

Epidor



Seals and Rubber Technology

CUSTOM SEALING
From design to manufacturing



Epidor Seals and Rubber Technology

Epidor Seals and Rubber Technology is the company of **EPI INDUSTRIES Family of Companies** specialized in sealing.

We have the widest range of products and solutions on the market thanks to our own gasket manufacturing, through machining or cutting processes. Moreover, we count with the offer of our high added value and strategic suppliers.

OUR MISSION

The team and resources of **Epidor Seals and Rubber Technology** are oriented to offer a direct service to usual users of seals, especially to machinery manufacturers as well as those industries whose processes require a critical and very specific treatment in sealing solutions.



OUR RESOURCES

- . Marketing policies: negotiation of prices, products, sales approach, proposals for new products
- . Development of the product range
- . Value-added services
- . Sales Campaigns

BUSINESS MANAGER

- . Key Account Management
- . Impulsion of our projects
- . Commercial support to the sales team
- . Commercial coordination of suppliers

KEY ACCOUNT MANAGERS

CUSTOMER SERVICE

- . Key Accounts Support
- . Multichannel customer contact
- . Incidence management
- . Solution of claims
- . Shipment tracking

- . Technical knowledge
- . Technical advice and failure analysis
- . Advice on special applications
- . Formation: Sales Team, Customers, Universities
- . Documentary support

PRODUCT ENGINEERS

BUYERS

- . Supplier Management
- . Stock management
- . Procurement process
- . Enquiries / Offers / Complaints
- . Product Availability
- . E-procurement

PRODUCTION

- . Technical advice
- . Design and manufacture
- . Materials research and testing
- . First Sample Reports
- . R+D+I Policy

WE OFFER

TECHNICAL ADVICE AND SOLUTION DESIGN:

We collaborate with the engineering companies of our customers, partners and suppliers to find the most reliable and profitable solution.

IN-HOUSE MANUFACTURING AND DESIGN OF CUSTOM PARTS:

We adapt to the needs of our clients and their applications, being able to combine our own production with that of our collaborators.

PRODUCT HANDLING AND ASSEMBLY TRAINING:

Our service not only ends when the product is delivered, but we also take into account its correct handling for optimum operation.

SPECIAL LOGISTIC TREATMENT:

Assembly of kits, laser marking of parts, packaging and personalized labels, urgent shipping service in 24 h...

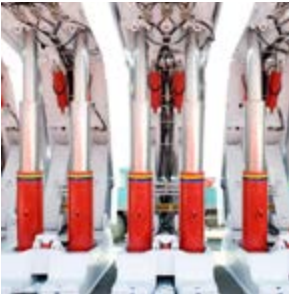


IN-HOUSE DESIGN AND MANUFACTURE

As a custom gasket manufacturer, **Epidor Seals and Rubber Technology** can offer technical solutions for a multitude of applications where durability, chemical compatibility, temperature resistance and functionality are crucial.

Our experience, together with the most advanced technology in the seals machining, allows us to supply parts from 4 to 2500 mm in a wide range of materials: common elastomers, PTFE virgin, loaded PTFE, polyurethanes, technical plastics, detectable materials, etc.

MARKETS



- Agriculture
- Food
- Mechanical Construction
- Packaging
- Pharmaceutical industry
- Chemical Industry
- Oil & Gas
- Engineering
- Public Works
- Automotive industry
- Marine
- Siderurgy and Metal
- Transformation
- Water treatment and distribution networks
- Industrial vehicles



APPLICATIONS



- Sealing of Rotary. Equipment: Pumps, Motors, Machine Tools
- Static Seals for Valves, Flanges, Mechanical Construction
- Hydraulics and pneumatics: Cylinders, Presses
- Insulation of Vibrations in Machines, Compressors, Generators
- Aseptic Gaskets: Sanitary Fittings, Medical Equipment, Packaging Machines



ENGINEERING SERVICES

FOR ORIGINAL EQUIPMENT MANUFACTURERS

Product development

- Advice in the design phase.
- Supply of functional samples for manufacturing.
- Rapid readjustment of the design in the homologation phase.
- Short series for prototypes (48 hours).

Equipment manufacturing

- Supply of small and medium series without the cost of moulds or tooling.
- Manufacturing service to cover emergencies in 24 hours.
- Product reliability. Adaptation of control guidelines to customer needs.

