

Tecnoflon® PL 855 (A353)

Low Temperature Peroxide Curable

Tecnoflon® PL 855 (A353) is a new generation low temperature peroxide curable medium viscosity fluoroelastomer with 64 % wt fluorine content. Tecnoflon® PL 855 (A353) exhibits excellent low temperature flexibility ($TR_{10} = -30\text{ }^{\circ}\text{C}$). Like all other Tecnoflon® peroxide curable grades, it exhibits excellent processability; moreover it needs very short post-curing cycles.

Some of the basic properties of Tecnoflon® PL 855 (A353) are:

- Excellent low temperature flexibility
- Low post cure
- Superior mold flow
- Lack of mould fouling
- Excellent mold release

Tecnoflon® PL 855 (A353) can be used for injection, injection-compression and transfer molding of O-rings, gaskets and seals. Tecnoflon® PL 855 (A353) 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® PL 855 (A353) 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 safety data sheet.

Basic characteristics of the raw polymer are as follows:

Property	Typical Value	Unit	Test Method
ML (1+10') at 121 °C	54	MU	ASTM D1646
Fluorine content	64	%	Solvay Internal Method – NMR
Specific gravity	1.78	g/cm ³	ASTM D792
Color	Translucent		
Packaging / Form	Slabs		
Solubility	Ketones and esters		

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Typical properties

Test Compound	Typical Value	Unit	Test Method
Tecnoflon® PL 855 (A353)	100	phr	
Luperox® 101XL-45	2	phr	
Drimix® TAIC (75%)	4	phr	
ZnO	5	phr	
N-990 MT Carbon Black	30	phr	

Property	Typical Value	Unit	Test Method
Mooney viscosity ML (1+10') at 121 °C	58	MU	ASTM D1646
Mooney Scorch MS at 130 °C			ASTM D1646
MV	32	MU	
t ₁₅	8.5	min	
ODR 12 min at 177 °C arc 3°			ASTM D2084
Minimum torque	13	lb·in	
Maximum torque	130	lb·in	
t _{s2}	0.9	min	
t' ₅₀	1.6	min	
t' ₉₀	2.0	min	
MDR 6 min at 170 °C arc 0.5°			ASTM D6601
Minimum torque	1.65	lb·in	
Maximum torque	26.9	lb·in	
t _{s2}	0.6	min	
t' ₅₀	0.9	min	
t' ₉₀	1.7	min	
MDR 6 min at 160 °C arc 0.5°			ASTM D6601
Minimum torque	1.70	lb·in	
Maximum torque	27.5	lb·in	
t _{s2}	0.9	min	
t' ₅₀	1.8	min	
t' ₉₀	3.6	min	

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Property	Typical Value	Unit	Test Method
Press cure: 6 min at 170 °C			
100 % Modulus	4.2	MPa	ASTM D412C
Tensile strength	18.2	MPa	
Elongation at break	287	%	
Hardness	67	ShoreA	ASTM D2240
Post cure: (1+4) h at 230 °C			
100 % Modulus	4.8	MPa	ASTM D412C
Tensile strength	20.8	MPa	
Elongation at break	248	%	
Hardness	69	ShoreA	ASTM D2240
Compression set 25 % deformation, 70 h at 200 °C			ASTM D395 method B
O-ring #214	23	%	
Temperature retraction			ASTM D1329
TR ₁₀	-30	°C	
TR ₃₀	-26	°C	
TR ₅₀	-24	°C	
Bold brittleness test			
Brittleness temperature	-32	°C	ASTM D2137

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Fluid resistance

Property	Typical Value	Unit	Test Method
FAM A, 70 h at 60°C			
Δ Tensile strength	-42	%	
Δ Elongation at break	-31	%	
Δ Hardness	-3	Shore A	
Δ Volume	20	%	
FAM A (after dry-out 24 h at 125°C), 70 h at 60°C			
Δ Volume	-0.7	%	
FAM B, 70 h at 60°C			
Δ Tensile strength	-55	%	
Δ Elongation at break	-40	%	
Δ Hardness	-7	Shore A	
Δ Volume	31	%	
FAM B (after dry-out 24 h at 125°C), 70 h at 60°C			
Δ Volume	-0.9	%	
Fuel C, 168 h at 23°C			
Δ Tensile strength	-31	%	
Δ Elongation at break	-24	%	
Δ Hardness	-1	Shore A	
Δ Volume	8	%	
M15 (Fuel C/Methanol 85/15), 168 h at 23°C			
Δ Tensile strength	-59	%	
Δ Elongation at break	-44	%	
Δ Hardness	-5	Shore A	
Δ Volume	35	%	
Fuel C/Ethanol, 168 h at 23°C			
Δ Tensile strength	-30	%	
Δ Elongation at break	-18	%	
Δ Hardness	-4	Shore A	
Δ Volume	13	%	

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