Product Data Sheet

SUPRENE® 590F

SK global chemical

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SUPRENE® 590F

SUPRENE EPDM 590F is a non-oil extended grade with very high Mooney viscosity and high ethylene content.

SUPRENE EPDM 590F enable to show excellent tensile properties with highly loaded fillers, thus makes it possible for rubber producer to reduce compounding cost.

SUPRENE EPDM 590F is well balanced between processability and physical properties. It has good green strength, which can give better shape retention and higher extrudability.

SUPRENE EPDM 590F is mainly used solid extrudate for automotive parts such as window seal, hose and used in other various applications.

Raw Polymer Properties

	Test Method	Unit	Min.	Max.	Typical Value
Mooney Viscosity, (ML 1+8, 150℃ unmilled)	ASTM D1646	-	82	92	87
Ethylene Content *	ASTM D3900	wt%	65	71	68
ENB Content	ASTM D6047	wt%	5.5	7.5	6.5
Oil Content	-	phr	-	-	-
Specific Gravity	ASTM D792	-	-	-	0.86
Volatile Matter	ASTM D1416	wt%	-	0.8	0.2
Ash	ASTM D1416	wt%	-	0.15	0.01
Physical Form, (kg/bale)	-	-	-	-	25kg (Friable Bale)

* Ethylene Content + Propylene Content = 100%

SUPRENE® 590F

Typical Properties

Properties	Test Method	S590F
Mooney Viscosity ML 1+8 @ 150℃	ASTM D1646	87.0
Ethylene Content, wt%	ASTM D3900	68.0
ENB Content, wt%	ASTM D6047	6.5

Guide Formulation

	Formulation 1	Formulation 2
S590F	100.0	100.0
FEF	205.0	145.0
CaCO3	150.0	70.0
PEG-4000	2.0	2.0
P-6	-	95.0
P-4W	145.0	-
Sulfur	0.1	-
ZnO	3.0	5.0
Stearic Acid	1.0	1.0
MBT(M)	1.5	1.2
#22(ETU)	0.9	0.8
TMTD(TT)	0.7	0.6
ZnBDC(BZ)	1.9	1.5
CaO	6.9	-
Sulfur	1.8	1.7
Total	**619.8**	**423.8**

** Unit: phr*

Properties	Test Method	Formulation 1	Formulation 2
Compound Mooney Viscosity	ASTM D1646	73.8	91.2
ML 1+4 @ 100℃			
Pre-vulcanization characteristics	ASTM D1646		
Large Rotor at 125℃			
Minimum Viscosity (Vm)		43.2	60.0
t'5 (min)		5.42	5.03
t'35 (min)		7.83	6.78
Δt30		2.41	1.75
Rotorless Cure Meter (MDR, 180℃/10min)	ASTM D5289		
M_L (lb·in)		2.0	2.7
M_H (lb·in)		16.1	18.8
t_S2 (min)		0.50	0.45
t_C50 (min)		0.80	0.80
t_C90 (min)		3.57	3.60

Cured at 180℃ for 10 min

Properties	Test Method	Formulation 1	Formulation 2
Specific Gravity	ASTM D792	1.34	1.26
Hardness (shore A)	ASTM D2240	76	77
Tensile Strength (kgf/cm^2)	ASTM D412	79	123
Elongation (%)	ASTM D412	225	249
100% Modulus (kgf/cm^2)	ASTM D412	40.5	49.4

Heat Resistance

Properties	Test Method	Formulation 1	Formulation 2
Hardness (Change Point)	ASTM D2240	+11	+2
Tensile Strength (Change %)	ASTM D412	+12	+3
Elongation (Change %)	ASTM D412	-35	-23

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

Compression Set

Properties	Test Method	Formulation 1	Formulation 2
Compression Set (%)	ASTM D395 (Method B)	55.5	32.0

** After 70 hours at 100 ℃*

The Innovative Chemical Company

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