

Product Data Sheet

# SUPRENE<sup>®</sup> 537-2

 **SK** global chemical

# SUPRENE<sup>®</sup> 537-2

SUPRENE EPDM 537-2 is used by blending with IIR.

SUPRENE EPDM 537-2 shows excellent heat aging properties, especially with peroxide cures.

It blends easily in all formulation and gives excellent weathering and low temperature impact properties.

SUPRENE EPDM 537-2 is mainly used in blends with IIR for inner tubes. It can also be used in various applications such as mechanical goods.

## Raw Polymer Properties

	Test Method	Unit	Min.	Max.	Typical Value
Mooney Viscosity, (ML 1+4, 125 °C unmilled)	ASTM D1646	-	36.0	44.0	40.0
Ethylene Content	ASTM D3900	wt%	54.0	60.0	57.0
ENB Content	ASTM D6047	wt%	2.7	3.3	3.0
Oil Content	-	phr	-	-	-
Specific Gravity	ASTM D792	-	-	-	0.86
Volatile Matter	ASTM D5668	wt%	-	0.8	-
Ash	ASTM D5667	wt%	-	0.15	-
Physical Form, (kg/bale)	-	-	-	-	25kg (Dense Bale)

\* Ethylene Content + Propylene Content = 100%



## SUPRENE<sup>®</sup> 537-2

### Typical Properties

Properties	Test Method	S537-2
Mooney Viscosity ML 1+4 @ 125°C	ASTM D1646	40.0
Ethylene Content, wt%	ASTM D3900	57.0
ENB Content, wt%	ASTM D6047	3.0

### Guide Formulation

#### Formulation 1 (IIR Blend)

Formulation 1	
S537-2	18.0
IIR(BK1675N)	82.0
HAF	40.0
GPF	35.0
P-4W	35.0
CIR	5.0
ZnO	4.0
Stearic Acid	1.0
MBT(M)	0.5
TMTD(TT)	1.0
Sulfur	1.5
<b>Total</b>	<b>223.0</b>

\* Unit: phr



Properties	Test Method	Formulation 1
Compound Mooney Viscosity ML 1+4 @ 100°C	ASTM D1646	64.4
Pre-vulcanization characteristics Large Rotor at 125°C	ASTM D1646	
Minimum Viscosity (Vm)		36.4
t'5 (min)		17.40
t'35 (min)		24.37
Δt30		6.97
Rotorless Cure Meter (MDR, 160°C/30min)	ASTM D5289	
M <sub>L</sub> (lb·in)		2.0
M <sub>H</sub> (lb·in)		13.2
t <sub>S2</sub> (min)		2.73
t <sub>C50</sub> (min)		4.18
t <sub>C90</sub> (min)		14.24

### **Cured at 160°C for 20 min**

Properties	Test Method	Formulation 1
Specific Gravity	ASTM D792	1.12
Hardness (shore A)	ASTM D2240	65
Tensile Strength (kgf/cm <sup>2</sup> )	ASTM D412	111
Elongation (%)	ASTM D412	546
100% Modulus (kgf/cm <sup>2</sup> )	ASTM D412	19.2

### **Heat Resistance**

Properties	Test Method	Formulation 1
Hardness (Change Point)	ASTM D2240	+4
Tensile Strength (Change %)	ASTM D412	-21
Elongation (Change %)	ASTM D412	-27

\* After 72 hours oven aging at 120 °C per ASTM D573



### Formulation 2 & 3

	Formulation 2	Formulation 3
S537-2	70.0	100.0
S505A	30.0	-
FEF	80.0	-
GPF	-	60.0
P-6	50.0	10.0
ZnO	5.0	5.0
CD	-	1.0
Stearic Acid	1.0	-
MBT(M)	1.0	-
TMTD(TT)	0.5	-
ZnBDC(BZ)	2.0	-
Sulfur	1.5	-
SR-350	-	2.0
DCP-40	-	7.0
<b>Total</b>	<b>241.0</b>	<b>185.0</b>

\* Unit: phr



Properties	Test Method	Formulation 2	Formulation 3
Compound Mooney Viscosity ML 1+4 @ 100°C	ASTM D1646	46.3	85.8
Pre-vulcanization characteristics Large Rotor at 125°C	ASTM D1646		
Minimum Viscosity (Vm)		26.9	48.6
t'5 (min)		13.47	11.69
t'35 (min)		22.15	75.13
Δt30		8.68	66.44
Rotorless Cure Meter (MDR, 160°C/30min)	ASTM D5289		
M <sub>L</sub> (lb·in)		1.16	2.62
M <sub>H</sub> (lb·in)		16.45	31.85
t <sub>S</sub> 2 (min)		1.91	0.68
t <sub>C</sub> 50 (min)		3.96	2.92
t <sub>C</sub> 90 (min)		11.05	12.09

**Cured at 160°C for 20 min**

Properties	Test Method	Formulation 2	Formulation 3
Specific Gravity	ASTM D792	1.09	1.09
Hardness (shore A)	ASTM D2240	67	67
Tensile Strength (kgf/cm <sup>2</sup> )	ASTM D412	134	139
Elongation (%)	ASTM D412	440	350
100% Modulus (kgf/cm <sup>2</sup> )	ASTM D412	30.6	25.5

**Compression Set**

Properties	Test Method	Formulation 2	Formulation 3
Compression Set (%)	ASTM D395 (Method B)	38.6	28.8

\* After 72 hours at 100 °C

