

# SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006, as amended

**Honeywell**

## Genetron® 245fa

000000009878

Version 2.11

Revision Date 28.01.2025

Supersedes 1

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

#### 1.1. Product identifier

Product name : Genetron® 245fa

SDS-number : 000000009878

Type of product : Substance

Remarks : SDS according to Art. 31 of Regulation (EC) 1907/2006.

Chemical name : 1,1,1,3,3-Pentafluoropropane

CAS-No. : 460-73-1

REACH Registration Number : 01-0000016587-60

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

Use of the Substance/Mixture : Refrigerant  
Heat transfer fluid

Uses advised against : none

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

Company : Honeywell Advanced Limited      Honeywell International, Inc.  
One Spencer Dock, North Wall      115 Tabor Road  
Quay      Morris Plains, NJ 07950-2546  
Dublin 1      USA  
Ireland

Telephone : +353 1 447 9350

For further information, please contact: : SafetyDataSheet@Honeywell.com

#### 1.4. Emergency telephone number

Emergency telephone number : +1-703-527-3887 (ChemTrec-Transport)  
+1-303-389-1414 (Medical)  
: Poison Control Center:  
Ireland: +353(1)8092166 United Kingdom: (+44) 844 892 0111

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### SECTION 2: Hazards identification

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

##### REGULATION (EC) No 1272/2008

Gases under pressure Liquefied gas

H280 Contains gas under pressure; may explode if heated.

#### 2.2. Label elements

##### REGULATION (EC) No 1272/2008

Hazard pictograms



Signal word

: Warning

Hazard statements

: H280

Contains gas under pressure; may explode if heated.

Precautionary statements

: P260

Do not breathe dust/ fume/ gas/ mist/ vapours/ spray.

P280

Wear protective gloves/ eye protection/ face protection.

P284

In case of inadequate ventilation wear respiratory protection.

P308 + P313

IF exposed or concerned: Get medical advice/ attention.

P410 + P403

Protect from sunlight. Store in a well-ventilated place.

Special labelling of certain products:

: Contains fluorinated greenhouse gases.

#### 2.3. Other hazards

Vapours are heavier than air and can cause suffocation by reducing oxygen available for breathing. Rapid evaporation of the liquid may cause frostbite. This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very

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bioaccumulative (vPvB) at levels of 0.1% or higher. The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

### SECTION 3: Composition/information on ingredients

#### 3.1. Substances

Chemical name	CAS-No. Index-No. REACH Registration Number EC-No.	Classification 1272/2008	Concentration	Remarks
1,1,1,3,3-Pentafluoropropane	460-73-1 01-0000016587-60 419-170-6	Press. Gas ; H280	100 %	

#### 3.2. Mixtures

Not applicable

Occupational Exposure Limit(s), if available, are listed in Section 8.  
For the full text of the H-Statements mentioned in this Section, see Section 16.

### SECTION 4: First aid measures

#### 4.1 Description of first aid measures

##### General advice:

First aider needs to protect himself. Move out of dangerous area. Take off all contaminated clothing immediately.

##### Inhalation:

Move to fresh air. Artificial respiration and/or oxygen may be necessary. Call a physician immediately.

##### Skin contact:

After contact with skin, wash immediately with plenty of water. Take off contaminated clothing and shoes immediately. Wash clothing before reuse. Call a physician immediately.

##### Eye contact:

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Remove contact lenses. Rinse immediately with plenty of water, also under the eyelids, for at least 5 minutes. Call a physician immediately.

### *Ingestion:*

Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Call a physician immediately.

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

No data available

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

Treat symptomatically.

See Section 11 for more detailed information on health effects and symptoms.

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### SECTION 5: Firefighting measures

#### 5.1. Extinguishing media

*Suitable extinguishing media:*

The product is not flammable.

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Water spray

Carbon dioxide (CO<sub>2</sub>)

Dry chemical

Foam

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

This product is not flammable at ambient temperatures and atmospheric pressure.

However, this material can ignite when mixed with air under pressure and exposed to strong ignition sources.

Container may rupture on heating.

Cool closed containers exposed to fire with water spray.

Do not allow run-off from fire fighting to enter drains or water courses.

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

Exposure to decomposition products may be a hazard to health.

