Tecnoflon® VPL 45730 / VPL 85730

Very Low Temperature Peroxide Curable

Tecnoflon® VPL 45730 and VPL 85730 are a brand new generation of very low temperature peroxide curable fluoroelastomer with outstanding low temperature flexibility (TR_{10} = 30 °C). Furthermore, they show an improved chemical resistance if compared to Tecnoflon PL grades with similar TR_{10}. Like all other Tecnoflon® peroxide curable grades, they exhibit excellent processability; moreover they need very short postcuring cycles.

Some of the basic properties of Tecnoflon® VPL 45730 and VPL 85730 are:

- Outstanding low temperature flexibility
- Excellent chemical resistance
- Low post cure
- Superior mold flow
- Lack of mold fouling
- Excellent mold release

Tecnoflon® VPL 45730 and VPL 85730 can be used for compression, injection, injection compression and transfer molding of O-rings, gaskets and seals. Tecnoflon® VPL 45730 and VPL 85730 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 45730 and VPL 85730 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.

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 material safety data sheet.

Basic characteristics of the raw polymer are as follows:

Property	Unit	VPL 45730	VPL 85730	Test Method
ML (1+10') at 121 °C	MU	25	45	ASTM D1646
Fluorine content	%	67	67	Solvay Internal Method – NMR
Specific gravity	g/cm^3	1.87	1.87	ASTM D792
Colour		Translucent	Translucent	
Packaging / Form		Slabs	Slabs	
Solubility		Ketones and esters	Ketones and esters	

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Typical properties

Property	Unit	VPL 45730	VPL 85730	Test Method
Tecnoflon®	phr	100	100	
Luperox® 101XL-45	phr	2	2	
Drimix® TAIC (75 %)	phr	5	5	
ZnO*	phr	5	5	
N-990 MT Carbon Black	phr	30	30	

Property	Unit	VPL 45730	VPL 85730	Test Method
MDR 6 min at 160 °C arc 0.5 °				ASTM D6601
Minimum torque	lb · in	0.78	1.2	
Maximum torque	lb · in	32	28.1	
t_{s2}	min	0.8	0.9	
t'_{50}	min	1.8	2.1	
t'_{90}	min	3.5	4.3	
Post cure: 4 h at 230 °C				
100 % Modulus	MPa	7.9	8.0	ASTM D412C
Tensile strength	MPa	19.3	18.8	
Elongation at break	%	176	187	
Hardness	ShoreA	74	72	ASTM D2240
Compression set 25 % deformation, 70 h at 200 °C				ASTM D395 method B
O-ring #214	%	19	22	
Temperature retraction				ASTM D1329
TR_{10}	°C	−30	−30	

Fuel resistance

Property	Typical Value	Unit	Test Method
Fuel B, 70 h at 24 °C			
Δ Tensile strength	−15	%	
Δ Elongation at break	4	%	
Δ Hardness	−4	Shore A	
Δ Volume	4	%	
Fuel C, 168 h at 23 °C			
Δ Tensile strength	−20	%	
Δ Elongation at break	−8	%	
Δ Hardness	−4	Shore A	
Δ Volume	8	%	
Fuel C, 168 h at 40 °C			
Δ Tensile strength	−31	%	
Δ Elongation at break	−21	%	
Δ Hardness	−6	Shore A	
Δ Volume	12	%	
M15, 168 h at 23 °C			
Δ Tensile strength	−66	%	
Δ Elongation at break	−34	%	
Δ Hardness	−9	Shore A	
Δ Volume	16	%	

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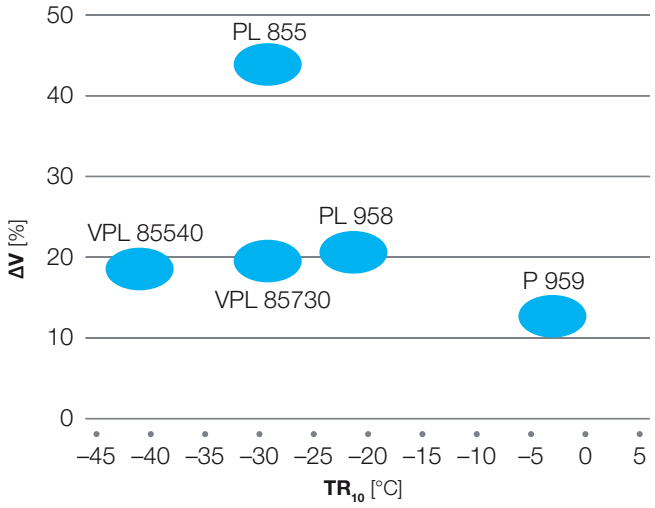
Property	Unit	VPL 85730**	VPL 85540	PL 958	PL 557	PL 855	Test Method
Fluorine content	% wt	67	65	66	65.5	64	
TR_{10}	°C	−30	−40	−24	−29	−30	ASTM D1329
M15 168 h/ 23 °C							
Δ Volume	%	11	13.5	14	24	40	

**For acids and base resistance, recipe without ZnO is recommended*
***VPL 45730 has same chemical resistance as VPL 85730*

Swelling in M15 at 23 °C vs TR_{10}



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