After-sales market

- Supply of small series.
- Individualized packaging.
- Personalized marking of pieces.
- Failure analysis.
- Training.

FOR MACHINE MAINTENANCE

Manufacturing and consulting in standard solutions

- Standard range manufacture in 24 hours.
- Adaptation of the seals to cover functional changes of the equipment.
- Individualized marking and packaging.
- Reverse engineering.
- Failure analysis.

CERTIFICATIONS

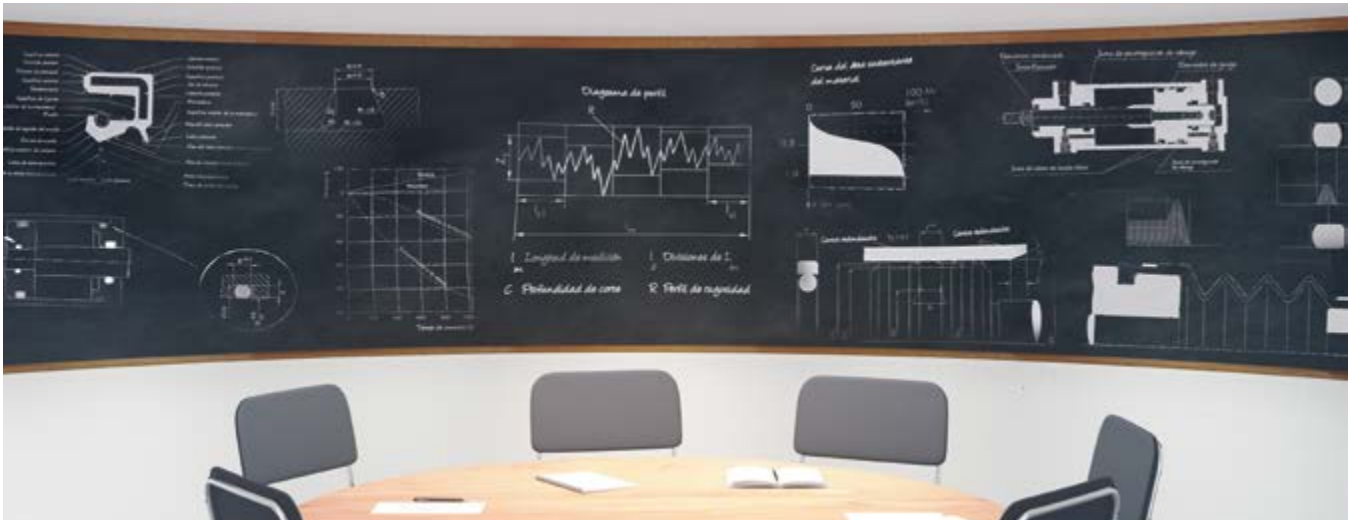
The materials we use have, among others, the following certifications:



RoHS



TRAINING SERVICES



Training and knowledge of our products is an essential element in our organisation: we train our own teams by means of an expert group of engineers. At the same time, we collaborate with universities and professional schools in the dissemination of knowledge of sealing systems and their correct use. And we also offer this service to our customers.

Below we detail some examples of available training courses, although in general, the training content is developed in collaboration with the **C**lient to adapt it to real needs:

General Sealing basis. Complete course.

Static Sealing. O-rings, x-ring seals, cord rings, back-up rings.

Static Sealing. Gaskets for flanges.

Dynamic Sealing. Complete course.

Radial dynamic Sealing. Shaft seals.

Radial dynamic Sealing. Other elements for rotary shafts (V-rings, labyrinths, shaft sleeves).