Fire may cause evolution of:

Hydrogen fluoride

Gaseous hydrogen chloride (HCl).

Carbon oxides

Halogenated compounds

Carbonyl halides

#### 5.3. Advice for firefighters

Wear full protective clothing and self-contained breathing apparatus.

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

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### SECTION 6: Accidental release measures

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

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Evacuate personnel to safe areas. Wear personal protective equipment. Unprotected persons must be kept away. Ensure adequate ventilation. In case of insufficient ventilation wear suitable respiratory equipment. Vapours are heavier than air and can cause suffocation by reducing oxygen available for breathing.

### 6.2. Environmental precautions

Should not be released into the environment. Do not flush into surface water or sanitary sewer system. Prevent further leakage or spillage if safe to do so. Prevent spreading over a wide area (e.g. by containment or oil barriers).

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

Contain and collect spillage with non-combustible absorbent materials, e.g. sand, earth, vermiculite, diatomaceous earth and place in container for disposal according to local regulations (see section 13). Minimize contact of spilled material with soils to prevent runoff to surface waterways. Place spilled material in an appropriate container for disposal.

### 6.4. Reference to other sections

For personal protection see section 8.

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## SECTION 7: Handling and storage

### 7.1. Precautions for safe handling

#### *Advice on safe handling:*

Do not breathe vapours or spray mist. Do not use in areas without adequate ventilation.

#### *Advice on protection against fire and explosion:*

Can form a combustible mixture with air at pressures above atmospheric pressure. Keep product and empty container away from heat and sources of ignition.

#### *Hygiene measures:*

Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes and clothing. Do not breathe vapours or spray mist. Ensure adequate ventilation, especially in confined areas. Remove and wash contaminated clothing before re-use. Contaminated work clothing should not be allowed out of the workplace. Keep working clothes separately. Wash hands before breaks and immediately after handling the product.

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

#### *Requirements for storage areas and containers:*

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Keep away from direct sunlight. Keep only in the original container in a cool, well ventilated place away from acids.

### 7.3. Specific end use(s)

*Specific use information:*

Restricted to professional users.

For industrial use only.

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## SECTION 8: Exposure controls/personal protection

### 8.1. Control parameters

#### Components with workplace control parameters

Contains no substances with occupational exposure limit values.

#### DNEL/ PNEC-Values

No DNEL-data available.

No PNEC data available.

### 8.2. Exposure controls

#### Occupational exposure controls

Do not breathe vapours or spray mist.

#### Engineering measures

Use with local exhaust ventilation.

Perform filling operations only at stations with exhaust ventilation facilities.

#### Personal protective equipment

*Respiratory protection:*

In case of insufficient ventilation wear suitable respiratory equipment.

Self-contained breathing apparatus (EN 133)

*Hand protection:*

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Glove material: Viton®

Vitoject® 890

Gloves must be inspected prior to use.

Replace when worn.

Remarks: Supplementary note: The specifications are based on information and tests from similar substances by analogy.

Due to varying conditions ( e.g.temperature or other strains) it must be considered that the usage of a chemical protective glove in practice may be much shorter than the permeation time determined in accordance with EN 374.

Since actual conditions of practical use often deviate from standardised conditions according EN 374 the glove manufacturer recommends to use the chemical protective glove in practice not longer than 50% of the recommended permeation time.

Manufacturer's directions for use should be observed because of great diversity of types .

Suitable gloves tested according EN 374 are supplied e.g. from KCL GmbH, D-36124 Eichenzell, Vertrieb@kcl.de

*Eye protection:*

Safety goggles

*Skin and body protection:*

Protective footwear

### Environmental exposure controls

Handle in accordance with local environmental regulations and good industrial practices.

