



# Material Safety Data Sheet

Product Name: Perfluoroelastomer Teflus® PR-90

Compilation Date: March 31st, 2020

Revision Date: March 1st, 2023

According to GB/T 16483 & GB/T 17519

MSDS Code: Teflus® PR-90

Version: A1

## 1. PRODUCT AND COMPANY IDENTIFICATION

### 1.1. Product

|              |                                  |
|--------------|----------------------------------|
| Product Name | Perfluoroelastomer Teflus® PR-90 |
|--------------|----------------------------------|

### 1.2. Company

|               |                                                                                                       |
|---------------|-------------------------------------------------------------------------------------------------------|
| Company       | TFT LIMITED                                                                                           |
| Address       | Unit 1101, 11th floor, Tower 1, Enterprise Square Bldg, No.9 Sheung Yuet Road, Kowloon Bay, Hong Kong |
| Post code     | 999077                                                                                                |
| Telephone No. | +852-2893-5300, +86-20-8918-9425                                                                      |
| Fax No.       | +852-2803-4763                                                                                        |
| E-mail        | kevin@tftlimited.com                                                                                  |

### 1.3. Emergency Tel line

|                        |                                  |
|------------------------|----------------------------------|
| National Emergency Tel | +86-532-83889090                 |
| General                | +852-2893-5300, +86-20-8918-9425 |

### 1.4. Identified uses of the substance and uses advised against

|                        |                                                                                 |
|------------------------|---------------------------------------------------------------------------------|
| Uses of the Substance  | Chemical industry; Electrical industry; Electronic industry; Oil & gas industry |
| Recommendation for use | For industrial use only                                                         |

## 2. HAZARDS IDENTIFICATION (POTENTIAL HEALTH EFFECTS)

### 2.1. Description of substance

The substance is colorless semi-transparent blocky solid

### 2.2. GHS Classification

Not classified as hazardous product under the regulation above.

### 2.3. Label Elements

Not applicable.

### 2.4. Physical Hazards

Not applicable.

### 2.5. Health Hazards

Not applicable.

### 2.6. Environmental Hazards

Not applicable.

### 2.7. Other Hazards

During vulcanization iodomethane (CH<sub>3</sub>I) is formed and liberated as a gas.  
Thermal decomposition can lead to release of toxic and corrosive gases

## 3. INFORMATION ON INGREDIENTS

### 3.1. Substance

Not applicable.

### 3.2. Mixture

| Ingredient         | CAS        | Chemical name                                                                                                          | Concentration [%] |
|--------------------|------------|------------------------------------------------------------------------------------------------------------------------|-------------------|
| Perfluoroelastomer | 26425-79-6 | Copolymer of tetrafluoroethylene monomer(C <sub>2</sub> F <sub>4</sub> ) and perfluoromethyl vinyl ether monomer(PMVE) | /                 |

**Teflus**®

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## 4. FIRST-AID MEASURES

### 4.1. Description of first aid measures

|                            |                                                                                                                                                                                                                                                                                                                                                                                      |
|----------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Inhalation Exposure</b> | <b>Exposure to decomposition products</b><br>Move to fresh air in case of accidental inhalation of fumes from overheating or combustion.<br>Oxygen or artificial respiration if needed. Consult a physician.<br>Symptoms of poisoning may develop many hours after exposure.<br>Keep under medical supervision for at least 48 hours.                                                |
| <b>Skin Exposure</b>       | Cool skin rapidly with cold water after contact with hot polymer.<br><b>Exposure to decomposition products</b><br>Remove Cloth, Wash off with soap and water.<br>Immediately apply calcium gluconate gel 2.5% and massage into the "affected area using rubber gloves.<br>To massage while repeatedly" applying gel until 15 minutes after pain is relieved.<br>Consult a physician. |
| <b>Eye Exposure</b>        | <b>Exposure to decomposition products</b><br>Rinse immediately with flowing water or saline solution<br>Consult a physician.                                                                                                                                                                                                                                                         |
| <b>Ingestion</b>           | Not applicable.                                                                                                                                                                                                                                                                                                                                                                      |

