

Dynalast®

Perfluoroelastomers

Dynalast® FFKM is one of the latest developments in the field of perfluoroelastomers.

Dynalast® FFKM combines the elasticity of fluoroelastomers (FKM) with the chemical resistance of polytetrafluoroethylene (PTFE), providing real solutions to the most demanding sealing problems.

The base monomers of Dynalast® FFKM are very expensive and the manufacturing processes very complex, meaning very high production costs, beyond comparison with other elastomers.

WHY CHOOSE DYNALAST® OVER OTHER PERFLUOROELASTOMERS?

- ▶ Because of the different grades of materials offering optimal performance for a range of applications:
 - . Specific formulations,
 - . Variable curing processes,
 - . Wide range of colours (upon request),
 - . Hardness range: 60 - 90 Shore A.
- ▶ Because of the wide range of possible shapes and sizes:
 - . O-Rings,
 - . Plates,
 - . Balls,
 - . Membranes,
 - . Specific seals,
 - . Rubber/ metal composites.
- ▶ Because of quick delivery.
- ▶ Because of its excellent value for money.

ADVANTAGES OF DYNALAST® FFKM

As well as having similar elasticity to other elastomers, Dynalast® offers the following advantages :

- . More or less identical chemical resistance to PTFE, ie: far higher than that of fluoroelastomers (FKM),
- . Maximum temperature : 290°C for continuous operation with a peak temperature of 310°C,
(The table on the third page compares the temperature resistances of the different materials.)
- . Excellent resistance to atmospheric

agents and ozone,

- . Optimal seal with vacuum and high vacuum, even in the presence of high temperatures.

These advantages guarantee the Dynalast® FFKM user reduced maintenance costs and minimise operating losses.

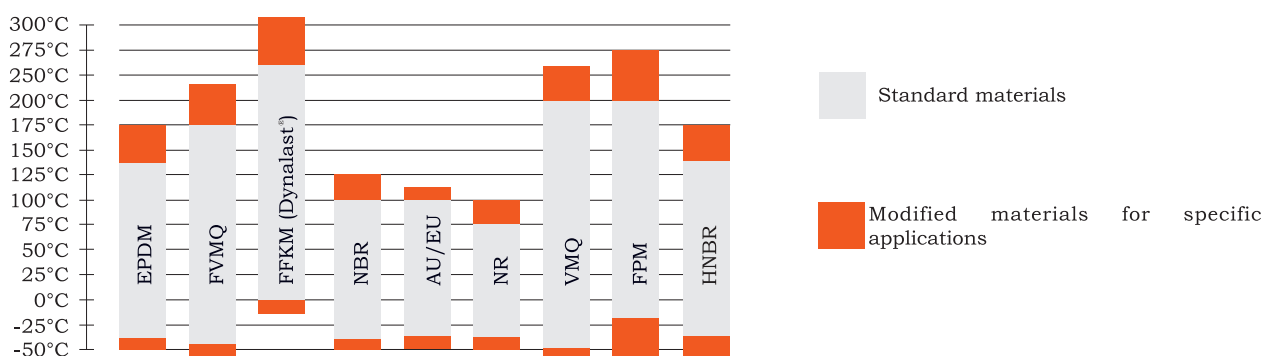
APPLICATIONS

- ▶ Chemistry:
Dynalast® resists almost all chemical reagents, solvents, ethers, ketones, amines, oxidatives, carburents, acids, bases, etc...
- Dynalast® FFKM resists high-temperature steam containing corrosion inhibitors (eg : amines).
- ▶ Petrochemicals, oil and gas production :
aniline, sulphuric acid, sodium hydroxide, diethanolamine, diethyl formamide, octane, etc...
- ▶ Pharmaceuticals and cosmetics : amines, acetic acid, nitric acid, aniline, toluene, etc...
- ▶ Dyes and paints :
ethyl acetate, acetone, methyl ethyl ketone, diethylene dioxide, etc...
- ▶ The semiconductor industry :
Only Dynalast® FFKM can meet the critical tightness requirements of this industrial sector : high temperatures, high pressures, chemical corrosion, efficient operation where gases are used, contamination prevention : plasma, acids, bases, solvents, ultra-pure deionized water, etc...
- ▶ Phytosanitary products industry :
xylene, aniline, acetic acid, sulphuric acid, nitric acid, ammonium hydroxide, etc...
- ▶ Photographic industry :
amyl acetate, acetic acid, etc...
- ▶ Detergent industry :
benzene, ethyl benzene, sodium hydroxide, etc...
- ▶ Plastic industry :
amines, aniline, ethyl acetate, ammonium hydroxide, benzene, methylene chloride, styrene, dimethylformamide, etc...

