

Printing date 17.10.2024

Version number 1

Revision: 17.10.2024

**\* SECTION 1: Identification of the substance/mixture and of the company/undertaking****1.1 Product identifier****Trade name:** PFC-14**Article number:** DF14**EC number:**

200-896-5

**1.2 Relevant identified uses of the substance or mixture and uses advised against:****Sector of Use** SU8 Manufacture of bulk, large scale chemicals (including petroleum products)**1.3 Details of the supplier of the safety data sheet****Manufacturer/Supplier:**

DAIKIN INDUSTRIES, LTD. CHEMICALS DIVISION:

OSAKA UMEDA TWIN TOWERS SOUTH, 1-13-1 Umeda, Kita-ku, Osaka-shi, Osaka, 530-0001, Japan

Phone: +81-6-6147-9702 Fax: +81-6-6147-9807

**Further information obtainable from:** <http://www.daikin.com/>**1.4 Emergency telephone number:**

Japan: +81-6-6349-7521

China: +86-532-8388-9090, +86-21-34151689

South Korea: +82-2-568-1722

Americas: CHEMTREC +1-800-424-9300 (Outside US/Canada: +1-703-527-3887)

Europe: +49-211-179 225-0

**SECTION 2: Hazard identification****2.1 Classification of the substance or mixture****Classification according to Regulation (EC) No 1272/2008**

Press. Gas (Comp.) H280 Contains gas under pressure; may explode if heated.

**2.2 Label elements****Labelling according to Regulation (EC) No 1272/2008:**

The substance is classified and labelled according to the CLP regulation.

**Signal word:** Warning**Precautionary statements:**

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

**\* SECTION 3: Composition/information on ingredients****Information on ingredients:**

CAS: 75-73-0 Carbon tetrafluoride

≥99.9%

Press. Gas (Comp.), H280

**Identification number(s)****EC number:** 200-896-5**SECTION 4: First aid measures****4.1 Description of first aid measures****General information:** Seek medical treatment.**After inhalation:**

If the patient does not breathe or hardly breathes, unbutton clothes, secure the airway for breathing and perform artificial respiration.

**After skin contact:**

Rinse with warm water.

Consult a doctor in case of complaints.

**After eye contact:** Consult an ophthalmologist in case of complaints.**Information for doctor:**

Catecholamines such as adrenaline, and other compounds having similar effects, should be reserved for emergencies and then used only with special caution.

Printing date 17.10.2024

Version number 1

Revision: 17.10.2024

Trade name: PFC-14

**4.2 Most important symptoms and effects, both acute and chronic:** No further relevant information available.

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

No further relevant information available.

## SECTION 5: Firefighting measures

### 5.1 Extinguishing media

**Suitable extinguishing agents:** Use fire extinguishing methods suitable for surrounding conditions.

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

In case of fire, the following can be released:

Hydrogen fluoride (HF)

Formation of toxic gases is possible during heating or in case of fire.

### 5.3 Advice for firefighters:

#### Protective equipment:

Wear fully protective suit.

Wear self-contained breathing apparatus and protective suit.

Do not inhale explosion gases or combustion gases.

## SECTION 6: Accidental release measures

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

Ensure adequate ventilation before entering the area.

Keep out unauthorized persons.

### 6.2 Environmental precautions:

 Suppress gases/fumes/haze with water spray.

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

Turn the container to discharge gas (not liquid) if possible.

Cool the container to prevent evaporation. Spray water to diffuse the generated vapor cloud.

### 6.4 Reference to other sections:

See Section 7 for information on safe handling.

See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.

## SECTION 7: Handling and storage

### 7.1 Precautions for safe handling:

Danger of ignition/explosion if mixed with flammable gas.

Do not inhale the gas.

Ensure good ventilation/exhaustion at the workplace.

Do not handle until all safety precautions have been read and understood.

**Information about fire - and explosion protection:** Keep ignition sources away - Do not smoke.

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

#### Storage

#### Requirements to be met by storerooms and receptacles:

Store material at 5 °C to 25 °C.

Store in a cool and dry location.

#### Information about storage in one common storage facility:

No further information available.

See section 10 for information on incompatible materials.

#### Further information about storage conditions:

Store in cool, dry conditions in well sealed receptacle.

Protect from heat and direct sunlight.

Store containers in a well ventilated area.

### 7.3 Specific end use(s):

 No further relevant information available.