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

|                            |                                                                                  |
|----------------------------|----------------------------------------------------------------------------------|
| <b>Inhalation Exposure</b> | <b>Exposure to decomposition products:</b> Headache; Shortness of breath; Cough. |
| <b>Skin Exposure</b>       | <b>Exposure to decomposition products:</b> Irritation; Redness; Burn.            |
| <b>Eye Exposure</b>        | <b>Exposure to decomposition products:</b> Irritation; Redness; Burn.            |
| <b>Ingestion</b>           | Not applicable.                                                                  |

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

|   |                                                                                                                                                                                                                                                                                  |
|---|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | Hazardous decomposition products such as Gaseous hydrogen fluoride (HF), Fluorophosgene, Fluorinated olefins formed under fire conditions.<br>Wear self-contained breathing apparatus and protective suit.<br>When intervention in close proximity wear acid resistant over suit |
|---|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

### 4.4. Notes to Physicians

None

## 5. FIRE FIGHTING MEASURES

### 5.1. Extinguishing Media

|          |                                                               |
|----------|---------------------------------------------------------------|
| Proper   | Dry chemical, Water spray, Carbon dioxide or appropriate foam |
| Improper | N/A                                                           |

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

Hazardous decomposition products such as Gaseous hydrogen fluoride (HF), Fluorophosgene, Fluorinated olefins formed under fire conditions

### 5.3. Precautions and protective measures for fire fighting

|                     |                                                                                                                                                                                                                                             |
|---------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Protective measures | Uninvolved persons should evacuate to a safe place.<br>Fire-extinguishing work should be carried out from the windward side.<br>Keep containers cool by spraying with water.<br>Collect contaminated water separately. Do not drain drains. |
|---------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

|                         |                                                                                                                                                                                                                                   |
|-------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Advice for firefighters | Fire residues and contaminated water must be disposed as local regulations.<br>Adopt fire extinguishing measures suitable for the local environment.<br>If it is safe to operate, remove undamaged containers from the fire area. |
|                         | Wear self-contained breathing apparatus and protective clothing to prevent contact with acid.                                                                                                                                     |

## 6. ACCIDENTAL RELEASE MEASURES

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

|                                    |                                                                                                                                                                     |
|------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Advice for non-emergency personnel | None                                                                                                                                                                |
| Advice for emergency responders    | Remove all ignition sources.<br>Wear personal protective suit.<br>Ensure adequate ventilation.<br>Keep away from open flames, hot surfaces and sources of ignition. |

### 6.2. Environmental precautions

|   |                                                                                               |
|---|-----------------------------------------------------------------------------------------------|
| 1 | Avoid discharging into the environment.                                                       |
| 2 | Collect contaminated washing water. Do not flush into sewers, surface water, and groundwater. |

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

|   |                                                        |
|---|--------------------------------------------------------|
| 1 | Clean and collect in suitable containers for disposal. |
|---|--------------------------------------------------------|

## 7. Handling and Storage

### 7.1. Precautions for safe handling

|                               |                                                                                                                                                                                                                                                                       |
|-------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Precautions for safe handling | Ensure adequate ventilation<br>Use personal protective equipment<br>Operate in accordance with good industrial hygiene and safety practices.<br>Keep away from open flames, hot surfaces and sources of ignition.<br>To avoid thermal decomposition, do not overheat. |
| Hygiene measures              | Ensure that eyewash stations and safety showers are close to the working area.<br>Wash hands after using.<br>Do not eat, drink or smoke when using.<br>Remove protective equipment before entering food area.                                                         |

### 7.2. Storage

|                   |                                                                                                                             |
|-------------------|-----------------------------------------------------------------------------------------------------------------------------|
| Storage condition | Stay away from open flames, hot surfaces.<br>Stay away from combustible materials.<br>Stay away from incompatible products. |
| Packing material  | Polythene film.                                                                                                             |

