



PULIM Sealing Materials

Thermoplastic/PTFE



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Sealing Materials

Pulim Sealing Solutions Co. Ltd. offers a wide range of standard compounds, the majority of which have been developed, and are produced, in our own production plant.



Advanced Engineered plastics products

Pulim Sealing Solutions Co. Ltd. is specialised in advanced engineered plastics products. The offer goes from turned, milled and moulded parts to advanced and standard engineered plastic parts, using in-house developed and produced range of materials.

The Thermoplastic Elastomers demonstrate the characteristic properties of elastomers over a wide temperature range, but with the processing behaviour of thermoplastics. They can be melted at high temperature and can be processed with traditional thermoplastic processing techniques. Thermoplastic elastomers are soluble and they generally swell less in comparison to their chemically crosslinked equivalents. Thermoplastics can be melted. They are polymer materials, which are essentially harder and rigid at their application temperature compared to elastomers. Depending on the chemical structure, the properties vary from hard, to stiff, to ductile and flexible. Due to the morphological structure, extensive stretching is non-reversible and moulded parts remain in the deformed state. Thermoplastics are therefore called Plastomers. Engineering Thermoplastics are applied in the sealing technology for back-up rings and guide rings, bearing bushes, etc.

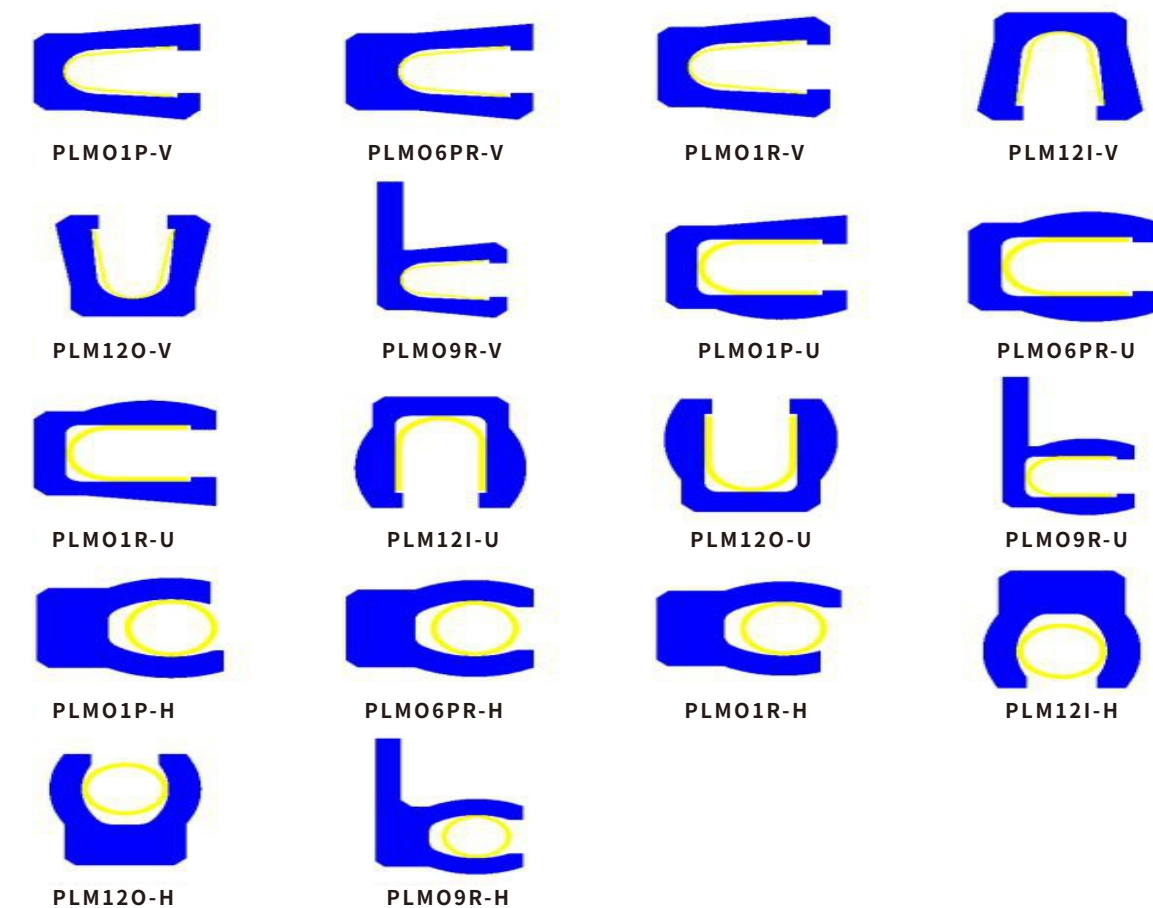
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Common types of PLM Energy-storage seals

The Energy-storage seal can choose V-type or H-type spring form and seal lip design according to various applications such as dynamic and static or internal and external pressure, so it shows different tightness.