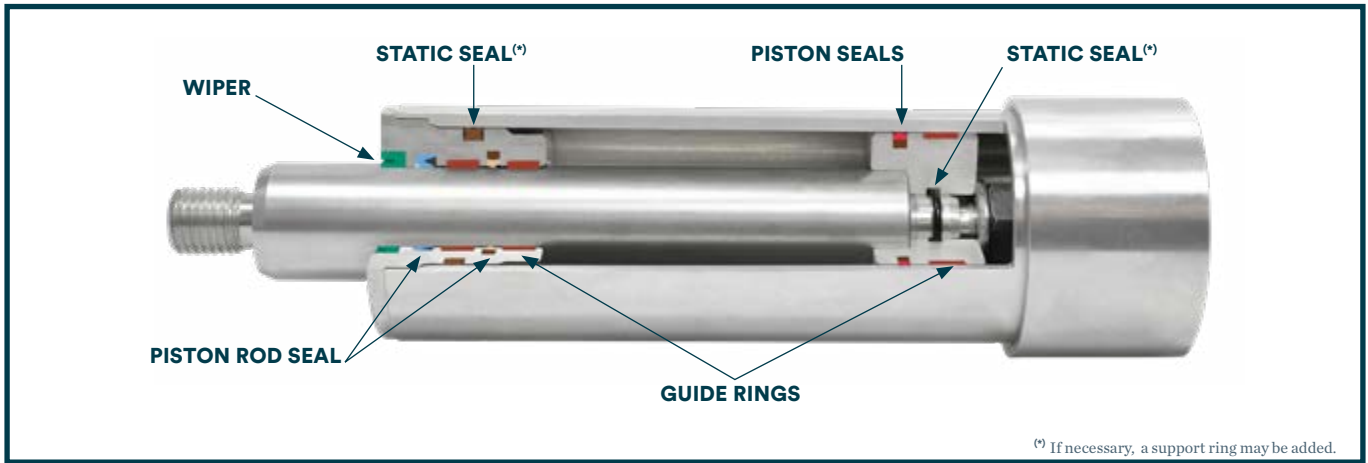
Axial dynamic Sealing. Complete course.

Axial dynamic Sealing. Seals for hydraulic cylinders.

Axial dynamic Sealing. Seals for pneumatic cylinders.

Vibration isolation. Complete course.

PROFILE RANGE



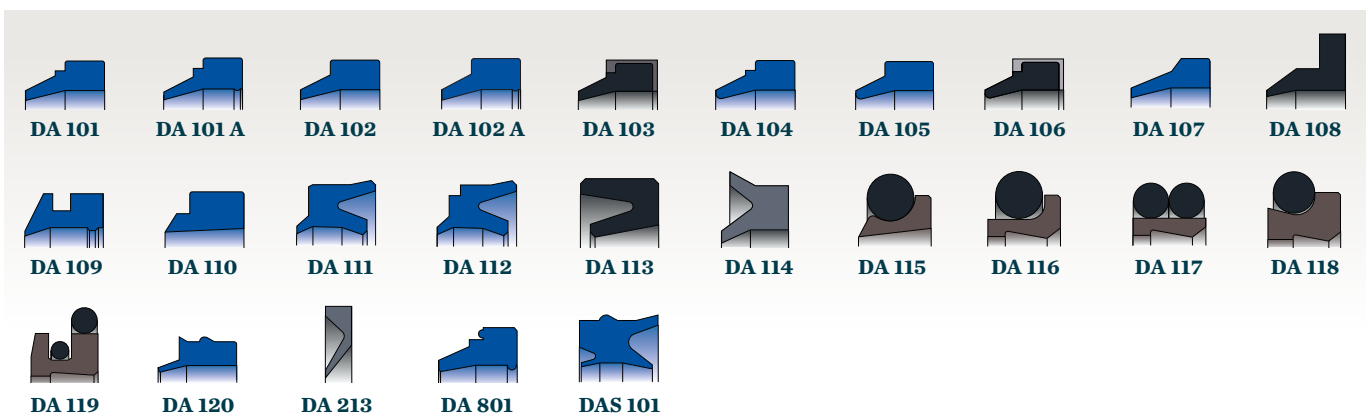
(* If necessary, a support ring may be added.)

SEALING ELEMENTS in a hydraulic or pneumatic cylinder.

