Product Data Sheet

SUPRENE® 6800WF

SK global chemical

Product Data Sheet

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SUPRENE® 6800WF

SUPRENE EPDM 6800WF is a semi-crystalline, oil extended 'friable bale' type grade which contains 100phr of non-staining white paraffinic oil.
It can be especially formulated to make products of lower hardness.

SUPRENE EPDM 6800WF has a very unique molecular architecture with very high molecular weight, high ethylene content and high ENB content resulting in excellent physical properties, even in the case of highly loaded formulations.

This grade has higher ENB content compared with other oil-extended EPDM grades. Its fast cure property helps reduce the use of accelerators, which gives the stability of rubber curing systems

SUPRENE EPDM 6800WF can be widely applicable in automotive parts, industrial goods, appliances, and TPV. This grade is especially good for lower hardness profiles and coloured rubber parts.

Raw Polymer Properties

	Test Method	Unit	Min.	Max.	Typical Value
Mooney Viscosity, (ML 1+4, 125℃ unmilled)	ASTM D1646	MU	42	52	47
Ethylene Content	ASTM D3900	wt%	68	72	70
ENB Content	ASTM D6047	wt%	8.0	9.0	8.5
Oil Content	-	wt%	48.0	52.0	50.0
Physical Form, (kg/bale)	-	-	-	-	Friable Bale (25kg/bale)

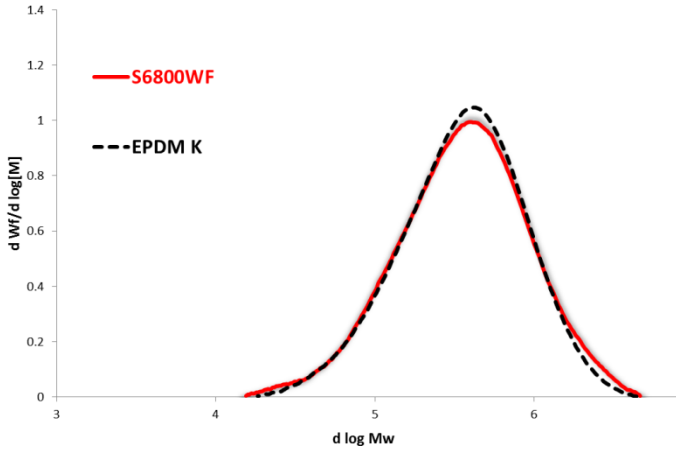
* Ethylene Content + Propylene Content = 100%

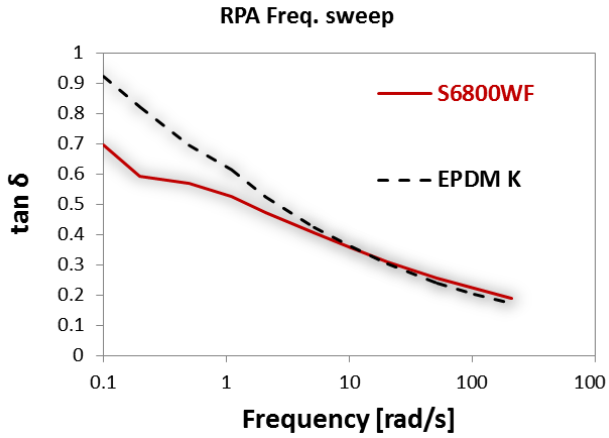
SUPRENE® 6800WF

Typical Properties

Properties	Test Method	S6800WF	EPDM K
Mooney Viscosity ML 1+4 @ 125℃	ASTM D1646	49.5	47.1
Ethylene Content, wt%	ASTM D3900	70.0	67.0
ENB Content, wt%	ASTM D6047	8.4	8.7

Polymer Structure





Properties	Test Method	S6800WF	EPDM K
MWD		2.39	2.21
Δδ		25	36

(higher Δδ is more narrow MWD)

Guide Formulation

Tub Frame Gasket Application (430phr)	
EPDM	200
Silica	60
CaCO3	50
Oil (P-6)	100
SDA-21G	4
PEG-4000	4
ZnO	5
Stearic acid	2
MBT(M)	1.5
TMTD(TT)	1.0
ZnBDC(BZ)	1.5
Sulfur	1.5
Total	**430.5**

** Unit: phr*

Vulcanization Behaviour

Properties	Test Method	S6800WF	EPDM K
Compound Mooney Viscosity	ASTM D1646	32.7	33.7
ML 1+4 @ 100℃			
Pre-vulcanization characteristics	ASTM D1646		
Large Rotor at 125℃			
Minimum Viscosity (Vm)		17.70	18.40
t'5 (min)		9.67	8.83
t'35 (min)		14.82	12.83
Δt30		5.15	4.00
Rotorless Cure Meter (MDR, 160℃/20min)	ASTM D5289		
M_L (lb·in)		1.04	1.04
M_H (lb·in)		4.98	7.18
t_S2 (min)		2.97	2.52
t_C50 (min)		2.95	3.10
t_C90 (min)		6.84	14.34

Tensile Properties

Cured at 160℃ for 10 min

Properties	Test Method	S6800WF	EPDM K
Specific Gravity	ASTM D792	1.07	1.07
Hardness (shore A)	ASTM D2240	41.7	40.5
Tensile Strength (kgf/cm^2)	ASTM D412	95.2	86.5
Elongation (%)	ASTM D412	691.2	691.8
100% Modulus (kgf/cm^2)	ASTM D412	8.4	8.2
200% Modulus (kgf/cm^2)	ASTM D412	12.7	12.6
300% Modulus (kgf/cm^2)	ASTM D412	17.6	17.1

Heat Resistance

Properties	Test Method	S6800WF	EPDM K
Hardness (Change Point)	ASTM D2240	+3.5	+4.7
Tensile Strength (Change %)	ASTM D412	-22.0	-35.1
Elongation (Change %)	ASTM D412	-19.7	-27.2

** After 72 hours oven aging at 120℃ per ASTM D573*

Compression Set

Properties	Test Method	S6800WF	EPDM K
Compression Set (%)	ASTM D395	60.2	58.5
(After 72 hours at 100℃)	(Method B)		

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