

## HIGH PERFORMANCE CARBON BLACKS TIRE TREAD APPLICATIONS

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China Products



### OVERVIEW

Tires are one of the most important parts of any vehicle. They support the weight of the vehicle, provide traction, help to absorb road shocks for passenger comfort, and transmit steering, torque and braking forces to the road surface allowing drivers to reliably maintain and change the direction of travel.

Today's market demands high-performance tires now more than ever. New fuel efficiency regulations and stricter labelling standards challenge tire makers to produce diverse and high-performance product offerings. Consumers demand safety and performance in a range of different environments. Truck operators require high-durability tires to eliminate in-field failures and maximize operational uptime. And everyone wants tires that last longer.



## KEY PERFORMANCE CONSIDERATIONS

Sitting at the interface between the road and a vehicle, the tread is a critical determinant of tire performance. The formulation of tread compounds is one of the most important considerations in tire design as it can affect the overall ability of the tire to resist abrasion, cutting and tearing; to minimize hysteresis (energy loss) and improve fuel economy; and to grip the road and handle responsively.

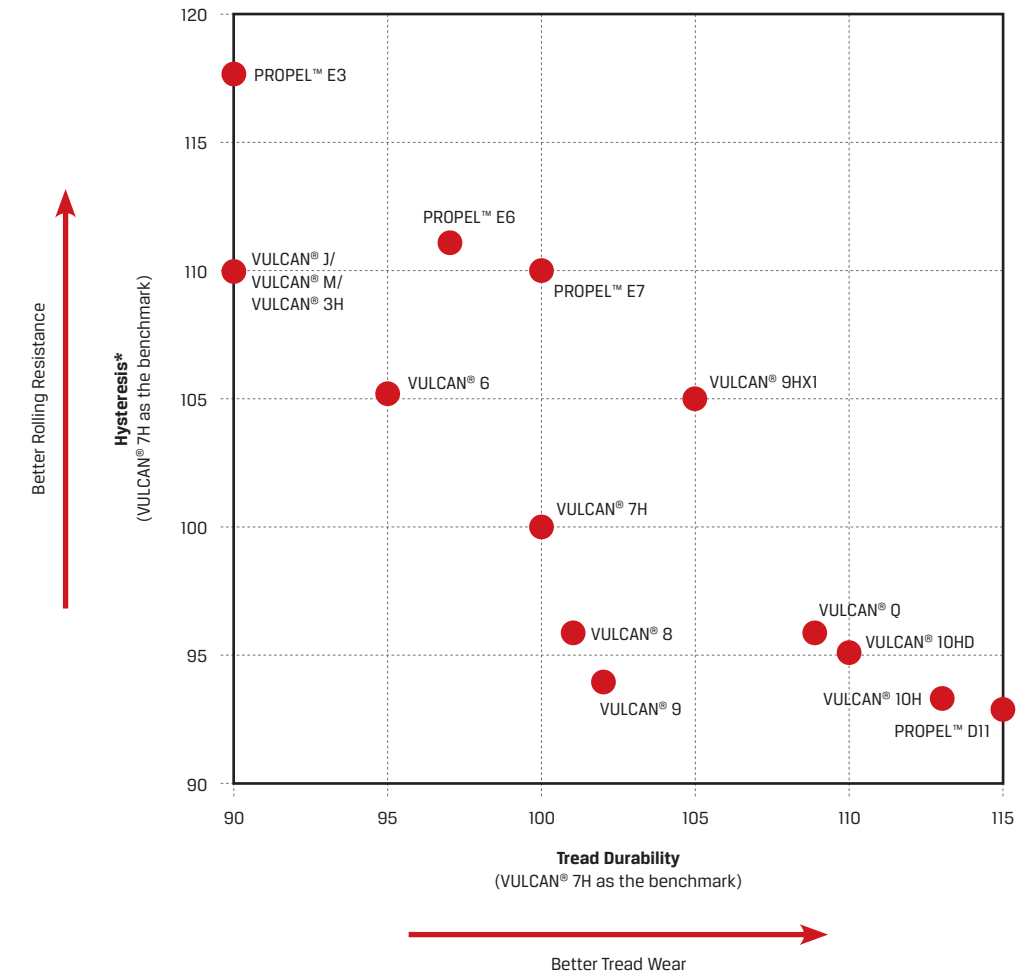
Selecting the right reinforcing agent for use in tread compounds is, therefore, critical. We understand the key requirements for tread compounds and will collaborate with you to help you select the proper reinforcing agent for fabrication of your tire compounds.

Our innovative products are designed to provide solutions for major challenges facing tire compounders, such as improving fuel economy, extending tire life and boosting driving performance. We have been supplying reinforcing agents to the tire industry for over 100 years and we continue to deliver new solutions to help tire manufacturers meet current and future market demands.



