

MATERIAL SAFETY DATA SHEET
In according to norm (CE) Num.1907/2006 REACH

Polytetrafluoroethylene (PTFE)

Date: 18/03/2011 Rev 0

Pag. 1/7

1 - Identification of the substance/ preparation and company/ undertaking

•	Company name:	Fluorseals S.p.A.
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•	Telephone nr.:	+39 035 4492811
•	e-mail:	sales@fluorseals.it

•	Trade Name:	Polytetrafluoroethylene (PTFE) Semifinished and finished products made of PTFE
•	Grades:	Moulded and Extrusion
•	Compound description:	n/a
•	Structural formula: (of the polymer)	$-(CF_2-CF_2)_n-$
•	Recommended use:	Product for industrial use only

2 – Hazard identifications

2.1	Adverse human health effects
•	The product is an inert polymer, which is not dangerous for the human health
2.2	Main symptoms
•	See section 4
2.3	Environmental effects
•	Environmental pollution only in case of emission of toxic and corrosive gases following thermal decomposition.
2.4	Physical and chemical hazards
•	Toxic and corrosive gases are released in thermal decomposition.

3 – Composition/ information on ingredients

Substances with established exposure limits or classifiable as dangerous according to EC Directive 67/548 and following amendments, in concentration equal or higher that that reported in EC Directive 88/379 (item.3, sect..6):

Name	Conc.	N° CAS.	Symbol	Risk phrases
Polytetrafluoroethylene	>99,9%	9002-84-0	$-(CF_2-CF_2)-$	–

MATERIAL SAFETY DATA SHEET
In according to norm (CE) Num.1907/2006 REACH

Polytetrafluoroethylene (PTFE)

Date: 18/03/2011 Rev 0

Pag. 2/7

4 – First – aid measures

4.1	Symptomatology following exposure to products of thermal decomposition	
	• Inhalation	Headache, short breathing, cough, chills and fever, tachycardia.
	• Eye contact	Redness, irritation, burns
	• Skin contact	Redness, irritation, burns
4.2	First Aid Measures in case of exposure to gases from thermal decomposition	
	• Inhalation	Move immediately affected person to fresh air. Seek medical attention immediately. If not breathing, supply artificial respiration, preferably mouth to mouth. In case of difficult breathing, give oxygen. The symptoms by inhalation of thermal decomposition products do not occur until several hours after exposure. Keep the affected person under medical observation for at least 48 hours. A timely medical attention is absolutely required.
	• Eye contact	Flush immediately and copiously with water for at least 15 minutes, retracting eyelids often. Seek medical attention in case burns continues.
	• Skin contact	Wash immediately with water and soap (pay particular attention to flushing skin under nails). Seek medical attention in case burns continues.

5 – Fire fighting measures

5.1	Specific hazards	
	•	The product is neither flammable nor explosive.
	•	In the event of fire, corrosive and toxic gases from thermal decomposition may be formed, like Carbon monoxide (CO)
	•	Hydrofluoric acid (HF)
	•	Carbonil Fluoride (COF ₂)
	•	Tetrafluoroethylene
	•	Hexafluoroisobutylene
	•	Perfluoroisobutylene
	•	Sulphurous anydride
5.2	Specific methods	
	•	In case of surrounding fire, if possible, remove the containers in a safety place. To do only if in safe conditions (safety distance from the flames and staying upwind)
	•	In case of impending fire, keep containers cool by spraying with water.
5.3	Extinguishing media	
	•	Water (spray, fog, stream), CO ₂ , chemicals in powder or foam.
5.4	Protection of fire-fighters	
	•	Self contained breathing apparatus.
	•	Full anti-acid clothing

MATERIAL SAFETY DATA SHEET
In according to norm (CE) Num.1907/2006 REACH

Polytetrafluoroethylene (PTFE)

Date: 18/03/2011 Rev 0

Pag. 3/7

6 – Accidental release measures

6.1	Personal precautions
	<ul style="list-style-type: none">• Keep away from hot surfaces and flames.• Stop the release as soon as possible, in safe conditions.
6.2	Environmental precautions
	<ul style="list-style-type: none">• Avoid uncontrolled discharge of the product in the soil and underground waters.
6.3	Methods for cleaning up
	<ul style="list-style-type: none">• Sweep and scoop out the released material, collecting it in suitable container for re-use or disposal according to applicable regulations.

