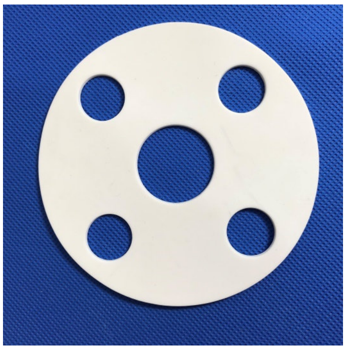
Munsch & Co
"Keeping You Working"

PTM SEALING YOUR FUTURE

Technical Data Sheet

PTFE

FILLED PTFE GRADES



In additions to our WCM400 Virgin PTFE, we also offer a range of filled grades.

When the PTFE is blended with fillers, the material shows improvement in some basic physical properties over virgin grades.

The advantages are the following:

- Compressive strength is enhanced
- Improved thermal conductivity
- Thermal expansion is reduced
- Reduced wear factor

The table below shows the way each filler affects mechanical and physical properties. Combinations of two or more fillers which are not covered in the table allow a larger spectrum of possible compounds.

Filler	Property	Most common applications
Glass	Enhanced wear resistance. Enhanced chemical resistance (except for alkali and hydrofluoric acid).	Valve seats, seals, bearings, requested to resist sliding and chemicals. Suitable for bearings working at low PV values.
Graphite	Extremely low coefficient of friction. Fairly good compressive strength. Good wear resistance.	Bearings for high speed on fairly hard surface.
Carbon	Good thermal conductivity. Good resistance to deformation.	Valve seats. Bearings for high speed and when fast dissipation of electric charges is needed. Elastic bands for unlubricated compressors.
Molibdenum disulphide	Enhanced non-stick properties. Low static coefficient of friction. Fairly good resistance to deformation.	Guide bands. Details needing good resistivity.
Bronze	Enhanced compressive strength. Good wear resistance and high thermal conductivity.	Anti-extrusion rings. Unlubricated bearings for high speed on not hard surface.

More specific data can be found on page 2.

Care should be taken in selecting the most suitable quality for each application. Advice is available, but final responsibility remains with the customer.

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PTFE

Property	Test method	Unit	Virgin	M Standard Compounds					
			M400	M403 15% GLASS FIBRE	M405 25% GLASS FIBER	M412 15% GRAPHITE	M415 25% SOFT CARBON	M453 25% CAR-BOGRAPH ITE	M458 60% BRONZE 2% CAR-BON
Moulded									
Specific gravity	ASTM D792	g/cm3	2.14 - 2.18	2.19 - 2.22	2.20 - 2.26	2.10 - 2.15	2.05 - 2.11	2.05 - 2.11	3.75 - 3.93
Coefficient of linear thermal expansion 25 -100¡C	ASTM D696	10-5 (mm/mm)/¡C	41609	11 - 13	7.5 - 11	8 - 10	9 - 12	10 - 12	7 - 8
Hardness Shore D	ASTM D2240	Points	≥51	≥60	≥70	≥ 55	≥ 60	≥ 64	≥ 62
Tensile strength	ISO 527	N/mm2	≥24	≥17	≥17	≥18	≥15	≥14	≥15
Elongation at break	ISO 527	%	≥250	≥250	≥230	≥200	≥150	≥90	≥100
Compressive strength at 1% defor-mation	ASTM D695	N/mm2	4 - 5	6 - 7	8 - 9	6.5 - 7.5	7 - 9	7 - 9	10 - 11
Deformation under load (24 h 13.7 N/mm2 23¡C	ASTM D621	%	≤17	≤14	≤10	≤10	≤6.5	≤7	≤6
Permanent deformation (as above after 24 h relaxation)	ASTM D621	%	≤9	≤7	≤6.5	≤6	≤4	≤5	≤2.5
Kinetic coeffi-cient of fric-tion	ASTM D1894	/	0.03	0.12	0.13	0.07	0.13	0.11	0.13
Wear factor at PV 100	ASTM D3702	$\frac{cm^3 \cdot min}{Kg \cdot m}$	2.900	10 - 20	10 - 15	60	20 - 30	16 - 20	10
Extruded									
Specific gravity	ASTM D792	g/cm3	2.14 - 2.18	2.18 - 2.21	2.18 - 2.26	2.09 - 2.14	2.04 - 2.10	2.04 - 2.10	3.80 - 3.88
Hardness Shore D	ASTM D2240	Points	≥40	≥ 60	≥60	≥ 55	≥ 60	≥ 64	≥ 65
Tensile strength	ISO 527	N/mm2	≥20	≥15	≥13	≥ 14	≥15	≥12	≥13
Elongation at break	ISO 527	%	≥ 200	≥200	≥180	≥150	≥50	≥50	≥80

ISOQAR REGISTERED UKAS MANAGEMENT SYSTEMS 0026

Certificate Number: 14352
ISO 9001

UK GASKET & SEALING ASSOCIATION

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