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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-532**Article number:** M532 STD**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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Phone: (+81) 6-6373-4345 Fax: (+81) 6-6373-4281

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

Japan: +81-6-6349-7521

China: +86-512-5-232-0949, +86-21-34151689

South Korea: +82-2-568-1722

Americas: +1-256-306-5000

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.

Consult a doctor in case of complaints.

**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.**Information for doctor:****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.

Printing date 18.06.2019

Version number 1

Revision: 18.06.2019

Trade name: POLYFLON PTFE M-532

**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:** *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:***No dangerous substances are released.**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:***Not required.**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****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:** *Not required.***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 skin.**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 mask which filters at least 99.95% of airborne particles (below 0.3µm)**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*

Printing date 18.06.2019

Version number 1

Revision: 18.06.2019

Trade name: POLYFLON PTFE M-532

**Protection of hands:**  
Synthetic rubber gloves



Protective gloves

**Material of gloves:** Rubber  
**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>	Powder
<b>Colour:</b>	White
<b>Odour:</b>	Odourless
<b>Odour threshold:</b>	Not determined.
<b>pH-value:</b>	No further information available. Not determined.
<b>Melting point/freezing point:</b>	320-330 °C
<b>Initial boiling point and boiling range:</b>	No further information available.
<b>Flash point:</b>	Not applicable.
<b>Flammability (solid, gas):</b>	Product is not flammable.
<b>Decomposition temperature:</b>	480-490 °C (1%TG)
<b>Auto-ignition temperature:</b>	Not determined.
<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:</b>	2.1 – 2.2 g/cm <sup>3</sup>
<b>Relative density</b>	Not determined.
<b>Vapour density</b>	Not applicable.
<b>Evaporation rate</b>	Not applicable.
<b>Solubility in / Miscibility with water:</b>	Not miscible or difficult to mix.
<b>Partition coefficient: n-octanol/water:</b>	Not determined.
<b>Viscosity:</b>	
<b>Dynamic:</b>	Not applicable.
<b>Kinematic:</b>	Not applicable.
<b>9.2 Other information:</b>	No further relevant information available.

## \* SECTION 10: Stability and reactivity

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

Printing date 18.06.2019

Version number 1

Revision: 18.06.2019

Trade name: POLYFLON PTFE M-532

**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 toxicological effects**

**Acute toxicity** no data

**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.

**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

**CMR effects**

**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:** The product is thought to be non-biodegradable.

**Other information:** The product is insoluble in water and the biodegradation and ecotoxicity is expected to be low.

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

Printing date 18.06.2019

Version number 1

Revision: 18.06.2019

Trade name: POLYFLON PTFE M-532

**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:**

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:**

ADR, ADN, IMDG, IATA

Not applicable

**14.2 UN proper shipping name:**

ADR, 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 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** Not applicable

**Hazard pictograms** Not applicable

**Signal word** Not applicable

**Hazard statements** Not applicable

**National regulations** No further information available.

**Other regulations, limitations and prohibitive regulations:** 1

**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

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*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 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*

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