## SECTION 8: Exposure controls/personal protection

### 8.1 Control parameters

 No further information available.

**Ingredients with limit values that require monitoring at the workplace:** Not required.

**Additional information:** The lists valid during the making were used as basis.

Printing date 17.10.2024

Version number 1

Revision: 17.10.2024

Trade name: PFC-14

## 8.2 Exposure controls

**Appropriate engineering controls** No further data; see section 7.

**Individual protection measures, such as personal protective equipment**

**General protective and hygienic measures:**

Wash hands before breaks and at the end of work.

Do not eat or drink while working.

Keep away from tobacco products.

**Respiratory protection:** Not required.

**Hand protection**



Protective gloves

**Material of gloves:** Leather

**Penetration time of glove material**

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

**Eye/face protection**



Safety glasses

**Body protection:** Protective work clothing

## \* SECTION 9: Physical and chemical properties

### 9.1 Information on basic physical and chemical properties

**General Information**

**Physical state**

Liquefied gas

**Colour:**

Colourless

**Odour:**

Odourless

**Odour threshold:**

Not determined.

**Melting point/freezing point:**

-184 °C

**Boiling point or initial boiling point and boiling range**

-128 °C

**Flammability**

No data.

**Lower and upper explosion limit**

**Lower explosive limit:**

No further information available.

**Upper explosive limit:**

Not determined.

**Flash point:**

Not applicable.

**Auto-ignition temperature:**

No further information available.

**Decomposition temperature:**

No further information available.

**pH**

Not determined.

**Viscosity:**

**Kinematic viscosity**

Not determined.

**Dynamic:**

Not determined.

**Solubility**

**water at 25 °C:**

0.0015 g/100g

**Partition coefficient n-octanol/water (log value)**

No further information available.

**Vapour pressure at -80 °C:**

1.202 Mpa

**Density and/or relative density**

**Density:**

Not determined.

**Relative density**

Not determined.

**Vapour density**

Not determined.

**Particle characteristics**

No further information available.

### 9.2 Other information:

**Form:**

Liquefied gas

**Ignition temperature:**

Not determined.

**Explosive properties:**

Not determined.

Printing date 17.10.2024

Version number 1

Revision: 17.10.2024

Trade name: PFC-14

<b>Evaporation rate</b>	Not applicable.
<b>Information with regard to physical hazard classes</b>	
<b>Explosives</b>	Not applicable
<b>Flammable gases</b>	Not applicable
<b>Aerosols</b>	Not applicable
<b>Oxidising gases</b>	Not applicable
<b>Gases under pressure</b>	Contains gas under pressure; may explode if heated.
<b>Flammable liquids</b>	Not applicable
<b>Flammable solids</b>	Not applicable
<b>Self-reactive substances and mixtures</b>	Not applicable
<b>Pyrophoric liquids</b>	Not applicable
<b>Pyrophoric solids</b>	Not applicable
<b>Self-heating substances and mixtures</b>	Not applicable
<b>Substances and mixtures, which emit flammable gases in contact with water</b>	Not applicable
<b>Oxidising liquids</b>	Not applicable
<b>Oxidising solids</b>	Not applicable
<b>Organic peroxides</b>	Not applicable
<b>Corrosive to metals</b>	Not applicable
<b>Desensitised explosives</b>	Not applicable

**SECTION 10: Stability and reactivity**

**10.1 Reactivity** No further relevant information available.

**10.2 Chemical stability**

**Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.

**10.3 Possibility of hazardous reactions:** No dangerous reactions known.

**10.4 Conditions to avoid:** Keep away from heat, sparks, flame, high temperature.

**10.5 Incompatible materials:** No further relevant information available.

**10.6 Hazardous decomposition products:**

Danger of forming toxic pyrolysis products.

Fluorophosgene in contact with naked flame or red hot objects.

