Product Data Sheet

SUPRENE® 600WF

SK global chemical

Product Data Sheet

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SUPRENE® 600WF

SUPRENE EPDM 600WF is an oil-extended 'friable bale' ENB type grade which contains 100phr of non-staining white paraffinic oil.

SUPRENE EPDM 600WF is possible to load it with high concentration of fillers etc.
When blended with a non-oil extended SUPRENE EPDM grade, the SUPRENE EPDM 600WF improves the properties and processability (at mixing and extruding) of the non-oil extended grade.
It can be formulated to make products of lower hardness.
Its blend with diene-type rubber gives excellent physical properties.

SUPRENE EPDM 600WF is mainly used in automotive parts such as window seal, hose, and various industrial parts.

Raw Polymer Properties

	Test Method	Unit	Min.	Max.	Typical Value
Mooney Viscosity, (ML 1+4, 100℃ unmilled)	ASTM D1646	-	56	66	61
Ethylene Content	ASTM D3900	wt%	69	75	72
ENB Content	ASTM D6047	wt%	3.0	5.0	4.0
Oil Content	-	phr	97	103	100
Specific Gravity	ASTM D792	-	-	-	0.87
Volatile Matter	ASTM D1416	wt%	-	0.8	0.3
Ash	ASTM D1416	wt%	-	0.10	-
Physical Form, (kg/bale)	-	-	-	-	25kg (Friable Bale)

* Ethylene Content + Propylene Content = 100%

SUPRENE® 600WF

Typical Properties

Properties	Test Method	S600WF
Mooney Viscosity ML 1+4 @ 100℃	ASTM D1646	61.0
Ethylene Content, wt%	ASTM D3900	72.0
ENB Content, wt%	ASTM D6047	4.0

Guide Formulation

Formulation 1 & 2

	Formulation 1	Formulation 2
S600WF	200.0	200.0
FEF	220.0	100.0
Talc	90.0	-
PEG-4000	2.0	-
CaO	3.0	-
P-6	80.0	25.0
ZnO	5.0	5.0
Stearic Acid	1.0	1.0
MBT(M)	1.0	-
MBTS(DM)	-	0.5
TMTD(TT)	0.5	1.5
DPTT(TRA)	0.5	-
CBS(CZ)	2.0	-
Sulfur	1.5	1.5
Total	**606.5**	**334.5**

** Unit: phr*

Properties	Test Method	Formulation 1	Formulation 2
Compound Mooney Viscosity	ASTM D1646	70.3	65.0
ML 1+4 @ 100℃			
Pre-vulcanization characteristics	ASTM D1646		
Large Rotor at 125℃			
Minimum Viscosity (Vm)		44.9	43.3
t'5 (min)		9.35	26.65
t'35 (min)		13.45	38.68
Δt30		4.10	12.03
Rotorless Cure Meter (MDR, 160℃/30min)	ASTM D5289		
M_L (lb·in)		2.27	2.4
M_H (lb·in)		10.78	12.1
t_S2 (min)		2.22	5.05
t_C50 (min)		2.82	7.18
t_C90 (min)		12.56	14.41

Cured at 160℃ for 20 min

Properties	Test Method	Formulation 1	Formulation 2
Specific Gravity	ASTM D792	1.26	1.05
Hardness (shore A)	ASTM D2240	73	53
Tensile Strength (kgf/cm^2)	ASTM D412	98	171
Elongation (%)	ASTM D412	328	535
100% Modulus (kgf/cm^2)	ASTM D412	41.9	19.0
Tear Strength (kgf/cm)	ASTM D624		

Heat Resistance

Properties	Test Method	Formulation 1	Formulation 2
Hardness (Change Point)	ASTM D2240	+4	-
Tensile Strength (Change %)	ASTM D412	+5	-
Elongation (Change %)	ASTM D412	-30	-

** After 168 hours oven aging at 100℃ per ASTM D573*

Formulation 3 & 4

	Formulation 3	Formulation 4
S600WF	200.0	200.0
FEF	185.0	159.0
$CaCO_3$	100.0	87.0
P-4W	55.0	35.0
MB	8.0	8.0
RD	2.0	2.0
ZnO	5.0	5.0
Stearic Acid	1.0	1.0
SR-350	1.5	1.5
DCP-BC	10.0	10.0
Sulfur	0.1	0.1
Total	**567.6**	**508.6**

** Unit: phr*

Properties	Test Method	Formulation 3	Formulation 4
Compound Mooney Viscosity ML 1+4 @ 100℃	ASTM D1646	92.8	97.4
Pre-vulcanization characteristics	ASTM D1646		
Large Rotor at 125℃			
Minimum Viscosity (Vm)		54.9	57.9
t'5 (min)		22.42	20.82
t'35 (min)		37.12	35.77
Δt30		14.70	14.95
Rotorless Cure Meter (MDR, 180℃/20min)	ASTM D5289		
M_L (lb·in)		2.0	3.1
M_H (lb·in)		14.6	16.2
t_S2 (min)		0.44	0.43
t_C50 (min)		0.74	0.74
t_C90 (min)		1.79	1.83

Cured at 180℃ for 10 min

Properties	Test Method	Formulation 3	Formulation 4
Specific Gravity	ASTM D792	1.25	1.23
Hardness (shore A)	ASTM D2240	67	67
Tensile Strength (kgf/cm^2)	ASTM D412	89	101
Elongation (%)	ASTM D412	346	386
100% Modulus (kgf/cm^2)	ASTM D412	26.7	23.3
Tear Strength (kgf/cm)	ASTM D624	26.1	30.6

Heat Resistance

Properties	Test Method	Formulation 3	Formulation 4
Hardness (Change Point)	ASTM D2240	+13	+13
Tensile Strength (Change %)	ASTM D412	-4	-5
Elongation (Change %)	ASTM D412	-45	-42
Tear Strength (Change %)	ASTM D624	+5	+3

** After 96 hours oven aging at 160℃ per ASTM D573*

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