



Lion Elastomers LLC

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## SBR 4684 Elastomer

## Product Data

SBR 4684 is a developmental carbon black master batch (CBMB) containing 52 parts of N-234 carbon black. It is extended with 10 parts of highly aromatic oil. SBR 4684 has excellent abrasion resistance, superior physical properties and is smooth processing. **Product is made to order on demand.**

### Unique Features

- ▶ Cold polymerized styrene-butadiene elastomer
- ▶ Carbon black master batch
- ▶ Low level extender oil

### Applications

- ▶ Premium truck tire treading
- ▶ Mechanical rubber goods

### Typical Properties

<u>Property</u>	<u>Test Method*</u>	<u>Typical</u>
Carbon black type, phr .....	N-234	52
Carbon black, Weight % .....	5.16.02*	30.6 – 33.6
Oil type, phr.....	Highly Aromatic	10
Oil, Weight %.....	ASTM D5774	4.7 – 7.7
Mooney viscosity, UMS 4+4 (100°C) .....	ASTM D1646	49 - 77
Bound Styrene, Weight % .....	ASTM D5775	22.5 – 24.5
Organic acid, Weight % .....	ASTM D5774	3.1 – 5.1
Soap, Weight % .....	ASTM D5774	0.5 Max.
Ash, Weight % .....	ASTM D5667	0.50 Max.
Volatile matter, Weight % .....	ASTM D5668	0.50 Max.
Emulsifier .....	—	Mixed acid
Coagulant .....	—	Acid
Stabilizer .....	—	Staining
Specific gravity, g/cc (bale).....	—	1.11
Physical form**, lbs/bale .....	—	90.0 (41 kg)

**SBR 4684 is a developmental carbon black master batch containing N-234 carbon black. Low level of oil extension enables good abrasion resistance, high physical properties and smooth processing. Top applications include truck tire treads and mechanical rubber goods.**

\* Company Test Method

\*\* This product is available in 90 lb rectangular bales individually wrapped in 1.5 mil, low melting point film and shipped stretch wrapped on a wooden pallet. Bales are dipped. **Note:** Antioxidant is added to this polymer to provide protection during manufacture and storage. The end user's process may require additional antioxidant protection.

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### Rheometric Properties (MDR 2000 rheometer)

Test Method - ASTM D3186\*\*\*

<u>Property</u>	<u>Result</u>
M <sub>L</sub> lbf-in .....	0.7 – 2.7
dN-m .....	0.8 – 3.1
M <sub>H</sub> lbf-in .....	14.5 – 18.5
dN-m .....	16.4 – 20.9
t <sub>s</sub> 1, minutes .....	2.9 – 4.9
t' 50, minutes .....	5.5 – 9.5
t' 90, minutes .....	10.2 – 15.2

### Test Formula (ASTM D3186)

<u>Test Formula (ASTM D3186)</u>	<u>Quantity, Parts by Mass</u>	<u>Material</u>
SBR 4684 oil-extended, CBMB elastomer .....	162	
Zinc oxide .....	3.00	IRM 91A
Sulphur .....	1.75	IRM 031
Stearic acid .....	1.50	IRM 021
TBBS .....	1.25	IRM 003

**SBR 4684 is a developmental carbon black master batch containing N-234 carbon black and a low level of oil extension. Recommended applications include truck tire treads and mechanical rubber goods.**

**Product is made to order on demand.**

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