**SECTION 11: Toxicological information**

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

**Acute toxicity LCLo 15H Rat:** 895000 ppm

**LD/LC50 values relevant for classification:** No further information available.

**Primary irritant effect**

**Skin corrosion/irritation:** No further information available.

**Serious eye damage/irritation:** No further information available.

**after inhalation:** No further information available.

**Respiratory or skin sensitisation:** Based on available data, the classification criteria are not met.

**Germ cell mutagenicity:** Based on available data, the classification criteria are not met.

**Carcinogenicity:** Based on available data, the classification criteria are not met.

**Reproductive toxicity:** Based on available data, the classification criteria are not met.

**STOT-single exposure:** Based on available data, the classification criteria are not met.

**STOT-repeated exposure:** Based on available data, the classification criteria are not met.

**Aspiration hazard:** Based on available data, the classification criteria are not met.

**Other information (about experimental toxicology):** No further information available.

**Subacute to chronic toxicity:** No further information available.

**\* SECTION 12: Ecological information**

**12.1 Toxicity**

**Aquatic toxicity:** No further relevant information available.

**12.2 Persistence and degradability:** No further relevant information available.

**12.3 Bioaccumulative potential:** No further relevant information available.

**12.4 Mobility in soil:** No further relevant information available.

Printing date 17.10.2024

Version number 1

Revision: 17.10.2024

Trade name: PFC-14

**12.5 Results of PBT and vPvB assessment****PBT:** No further relevant information available.**vPvB:** No further information available.**12.7 Other adverse effects:****Ecotoxicological effects:** no data**Additional ecological information:****General notes:**

Ozone depletion potential(ODP) : 0

Global warming potential(GWP) : 6500

**SECTION 13: Disposal considerations****13.1 Waste treatment methods****Recommendation:** Disposal must be made according to official regulations.**Uncleaned packaging****Recommendation:** Disposal must be made according to official regulations.**\* SECTION 14: Transport information****14.1 UN number or ID number****ADR, IMDG, IATA**

UN1982

**14.2 UN proper shipping name:****ADR:**

1982 TETRAFLUOROMETHANE

**IMDG, IATA**

TETRAFLUOROMETHANE (REFRIGERANT GAS R 14)

**14.3 Transport hazard class(es):****ADR****Class:**

2 1A Gases.

**Label:**

2.2

**IMDG, IATA****Class:**

2 Gases.

**Label:**

2.2

**14.4 Packing group:****ADR, IMDG, IATA**

Not applicable

**14.5 Environmental hazards:****Marine pollutant:**

No

**14.6 Special precautions for user:**

Warning: Gases.

**Hazard identification number (Kemler code):**

20

**EMS Number:**

F-C,S-V

**Stowage Category**

A

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

Not applicable.

**Transport/Additional information:**

Avoid direct sunlight. Make sure of no damage, corrosion, leaks on the receptacles.

Take necessary measures for preventing cargo shift.

**ADR****Limited quantities (LQ):**

120 ml

**Excepted quantities (EQ)**

Code: E1

Maximum net quantity per inner packaging: 30 ml

Maximum net quantity per outer packaging: 1000 ml

Printing date 17.10.2024

Version number 1

Revision: 17.10.2024

**Trade name: PFC-14**

<b>Transport category:</b>	3
<b>Tunnel restriction code:</b>	C/E
<b>IMDG</b>	
<b>Limited quantities (LQ)</b>	120 ml
<b>Excepted quantities (EQ)</b>	Code: E1
	Maximum net quantity per inner packaging: 30 ml
	Maximum net quantity per outer packaging: 1000 ml
<b>UN "Model Regulation":</b>	UN1982, TETRAFLUOROMETHANE (REFRIGERANT GAS R 14), 2.2

**\* SECTION 15: Regulatory information****15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

No further relevant information available.

**Labelling according to Regulation (EC) No 1272/2008**

The substance is classified and labelled according to the CLP regulation.

**Hazard pictograms**

GHS04

**Signal word** Warning**Hazard statements**

H280 Contains gas under pressure; may explode if heated.

**Precautionary statements**

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

**National regulations** No further information available.**15.2 Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.**SECTION 16: Other information**

The product is for the industrial use only. We do not guarantee the safety in case the product is used for the other purposes. When using the product for health-care application or food/feed application, consult us in advance.

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

**Department issuing SDS:** EHS Department**Contact:** <https://www.daikin.com/>**Abbreviations and acronyms:**

ADR: Accord relatif au transport international des marchandises dangereuses par route (European Agreement Concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods

IATA: International Air Transport Association

GHS: Globally Harmonised System of Classification and Labelling of Chemicals

EINECS: European Inventory of Existing Commercial Chemical Substances

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

PBT: Persistent, Bioaccumulative and Toxic

vPvB: very Persistent and very Bioaccumulative

Press. Gas (Comp.): Gases under pressure – Compressed gas

**\* Data compared to the previous version altered.**