

HEROFLON PTFE COMPOUNDS



Heroflon supplies over **1,400 types** of PTFE compounds, also known as filled PTFE. **Specific fillers and reinforcements** are added to the virgin PTFE (i.e. Glass Fibers, Bronze powder, Carbon Fibers, Graphite, pigment, etc.) modifying the original properties to fulfil the customer's specific requirements.



QUALITY FIRST OF ALL

We are completely sure that the high quality of materials makes the difference and we only look for the best.



TECHNICAL SUPPORT

A team of high skilled technicians is always at complete disposal of our clients in the search for the best solution.



TAILOR-MADE FORMULATIONS

Our flexibility and deep know-how permit us to develop and supply personalized compounds for each specific application.



YOUR TARGET IS OUR TARGET

We work together with our clients in demanding projects, sharing our expertise and knowledge in formulating and compounding.



HEROFLON S.p.A.
A sole-shareholder company subject to the direction and co-ordination of Daikin Industries Ltd
Via Alcide De Gasperi, 4
25060 Collebeato (BS) - Italy
Tel. +39 030 2510211 - Fax +39 030 2511495
welcome@heroflon.com

www.heroflon.com

ALL HEROFLON'S COMPOUNDS CAN BE FORMULATED:

Combining **fillers** and **pigments**, in different **percentages**, in order to reach the **perfect solution** for each **application**. Choosing between **Virgin** PTFE Base Polymer or **Modified** Virgin PTFE Base Polymer. Choosing between the **different grades available** depending on specific application and processing methods, such as:

- ✓ **NFF** (*Non Free-Flowing*) for Compression Moulding
- ✓ **FF** (*Free-Flowing*) for Compression, Semi-Automatic and Isostatic Moulding
- ✓ **FF/HD** (*Free-Flowing High Density*) for Compression and Automatic Moulding
- ✓ **E** (*Pre-Sintered*) for RAM Extrusion

MAIN FILLERS

ORGANIC FILLERS					
Carbon Hard & Soft	Graphite	Antistatic and Conductive Carbon	Carbon Fibers		
Aramid Fibers	Aromatic Polyester	PEEK	Polyimide	PPS	PPSO ₂
INORGANIC FILLERS					
Glass Fibers	Alumina Calcium Fluoride Boron Nitride Cobalt Aluminate	Ceramic	Glass Beads	Molybdenum Disulfide	Silica Aluminum & Calcium Silicate Barium Sulphate
METALLIC FILLERS					
Anti-Oxidating Bronze	Irregular Bronze	Spherical Bronze	Dendritic Bronze		



