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**SECTION 1: Identification of the substance/mixture and of the company/undertaking****1.1 Product identifier****Trade name:** POLYFLON PTFE M-12, 18, 18F, 391S, 392, 393**Article number:** M**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:**

DAIKIN INDUSTRIES, LTD. CHEMICALS DIVISION:

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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**

The substance is not classified, according to the CLP regulation.

**2.2 Label elements****Labelling according to Regulation (EC) No 1272/2008:** Not applicable**Signal word:** Not applicable**SECTION 3: Composition/information on ingredients****Information on ingredients:**

CAS: 9002-84-0 Polytetrafluoroethylene

100%

**SECTION 4: First aid measures****4.1 Description of first aid measures****General information:** Seek medical treatment.**After inhalation:** In case of inhaling decomposed gases: supply fresh air and consult a doctor in case of complaints.**After skin contact:**

Immediately wash with water and soap and rinse thoroughly.

After contact with the molten product, cool rapidly with cold water.

Do not pull solidified product off the skin.

**After eye contact:**

Rinse opened eye for several minutes under running water.

Consult an ophthalmologist in case of complaints.

**After swallowing:** If symptoms persist consult a doctor.**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.**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.

Printing date 24.03.2022

Version number 1

Revision: 24.03.2022

Trade name: POLYFLON PTFE M-12, 18, 18F, 391S, 392, 393

**5.3 Advice for firefighters:****Protective equipment:**

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:** Do not allow product to reach sewage system or any water course.**6.3 Methods and material for containment and cleaning up:** Pick up mechanically.**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:**

Ensure good ventilation/exhaustion at the workplace.  
Extractors are required on all machines used for thermal processing or powder handling processes.  
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.**Information about storage in one common storage facility:**

Store away from oxidising agents.  
See section 10 for information on incompatible materials.

**Further information about storage conditions:**

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.**8.2 Exposure controls****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:**

Use respiratory protective device with filters for organic and acid gas (or airline respirators in some cases), if the product is heated above 260 °C and toxic gas is formed.

Dust respirator, simplified dust respirator

**Hand protection**

Protective gloves

**Material of gloves:** Rubber

Printing date 24.03.2022

Version number 1

Revision: 24.03.2022

Trade name: POLYFLON PTFE M-12, 18, 18F, 391S, 392, 393

**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**

<b>Colour:</b>	Milky-white
<b>Odour:</b>	Odourless
<b>Melting point/freezing point:</b>	320-330 °C
<b>Boiling point or initial boiling point and boiling range</b>	No further information available.
<b>Flammability</b>	Product is not flammable.
<b>Lower and upper explosion limit</b>	
<b>Lower explosive limit:</b>	No further information available.
<b>Upper explosive limit:</b>	No further information available.
<b>Flash point:</b>	Not applicable.
<b>Decomposition temperature:</b>	480-490 °C (1%TG)
<b>pH</b>	Not applicable.
<b>Solubility</b>	
<b>water:</b>	Insoluble.
<b>Partition coefficient n-octanol/water (log value)</b>	No further information available.
<b>Vapour pressure:</b>	Not applicable.
<b>Density and/or relative density</b>	
<b>Density:</b>	No further information available.
<b>Relative density</b>	2.1-2.2

**9.2 Other information:**

<b>Appearance</b>	
<b>Form:</b>	Powder

**Information with regard to physical hazard classes**

<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>	Not applicable
<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</b>	
<b>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.

Printing date 24.03.2022

Version number 1

Revision: 24.03.2022

Trade name: POLYFLON PTFE M-12, 18, 18F, 391S, 392, 393

**10.2 Chemical stability****Thermal decomposition / conditions to be avoided:**

Even at the temperatures reached during the normal hot processing of fluoropolymers, fume that presents a potential health hazard may be generated.

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:**

Metal powder (e.g. Al, Mg) and fluorine oxidizer. There is a danger of chemical reactions that could cause fire or explosion when the product is heated with them.

**10.6 Hazardous decomposition products:**

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

**Acute toxicity** no data

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

**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.

**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:**

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

**11.2 Information on other hazards****Endocrine disrupting properties**

Substance is not listed.

**SECTION 12: Ecological information****12.1 Toxicity**

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

Printing date 24.03.2022

Version number 1

Revision: 24.03.2022

Trade name: POLYFLON PTFE M-12, 18, 18F, 391S, 392, 393

**12.2 Persistence and degradability:** The product is thought to be non-biodegradable.

**Other information:** The product is slightly biodegradable.

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

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

**12.5 Results of PBT and vPvB assessment**

**PBT:**

No further relevant information available.

No further relevant information available.

Not applicable.

**vPvB:**

No further relevant information available.

No further relevant information available.

Not applicable.

**12.6 Endocrine disrupting properties** For information on endocrine disrupting properties see section 11.

### SECTION 13: Disposal considerations

#### 13.1 Waste treatment methods

**Recommendation:**

Landfill disposal is recommended.

In case of incineration, the temperature must be higher than 800 °C.

Treat exhaust gas such as HF in a suitable way.

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, 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

#### 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 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.

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** Not applicable

**Hazard pictograms** Not applicable

**Signal word** Not applicable

**Hazard statements** Not applicable

**National regulations** No further information available.

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**Trade name: POLYFLON PTFE M-12, 18, 18F, 391S, 392, 393****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)

**IATA-DGR:** Dangerous Goods Regulations by the "International Air Transport Association" (IATA)

**ICAO:** International Civil Aviation Organisation

**ICAO-TI:** Technical Instructions by the "International Civil Aviation Organisation" (ICAO)

**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

**LC50:** Lethal concentration, 50 percent

**LD50:** Lethal dose, 50 percent

**PBT:** Persistent, Bioaccumulative and Toxic

**vPvB:** very Persistent and very Bioaccumulative

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