

Product Data Sheet

# SUPRENE<sup>®</sup> 600WF

 **SK** global chemical

# SUPRENE<sup>®</sup> 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°C 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<sup>®</sup> 600WF

### Typical Properties

Properties	Test Method	S600WF
Mooney Viscosity ML 1+4 @ 100°C	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
<b>Total</b>	<b>606.5</b>	<b>334.5</b>

\* Unit: phr



Properties	Test Method	Formulation 1	Formulation 2
Compound Mooney Viscosity ML 1+4 @ 100°C	ASTM D1646	70.3	65.0
Pre-vulcanization characteristics Large Rotor at 125°C	ASTM D1646		
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°C/30min)	ASTM D5289		
M <sub>L</sub> (lb·in)		2.27	2.4
M <sub>H</sub> (lb·in)		10.78	12.1
t <sub>S</sub> 2 (min)		2.22	5.05
t <sub>C</sub> 50 (min)		2.82	7.18
t <sub>C</sub> 90 (min)		12.56	14.41

### Cured at 160°C 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 <sup>2</sup> )	ASTM D412	98	171
Elongation (%)	ASTM D412	328	535
100% Modulus (kgf/cm <sup>2</sup> )	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°C per ASTM D573



### Formulation 3 & 4

	Formulation 3	Formulation 4
S600WF	200.0	200.0
FEF	185.0	159.0
CaCO <sub>3</sub>	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
<b>Total</b>	<b>567.6</b>	<b>508.6</b>

\* Unit: phr

Properties	Test Method	Formulation 3	Formulation 4
Compound Mooney Viscosity ML 1+4 @ 100°C	ASTM D1646	92.8	97.4
Pre-vulcanization characteristics Large Rotor at 125°C	ASTM D1646		
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°C/20min)	ASTM D5289		
M <sub>L</sub> (lb·in)		2.0	3.1
M <sub>H</sub> (lb·in)		14.6	16.2
t <sub>S2</sub> (min)		0.44	0.43
t <sub>C50</sub> (min)		0.74	0.74
t <sub>C90</sub> (min)		1.79	1.83



**Cured at 180°C for 10 min**

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

**Heat Resistance**

<b>Properties</b>	<b>Test Method</b>	<b>Formulation 3</b>	<b>Formulation 4</b>
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°C per ASTM D573*