PISTON ROD SEALS



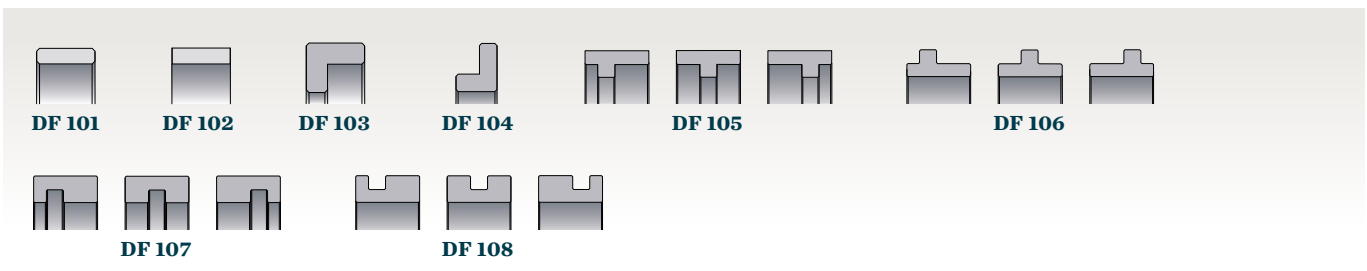
WIPERS



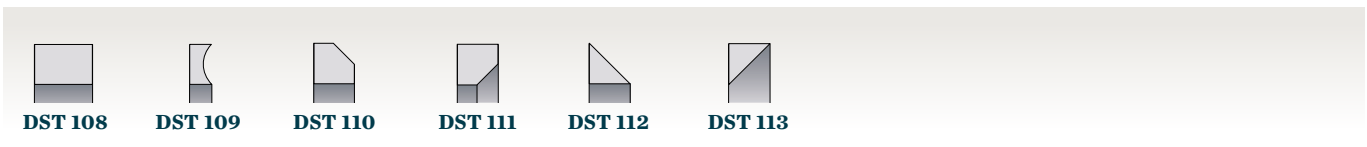
PISTON SEALS



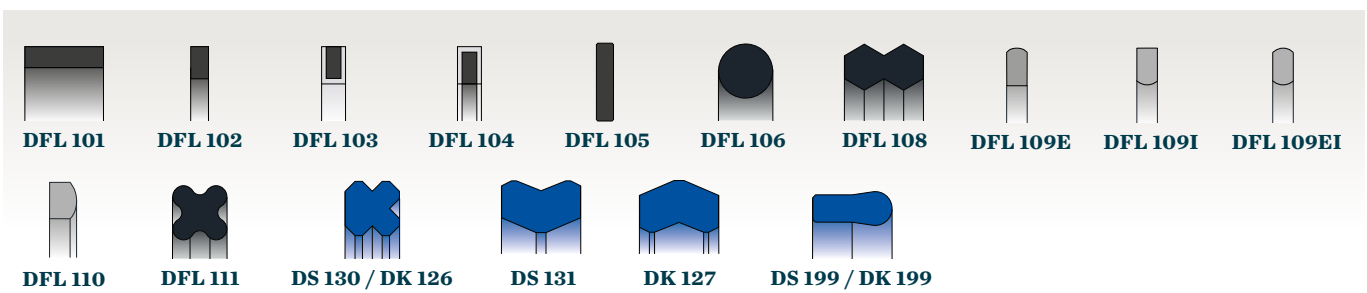
GUIDE RINGS



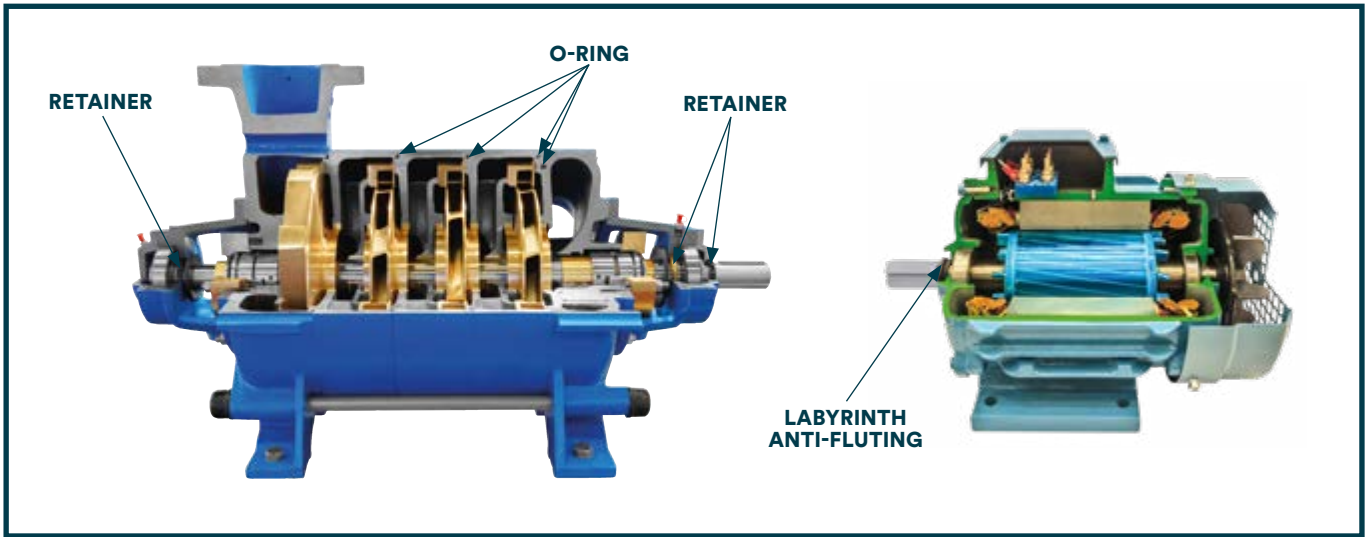
SUPPORT RINGS



STATIC SEALS

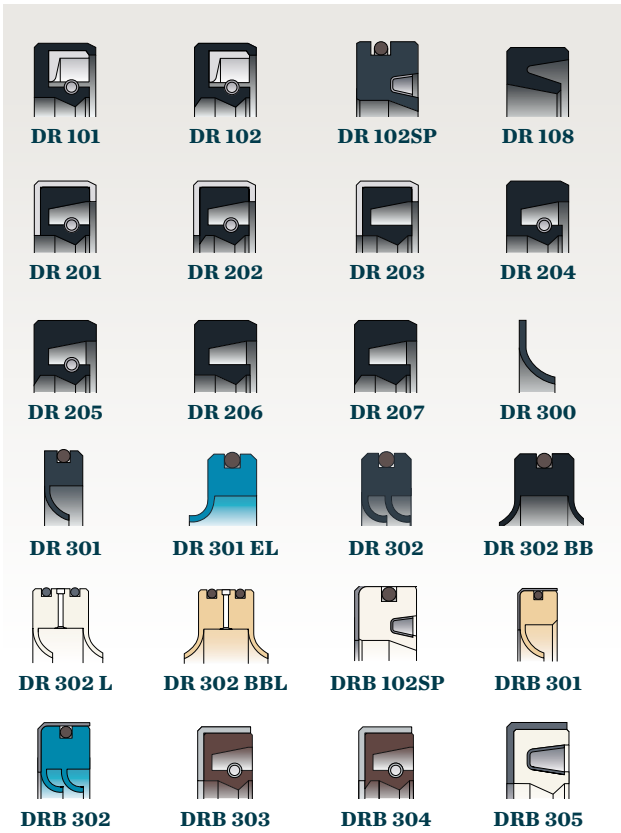


CUSTOMIZED SOLUTIONS:
Design of new parts, in collaboration between the Customer and our Engineering Department.

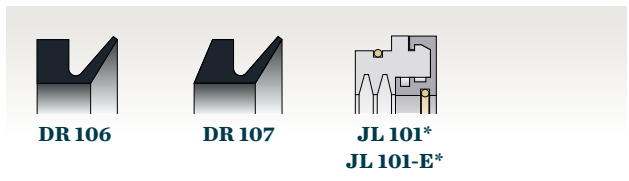


SEALING ELEMENTS in rotary machines.

RETAINERS



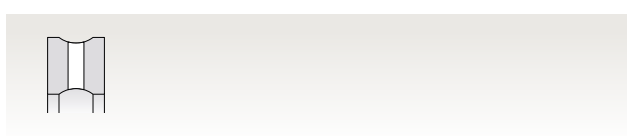
V-RING AND LABYRINTH RINGS



ROTARY SEALS



LANTERN RING



MATERIALS

A wide range of materials is used in the manufacture of seals, the common characteristic of which is elasticity. This can be achieved by using an elastic material or by designing an energised profile with a metal spring which allows materials such as PTFE or technical plastics to be used.



CERTIFICATIONS

1. FDA-CFR 21.177.1520
2. FDA-CFR 21.177.1550
3. FDA-CFR 21.177.2415
4. FDA-CFR 21.177.2470
5. FDA-CFR 21.177.2600
6. Regulation (EC) No 1935/2004
7. Regulation (EU) No 10/2011
8. 3A Sanitary Standard 18-03
9. Norsok M-710











ELASTOMERS

Low residual deformation, chemical stability and wide thermal field.