Sealing force and compressible deformation. The spring force will affect the sealing performance, friction and wear behavior of the energy storage seal; The compressible stroke determines the effect of energy storage seal on.

Compensation ability for seal lip wear and dimensional tolerance variation of seal groove.



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ID [mm]	OD [mm]	L [mm]		ID [mm]	OD [mm]	L [mm]
460	510	100		1170	1200	100
470	500	100		1170	1225	100
470	510	100		1170	1250	100
470	525	100		1195	1225	100
470	540	100		1195	1250	100
485	510	100		1195	1275	100
485	525	100		1220	1250	100
500	525	100		1220	1300	100
500	540	100		1245	1275	100
500	565	100		1245	1300	100
510	540	100		1270	1300	100
525	565	100				
525	580	100				
540	580	100				
550	580	100				
550	605	100				
570	605	100				
570	620	100				
580	610	100				
590	640	100				
595	650	100				
600	630	100				
600	640	100				
610	650	100				
630	660	100				
630	680	100				
645	680	100				
645	700	100				
665	700	100				
665	720	100				
685	720	100				
685	740	100				
705	740	100				
705	760	100				
725	760	100				

PULIM PTFE

PULIM PTFE are mainly used for back-up rings, guide rings, bushings, bearings and engineered parts. Many have outstanding resistance to high temperatures and chemicals, offer excellent sliding properties and can absorb high radial forces. Therefore they are often also referred to as engineering plastics .

Standard .

PLMFLON-1 PTFE-Virgin | PLMFLON-2 PTFE+15% glass+5% MoS₂ | PLMFLON-3 PTFE+40% Bronze | PLMFLON-4 PTFE+20% Carbon | PLMFLON-5 PTFE+10% Ekonol | PLMFLON-6 PTFE+10% PEEK

Ø INNOVATION. PLM Modified.PTFE

PLM-M-FLON-1 modified. PTFE -Virgin | PLM-M-FLON-2 modified. PTFE + 15% Glass fiber |



PLMFLON-1 (white)

(PTFE-Virgin)

PLMFLON-1 is based on polytetrafluorethylene. Due to its composition, it has the widest application range of all sealing materials. It has an outstanding chemical resistance and is only susceptible to molten alkali metals and elementary fluorine at high temperatures. PTFE has a tendency to creep and can absorb relatively low pressure loads. PLMFLON-1 is suitable for applications in contact with foodstuffs and is also used in many applications in the healthcare and pharmaceutical industries.

PLMFLON-2 (grey)

(PTFE + 15% glass + 5% MoS2)

PLMFLON-2 is a PTFE filled with 15% glass and 5% MoS2 in order to improve its compression strength, extrusion resistance and sliding properties in comparison with PTFE-virgin. The chemical resistance remains similar to PLMFLON-1. Glass-filled PTFE compounds have an abrasive effect on their mating surfaces, especially in rotary applications.

PLMFLON-3 (brown)

PLMFLON-3 (brown)

(PTFE + 40% bronze)

PLMFLON-3 is a PTFE filled with 40% bronze in order to improve its compression strength and has an improved thermal conductivity as well as excellent wear resistance compared with PTFE-virgin. Bronze-filled PTFE has higher friction and poorer chemical resistance than other filled PTFE compounds.



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ID [mm]	OD [mm]	L [mm]		ID [mm]	OD [mm]	L [mm]		ID [mm]	OD [mm]	L [mm]
90	120	150		180	200	150		340	400	100
90	125	150		180	205	150		355	390	100
90	135	150		180	210	150		355	400	100
95	110	150		180	215	150		355	415	100
95	115	150		180	225	150		365	390	100
95	120	150		185	200	150		365	400	100
95	125	150		185	205	150		365	415	100
95	130	150		185	210	150		365	430	100
95	140	150		185	215	150		375	400	100
100	115	150		185	220	150		375	415	100
100	120	150		185	225	150		375	430	100
100	125	150		190	205	150		385	415	100
100	130	150		190	210	150		385	430	100
100	135	150		190	215	150		385	450	100
100	140	150		190	220	150		390	415	100
105	120	150		190	225	150		390	430	100
105	125	150		190	235	150		390	445	100
105	130	150		195	210	150		395	430	100
105	135	150		195	215	150		395	460	100
105	140	150		195	220	150		400	430	100
110	125	150		195	225	150		400	445	100
110	130	150		195	230	150		400	460	100

