

**According to Regulation (EU) No. 1907/2006 (REACH), Annex II  
(COMMISSION REGULATION (EU) No 453/2010)**

Version: 1.0/EN

Prepared date:  
18/05/2016

Product name: **1,1,1,3,3,3-Hexafluoropropane (HFC-236FA)**

Revision date:  
18/05/2016

**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  
REACH Reg. No.: 01-2120026963-54-0000  
CAS No.: 690-39-1

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

Identified uses: Fire extinguishing agent.  
Uses advised against: No information available.

**1.3 Details of the supplier of the SDS**

Company: **BlazeCut s.r.o**  
Address: Priemyselná 2521, 900 27 Bernolákovo Slovakia  
E-mail: [technical@blazecut.com](mailto:technical@blazecut.com)  
Telephone: +421 911 712 640; +61 2 8006 1300

**1.4 Emergency telephone number**

EU: +421 2 54774166, AUS +61 8 6102 8552, +61 403 006 070

**SECTION 2: Hazards identification**

**2.1 Classification of the substance or mixture**

Classification according to Regulation (EC) No 1272/2008[CLP]  
Liquefied gas; H280

Classification according to Directive 67/548/EEC[DSD] or Directive 1999/45/EC[DPD]

This product is not classified as hazardous.

**Additional information**

Full text of R-phrases(s)/H-statement(s): see SECTION 16.

**2.2 Label elements**

Labelling according to Regulation (EC) No 1272/2008[CLP]

Hazard pictogram(s):



Signal word:

Warning

**Hazard statement(s):** H280: Contains gas under pressure; may explode if heated.

**Precautionary statement(s):**

Storage: P410+P403: Protect from sunlight. Store in a well-ventilated place.

**Supplemental Hazard information (EUH):**

No information available.

**Special rules for supplemental label elements for certain mixtures:**

No information available.

### 2.3 Other hazards

No information available.

## SECTION 3: Composition/information on ingredients

### 3.1 Substance/Preparation information

Substance name: 1,1,1,3,3,3-Hexafluoropropane  
Index No.: None  
CAS No.: 690-39-1  
EC No.: 425-320-1  
Purity:  $\geq 99.6 - < 100$  % (w/w)

## SECTION 4: First aid measures

### 4.1 Description of first aid measures

**General notes:**

In all cases of doubt, or when symptoms persist, seek medical attention.

**Following inhalation:**

Move to fresh air. Artificial respiration if not breathing. Administer oxygen if breathing is labored. Seek medical attention.

**Following skin contact:**

Flush/irrigate (spray) with water. Apply sterile dressing as necessary. Seek medical treatment for symptoms of frostbite.

**Following eye contact:**

Flush/irrigate with fresh water. Seek medical attention.

**Following ingestion:**

Ingestion is not considered a potential route of exposure.

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

Skin contact may provoke the following symptoms: frostbite; Inhalation may provoke the following symptoms: shortness of breath, dizziness, weakness, nausea, headache, narcosis, irregular cardiac activity.

### 4.3 Indication of the immediate medical attention and special treatment needed

No information available.

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## SECTION 5: Fire-fighting measures

### 5.1 Extinguishing media

**Suitable extinguishing media:** Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. Such as water spray, foam, dry chemical, carbon dioxide (CO<sub>2</sub>).

**Unsuitable extinguishing media:** No information available.

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

Fire or intense heat may cause violent rupture of packages.

Container rupture possible if pressure and temperature relief valves should fail.

Thermal decomposition can lead to release of irritating or toxic gases/vapors: carbon oxides, hydrogen fluoride, carbonyl fluoride, fluorocarbons.

### 5.3 Advice for fire-fighters

Employ water spray from a safe distance to prevent container rupture. If containers should rupture, use self-contained breathing apparatus.

Product is non-flammable, but denser than air, posing asphyxiation risk. Thoroughly ventilate affected area to remove product and any decomposition products before allowing re-entry.

## SECTION 6: Accidental release measures

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

Refer to SECTION 8 for personal protective equipment. Prevention of skin and eye contact. Ensure adequate ventilation. Remove all sources of ignition. Wear self-contained breathing apparatus when entering area unless atmosphere is proved to be safe. Prevent from entering sewers, basements and work pits, or any place where its accumulation can be dangerous.

