



▶ Product Information

# PTFE Compounds

Combining fillers and pigments in different percentage, in order to reach the suitable solution.

Choosing between the different grade available depending on specific application and processing methods.

Powder type	Recommended molding method
NFF (Non-Free Flowing)	Compression molding
FF (Free Flowing)	Compression molding, Semi automatic and Isostatic molding
FF /HD (Free-Flowing High Density)	Compression molding, Automatic molding
E (Pre-sintered)	RAM extrusion

- ✔ Glass fiber, glass beads
- ✔ Carbon
- ✔ Graphite
- ✔ Bronze
- ✔ Molybdenum Disulfide (MoS<sub>2</sub>)
- ✔ Carbon fiber
- ✔ Conductive filler
- etc.

For more information, please contact us.

**Daikin Chemical Europe GmbH**

Am Wehrhahn 50

40211 Düsseldorf

daikinchem.de

sales@daikinchem.de

## PTFE compounds with most commonly used filler types

Property	Test Method	Unit	15GL	25GL	25CAR	25CAR/R	15GR	15GLM	40BRR	10CF	20CER	10R	10R MOD*	10PEEK	15RJ	10EK	15KV	50STST
Filler Description	-	-	Glass Fibers	Glass Fibers	Hard Carbon	Soft Carbon	Graphite	Glass Fibers + MoS <sub>2</sub>	Irregular Bronze Anti-Oxidizing	Carbon Fibers	Ceramics	PPS Mod PPS	PPS Mod PPS	Peek	Polyimide	Aromatic Polyester	Aramidic Fibers	Stainless Steel
Filler Content	-	%	15	25	25	25	15	15+5	40	10%	20%	10%	10%	10%	15%	10%	15%	50%
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	3,35
Tensile Strength CD (or ED)	ASTM D4894	Mpa	23	18	Min. 15	18	20	20	26	22	18	22	22	22	15	22	13	20
Elongation CD (or ED)	ASTM D4894	%	300	270	Min. 90	190	200	260	270	250	200	260	330	280	200	320	200	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	67+/-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	2,2+/-0,5
Other possible Combinations			Also with: • MoS <sub>2</sub> • Carbon • Graphite		Also with: • Graphite		-	-	Also with: • Carbon Fibers • Graphite • MoS <sub>2</sub>	-	Also with: • Carbon	Also with: • Carbon Fibers • Graphite	Also with: • Carbon Fibers • Graphite	-	-	Also with: • MoS <sub>2</sub> • Carbon Fibers	-	-
Benefits and Limits			<ul style="list-style-type: none"> <li>High temperature and dimensional stability</li> <li>High pressure resistance and stiffness plus good wear resistance properties</li> <li>Reduced 'cold-flow' plus dielectric properties</li> <li>Good chemical resistance against organic solvents</li> <li>Moly (MoS<sub>2</sub>) and Graphite content reduce friction and abrasion of the metal counterpart</li> </ul>	<ul style="list-style-type: none"> <li>Advanced pressure resistance with increased hardness</li> <li>Hydrochloric acid resistant</li> <li>Not resistant against heavily oxidising agents (acids, bleaches, halogens)</li> </ul>	<ul style="list-style-type: none"> <li>Good dry running</li> <li>Hydrochloric acid resistant</li> <li>Electrical conductive when highly filled</li> <li>Not resistant against heavily oxidising agents (acids, bleaches, halogens)</li> <li>Low abrasivity during machining</li> </ul>	<ul style="list-style-type: none"> <li>Good heat conductivity</li> <li>Wear characteristics approx. 5x better than Virgin PTFE</li> <li>Lower coefficient of friction compared to Glass Fibers, Carbon and Bronze compounds</li> <li>Low abrasion when used against soft metals counterparts</li> <li>Low hardness compared to standard compounds as Glass Fibers, Carbon and Bronze</li> </ul>	<ul style="list-style-type: none"> <li>Improvement fo tribological properties compared to compounds with Glass Fibers only</li> </ul>	<ul style="list-style-type: none"> <li>Very high pressure and hardness</li> <li>High resistance against gap extrusion (low cold-flow)</li> <li>Good resistance to abrasion</li> <li>High heat absorption and good conductivity</li> <li>Smooth running characteristics</li> <li>Non acid proof</li> </ul>	<ul style="list-style-type: none"> <li>Already with low filler content extremely high wear resistance behaviour</li> <li>Low abrasion of the counterpart surface when using soft metals (i.e. hardened aluminium)</li> <li>Particularly low wear when lubricated with water</li> </ul>	<ul style="list-style-type: none"> <li>Very high pressure and wear resistance</li> <li>Percentage of filler content can be increased up to 60%</li> <li>Suitable for contact with food stuff</li> </ul>	<ul style="list-style-type: none"> <li>High temperature dimensional stability</li> <li>Excellent resistance to abrasion</li> <li>Good chemical resistance</li> <li>Reduced cold flow</li> <li>Protects the sliding partner</li> <li>Suitable for contact with