ID [mm]	OD [mm]	L [mm]		ID [mm]	OD [mm]	L [mm]
410	430	100		1040	1100	70
410	445	100		1040	1125	100
410	460	100		1060	1100	70
420	445	100		1060	1125	100
420	460	100		1060	1150	100
420	470	100		1080	1125	100
420	480	100		1080	1150	100
440	470	100		1080	1175	100
440	490	100		1100	1150	100
450	490	100		1100	1175	100
450	500	100		1120	1150	100
450	510	100		1120	1175	100
455	490	100		1120	1200	100
455	500	100		1145	1175	100
455	510	100		1145	1200	100
460	490	100		1145	1225	100
460	500	100		1150	1200	70

ID [mm]	OD [mm]	L [mm]		ID [mm]	OD [mm]	L [mm]		ID [mm]	OD [mm]	L [mm]
50	80	150		140	175	150		250	280	150
50	85	150		140	180	150		250	290	150
55	70	150		145	160	150		250	300	150
55	75	150		145	165	150		260	280	150
55	80	150		145	170	150		260	290	150
55	85	150		145	175	150		260	300	150
55	90	150		145	180	150		260	320	150
60	70	150		145	185	150		270	290	100
60	75	150		150	165	150		270	300	100
60	80	150		150	170	150		270	320	100
60	85	150		150	175	150		270	330	100
60	90	150		150	180	150		280	305	150
60	95	150		150	185	150		280	315	100
65	80	150		150	190	150		280	330	100
65	85	150		155	170	150		280	340	100
65	90	150		155	175	150		290	315	100
65	95	150		155	180	150		290	350	100
65	100	150		155	185	150		295	320	100
70	85	150		155	190	150		295	330	100
70	90	150		155	195	150		295	340	150
70	95	150		160	175	150		295	350	100
70	100	150		160	180	150		300	330	100
70	105	150		160	185	150		300	340	100
75	85	150		160	190	150		300	350	100
75	90	150		160	195	150		300	360	150
75	95	150		160	200	150		310	330	100
75	100	150		165	180	150		310	340	100
75	105	150		165	185	150		310	350	100
75	110	150		165	190	150		310	360	100
80	95	150		165	195	150		310	370	100
80	100	150		165	200	150		320	340	100
80	105	150		165	205	150		320	350	100
80	110	150		170	185	150		320	360	100
80	115	150		170	190	150		320	370	100
80	120	150		170	195	150		320	380	100
85	100	150		170	200	150		330	360	100
85	105	150		170	205	150		330	370	100
85	110	150		170	215	150		330	390	100
85	115	150		175	190	150		335	360	100
85	120	150		175	195	150		335	370	100
90	105	150		175	200	150		335	400	100
90	110	150		175	215	150		340	370	100
90	115	150		180	195	150		340	390	100

PLMFLON-4 (black)

(PTFE + 20% carbon)

PLMFLON-4 is a PTFE filled with 20% carbon, which gives it excellent compression strength, good thermal conductivity and low permeability. Carbon-filled PTFE is less abrasive than glass-filled PTFE and has excellent wear and friction properties especially combined with graphite.

PLMFLON-5 (Cream)

(PTFE+10% Ekonol)

PLMFLON-5 is a PTFE filled with 10% Ekonol. It has good wear and extrusion resistance, especially in dry running conditions. It has similar chemical resistance, and can be used in same temp. range, as pure PTFE, especially in rotary applications at high speeds. It should not be used in hot water.

PLMFLON-6(Tan)

(PTFE+10% PEEK)

PLMFLON-6 is a PTFE filled with 10% PEEK. It has good chemical resistance, high creep strength and high wear resistance. PLMFLON-6 is mainly used for applications requiring very high resistance.