Material name	CERTIFICATIONS	Colour	Shore A hardness	Tensile breaking load (MPa)	Elongation at break (%)	Density (gr/cm ³)	Abrasion test (mm ³)	Remaining deformation 70 °C @ 24 h (%)	Remaining deformation 100 °C @ 24 h (%)	T _{MIN} (°C)	T _{MAX} (°C)	Water / steam T _{MAX} (°C)	Hot air T _{MAX} (°C)
			ISO 868	DIN 53 504	DIN 53 504	ISO 1183	DIN 53 516	ISO 815	ISO 815				
In stock													
NBR	-	Black	85 ± 5	≥ 17	≥ 150	1,28	100	≤ 5	≤ 6	-30	110	-	-
NBR 73	-	Black	75 ± 5	≥ 16	≥ 225	1,23	132	≤ 5	≤ 8	-30	90	-	-
NBR W	-	White	85 ± 5	≥ 15	≥ 200	1,44	140	≤ 7	≤ 9	-30	110	-	-
T-NBR	-	Black	80 ± 5	≥ 14	≥ 140	1,27	-	≤ 6	≤ 9	-50	110	-	-
NBR FDA	5, 6, 7	Blue	80 ± 5	≥ 8	≤ 140	1,23	248	13	-	-30	100	-	-
H-NBR	-	Green	85 ± 5	≥ 20	≥ 190	1,32	135	≤ 12	≤ 14	-20	150	120	180
H-NBR FDA	5	Black	90 ± 5	≥ 9	≥ 220	1,45	130	≤ 26	≤ 32	-20	150	120	180
EPDM Peróxido	-	Black	85 ± 5	≥ 12	≥ 80	1,22	140	≤ 7	≤ 7	-45	130	130	180
EPDM W FDA	5	White	82 ± 5	≥ 7	≥ 160	1,22	291	≤ 25	≤ 30	-45	130	130	150
EPDM FDA	5, 6, 8	Black	85 ± 5	≥ 10	≥ 85	1,18	160	≤ 10	≤ 10	-45	130	130	150
EPDM FDA BLUE	5, 6	Blue	81 ± 5	≥ 9	≤ 140	1,12	177	14	15	-30	130	-	-
FPM	-	Brown	82 ± 5	≥ 9	≥ 200	2,53	175	≤ 17	≤ 20	-20	220	-	300*
FPM 73	-	Black	73 ± 5	≥ 9	≥ 270	2,16	216	≤ 13	≤ 13	-20	210	-	280*
FPM FDA	5, 8	Brown	80 ± 5	≥ 8	≥ 150	2,40	220	≤ 7	≤ 9	-20	220	-	300*
FPM Black	-	Black	85 ± 5	≥ 9	≥ 140	1,87	-	≤ 13	≤ 15	-20	210	-	280*
FPM FDA BLUE	5, 6, 8	Blue	80 ± 5	≥ 7	≤ 180	2,53	252	6	8	-17	200	-	-
VMQ	5	Light Blue	85 ± 5	≥ 7	100	1,47	-	≤ 10	≤ 30	-60	200	110	300
VMQ FDA	5	White	85 ± 5	≥ 8	≥ 250	1,23	-	≤ 14	≤ 22	-60	200	110	300
VMQ W FDA	5	White	85 ± 5	≥ 7	≥ 100	1,47	-	≤ 10	≤ 30	-60	200	110	300
Aflas®	-	Black	83 ± 5	≥ 9	≥ 130	1,73	230	40	-	-5	200	170	230*
On request													
H-NBR 73	-	Black	73 ± 5	≥ 22	≥ 250	1,17	72	≤ 9	≤ 12	-20	150	120	180
H-NBR ED	9	Black	85 ± 5	≥ 17	≥ 190	1,29	184	≤ 17	≤ 21	-15	150	110	180
FPM ED	9	Black	85 ± 5	≥ 10	≥ 200	1,86	175	≤ 30	≤ 35	-20	220	-	300*
FPM LT	-	Black	85 ± 5	≥ 6	≥ 190	1,81	-	≤ 16	-	-40	200	-	300*






POLYURETHANES

High resistance to wear and high pressures.