### 6.2 Environmental precautions

Do not discharge into drains/surface waters/groundwater.

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

Evacuate and ventilate the affected area. Prohibit general entry into areas where high concentrations may exist, particularly confined or poorly ventilated areas. Keep in mind that this product is denser than air and that concentrations will be higher at lower levels (sewers, basements or pits). Trained personnel should use self-contained breathing apparatus when entering areas where high concentrations may exist.

### 6.4 Reference to other Section's

See SECTION 7 for information on safe handling.

See SECTION 8 for information on personal protection equipment.

See SECTION 13 for information on disposal.

## SECTION 7: Handling and storage

### 7.1 Precautions for safe handling

Handle in accordance with good industrial hygiene and safety practice. Use personal protective equipment as required. Avoid breathing vapors or mist. Do not get in eyes, on skin, or on clothing. Wash thoroughly after handling. Do not smoke in workplace. Suck back of water into the container must be prevented. Never attempt to transfer gases from one cylinder/container to another. Never use direct flame or electrical heating devices to raise the pressure of a container. Do not remove or deface labels provided by the supplier for the identification of the cylinder contents. Purge system with dry inert gas (e.g. helium or nitrogen) before gas is introduced and when system is placed out of service.

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

Store in a cool, dry, well-ventilated area separate from incompatible materials. Protect containers from mechanical damage.

### 7.3 Specific end use(s)

Apart from the uses mentioned in SECTION 1.2 no other specific uses are stipulated.

## SECTION 8 : Exposure controls/personal protection

### 8.1 Control parameters

**Occupational exposure limit values:**

Not established.

**DNEL (Derived No Effect Level) for workers and the general population:**

Not available.

**PNEC (Predicted No Effect Concentration) values:**

Not available.

### 8.2 Exposure controls

**Appropriate engineering controls:**

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

**Personal protective equipment:**

Eye and face 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.

Skin protection: Impervious clothing

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

**Environmental exposure controls:**

Do not empty into drains.

## SECTION 9: Physical and chemical properties

### 9.1 Information on basic physical and chemical properties

Appearance:	Colorless liquefied gas
Odor:	Other: slight, ether-like
pH:	Not available.
Freezing point:	-103°C
Boiling point:	-2°C (101.3 kPa)
Flash point:	Not applicable.
Evaporation rate:	Not available.
Flammability (solid, gas):	Not flammable
Upper/lower flammability or explosive limits:	Not available.
Vapor pressure:	249 kPa (at 20 °C)
Density:	6.18 ± 0.06 kg/m <sup>3</sup> at 22.4 °C
Solubility(ies):	In water: 724 mg/L (at 20 °C)
Partition coefficient: n-octanol/water:	log Pow= 1.12(at 20 °C)
Auto-ignition temperature:	Product is not self-igniting.
Decomposition temperature:	Not available.
Viscosity:	Not available.
Explosive properties:	No explosive properties.
Oxidizing properties:	Not available.

### 9.2 Other information

Surface tension	73 mN/m (at 20 °C, Concentration 707 mg/L)
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## SECTION 10: Stability and reactivity

### 10.1 Reactivity

Stable under recommended storage and handling conditions (see SECTION 7, handling and storage).  
Decomposes on heating.

### 10.2 Chemical stability

Stable under normal conditions of use.

### 10.3 Possibility of hazardous reactions

No known hazardous reactions.

### 10.4 Conditions to avoid

The product is not flammable in air under ambient conditions of temperature and pressure. When pressurized with air or oxygen, the mixture may become flammable. Certain mixtures of HCFC's or HFC's with chlorine may become flammable or reactive under certain conditions.

### 10.5 Incompatible materials

Alkali metals, alkaline earth metals, powdered metals, powdered metal salts.

## 10.6 Hazardous decomposition products

Hazardous thermal decomposition products may include: carbon oxides, hydrogen fluoride, carbonyl fluoride, fluorocarbons.

## SECTION 11: Toxicological information

### 11.1 Information on toxicological effects

#### Acute toxicity

LC50> 457000 ppm/4 h(rat)

#### Skin corrosion/irritation:

Product is not irritating to skin.