7 – Handling and storage

7.1	Handling
7.1.1	Precautions
	<ul style="list-style-type: none">• Wear suitable protective clothing (see par. 8).• Avoid processing above decomposition temperature without adequate ventilation.• Keep attention that particles of products coming from hands or from garments will not become in contact with materials or substances that could be burnt (ex. cigarettes, tobacco).• Clean facilities (pipe, vessels) before any discontinuous operations.
7.1.2	Security measures
	<ul style="list-style-type: none">• In working areas where the materials are handled at temperatures higher than 350°C appropriate exhaust ventilation and smoke down bringing are required.
7.2	STORAGE
7.2.1	Storage conditions
	<ul style="list-style-type: none">• Keep away from sparks and flames, hot surfaces and inflammable materials.• Do not store near incompatible materials (see par. 10).
7.2.2	Packing
	<ul style="list-style-type: none">• Cardboard boxes or plastic drums, wooden boxes

MATERIAL SAFETY DATA SHEET
In according to norm (CE) Num.1907/2006 REACH

Polytetrafluoroethylene (PTFE)

Date: 18/03/2011 Rev 0

Pag. 4/7

8 – Exposure controls/ personal protection

8.1	Exposure limits	ACGIH 2003		
	• n/ a			
	• n/ a			
	• n/ a			
8.2	Technical measures			
	• Adequate local exhaust ventilation is required in case of high temperature processing			
8.3	Personal protective equipment			
8.3.1	Respiratory protection			
	• n/a			
8.3.2	Hand protection			
	• n/a			
8.3.3	Eye and body Protection			
	• In case of high dust concentration wear safety goggles and appropriate work suits/overalls.			
8.3.4	Measures			
	• Do not eat, drink or smoke while handling the product.			

9 – Physical and chemical properties

•	Physical state	Solid
•	Odour	Odourless
•	Colour	White
•	Relative Density	2,130 – 2,200 g/cm ³
•	Melting point	327 ÷ 335 °C
•	Decomposition temperature	> 350 °C
•	Auto ignition temperature	575 °C
•	pH	not applicable
•	Boiling point	not applicable
•	Flash point	not flammable
•	Explosion properties	not explosive
•	Oxidising properties	not oxidiser
•	Vapour pressure	not applicable
•	Vapour density	not applicable
•	Solubility in water	not soluble
•	Solubility in organic solvents	not soluble

MATERIAL SAFETY DATA SHEET
In according to norm (CE) Num.1907/2006 REACH

Polytetrafluoroethylene (PTFE)

Date: 18/03/2011 Rev 0

Pag. 5/7

10 – Stability and reactivity

10.1	Stability	<ul style="list-style-type: none"> The product is stable in normal condition of use and storage.
10.2	Conditions to avoid	<ul style="list-style-type: none"> Avoid heating the product above a temperature of 350 °C in absence of adequate protective measures. Avoid contact with sparks and flames, hot surfaces and inflammable materials.
10.3	Materials to avoid	<ul style="list-style-type: none"> Avoid contact with alkaline metals and Fluorine under pressure.
10.4	Hazardous decomposition products:	<ul style="list-style-type: none"> Toxic and corrosive vapour-steam (hydrogen fluoride, carbonyl fluoride, tetrafluoroethylene, hexafluoropropane and perfluoroisobutane). The temperature level influences directly the thermal combustion products.