Material name	CERTIFICATIONS	Colour	Shore A hardness	Shore D hardness	Tensile breaking load (MPa)	Elongation at break (%)	Density (gr/cm ³)	Abrasion test (mm ³)	Remaining deformation 70 °C @ 24 h (%)	Remaining deformation 100 °C @ 24 h (%)	T _{MIN} (°C)	T _{MAX} (°C)
			ISO 868	ISO 868	DIN 53 504	DIN 53 504	ISO 1183	DIN 53 516	ISO 815	ISO 815		
In stock												
HPU	5, 6, 7, 8		95 ± 2	48 ± 3	≥ 50	≥ 350	1,20	17	≤ 27	≤ 33	-20	115
HPU 55 D	-		-	55 ± 3	≥ 45	≥ 340	1,21	25	≤ 30	≤ 35	-20	115
C-HPU	5		96 ± 2	50 ± 3	≥ 45	≥ 450	1,11	20	≤ 30	≤ 35	-37	110
C-HPU 57 D	-		-	57 ± 3	≥ 45	≥ 350	1,16	25	≤ 30	≤ 35	-30	110
C-HPU 72 D	-		-	70 ± 3	≥ 50	≥ 150	1,21	-	-	-	-20	110
PUBL	5, 6, 7, 8		95 ± 2	48 ± 3	≥ 50	≥ 350	1,20	17	≤ 27	≤ 33	-20	115
LT-PU+	-		94 ± 2	49 ± 3	≥ 45	≥ 450	1,13	20	≤ 27	≤ 30	-55	110
SL-PU	-		96 ± 2	48 ± 3	≥ 45	≥ 350	1,19	15	≤ 30	≤ 35	-20	110
PUV	-		93 ± 2	47 ± 3	≥ 50	≥ 500	1,20	35	≤ 25	≤ 33	-30	110
HPU SOFT	-		90 ± 2	-	≥ 50	≥ 380	1,20	-	≤ 27	-	-20	110

TECHNICAL PLASTICS











Mechanical and abrasion resistance. Chemical and thermal stability.

Material name	CERTIFICATIONS	Colour	Shore D hardness	Water absorption (%)	Density (gr/cm ³)	Tensile breaking load (MPa)	Elongation at break (%)	Compression limit load (MPa)	Thermal conductivity (W/m · K)	Expansion coefficient (K ⁻¹ · 10 ⁻⁵)	Dynamic coefficient of friction	Resistivity (Ω·cm)	T _{MIN} (°C)	T _{MAX} (°C)
			ISO 868	ISO 62	DIN 53 479	ISO 527	ISO 527	DIN 53 455	DIN 52 612	DIN 53 516		IEC 60093		
In stock														
POM (Polyacetal)	4		81 ± 3	< 0,7	1,41	60	30	88	0,31	11	0,28	> 10 ¹⁴	-45	100
PA (Polyamide)	-		85 ± 3	2,5	1,13	80	40	110	0,29	8	0,40	10 ¹⁵	-40	110
UHMW-PE	1		61 ± 3	< 0,1	0,93	≥ 40	≥ 50	88	0,41	15	0,25	> 10 ¹⁴	-200	80
PEEK	3, 6, 7		86 ± 2	0,2	1,31	110	20	125	0,25	5	0,44	4,9 · 10 ¹⁶	-60	250
T4 / Phenolic resin / fabric	-		89 M	0,6	1,39	51	-	137	-	3	0,50	10 ⁹	-20	120



LOADED PTFE

Almost universal chemical stability, low coefficient of friction and wide thermal field (from -200 °C to +260°C).