## SECTION 9: Physical and chemical properties

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

- |                                  |   |                   |
|----------------------------------|---|-------------------|
| (a) Physical state               | : | gaseous           |
| (b) Colour                       | : | colourless        |
| (c) Odour                        | : | weak              |
| (d) Melting point/freezing point | : | -103 °C           |
| (e) Boiling point/boiling range  | : | 15,3 °C           |
| (f) Flammability                 | : | No data available |

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- (g) Lower and upper explosion limit : Lower explosion limit  
None  
: Upper explosion limit  
None
- (h) Flash point : Not applicable
- (i) Auto-ignition temperature : 412 °C
- (j) Decomposition temperature : 250 °C
- (k) pH : neutral
- (m) Solubility(ies) : Water solubility:  
7,18 g/l  
  
Solubility in other solvents:  
Medium: Methanol  
partly soluble  
Medium: Diethylether  
partly soluble
- (n) Partition coefficient: n-octanol/water : log Pow 1,35  
at: 21,5 °C  
The product is more soluble in octanol.
- (o) Vapour pressure : 1.227 hPa  
at 20 °C  
  
3.882 hPa  
at 54,4 °C
- (p) Density and / or relative density : 1,32 g/cm3  
at 20 °C
- (q) Relative vapour density : 4,6  
(Air = 1.0)

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(r) Particle characteristics : No data available

### 9.2 Other Information

Evaporation rate : < 1  
Method: Compared to Ether (anhydrous).

Evaporation rate : > 1  
Method: Compared to CCl<sub>4</sub>.

## SECTION 10: Stability and reactivity

### 10.1. Reactivity

Stable under recommended storage conditions.

### 10.2. Chemical stability

No data available

### 10.3. Possibility of hazardous reactions

No data available

### 10.4. Conditions to avoid

Pressurized container. Protect from sunlight and do not expose to temperatures exceeding 55 °C.  
Can form a combustible mixture with air at pressures above atmospheric pressure.

### 10.5. Incompatible materials

Strong oxidizing agents  
Magnesium  
Finely divided aluminium

### 10.6. Hazardous decomposition products

Halogenated compounds

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Carbon oxides  
Hydrogen fluoride  
Carbonyl halides  
Gaseous hydrogen chloride (HCl).

### SECTION 11: Toxicological information

#### 11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008

##### **(a) Acute toxicity**

*Acute oral toxicity:*  
Not applicable

*Acute dermal toxicity:*  
LD50  
Species: Rabbit  
Value: > 2.000 mg/kg

*Acute inhalation toxicity:*  
LC50  
Species: Rat  
Value: > 200000 ppm  
Exposure time: 4 h

LC50  
Species: Mouse  
Value: > 100000 ppm  
Exposure time: 4 h

*Acute toxicity (other routes of administration):*  
No data available

**(b) Skin corrosion/irritation:**  
No skin irritation

**(c) Serious eye damage/eye irritation:**  
No data available

**(d) Respiratory or skin sensitisation:**  
Classification: non-sensitizing

**(e) Germ cell mutagenicity:**  
Cell type: Human lymphocytes

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Result: Weak positive activation without S9 at 30% v/v; not active with S9 up to 70% v/v.

Test Method: Ames test

Metabolic activation: with and without metabolic activation

Result: negative

Species: Mouse

Cell type: Bone marrow

Application Route: Inhalation

Method: Mutagenicity (micronucleus test)

Result: negative

### **(h) STOT-single exposure:**

Assessment: May cause drowsiness or dizziness.

### **(i) STOT - repeated exposure:**

Species: Rat

Exposure time: 28 d

NOAEL: 500 ppm

### **(j) Aspiration hazard:**

Not classified

## **11.2. Information on other hazards**

*Endocrine disrupting properties*

No data available

*Other information:*

No data available

## **SECTION 12: Ecological information**

### **12.1. Toxicity**

*Toxicity to fish:*

LC50

Species: *Oncorhynchus mykiss* (rainbow trout)

Value: > 81,8 mg/l

Exposure time: 96 h

NOEC

Species: *Oncorhynchus mykiss* (rainbow trout)

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Value: > 10 mg/l  
Exposure time: 96 h

### *Toxicity to aquatic plants:*

EC50

Growth inhibition

Species: Algae

Value: > 118 mg/l

Method: OECD Test Guideline 201

### *Toxicity to aquatic invertebrates:*

EC50

Species: Daphnia magna (Water flea)

Value: > 97,9 mg/l

Exposure time: 48 h

NOEC

Species: Daphnia magna (Water flea)

Value: > 97,9 mg/l

Exposure time: 48 h

## **12.2. Persistence and degradability**

### *Biodegradability:*

No data available

## **12.3. Bioaccumulative potential**

No data available

## **12.4. Mobility in soil**

No data available

## **12.5. Results of PBT and vPvB assessment**

No data available

## **12.6. Endocrine disrupting properties**

No data available

## **12.7. Other adverse effects**

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Accumulation in aquatic organisms is unlikely.