Dynalast® material

Dynalast® Ref.	Colour	Hardness	Main characteristics	Using T(°C)	Price level
8904	Black	80 Sh.A	Optimum universal material recommended for chemical applications with high temperatures.	-20 +270°C	1
8905	Black	70 Sh.A	8904 modified to get more flexibility and a better compression set.	-20 +270°C	1,2
8906	Red	70 Sh.A	The only difference with our 8905 Dynalast is the color.	-20 +270°C	1,3
8907	Black	80 Sh.A	Optimal chemical resistance.	-15 +250°C	1,2
8908	Black	80 Sh.A	Recommended for applications with steam.	-15 +260°C	1,1
8909	Black	80 Sh.A	Recommended for the paint industry.	-15 +260°C	1,15
8910	Black	80 Sh.A	Optimum for steam applications and very high temperature applications.	-15 +320°C	1,25
8912	Black	90 Sh.A	Particularly suitable for vacuum, high pressures applications and applications with explosive decompressions.	-15 +260°C	1,2
8913	Black	80 Sh.A	Economical material.	-15 +250°C	0,85
8914	White	80 Sh.A	Suitable for applications in the pharmaceutical industry. Approved under FDA standards.	-15 +260°C	1,2
8915	Black	80 Sh.A	Recommended for dynamical applications.	-20 +270°C	1,3
8916	White	70 Sh.A	Particularly recommended for applications in the semiconductor industry.	-15 +310°C	1,5

Temperature resistance



Volume and harness changes

Material	Conditions	Hardness change (Sh.A)	Volume change(%)
Acetic acide glacial	168 h - 40°C	+1	+2
Acetic acid glacial	168 h - 50°C	-2	+7
Acetic acid 10%	168 h - 40°C	0	+2
Acetic anhydride	168 h - 23°C	+1	0
Acetone	168 h - 23°C	-1	0
Ammonia hydroxide 30%	168 h - 23°C	0	0
Ammonia hydroxide 30%	168 h - 100°C	-8	+15
Black liquor	168 h - 150°C	-1	5
Butyl acetate	168 h - 23°C	-1	0
Cyclohexanone	168 h - 23°C	-2	0
Dimethyl formamide DMF	168 h - 23°C	0	0
Ethanolamine	168 h - 23°C	-2	0
Ethylenediamine	168 h - 23°C	+2	0
Ethyl acetate	168 h - 23°C	-1	0
Ethylene oxide / gaseous	70 h - 23°C	-4	+2
Freon 11	168 h - 15°C	-9	+8
Freon 134 A	168 h - 23°C	-9	+14
Freon 134 A	168 h - 100°C	-13	+25
Hexane	168 h - 23°C	+1	+1
Hydrochloric acid 10%	168 h - 40°C	-1	+1
Hydrofluoric acid 60%	168 h - 23°C	+1	+1
Hydrogen peroxide 30%	168 h - 7°C	-4	+26
IRM 903 oil	70 h - 230°C	-1	+3
Methanol	168 h - 23°C	0	0
Methyl ethyl ketone MEK	168 h - 23°C	0	0
Methyl isobutyl ketone MBK	168 h - 23°C	0	0
Methyl tertiary butyl ether MTBE	168 h - 23°C	0	0
Methylene chloride	168 h - 23°C	-4	+1
Mobil 254 oil	70 h - 220°C	-1	+2
Nitric acid 69%	168 h - 40°C	-3	+6
Nitric acid 65%	168 h - 80°C	-11	+26
Perfluoro try butyl amine PTBA	168 h - 23°C	-14	+32
Propylene oxide liquid	168 h - 23°C	-3	+2
Pyridine	168 h - 23°C	-1	0
Skydrol 500	168 h - 121°C	-2	+3
Sodium hydroxide 50%	168 h - 23°C	2	0
Sodium hydroxide 50%	168 h - 150°C	1	0
Steam	168 h - 160°C	-2	+10
Steam	168 h - 232°C	-7	+45
Styrene	168 h - 23°C	2	0
Sulfuric acid 98%	168 h - 23°C	+1	0
Sulfuric acid 98%	672 h - 120°C	-6	+3
Tetra hydro furan THF	168 h - 23°C	-1	+1
Tetra hydro furan THF	168 h - 40°C	-2	+2
Toluene	168 h - 23°C	0	0
Toluene	168 h - 40°C	-1	+1
Tri ethanol amine TEA	168 h - 23°C	-1	0
Tri ethanol amine TEA	168 h - 40°C	-2	+1
Wagner 21 brake fluid	168 h - 23°C	+1	0
Water	168 h - 160°C	-3	+10
Water	168 h - 232°C	-4	+12
Xylene	168 h - 23°C	-1	0