## 8. Exposure controls/personal protection

### 8.1. Components with occupational exposure limits

Contains no substances with occupational exposure limit values above their regulatory reporting threshold

**During vulcanization iodomethane (CH<sub>3</sub>I) is formed and liberated as a gas.**

| Components  | Basis                        | Value Type | Value                |
|-------------|------------------------------|------------|----------------------|
| Iodomethane | Occupational Exposure Limits | PC-TWA     | 10 mg/m <sup>3</sup> |

**Threshold limit values of by-products from thermal decomposition:**

| Components          | Basis                        | Value Type | Value                |
|---------------------|------------------------------|------------|----------------------|
| Hydrofluoric acid   | Occupational Exposure Limits | MAC        | 2 mg/m <sup>3</sup>  |
| Carbonyl difluoride | Occupational Exposure Limits | PC-TWA     | 5 mg/m <sup>3</sup>  |
| Carbonyl difluoride | Occupational Exposure Limits | PC-STEL    | 10 mg/m <sup>3</sup> |

### 8.2. Biological limit

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## Threshold limit values of by-products from thermal decomposition:

| Components        | Basis                                    | Value Type                 | Value             |
|-------------------|------------------------------------------|----------------------------|-------------------|
| Hydrofluoric acid | GBZ2.1-2019 Occupational Exposure Limits | 42 mmol/mol Cr (7mg/g Cr)  | After work shift  |
|                   |                                          | 24 mmol/mol Cr (4 mg/g Cr) | Before work shift |

### 8.3.Control measures

None

### 8.4.Engineering measures

|   |                                                                                      |
|---|--------------------------------------------------------------------------------------|
| 1 | Provide local ventilation appropriate to the product decomposition risk (Section 10) |
| 2 | Refer to protective measures listed in sections 7 and 8.                             |
| 3 | Apply technical measures to comply with the occupational exposure limits             |

### 8.5.Individual protection measures

|                          |                                                                                                                                                                                                 |
|--------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Respiratory protection   | Use an air respirator with a mask appropriate to the product decomposition risk (see Section 10).<br>Use only personal protective equipment that conforms to international/ national standards. |
| Eye protection           | Wear protective gloves made of Nitrile rubber, PVC, Neoprene or butyl-rubber.                                                                                                                   |
| Eye protection           | Safety goggles.                                                                                                                                                                                 |
| Skin and body protection | Wear work overall and safety shoes.                                                                                                                                                             |

## 9.Physical and chemical properties

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

|                                          |                                                                                                                                       |
|------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------|
| Appearance                               | Semi-transparent, Solid                                                                                                               |
| Odor                                     | Weak odor                                                                                                                             |
| pH Value                                 | No data available                                                                                                                     |
| Melting Point                            | No data available                                                                                                                     |
| Boiling Point                            | No data available                                                                                                                     |
| Flash Point                              | Not applicable                                                                                                                        |
| Flammability/Explosive limit             | No data available                                                                                                                     |
| Vapor Pressure                           | Not available                                                                                                                         |
| Vapor Density (Air=1)                    | No data available                                                                                                                     |
| Specific Gravity                         | 2.04g/cm <sup>3</sup>                                                                                                                 |
| Solubility                               | Water solubility<br>Solubility in other solvents:<br>Esters: insoluble<br>Ketones: insoluble<br>Fluorinated solvent: slightly soluble |
| Partition coefficient of n-octanol/water | No data available                                                                                                                     |
| Auto-ignition temperature                | Not applicable                                                                                                                        |
| Decomposition temperature                | >250 °C                                                                                                                               |
| Viscosity                                | No data available                                                                                                                     |
| Explosivity                              | Not explosive                                                                                                                         |
| Oxidizing properties                     | Not considered as oxidizing                                                                                                           |

### 9.2.Other Information

None

## 10.Stability and reactivity

|           |                                              |
|-----------|----------------------------------------------|
| Stability | Stable under recommended storage conditions. |
|-----------|----------------------------------------------|