### SECTION 13: Disposal considerations

#### 13.1. Waste treatment methods

*Product:*

Offer surplus and non-recyclable solutions to a licensed disposal company. Refer to manufacturer/supplier for information on recovery/recycling.

*Remarks:*

The classification of the product may meet the criteria for a hazardous waste. Classification: 14.06.01

*Further information:*

Provisions relating to waste:

EC Directive 2006/12/EC; 2008/98/EEC

Regulation No. 1013/2006

The classification of the product may meet the criteria for a hazardous waste.

For personal protection see section 8.

### SECTION 14: Transport information

#### 14.1 UN number or ID number

ADR/RID:3163

IMDG:3163

IATA:3163

#### 14.2 UN proper shipping name

ADR/RID:LIQUEFIED GAS, N.O.S.(1,1,1,3,3-PENTAFLUOROPROPANE)

IMDG:LIQUEFIED GAS, N.O.S.(1,1,1,3,3-PENTAFLUOROPROPANE)

IATA:Liquefied gas, n.o.s.(1,1,1,3,3-Pentafluoropropane)

#### 14.3 Transport hazard class(es)

ADR/RID:2.2

IMDG: 2.2

IATA: 2.2

#### 14.4 Packaging group

No data available

#### 14.5 Environmental hazards

ADR/RID:no

Marine pollutant: no

#### 14.6 Special precautions for user

IMDG Code segregation group according chapter 3.1.4.4 : NONE,

#### 14.7 Maritime transport in bulk according to IMO instruments

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No data available

## SECTION 15: Regulatory information

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

Basis	Value	Remarks
Directive 2012/18/EC SEVESO III		Not applicable
Substances of very high concern (SVHC)		This product does not contain substances of very high concern according to Regulation (EC) No Article 57 above the respective regulatory 1907/2006 (REACH), concentration limit of $\geq 0.1$ % (w/w).
Regulation (EC) No. 1907/2006, Annex XIV		Not listed
Regulation (EC) No. 1907/2006, Annex XVII		Not listed

*Global warming potential :*  
1.030

#### Other inventory information

USA. List of Active Substances on the Toxic Substances Control Act (TSCA) Chemical Substances Inventory, as amended  
On TSCA Inventory

Australia. Inventory of Industrial Chemicals (AIIC), as amended  
On the inventory, or in compliance with the inventory

Canada. Domestic Substances List (DSL), as amended  
All components of this product are on the Canadian DSL

Japan. Kashin-Hou Law List  
On the inventory, or in compliance with the inventory

Korea. Existing Chemicals Inventory (KECI)

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On the inventory, or in compliance with the inventory

Philippines. Inventory of Chemicals and Chemical Substances (PICCS)  
Not in compliance with the inventory

China. Inventory of Existing Chemical Substances (IECSC)  
On the inventory, or in compliance with the inventory

New Zealand. Inventory of Chemicals (NZIoC), as published by ERMA New Zealand  
On the inventory, or in compliance with the inventory

Taiwan Chemical Substance Inventory (TCSI)  
On the inventory, or in compliance with the inventory

### 15.2 Chemical safety assessment

A chemical safety assessment has been carried out. In accordance to the article 14(4) of the REACH regulation (EC) No. 1907/2006, exposure estimation and risk characterization is not required.

## SECTION 16: Other information

### Text of H-statements referred to under heading 3

1,1,1,3,3- : H280 Contains gas under pressure; may explode if heated.  
Pentafluoropropane

### Further information

All directives and regulations refer to amended versions.  
Vertical lines in the left hand margin indicate a relevant amendment from the previous version.

Abbreviations:

EC European Community

CAS Chemical Abstracts Service

DNEL Derived no effect level

PNEC Predicted no effect level

vPvB Very persistent and very bioaccumulative substance

PBT Persistent, bioaccumulative and toxic substance

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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. Final determination of suitability of any material is the sole responsibility of the user.

This information should not constitute a guarantee for any specific product properties.