

Tecnoflon® VPL X75545

Very Low Temperature Peroxide Curable

Tecnoflon® VPL X75545 is a unique and innovative peroxide curable fluoroelastomer with outstanding low temperature flexibility ($TR_{10} = -45\text{ °C}$). Like all the Tecnoflon® VPL series, this FKM is based on the proprietary MOVE monomer technology which combines low temperature and high chemical resistance.

Some of the basic properties of Tecnoflon® VPL X75545 are:

- Outstanding low temperature flexibility
- Long term sealing force
- Excellent C-set
- High chemical resistance in fuels, oils, acids, alcohols and strong oxidizers

Tecnoflon® VPL X75545 can be used for injection, injection-compression and transfer molding of O-rings, gaskets and seals. Tecnoflon® VPL X75545 can be combined with the cure system and other typical fluoroelastomer compounding ingredients. Mixing can be accomplished with two roll mills or internal mixers.

Tecnoflon® VPL X75545 can be extruded into hoses or profiles and can be calendered to make sheet stocks or belting. Finished goods may be produced by a variety of rubber processing methods.

Application fields

Thanks to its very low temperature service, Tecnoflon® VPL X75545 is the preferred choice in the following applications:

- Aerospace sealing parts
- Automotive elastomeric parts requiring very low temperature sealing (i.e. CNG and LPG systems)
- Oil drilling in cold environments

Handling and safety

Normal care and precautions should be taken to avoid skin contact, eye contact and breathing of fumes. Smoking is prohibited in working areas. Wash hands before eating or smoking. For complete health and safety information, please refer to the safety data sheet.

Basic characteristics of the raw polymer are as follows:

Property	Typical Value	Unit	Test Method
ML (1+10') at 121 °C	32	MU	ASTM D1646
Color	Translucent		
Packaging / Form	Slabs		
Solubility	Ketones and esters		

Typical properties

Test Compound	Typical Value	Unit	Test Method
Tecnoflon® VPL X75545	100	phr	
Luperox® 101XL-45	2	phr	
Drimix® TAIC (75%)	5	phr	
N-990 MT Carbon Black	30	phr	

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Property	Typical Value	Unit	Test Method
Mooney viscosity ML (1+10') at 121 °C	30	MU	ASTM D1646
MDR 6 min at 170 °C arc 0.5°			ASTM D6601
Minimum torque	0.7	lb·in	
Maximum torque	19.5	lb·in	
t _{s2}	0.6	min	
t' ₅₀	1.0	min	
t' ₉₀	1.5	min	
Post cure: (1 + 4) h at 230 °C			
100% Modulus	4.2	MPa	ASTM D412C
Tensile strength	14.2	MPa	
Elongation at break	198	%	
Hardness	62	ShoreA	ASTM D2240
Heat aging, 1008 h at 200 °C			ASTM D573
100% Modulus	4.2	MPa	
Δ Tensile strength	-25	%	
Δ Elongation at break	22	%	
Δ Hardness	-2	ShoreA	
Δ Weight	-1.23	%	
Compression set			ASTM D395
25% deformation, O-ring #214			method B
70 h at 200 °C	22	%	
336 h at 200 °C	53	%	
168 h at 150 °C	12	%	
Low temperature flexibility			ASTM D1329
TR ₁₀	-45	°C	
T _g by DSC (midpoint)	-46.5	°C	

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