MATERIAL NAME <i>Fillers</i>	CERTIFICATIONS	Colour	Shore D hardness	Wear factor (cm ³ ·min ⁻³ / kg·m·h)	Density (gr/cm ³)	Tensile breaking load (MPa)	Elongation at break (%)	Load limit a compression (MPa)	Thermal conductivity (W / m · K)	Linear coefficient of expansion (K ⁻¹ · 10 ⁻⁵)	Coefficient of dynamic friction	Resistivity (Ω·cm)	T _{MIN} (°C)	T _{MAX} (°C)
In stock														
F1 PTFE VIRGIN Virgin	2, 6, 7		≥ 54	22.500	2,16 ± 0,03	≥ 20	≥ 200	≥ 4	0,34	12 - 15	0,06 - 0,08	10 ¹⁸	-200	260
F2 PTFE I Fv Mo F2 15 % Fibreglass, 5 % MoS ₂	-		≥ 58	15 - 25	2,27 ± 0,03	≥ 18	≥ 200	-	0,34	9 - 13	0,08 - 0,12	10 ¹⁵	-200	260
F3 PTFE II Bronze 40 % Bronze	-		≥ 65	15 - 20	3,10 ± 0,05	≥ 15	≥ 180	10	0,55	9 - 11	0,14 - 0,16	10 ⁷	-200	260
F4 PTFE Coke coal 25% Coke coal	-		≥ 62	35	2,09 ± 0,03	≥ 13	≥ 60	-	0,59	7 - 12,5	0,12 - 0,14	10 ⁴	-200	260
F4 FDA PTFE Coke coal 23 % Coke coal, 2 % Graphite	2, 6, 7		≥ 62	34	2,10 ± 0,02	≥ 13	≥ 60	-	0,59	7 - 12	0,11 - 0,13	10 ⁴	-200	260
F5 PTFE 05 1% Cobalt blue pigment	-		≥ 51	-	2,16 ± 0,02	≥ 24	≥ 250	-	-	12 - 13	0,06 - 0,08	-	-200	260
F5G PTFE D05 Glass 15% Glass fibre, 1% additives	-		≥ 57	-	2,21 ± 0,02	≥ 19	≥ 255	≥ 8	0,31	10	≥ 0,13	-	-200	260
F6 PTFE D46 Bronze 46% Bronze	-		≥ 65	15 - 20	3,22 ± 0,05	≥ 15	≥ 170	-	0,57	9 - 10,5	0,14 - 0,16	10 ⁷	-200	260
F8 PTFE 08 Glass < 20 % Glass fibre, additives	-		≥ 59	-	2,23 ± 0,02	≥ 26	≥ 300	≥ 8	0,31	10	≥ 0,13	-	-200	260
F10 PTFE Ekonol 10 % Ekonol	2, 6, 7		≥ 55	-	1,99 ± 0,07	≥ 14	≥ 220	5 - 7	-	9 - 12	0,10 - 0,20	-	-200	260
F11 PTFE 25 % Glass 25 % Glass fibre	2, 6, 7		≥ 60	15 - 25	2,24 ± 0,03	≥ 13	≥ 180	-	0,41	7,7 - 11,2	0,15 - 0,17	10 ¹⁵	-200	260
F12 PTFE PEEK 15 % PEEK	2, 6, 7		≥ 58	< 4	1,98 ± 0,07	≥ 15	≥ 220	≥ 5	-	9 - 12	0,10 - 0,20	> 10 ¹⁵	-200	260
F13 PTFE Detectable < 20 % Ferrite / Magnetite	2, 6, 7		≥ 58	-	2,33 ± 0,03	≥ 20	≥ 250	-	-	-	-	> 10 ¹²	-200	260
F17 PTFE Mineral load	-		≥ 58	15 - 25	2,25 ± 0,03	≥ 20	≥ 200	-	0,35	10 - 13	0,09 - 0,11	> 10 ¹⁵	-200	260
On request														
F7 PTFE E-Carbón < 25 % Coke coal (E-carbon)	2, 6, 7		≥ 57	-	2,14 ± 0,02	≥ 24	≥ 250	-	0,97	11	≥ 0,18	-	-200	260
F9 PTFE Grafito 15 % Graphite	2, 6, 7		≥ 55	2.250	2,16 ± 0,01	≥ 16	≥ 180	-	0,75	8 - 13	0,10 - 0,12	10 ⁷	-200	260
F14 PTFE Conductor FDA 2 % Carbon fibre (Conductor)	2, 6, 7		≥ 54	22.500	2,16 ± 0,03	≥ 22	≥ 250	≥ 4	0,34	15 - 16	0,06 - 0,08	10 ⁴	-200	260
F16 PTFE / TFM 15 % TFM	2, 6, 7, 9		≥ 54	22.500	2,16 ± 0,02	≥ 30	≥ 450	≥ 4	0,24	12 - 14	0,06 - 0,08	10 ¹⁸	-200	260



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Technology

P.I.Els Batzacs
C/ Els Xops, 5
08185 Lliçà de Vall
(Barcelona)
+34 938 63 32 77
infoweb@epidor-srt.com

www.epidor-srt.com