#### Serious eye damage/irritation:

Product is not irritating to eyes.

#### Respiratory or skin sensitization:

Product is not sensitizing.

#### Germ cell mutagenicity:

No information available.

#### Carcinogenicity:

No information available.

#### Reproductive toxicity:

No information available.

#### STOT-single exposure:

No information available.

#### STOT-repeated exposure:

No information available.

#### Aspiration hazard:

No information available.

## SECTION 12: Ecological information

### 12.1 Toxicity

Invertebrates: EC50=259 mg/L/24h

EC50=299 mg/L/48h

Algae and cyanobacteria: EC50> 186 mg/L/72 h (biomass, growth rate)

NOEC>= 186 mg/L/72 h (biomass, growth rate)

## 12.2 Persistence and degradability

The substance was not biodegraded by microorganisms.

## 12.3 Bio accumulative potential

Bioaccumulation is not expected (Log Kow < 3).

## 12.4 Mobility in soil

No information available.

## 12.5 Results of PBT and vPvB assessment

PBT/vPvB assessment information is not available as chemical safety assessment not conducted.

## 12.6 Other adverse effects

No information available.

## SECTION 13: Disposal considerations

### 13.1 Waste treatment methods

Product: Can be used after re-conditioning. In accordance with local and national regulations.

Contaminated packaging: Empty pressure vessels should be returned to the supplier.

## SECTION 14: Transport information

14.1 UN Number	3163
14.2 UN proper shipping name	LIQUEFIED GAS, N.O.S.( 1,1,1,3,3,3-Hexafluoropropane)
14.3 Transport hazard class(es)	2.2
14.4 Packing group	None
14.5 Environmental hazards	Product is not marine pollutant.
14.6 Special precautions for user	No information available.
14.7 Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code	The product is not intended to be transport in bulk.

## SECTION 15: Regulatory information

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

#### EU regulation:

Authorizations: Not applicable.

Restrictions on use: Not applicable.

EINECS: CAS#690-39-1 is not listed.

## Other chemical regulation:

CAS No.	USA TSCA	Canada DSL	Australia AICS	Korea ECL	China IECSC
690-39-1	Listed	Listed	Not listed	Listed	Listed
Remark: The above-mentioned search results are based on the Non-Confidential Inventory.					

## 15.2 Chemical Safety Assessment

Chemical Safety Assessment has been carried out for this product.

## SECTION 16: Other information

### 16.1 Revision Information

Date of the previous revision: Not applicable.

Date of this revision: 18/05/2016.

Revision summary: The first new SDS

### 16.2 Abbreviations and acronyms

**CLP:** EU regulation (EC) No 1272/2008 on classification, labelling and packaging of chemical substances and mixtures.

**CAS:** Chemical Abstracts Service (division of the American Chemical Society).

**EINECS:** European Inventory of Existing Commercial Chemical Substances.

**DSD:** Dangerous Substance Directive (67/548/EEC).

**TSCA:** Toxic Substances Control Act, The American chemical inventory.

**DSL:** Domestic Substances List, The Canadian chemical inventory.

**AICS:** The Australian Inventory of Chemical Substances.

**ECL:** Existing Chemicals List, the Korean chemical inventory.

**IECSC:** Inventory of existing chemical substances in China.

### 16.3 Key literature references and sources for data

Provided by company.

### 16.4 Relevant R-phrases/H-statements

H280 Contains gas under pressure; may explode if heated.

### 16.5 Training advice

Provide adequate information, instruction and training for operators.

### 16.6 Declare to reader

The information in this SDS is provided all the relevant data fully and truly. However, the information is provided without any warranty on their absolute extensiveness and accuracy. This SDS was prepared to provide safety preventive measures for the users who have got professional training. The personal user who obtained this SDS should make independent judgment for the applicability of this SDS under special conditions. In these special cases, we do not assume responsibility for the damage. According to REACH Article 31(5), the SDS shall be supplied in an official language of the Member State(s) where the substance or mixture is placed on the market, unless the recipient Member State(s) concerned provide otherwise. It should also be noted that this SDS is applicable to the countries with English as an official language.