

Tecnoflon®



SOLVAY

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Tecnoflon® FOR X5691E

for Fuel Hoses

**SPECIALTY
POLYMERS**

Tecnoflon® FOR X5691E

Tecnoflon® FOR X5691E is a new extrusion grade FKM polymer developed for the manufacture of high-quality fuel hoses. FOR X5691E is a bisphenol curable VDF/HFP/TFE terpolymer that exhibits very good chemical and permeation resistance in both conventional fuels and flex fuels such as M15, E10 and E22. It also demonstrates good flexibility and elasticity to seal.

In a typical fuel hose construction, FKM is used as the inner layer of the hose while the external layer is made of AEM or ECO elastomers. In addition, aramid fibers are used between the FKM and the other elastomers for reinforcement.

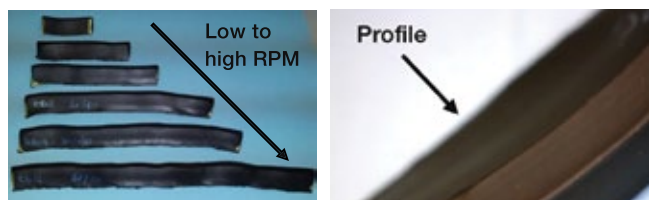
Features of Tecnoflon® FOR X5691E include:

- Bi-modal polymer architecture
- 70 % fluorine content
- High green strength
- Low die swell
- Excellent extrusion profile
- Good mechanical properties
- Low mooney viscosity



Garvey die testing conducted at 100 °C demonstrates that even at high extrusion rates (RPM), the sample profiles remain smooth and die swell is negligible (Figure 1).

Figure 1: Garvey die testing



In Figure 2, the RPA Temperature Sweep Test shows high modulus values at low temperatures. This ensures both low die swell and high green strength during the cooling step. Due to this particular trend in shear modulus, after extrusion, the material is highly stable and is able to retain its mechanical and structural integrity.

Table 2 shows the typical properties for Tecnoflon® FOR X5691E in a standard recipe.

Figure 2: Temperature sweep test (RPA)

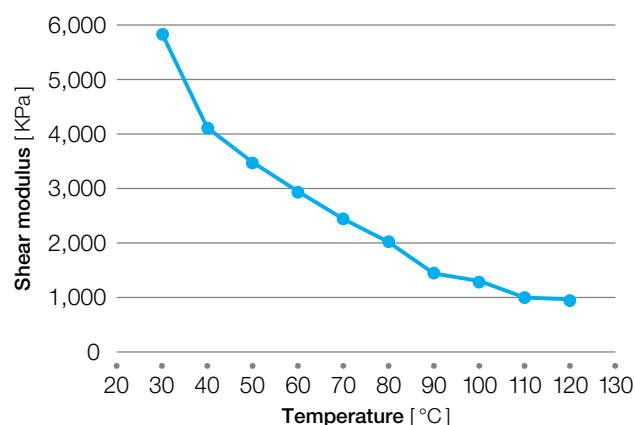


Table 2: Tecnoflon® FOR X5691E typical properties

Property	Units	FOR X5691E
Mooney viscosity (1+10) min @ 121 °C (250 °F)	MU	20
MDR 12 min @ 177 °C (351 °F)		
Minimum torque	lb in	1
Ts2	min	2.5
T'50	min	2.9
T'90	min	4.2
Maximum torque	lb in	14.3
Mechanical Properties		
Tensile strength	MPa	10.0
Elongation at break	%	370
M100	MPa	3.2
Hardness	ShA	77
Permeability in M15 @ 40 °C (104 °F)	g mm/m ² d	35
Permeability in E10 @ 40 °C (104 °F)	g mm/m ² d	15
Compound Recipe		
Tecnoflon® FOR X5691E	phr	100
MgO DE	phr	3
Ca(OH) ₂	phr	6
Carbon Black N990	phr	30

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