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|                                  |                                                                                                                                            |
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| Dangerous reaction               | No dangerous reaction known under conditions of normal use.                                                                                |
| Conditions to avoid              | Keep away from flames and sparks.<br>To avoid thermal decomposition, do not overheat.                                                      |
| Incompatible materials           | Alkali metals (molten form)                                                                                                                |
| Hazardous decomposition products | Gaseous hydrogen fluoride (HF), Fluorophosgene, Fluorinated olefins.<br>The release of other hazardous decomposition products is possible. |

## 11. Toxicological information

|                                           |                   |
|-------------------------------------------|-------------------|
| Toxicological information                 | No data available |
| Skin corrosion/irritation                 | No data available |
| Serious eye damage/eye irritation         | No data available |
| Respiratory or skin sensitisation         | No data available |
| Toxicity for reproduction and development | No data available |
| Carcinogenicity                           | No data available |
| Toxicity to reproduction/Fertility        | No data available |
| STOT - single exposure                    | No data available |
| STOT - repeated exposure                  | No data available |
| Aspiration toxicity                       | No data available |

## 12. Ecological information

### 12.1. Toxicity

No data available

### 12.2. Persistence and degradability

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

## 13. Waste treatment methods

### 13.1. Disposal of Product

Recycle as much as possible. If it cannot be recycled, incineration method shall be adopted for treatment. Incineration equipment must be available for neutralizing or collecting hydrofluoric acid.

### 13.2. Disposal of packaging

Return the containers to producer or dispose with the local regulations.

### 13.3. Note for disposal

Prior to disposal, relevant national and local regulations should be consulted. Safety precautions for disposal personnel see section 8.

## 14. Transport information

UN Dangerous Goods Number: No data available

UN shipping name: No data available

UN Hazard classification: No data available

# Teflus®

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Packing Category: No data available

Packing Mark: No data available

Package: Closed packaging in plastic drums

IMDG: not regulated

Note: This product is transported as non hazardous. The product should be packaged correctly to avoid any leakage. If there is a leak, please treat it as non hazardous goods.

**For other transport information, please contact our representatives.**

## 15. REGULATION INFORMATION

The latest version of following regulations/legislation or standards specific for the substance on classification SDS and labels:

GB 13690: General rules for classification and hazard communication of chemicals

GB30000.2~GB30000.29:

Series standards of Safety rules for classification, precautionary labeling and precautionary statements of chemical

GB 15258: General rules for preparation of precautionary label for chemicals

GB/T 16483: Safety data sheet for chemical products—Content and order of sections

Decree No. 591 of the State Council of the People's Republic of China:

Regulations on the Control over Safety of Hazardous Chemicals

GB 12268: List of Dangerous Goods

GB 6944: Classification and code of dangerous goods

## 16. OTHER INFORMATION

**Abbreviations and acronyms used in the safety data sheet**

C: Ceiling limit

CN BEI: China. Biological Occupational Exposure Indices

MAC: Maximum allowable concentration

PC-STEL: Permissible concentration - short term exposure limit

PC-TWA: Permissible concentration - time weighted average

STEL: Short-term exposure limit

IATA: International Air Transport Association.

IMDG: International Maritime Dangerous Goods.

TWA: Time weighted average

CAS: Chemical Abstracts Service.

PBT: Persistent, Bioaccumulative and Toxic substance.

vPvB: Very Persistent and Very Bioaccumulative.

GHS/CLP/SEA: Classification, labeling, packaging regulation

The information in this SDS (Safety Data Sheet) is only applicable to the specified products. Unless otherwise specified, it is not applicable to the mixture of this product and other substances. This SDS only provides information on product use safety for those who have received appropriate professional training. Users of this SDS must make independent judgments on the applicability of this SDS under special conditions of use. Under special circumstances, the author of this SDS will not be responsible for any damage caused by the use of this SDS.