11 – Toxicological information

11.1	Penetration routes	<ul style="list-style-type: none"> Inhalation of toxic vapours or dust ingestion 	
11.2	Adverse effects for the Human Health	<ul style="list-style-type: none"> Delayed and/or immediate effects after short and/or prolonged exposure. Acute toxicity: Health injuries are not known or expected under normal use. The thermal decomposition vapours of fluorinated polymers may cause polymer fume fever with influenza-like symptoms (headache, tremors, sweating, high temperature), especially when smoking contaminated tobacco; danger of serious damage to health by prolonged exposure. Chronic toxicity: No data available in normal industrial documentation. Local effects: May cause irritation to the eyes or skin due to mechanical effects decomposition products may cause severe burns on skin, eyes and mucosae. Sensitisation: No data available. Carcinogenicity: No data available. Mutagen city and reproduction toxicity: The product is not listed as potential mutagenic agent by National and International Agencies or Competent Authorities. 	
11.3	Experimental toxicological data (on animals)		
	<ul style="list-style-type: none"> LC50 – inhalation 	3500 mg/m ³ (30 min.)	Species: rat
		(referred to pyrolysis products of PTFE at 625 °C)	
	<ul style="list-style-type: none"> LC50 – inhalation 	2700 mg/m ³ (5 min.)	Species: rat
		(referred to pyrolysis products of PTFE at 800 °C)	

MATERIAL SAFETY DATA SHEET
In according to norm (CE) Num.1907/2006 REACH

Polytetrafluoroethylene (PTFE)

Date: 18/03/2011 Rev 0

Pag. 6/7

12 – Ecological information

12.1	Environmental effects		
	•	Mobility and bioaccumulation:	no data available
	•	Persistence:	no data available
	•	Degradability:	no data available
	•	Ecotoxicity:	no data available
12.2	Evaluation		
	•	Avoid polluting the environment	

13 – Disposal considerations

13.1	Waste treatment		
	•	The product that can not be recycled must be disposed in authorised landfill or destroyed in a high-temperature incinerator designed to burn halogen materials.	
13.2	Packaging treatment		
	•	Dispose of in authorised landfills according to local laws and regulations.	

14 – Transport information

14.1	Specific hazards		
	•	The product is not classified as dangerous in transportation	
14.2	Packaging information		
	•	Product usually shipped in bags within plastic canisters, cardboard boxes or plastic drums, wooden boxes	
14.3	International transport classification		
	•	Packaging group:	not assigned
	•	U.N. Number:	not assigned

MATERIAL SAFETY DATA SHEET
In according to norm (CE) Num.1907/2006 REACH

Polytetrafluoroethylene (PTFE)

Date: 18/03/2011 Rev 0

Pag. 7/7

15 – Regulatory information

15.1	EC Regulations	
	<ul style="list-style-type: none">Directive 67/548 and following amendmentsDirective 1999/45 CE and following amendments	
15.2	Classification	
	<ul style="list-style-type: none">Hazard class:	none
	<ul style="list-style-type: none">Classification type	not required
15.3	Labelling	
	<ul style="list-style-type: none">Trade name	Polytetrafluoroethylene (PTFE) Virgin ptfе semifinished and finished products
	<ul style="list-style-type: none">Risk phrases (R)	none
	<ul style="list-style-type: none">Safety phrases (S)	none
	<ul style="list-style-type: none">Hazard Symbol	none

16 – Other information

- Safety data sheet according to Directive 2001/58/CE;
- Data Bases: IUCLID(1996) OHMTADS (2003) IRIS (2003) RTECS (2003) HSDB (2003) IUCLID 5 (2010);
- Material Safety Data Sheet according to EC Regulation 1907/2006 REACH.

The information given in this safety data sheet is based on the present available knowledge. Their aim is to describe the security appearance related to our products and not really to grant their properties. The Company is not responsible for damages to persons or things caused by a misuse of the information indicated in this document.