food</li> </ul>	<ul style="list-style-type: none"> <li>High temperature dimensional stability</li> <li>Excellent resistance to abrasion</li> <li>Good chemical resistance</li> <li>Reduced cold flow</li> <li>Protects the sliding partner</li> <li>Suitable for contact with food stuff</li> </ul>	<ul style="list-style-type: none"> <li>High temperature dimensional stability</li> <li>Excellent resistance to abrasion</li> <li>Good chemical resistance</li> <li>Requires hard counter surface</li> <li>Suitable for contact with food stuff</li> </ul>	<ul style="list-style-type: none"> <li>Very low coefficient of friction</li> <li>Self-lubricating effect</li> <li>Extreme long term wear resistance</li> <li>High temperature resistance</li> <li>Resistance against aggressive chemicals for corrosion and rust free components</li> <li>Long term operating life</li> </ul>	<ul style="list-style-type: none"> <li>Low abrasion on the counterpart surface of soft metals (i.e. Aluminium)</li> <li>High temperature resistance, higher than 300°C</li> <li>Dimensional stability at high temperatures</li> <li>Good wear and friction behaviour</li> <li>Very good corrosion and abrasion resistance</li> </ul>	<ul style="list-style-type: none"> <li>Low abrasion on the counterpart surface of soft metals (i.e. Aluminium)</li> <li>Dimensional stability at high temperatures</li> <li>Good wear and friction behaviour</li> <li>Very good corrosion and abrasion resistance</li> </ul>	<ul style="list-style-type: none"> <li>Heat conductivity</li> <li>Significant reduction of the cold flow (creep)</li> <li>High pressure resistance</li> <li>Very good chemical resistance</li> </ul>	
Applications			<ul style="list-style-type: none"> <li>Suitable for large variety of ambient situations</li> <li>Not suitable for soft metal counterparts, then Glass/Moly is limited in hot water condition</li> </ul>	<ul style="list-style-type: none"> <li>Good choice for water applications</li> <li>Suggested for medium to high loading</li> <li>Compressor rings, V-rings, packings, pistons, rod packs</li> </ul>	<ul style="list-style-type: none"> <li>Good choice for water applications</li> <li>Suggested for dry running from low to medium loading</li> <li>Large variety of seals and bushings</li> </ul>	<ul style="list-style-type: none"> <li>Suitable usage against aggressive and corrosive agents</li> <li>Hot water and steam applications</li> </ul>	<ul style="list-style-type: none"> <li>Dynamic seals</li> <li>Lip-seals</li> <li>Shaft-seals</li> </ul>	<ul style="list-style-type: none"> <li>Preferred usage in hydraulic and pneumatic systems</li> <li>No usage for water applications</li> <li>Not suitable for electrical applications</li> </ul>	<ul style="list-style-type: none"> <li>Seals for power steering box (hydraulics)</li> <li>Sealing rings and guiding rings in high pressure piston for compressors</li> </ul>	<ul style="list-style-type: none"> <li>Alternative for Glass &amp; Carbon Fibers Compounds</li> </ul>	<ul style="list-style-type: none"> <li>Self-lubricated bearings</li> <li>Sealing elements</li> <li>Compressor rings</li> <li>High speed rotating radial seals</li> <li>Back-up rings</li> <li>Bushings</li> <li>Packing sets</li> </ul>	<ul style="list-style-type: none"> <li>Self-lubricated bearings</li> <li>Sealing elements</li> <li>Compressor rings</li> <li>High speed rotating radial seals</li> <li>Back-up rings</li> <li>Bushings</li> <li>Packing sets</li> </ul>	<ul style="list-style-type: none"> <li>Compressor rings</li> <li>High speed rotating radial seals</li> <li>Back-up rings</li> <li>Bushings</li> <li>Packing sets</li> </ul>	<ul style="list-style-type: none"> <li>Self-lubricated bearings</li> <li>Sealing elements</li> <li>Technical components and shaped parts</li> <li>Skived films and sheets</li> </ul>	<ul style="list-style-type: none"> <li>High speed rotating radial seals</li> <li>Self-lubricating and slide bearings</li> <li>Compressor rings</li> <li>Spring-load seals</li> <li>Bushings</li> <li>Gaskets</li> <li>Dry running conditions</li> </ul>	<ul style="list-style-type: none"> <li>High speed rotating radial seals</li> <li>Self-lubricating and slide bearings</li> <li>Compressor rings</li> <li>Spring-load seals</li> <li>Bushings</li> <li>Gaskets</li> <li>Dry running conditions</li> </ul>	<ul style="list-style-type: none"> <li>Usage in steam valves (i.e. ball seats, etc.)</li> <li>Only for low speed applications and static seals mainly</li> <li>Not suitable for application in nuclear plants</li> </ul>	