HEROCOMP PTFE COMPOUNDS

WITH MOST COMMONLY USED FILLER TYPES

PROPERTY	TEST METHOD	UNIT	15GL	25GL	25CAR	25CAR/R	15GR	15GL5M	40BRR	10CF	20CER	10R	10R MOD*	10PEEK	15RJ	10EK	15KV																											
Filler Description	-	-	Glass Fibers	Glass Fibers	Hard Carbon	Soft Carbon	Graphite	Glass Fibers + MoS ₂	Irregular Bronze Anti-Oxidizing	Carbon Fibers	Ceramics	PPS PPSO ₂	PPS PPSO ₂	PEEK	Polyimide	Aromatic Polyester	Aramid Fibers																											
Filler Content	-	%	15	25	25	25	15	15 + 5	40	10	20	10	10	10	15	10	15																											
Specific Gravity	ASTM D4894	-	2,22	2,25	2,10	2,10	2,16	2,26	3,08	2,09	2,03	2,05	2,05	2,04	1,94	2,07	1,98																											
Tensile Strength CD (or ED)	ASTM D4894	MPa	23	18	Min. 15	18	20	20	26	22	18	22	22	22	15	22	13																											
Elongation CD (or ED)	ASTM D4894	%	300	270	Min. 90	190	200	260	270	250	200	260	330	280	200	320	200																											
Hardness	NEEDLE	Shore D	62 +/- 3	64 +/- 3	63 +/- 3	63 +/- 3	61 +/- 3	62 +/- 3	65 +/- 3	62 +/- 3	62 +/- 3	59 +/- 3	59 +/- 3	59 +/- 3	60 +/- 3	60 +/- 3	60 +/- 3																											
Diametric Shrinkage	INTERNAL	%	2,4 +/- 0,5	2,1 +/- 0,5	2,5 +/- 0,5	2,6 +/- 0,5	2,4 +/- 0,5	2,5 +/- 0,5	2,2	2,1 +/- 0,6	5,5 +/- 0,5	3,0 +/- 0,5	3,0 +/- 0,5	4,0 +/- 0,5	3,7	2,5 +/- 0,5	2,5 +/- 0,5																											
Other possible Combinations	-	-	Also with: - MoS ₂ - Carbon - Graphite		Also with: - Graphite		-	-	Also with: - Carbon Fibers - Graphite - MoS ₂	-	Also with: - Carbon	Also with: - Carbon Fibers - Graphite	Also with: - Carbon Fibers - Graphite	-	-	Also with: - MoS ₂ - Carbon Fibers	-																											
Benefits and Limits	<ul style="list-style-type: none"> High temperature and dimensional stability High pressure resistance and stiffness plus good wear resistance properties Reduced 'cold-flow' plus dielectric properties Good chemical resistance against organic solvents Moly (MoS₂) and Graphite content reduce friction and abrasion of the metal counterpart 			<ul style="list-style-type: none"> Advanced pressure resistance with increased hardness Hydrochloric acid resistant Not resistant against heavily oxidising agents (acids, bleaches, halogens) 			<ul style="list-style-type: none"> Good dry running Hydrochloric acid resistant Electrical conductive when highly filled Not resistant against heavily oxidising agents (acids, bleaches, halogens) Low abrasivity during machining 			<ul style="list-style-type: none"> Good heat conductivity Wear characteristics approx. 5X better than Virgin PTFE Lower coefficient of friction compared to Glass Fibers, Carbon and Bronze compounds Low abrasion when used against soft metals counterparts Low hardness compared to standard compounds such as Glass Fibers, Carbon and Bronze 			<ul style="list-style-type: none"> Improvement of tribological properties compared to compounds with Glass Fibers only 			<ul style="list-style-type: none"> Very high pressure resistance and hardness High resistance against gap extrusion (low 'cold-flow') Good resistance to abrasion High heat absorption and good conductivity Smooth running characteristics Non acid proof 			<ul style="list-style-type: none"> Already with low filler content extremely high wear resistance behaviour Low abrasion of the counterpart surface when using soft metals (i.e. hardened aluminum) Particularly low wear when lubricated with water 			<ul style="list-style-type: none"> Very high pressure and wear resistance Percentage of filler content can be increased up to 60% Suitable for contact with food stuff 			<ul style="list-style-type: none"> High temperature dimensional stability Excellent resistance to abrasion Good chemical resistance Reduced 'cold-flow' Protects the sliding partner Suitable for contact with food stuff 			<ul style="list-style-type: none"> High temperature dimensional stability Excellent resistance to abrasion Good chemical resistance Reduced cold flow Protects the sliding partner 			<ul style="list-style-type: none"> High temperature dimensional stability Excellent resistance to abrasion Good chemical resistance Requires hard counter surface Suitable for contact with food stuff 			<ul style="list-style-type: none"> Very low coefficient of friction Self-lubricating effect Extreme long-term wear resistance High temperature resistance High temperature resistance Resistant against aggressive chemicals for corrosion and rust free components Long term operating life 			<ul style="list-style-type: none"> Low abrasion on the counterpart surface of soft metals (i.e. Aluminum) High temperature resistance, higher than 300°C Dimensional stability at high temperatures Good wear and friction behaviour Very good corrosion and abrasion resistance 			<ul style="list-style-type: none"> Low abrasion on the counterpart surface of soft metals (i.e. Aluminum) Dimensional stability at high temperatures Good wear and friction behaviour Very good corrosion and abrasion resistance 				
	Applications			<ul style="list-style-type: none"> Suitable for a large variety of environmental situations Not suitable for soft metal counterparts, unless used with a very low percentage of Glass filling Only limited in hot water condition 			<ul style="list-style-type: none"> Good choice for water applications Suggested for medium to high loading Compressor rings, V-rings, packings, pistons, rod packs 			<ul style="list-style-type: none"> Good choice for water applications Suggested for dry running from low to medium loading Large variety of seals and bushings 			<ul style="list-style-type: none"> Suitable usage against aggressive and corrosive agents Hot water and steam applications 			<ul style="list-style-type: none"> Dynamic seals Lip-seals Shaft-seals 			<ul style="list-style-type: none"> Preferred usage in hydraulic and pneumatic systems No usage for water applications Not suitable for electrical applications 			<ul style="list-style-type: none"> Seals for power steering box (hydraulics) Sealing rings and guiding rings in high pressure piston for compressors 			<ul style="list-style-type: none"> Alternative for Glass+Carbon Fibers Compounds 			<ul style="list-style-type: none"> Self-lubricated bearings Sealing elements Compressor rings High speed rotating radial seals Back-up rings Bushings Packing sets 			<ul style="list-style-type: none"> Self-lubricated bearings Sealing elements Compressor rings High speed rotating radial seals Back-up rings Bushings Packing sets 			<ul style="list-style-type: none"> Compressor rings High speed rotating radial seals Back-up rings Bushings Packing sets 			<ul style="list-style-type: none"> Self-lubricated bearings and piston rings Sealing elements Technical components and shaped parts Skived films and sheets 			<ul style="list-style-type: none"> High speed rotating radial seals Self-lubricating and slide bearings Compressor rings Spring-load seals Bushings Gaskets Dry running conditions 			<ul style="list-style-type: none"> High speed rotating radial seals Self-lubricating and slide bearings Compressor rings Spring-load seals Bushings Gaskets Dry running conditions 	

Typical Values referred to Free-Flowing grade version. Not suitable for specification purposes.

* Modified PTFE base polymer.

All of Heroflon's compounds can also be formulated with Virgin Modified PTFE base polymer.

IMPORTANT NOTICE: The information contained herein is based on technical data and tests we believe to be reliable and is intended for use by persons having technical knowledge and skills, solely at their own discretion and risk. Since conditions of use are outside of our control, we assume no responsibility for results obtained or damages incurred through the application of the data given; and the publication of the information herein shall not be understood as permission or recommendation for the use of our fluorinated polymers in violation of any patent or otherwise. We only warrant that the product conforms to description and specification, and our only obligation shall be to replace goods shown to be defective or refund the original purchase price thereof.