

VULCAN® 1436

Description

VULCAN® 1436 carbon black has a unique surface area, aggregate size distribution and high structure combination offering typical low heat build up of ASTM N300 carbon black type together with the high abrasion/wear resistance typical to ASTM N200/100 series carbon black. It is easy to incorporate and gives excellent dispersion in rubber. Die swell and extrusion shrinkage is relatively low and extrusion appearance is good.

The low heat build up and high abrasion resistance makes VULCAN 1436 carbon black an ideal carbon black for low rolling resistance passenger or truck tire treads. It is well suited for truck tire treads and retreads where heat build up

needs to be reduced in both steer and drive tires. VULCAN 1436 is particular of interest in super single trailer tires to address the low heat build up and high severity abrasion requirement for such tires.

Applications

The relative high reinforcing, low hysteresis performance features of VULCAN 1436 can be seen in the following lab comparison against ASTM N220, N375 and N339 at equal loading in a basic NR truck tread formulation:

Basic rubber properties in a NR truck tread formulation

Carbon black type	VULCAN 1436	VULCAN 6	VULCAN J	VULCAN M
ASTM grade code	—	N220	N375	N339
carbon black loading, (phr)	50	50	50	50
Hardness				
Shore A, @ 25°C	65	63	63	63
Shore A, @ 70°C	61	58	58	58
Zwick Rebound				
Rebound @ 25°C, (%)	57	53	55	54
Rebound @ 70°C, (%)	68	63	66	66
Tensile properties				
Tensile Strength, (MPa)	30.8	28.8	29.8	27.9
Elongation @ Break, (%)	470	535	500	475
100% Modulus, (MPa)	3.7	2.9	3.2	3.1
300% Modulus, (MPa)	18.6	14.0	16.0	15.9

The 2 tables below show Truck Tire road test results exhibiting the clearly improved tread wear/rolling resistance/heat build up balanced offered by VULCAN 1436 against N200 type ASTM grades:

Truck Tire road test

Tread Wear and Rolling Resistance in NR/BR formulation

Carbon black type	VULCAN 1436	VULCAN 6
ASTM grade code	—	N220
carbon black loading, (phr)	48	50
Rel. Tread Wear Index (higher = better)		
Low severity @55300 km	101	100
Medium severity @40700 km	101	100
High severity @22400 km	98	100
Heat Build Up Index (lower = better)		
After 1.5 hrs @ 56 km/hrs	93	100
Rolling Resistance Index (lower = better)		
	92	100

Tread Wear and Rolling Resistance in NR formulation

Carbon black type	VULCAN 1436	VULCAN 7H
ASTM grade code	—	N234
carbon black loading, (phr)	48	50
Rel. Tread Wear Index (higher = better)		
Low severity @54000 km	104	100
Heat Build Up Index (lower = better)		
After 1 hrs @ 67 km/hrs	93	100
Rolling Resistance Index (lower = better)		
@ 83 km/hrs	91	100

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NORTH AMERICA
 Cabot Corporation
 Rubber Blacks
 1095 Windward Ridge Pkwy
 Suite 200
 Alpharetta, GA 30005
 (800) 472-4889
 www.cabot-corp.com

SOUTH AMERICA
 Cabot Brasil Industria e Comércio
 Ltda.
 Av. João Castaldi, 88
 04517-900 São Paulo, SP
 Brazil
 Tel: (55-11) 5536-0388
 www.cabot-corp.com

EUROPE
 Cabot Europe Ltd./Cabot
 Europe/Cabot GIE
 Le Nobel 4B
 2 rue Marcel Monge
 92158 Suresnes Cedex, France
 Tel: (33-1) 46-97-58-00
 www.cabot-corp.com

ASIA, PACIFIC
 Asia Pacific Region
 Level 14, MNI Tower 2,
 11 Jalan Pinang
 50450 Kuala Lumpur, Malaysia
 Tel: (60-3) 2164 8352
 www.cabot-corp.com