Product Data Sheet

SUPRENE® 503

SK global chemical

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SUPRENE EPDM 503 is ENB type grade, which has high ethylene content and low Mooney Viscosity.
It shows excellent mechanical properties even in high hardness compound.
It has good flow property and is suitable for weather strip with high hardness and low compression set.

Main uses of SUPRENE EPDM 503 are found in weather strip, joint, molded parts, electric parts, wire & cable, various rubber coated materials and general industrial parts.

Raw Polymer Properties

	Test Method	Unit	Min.	Max.	Typical Value
Mooney Viscosity, (ML 1+4, 100℃ unmilled)	ASTM D1646	-	32	40	36
Ethylene Content *	ASTM D3900	wt%	69	73	71
ENB Content	ASTM D6047	wt%	5.2	6.2	5.7
Oil Content	-	phr	-	-	-
Specific Gravity	ASTM D792	-	-	-	0.86
Volatile Matter	ASTM D5668	wt%	-	0.8	0.3
Ash	ASTM D5667	wt%	-	0.15	0.01
Physical Form, (kg/bale)	-	-	-	-	25kg (Dense Bale)

* Ethylene Content + Propylene Content = 100%

SUPRENE® 503

Typical Properties

Properties	Test Method	S503
Mooney Viscosity ML 1+4 @ 100℃	ASTM D1646	38.0
Ethylene Content, wt%	ASTM D3900	71.0
ENB Content, wt%	ASTM D6047	5.7

Guide Formulation

	Formulation 1	Formulation 2
S503	100.0	100.0
HAF	50.0	80.0
P-6	50.0	10.0
ZnO	5.0	5.0
Stearic Acid	1.0	1.0
MBT(M)	0.5	0.5
TMTD(TT)	1.0	1.0
Sulfur	1.5	1.5
Total	**209.0**	**199.0**

** Unit: phr*

Properties	Test Method	Formulation 1	Formulation 2
Compound Mooney Viscosity ML 1+4 @ 100℃	ASTM D1646	18.2	73.6
Pre-vulcanization characteristics	ASTM D1646		
Large Rotor at 125℃			
Minimum Viscosity (Vm)		11.0	78.3
t'5 (min)		22.82	9.90
t'35 (min)		45.22	15.48
Δt30		22.30	5.58
Rotorless Cure Meter (MDR, 160℃/30min)	ASTM D5289		
M_L (lb·in)		0.62	5.03
M_H (lb·in)		18.60	50.99
t_S2 (min)		2.84	1.14
t_C50 (min)		4.74	2.81
t_C90 (min)		10.1	8.11

Cured at 160℃ for 20 min

Properties	Test Method	Formulation 1	Formulation 2
Specific Gravity	ASTM D792	1.03	1.14
Hardness (shore A)	ASTM D2240	63	86
Tensile Strength (kgf/cm^2)	ASTM D412	121	192
Elongation (%)	ASTM D412	398	202
100% Modulus (kgf/cm^2)	ASTM D412	22.1	120.7

Heat Resistance

Properties	Test Method	Formulation 1	Formulation 2
Hardness (Change Point)	ASTM D2240	+2	+1
Tensile Strength (Change %)	ASTM D412	-32	+21
Elongation (Change %)	ASTM D412	-39	-27

** 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)	21.4	13.4

** After 72 hours at 70℃*