Property	DIN norm ASTM norm	Unit	PLMFLON-1 PTFE-Virgin	PLMFLON-2 PTFE+15% glass+5% MoS2	PLMFLON-3 PTFE+40% Bronze
Hardness	53505 2240	Shore	51-65	55-60	62-67
Density	53479	g/cm3	2.14-2.18	2.00-230	3.05-3.12
Tensile Strength	53504/53455 D412	N/mm2	≥25	≥15	≥23
Elongation at break	53504/53455 D412	%	≥300	≥220	≥220
Coeff.of friction(dyn.)	D1894	μ	0.06	0.08	0.13
Wear factor	D3702	k	29	10~20	9~13
Compression strength at 1% deformation	53517	N/mm2	4~5	8.5~9	7~9
Thermal Expansion Coeff. 25-100 (linear)	DIN 52612	10-5/°C	12~13	9~12	10~11.5
Min.service		°C/F	+260/+500	+260/+500	+260/+500
Max.service					
FDA-Compliance +:YES/-:NO			+	-	-

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PULIM PTFE Size List

ID [mm]	OD [mm]	L [mm]	ID [mm]	OD [mm]	L [mm]	ID [mm]	OD [mm]	L [mm]
0	20	150	110	135	150	200	215	150
0	30	150	110	140	150	200	220	150
0	40	150	110	145	150	200	225	150
0	60	150	115	130	150	200	230	150
15	30	150	115	135	150	200	235	150
15	40	150	115	140	150	200	240	150
17	45	150	115	145	150	205	220	150
20	35	150	115	150	150	205	225	150
20	40	150	120	135	150	205	230	150
20	45	150	120	140	150	205	235	150
20	50	150	120	145	150	205	240	150
25	40	150	120	150	150	210	225	150
25	45	150	120	155	150	210	230	150
25	50	150	125	140	150	210	235	150
25	55	150	125	145	150	210	240	150
30	45	150	125	150	150	210	245	150
30	50	150	125	155	150	210	250	150
30	55	150	125	160	150	220	235	150
30	60	150	125	165	150	220	240	150
35	50	150	130	145	150	220	245	150
35	55	150	130	150	150	220	250	150
35	60	150	130	155	150	220	260	150
35	65	150	130	160	150	220	270	150
40	55	150	130	165	150	220	280	150
40	60	150	130	170	150	230	250	150
40	65	150	135	150	150	230	260	150
40	70	150	135	155	150	230	270	150
45	60	150	135	160	150	230	280	150
45	65	150	135	165	150	230	305	150
45	70	150	135	170	150	240	260	100
45	75	150	135	175	150	240	270	100
50	60	150	140	155	150	240	280	150
50	65	150	140	160	150	240	290	100
50	70	150	140	165	150	240	300	150
50	75	150	140	170	150	250	270	100

Property	DIN norm ASTM norm	Unit	PLMFLON-4 PTFE+20% Carbon	PLMFLON-5 PTFE+10% Ekonol	PLMFLON-6 PTFE+10% PEEK
Hardness	53505 2240	Shore D	62-67	60-62	60
Density	53479	g/cm3	2.05-2.11	2.08	2.03
Tensile Strength	53504/53455 D412	N/mm2	≥14	≥20	≥20
Elongation at break	53504/53455 D412	%	≥130	≥250	≥200
Coeff.of friction(dyn.)	D1894	μ	0.09	0.18	0.17
Wear factor	D3702	k	10~12		
Compression strength at 1% deformation	53517	N/mm2	7~9		
Thermal Expansion Coeff.25-100(linear)	DIN 52612	10-5/°C	1~12	8.4	
Min.service Temp.		°C/F	-200/-328	-200/-328	-60/-76
Max.service Temp.		°C/F	+260/+500	+260/+500	+300/+572
FDA-Compliance +:YES/-:NO			-	-	-

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Property	DIN norm ASTM norm	Unit	PLM-M-FLON-1 modified.PTFE -Virgin	PLM-M-FLON-2 modified.PTFE Glass
Hardness	53505 2240	Shore D	≥54	≥54
Flamability	UL94			V-0
Water absorption	D570	%	0.01	0.03
Tensile Strength	53504/53455 D412	N/mm2	≥20	≥18
Elongation at break	53504/53455 D412	%	≥300	≥300
Coeff.of friction(dyn.)	D1894	μ	0.08-0.10	0.11-0.13
Compression strength at 1% deformation	53517	N/mm2	≥4	≥4
Thermal Expansion Coeff.25-100(linear)	DIN 52612	10-5/°C	12~15	10~13
Min.service Temp.		°C/F	-200/-328	-200/-328
Max.service Temp.		°C/F	+260/+500	+260/+500
FDA-Compliance +:YES/-:NO			+	-

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