should be used. Use water spray to cool containers.

[cont...]

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

**Exposure hazards:** In combustion emits toxic fumes. Nitrogen oxides (NO<sub>x</sub>).

**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.

**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. If outside do not approach from downwind. If outside keep bystanders upwind and away from danger point. Mark out the contaminated area with signs and prevent access to unauthorised personnel. Turn leaking containers leak-side up to prevent the escape of liquid.

**6.2. Environmental precautions**

**Environmental precautions:** Do not discharge into drains or rivers. Contain the spillage using bunding.

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

**Clean-up procedures:** Absorb into dry earth or sand. Transfer to a closable, labelled salvage container for disposal by an appropriate method.

**6.4. Reference to other sections**

**Section 7: Handling and storage**

**7.1. Precautions for safe handling**

**Handling requirements:** Avoid direct contact with the substance. Ensure there is sufficient ventilation of the area. Do not handle in a confined space. Avoid the formation or spread of mists in the air. 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.

**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.

[cont...]

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**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**

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

- State:** Liquified gas
- Colour:** Colourless
- Evaporation rate:** No data available.
- Oxidising:** No data available.
- Solubility in water:** No data available.
- Viscosity:** No data available.
- Boiling point/range°C:** -78
- Melting point/range°C:** -100
- Flammability limits %: lower:** No data available.
- upper:** No data available.
- Flash point°C:** No data available.
- Part.coeff. n-octanol/water:** No data available.
- Autoflammability°C:** No data available.
- Vapour pressure:** 459 hPa at 21 °C
- Relative density:** 1.607 g/mL @ -78°C
- pH:** No data available.
- VOC g/l:** No data available.

**9.2. Other information**

- Other information:** Vapour density: 9.3

**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.

**10.5. Incompatible materials**

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

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**10.6. Hazardous decomposition products**

**Haz. decomp. products:** In combustion emits toxic fumes of carbon dioxide / carbon monoxide.

**Section 11: Toxicological information**

**11.1. Information on toxicological effects**

**Relevant hazards for substance:**

Hazard	Route	Basis
Skin corrosion/irritation	DRM	Hazardous: calculated
Serious eye damage/irritation	OPT	Hazardous: calculated
STOT-single exposure	INH	Hazardous: calculated

**Symptoms / routes of exposure**

**Skin contact:** There may be irritation and redness at the site of contact.

**Eye contact:** There may be irritation and redness. The eyes may water profusely.

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

**Inhalation:** There may be irritation of the throat with a feeling of tightness in the chest. Exposure may cause coughing or wheezing.

**Other information:** RTECS: KI4110000 See actual RTECS entry for complete information.

**Section 12: Ecological information**

**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:** Transfer to a suitable container and arrange for collection by specialised disposal company. MATERIAL SHOULD BE DISPOSED OF IN ACCORDANCE WITH LOCAL, STATE AND FEDERAL REGULATIONS

[cont...]

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**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: UN2193

**14.2. UN proper shipping name**

Shipping name: HEXAFLUOROETHANE (R 116)

**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**

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. The OECD QSAR-Toolbox for grouping chemicals into categories. Developed by LMC bulgaria.  
<http://echa.europa.eu/support/oecd-qsar-toolbox>

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

H315: Causes skin irritation.

H319: Causes serious eye irritation.

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