

Printing date 13.07.2020

Version number 1

Revision: 15.04.2020

**\* SECTION 1: Identification of the substance/mixture and of the company/undertaking****1.1 Product identifier****Trade name: DAIFREE GW-4500****Article number: GW4500****1.2 Relevant identified uses of the substance or mixture and uses advised against:**

No further relevant information available.

**1.3 Details of the supplier of the safety data sheet****Manufacturer/Supplier:**

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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



Acute Tox. 4 H332 Harmful if inhaled.

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

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

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

P261 Avoid breathing dust/fume/gas/mist/vapours/spray.

P271 Use only outdoors or in a well-ventilated area.

P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.

P312 Call a POISON CENTER/doctor if you feel unwell.

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

Fluoropolymer	<5%
CAS: 7732-18-5 Water	85-95%
Others	1-10%

**Additional information:** For the wording of the listed hazard phrases refer to section 16.**\* SECTION 4: First aid measures****4.1 Description of first aid measures****General information:** Seek medical treatment.**After inhalation:**

Take affected persons into fresh air. Keep at rest.

Supply fresh air; consult doctor in case of complaints.

**After skin contact:**

Immediately wash with water and soap and rinse thoroughly.

Remove contaminated clothes immediately.

Consult a doctor in case of complaints.

Printing date 13.07.2020

Version number 1

Revision: 15.04.2020

**Trade name: DAIFREE GW-4500****After eye contact:**

Immediately rinse with a lot of water for several minutes. Remove contact lenses if possible. Continue rinsing. Consult an ophthalmologist in case of complaints.

**After swallowing:**

Rinse mouth with water. Do not induce vomiting. Consult a doctor in case of complaints.

**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:**

CO<sub>2</sub>, powder or water spray. Fight larger fires with water spray or alcohol resistant foam. Use fire extinguishing methods suitable for surrounding conditions.

**For safety reasons unsuitable extinguishing agents:** No further information available.

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

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.  
Wear appropriate protective devices (See Section 8 Exposure Controls/Personal Protection).  
Avoid contact with eyes and skin.  
Do not swallow the product.

**6.2 Environmental precautions:** Prevent seepage into sewage system, workpits and cellars.

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

For a small amount of leakage: Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders) or collect in an empty container that can be sealed tightly.  
For a large amount of leakage: Enclose with banks to avoid outflow. Lead the leakage to a safe place and collect.

**6.4 Reference to other sections:**

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:**

Do not breathe vapour or spray.  
Prevent formation of aerosols.  
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 in a cool and dry location.  
Provide solvent resistant, sealed floor.  
Keep containers tightly sealed.

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

Not required.  
See section 10 for information on incompatible materials.

Printing date 13.07.2020

Version number 1

Revision: 15.04.2020

Trade name: DAIFREE GW-4500

**Further information about storage conditions:**

Protect from heat and direct sunlight.

Store containers in a well ventilated area.

Store locked up.

7.3 Specific end use(s): No further relevant information available.

**\* SECTION 8: Exposure controls/personal protection****Additional information about design of technical facilities:** No further data; see item 7.

8.1 Control parameters No further information available.

**Ingredients with limit values that require monitoring at the workplace:**

The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.

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

## 8.2 Exposure controls

**Personal protective equipment****General protective and hygienic measures:**

Avoid contact with the eyes.

Wash hands before breaks and at the end of work.

Do not eat or drink while working.

Keep away from tobacco products.

**Respiratory protection:**

Use respiratory protective device to prevent inhalation of mist.

Wear respirator for organic gases, where leakage may occur.

Use respiratory protective device with filters for organic and acid gas (or airline respirators in some cases) if formation of toxic gases is possible while the product is heated.

Use respiratory protective device with organic gas cartridge.

**Protection of hands:**

Protective gloves

**Material of gloves:**

Synthetic rubber gloves

Rubber

**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 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****Appearance**

<b>Form:</b>	Solution
<b>Colour:</b>	Milky-white
<b>Odour:</b>	Characteristic
<b>Odour threshold:</b>	Not determined.
<b>pH-value:</b>	No further information available.
<b>Melting point/freezing point:</b>	No further information available.
<b>Initial boiling point and boiling range:</b>	100 °C

Printing date 13.07.2020

Version number 1

Revision: 15.04.2020

Trade name: DAIFREE GW-4500

<b>Flash point:</b>	Not applicable.
<b>Flammability (solid, gas):</b>	Not applicable.
<b>Decomposition temperature:</b>	No further information available.
<b>Auto-ignition temperature:</b>	Product is not selfigniting.
<b>Explosive properties:</b>	Product does not present an explosion hazard.
<b>Explosion limits:</b>	
<b>Lower explosive limit:</b>	No further information available.
<b>Upper explosive limit:</b>	No further information available.
<b>Vapour pressure:</b>	No further information available.
<b>Density at 25 °C:</b>	1.00-1.06 g/cm <sup>3</sup>
<b>Relative density</b>	Not determined.
<b>Vapour density</b>	Not determined.
<b>Evaporation rate</b>	Not determined.
<b>Solubility in / Miscibility with water:</b>	Fully miscible.
<b>Partition coefficient: n-octanol/water:</b>	No further information available.
<b>Viscosity:</b>	
<b>Dynamic:</b>	Not determined.
<b>Kinematic:</b>	Not determined.
<b>9.2 Other information:</b>	No further relevant information available.

