Product Data Sheet

SUPRENE® 512F

SK global chemical

Product Data Sheet

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SUPRENE® 512F

SUPRENE EPDM 512F has high ethylene content for high green strength of uncured rubber.

Since SUPRENE EPDM 512F can make a formulation incorporating large quantities of fillers and process oil, the resulting compound is inexpensive.
In addition, its 'friable bale' form facilitates its mixing with ingredients by means of a Banbury mixer and at shorter mixing time, which results in energy saving.

For examples of application of SUPRENE EPDM 512F making the best use of its above-mentioned characteristics, there are various extrusion products, such as hose, window gasket, various molded products, and low cost compounds.

Raw Polymer Properties

	Test Method	Unit	Min.	Max.	Typical Value
Mooney Viscosity, (ML 1+4, 125℃ unmilled)	ASTM D1646	-	58	68	63
Ethylene Content *	ASTM D3900	wt%	67	71	69
ENB Content	ASTM D6047	wt%	3.5	5.5	4.5
Oil Content	-	phr	-	-	-
Specific Gravity	ASTM D792	-	-	-	0.86
Volatile Matter	ASTM D5668	wt%	-	0.8	0.2
Ash	ASTM D5667	wt%	-	0.15	0.01
Physical Form, (kg/bale)	-	-	-	-	25kg (Friable Bale)

* Ethylene Content + Propylene Content = 100%

SUPRENE® 512F

Typical Properties

Properties	Test Method	S512F
Mooney Viscosity ML 1+4 @ 125℃	ASTM D1646	63.0
Ethylene Content, wt%	ASTM D3900	69.0
ENB Content, wt%	ASTM D6047	4.5

Guide Formulation

	Formulation 1	Formulation 2
S512F	100.0	100.0
FEF	104.0	80.0
CaCO3	53.0	-
PEG-4000	1.0	-
CIR	1.5	-
P-6	90.0	50.0
ZnO	5.0	5.0
Stearic Acid	2.0	1.0
MBT(M)	1.4	0.5
CBS(CZ)	1.1	-
TMTD(TT)	-	1.0
Sulfur	0.7	1.5
Total	**359.7**	**239.0**

** Unit: phr*

Properties	Test Method	Formulation 1	Formulation 2
Compound Mooney Viscosity	ASTM D1646	49.1	73.8
ML 1+4 @ 100℃			
Pre-vulcanization characteristics	ASTM D1646		
Large Rotor at 125℃			
Minimum Viscosity (Vm)		31.1	46.5
t'5 (min)		22.78	16.43
t'35 (min)		35.19	28.08
Δt30		12.41	11.65
Rotorless Cure Meter (MDR, 160℃/30min)	ASTM D5289		
M_L (lb·in)		1.5	2.36
M_H (lb·in)		12.90	25.76
t_S2 (min)		3.60	2.19
t_C50 (min)		5.14	3.85
t_C90 (min)		11.25	8.42

Cured at 160℃ for 20 min

Properties	Test Method	Formulation 1	Formulation 2
Specific Gravity	ASTM D792	1.19	1.09
Hardness (shore A)	ASTM D2240	65	69
Tensile Strength (kgf/cm^2)	ASTM D412	120	185
Elongation (%)	ASTM D412	656	436
100% Modulus (kgf/cm^2)	ASTM D412	18.6	35.1

Heat Resistance

Properties	Test Method	Formulation 1	Formulation 2
Hardness (Change Point)	ASTM D2240	+4	+3
Tensile Strength (Change %)	ASTM D412	+4	-7
Elongation (Change %)	ASTM D412	-27	-31

** 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)	51.4	45.2

** After 72 hours at 100 ℃*

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