## SECTION 10: Stability and reactivity

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

### 10.2 Chemical stability

**Thermal decomposition / conditions to be avoided:** To avoid thermal decomposition do not overheat.

**10.3 Possibility of hazardous reactions:** No dangerous reactions known under normal conditions of use.

**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:

Poisonous gases/vapours

As for decomposition products, particulate matters and extremely toxic/corrosive fumes may be generated (HF, carbonyl fluoride, monomers, perfluoroisobutylene).

Decomposition products differ depending on the temperature and conditions.

## \* SECTION 11: Toxicological information

### 11.1 Information on toxicological effects

#### Acute toxicity

no data

Harmful if inhaled.

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

#### Primary irritant effect

**Skin corrosion/irritation** Based on available data, the classification criteria are not met.

**Serious eye damage/irritation** Based on available data, the classification criteria are not met.

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

**Respiratory or skin sensitisation** 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.

#### Additional toxicological information:

General effects:

Fumes generated during burning may cause "polymer fume fever" (flu-like symptoms such as fever, chill, cough). This may last for a whole day and night.

Fumes are not absorbed in skin. No sensitizing effect known.

Effects of hydrogen fluoride:

Printing date 13.07.2020

Version number 1

Revision: 15.04.2020

**Trade name: DAIFREE GW-4500**

Low concentration of hydrogen fluoride may cause feeling of dyspnea, cough, irritation in eyes, nose, throat, fever, chill for 1-2 days.

After that, dyspnea, cyanosis and pulmonary edema may be seen.

High concentration of hydrogen fluoride damages liver and kidney.

Effects of carbonyl fluoride:

Skin: Irritation or eruption

Eye: Ulcer in cornea, conjunctiva

Respiratory system: Irritation

Lung: Temporary symptoms such as cough, pain, dyspnea

Persons who have experienced lung diseases are vulnerable to toxicity caused by excessive exposure to pyrolysis products

**CMR effects**

**Germ cell mutagenicity**

Not applicable

**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.

## 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.

**Ecotoxicological effects:** no data

### 12.5 Results of PBT and vPvB assessment

**PBT:**

No further relevant information available.

Not applicable.

**vPvB:**

No further relevant information available.

Not applicable.

**12.6 Other adverse effects:** No further relevant information available.

## SECTION 13: Disposal considerations

### 13.1 Waste treatment methods

**Recommendation:**

After prior treatment product has to be disposed of in an incinerator for hazardous waste adhering to the regulations pertaining to the disposal of particularly hazardous waste.

Disposal must be made according to official regulations.

### Uncleaned packaging

**Recommendation:** Disposal must be made according to official regulations.

**Recommended cleansing agents:** Water, if necessary together with cleansing agents.

## SECTION 14: Transport information

### 14.1 UN-Number:

ADR, ADN, IMDG, IATA

Not applicable

### 14.2 UN proper shipping name:

ADR:

Not applicable

ADN, IMDG, IATA

Not applicable

### 14.3 Transport hazard class(es):

ADR, ADN, IMDG, IATA

Class:

Not applicable

Printing date 13.07.2020

Version number 1

Revision: 15.04.2020

Trade name: DAIFREE GW-4500

**14.4 Packing group:**

ADR, IMDG, IATA

Not applicable

**14.5 Environmental hazards:**

Marine pollutant:

No

**14.6 Special precautions for user:**

Not applicable.

**14.7 Transport in bulk according to Annex II of****MARPOL73/78 and the IBC Code:**

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.

UN "Model Regulation":

Not applicable

**\* 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 product is classified and labelled according to the CLP regulation.

**Hazard pictograms**

GHS07

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

H332 Harmful if inhaled.

**Precautionary statements**

P261 Avoid breathing dust/fume/gas/mist/vapours/spray.

P271 Use only outdoors or in a well-ventilated area.

P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.

P312 Call a POISON CENTER/doctor if you feel unwell.

**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:** <http://www.daikin.com/>**Abbreviations and acronyms:**

RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)

ICAO: International Civil Aviation Organisation

ADR: Accord européen sur le transport 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

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

PBT: Persistent, Bioaccumulative and Toxic

vPvB: very Persistent and very Bioaccumulative

Acute Tox. 4: Acute toxicity - inhalation - Category 4

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