## PRODUCT PERFORMANCE IN FORMULATION

We offer a variety of high-performance carbon black solutions to meet the needs of our customers around the world.



\*Larger number indicates better (lower) hysteresis.

**PLEASE NOTE:** Data plotted on this chart based on internal lab test measurements of abrasion and modulus ratio and tan delta in generic tire tread formulations.

## TRUCK AND BUS TIRES

Tread durability is a key performance requirement for short-haul truck tires to eliminate in-field failures and maximize operational uptime, while long-haul tires require low rolling resistance to maximize fuel efficiency.

### FEATURED PRODUCTS

- ◆ **VULCAN® 10H carbon black:** Provides maximum tread durability for the treads of truck and bus tires and retreads subjected to high abrasion conditions.
- ◆ **PROPEL™ E7 carbon black:** The product of choice for low rolling resistance long-haul medium and heavy duty truck tire, coach tires and retreads.
- ◆ **VULCAN® 9HX1 carbon black:** Offers a balance of tread wear and low rolling resistance for heavy truck and bus tires.

### PRODUCT SELECTION BY APPLICATION

Cabot Product	Truck and Bus Tread Performance Requirements			
	Tread Wear	Heat Build Up Resistance	Rolling Resistance	Dispersion
VULCAN® 10H carbon black	★★★★★	★★	★★★	★★
PROPEL™ E7 carbon black	★★★	★★★★★	★★★★★	★★★★★
VULCAN® 9HX1 carbon black	★★★★★	★★★	★★★★★	★★★★★
VULCAN® 7H carbon black	★★★	★★★	★★★	★★★★★
PROPEL™ D11 carbon black	★★★★★	★★	★★	★★

KEY:

★ Recommendation from 1-5 with 5 being highest.

Note: PROPEL™ D11 carbon black is ultra high reinforcing.

## OFF-THE-ROAD TIRES

Off-the-road environments require tires with high abrasion resistance and the ability to resist damage from cutting, chipping or chunking from rough/uneven surfaces. Large off-the-road tires require rubber compounds that minimize hysteresis to prevent failure due to excessive heat build-up.

### FEATURED PRODUCTS

- ◆ **VULCAN® 9 carbon black:** The product of choice for off-the-road tires and retreads calling for exceptional cut/chip/chunk resistance.
- ◆ **VULCAN® 6 carbon black:** Provides low heat build-up for off-the-road tires and retreads.
- ◆ **VULCAN® 10H carbon black:** Excellent tread wear for off-the-road tires, including earth mover and mining tires.

### PRODUCT SELECTION BY APPLICATION

Cabot Product	Off-the-Road Tread Performance Requirements			
	Cut/Chip/Chunk Resistance	Heat Build Up Resistance	Tread Wear	Dispersion
VULCAN® 9 carbon black	★★★★★	★★★★★	★★★	★★★
VULCAN® 6 carbon black	★★★	★★★★★	★★	★★★★★
VULCAN® 10H carbon black	★★	★★	★★★★★	★★

KEY:

★ Recommendation from 1-5 with 5 being highest.



## PASSENGER CAR AND LIGHT TRUCK TIRES

Passenger car and light truck tires require a balance of grip, tread durability, rolling resistance, and ride comfort and responsiveness (handling performance).

### FEATURED PRODUCTS

- ◆ **VULCAN® 10H carbon black:** The best choice for tread wear and grip in wet or dry conditions for high performance passenger car and light truck tires.
- ◆ **PROPEL™ E3 carbon black:** The product of choice for low rolling resistance light commercial, SUVs and passenger car tires.
- ◆ **VULCAN® 7H carbon black:** Offers a balance of improved tread wear, low rolling resistance and process ability.
- ◆ **VULCAN® 1391 carbon black:** Offers very high reinforcement, excellent grip, and good handling performance for racing and ultra-high performance passenger car and motorcycle tires.

### PRODUCT SELECTION BY APPLICATION

Cabot Product	Passenger Car and Light Truck Tread Performance Requirements				
	Tread Wear	Rolling Resistance	Grip	Handling	Dispersion
VULCAN® 10H carbon black	★★★★★	★★★	★★★★★	★★★	★★
PROPEL™ E3 carbon black	★★★	★★★★★	★★	★★	★★★★★
VULCAN® 7H carbon black	★★★	★★★	★★★	★★★	★★★★★
VULCAN® Q carbon black	★★★★	★★★	★★★★	★★★★★	★★★★
VULCAN® 9H carbon black	★★★★	★★★★★	★★★	★★★★★	★★★★★
VULCAN® 1391 carbon black	★★★★	★★	★★★★★	★★★★★	★★

KEY:

★ Recommendation from 1-5 with 5 being highest.

All products can be blended with silica to achieve desired final performance.



## ABOUT CABOT CORPORATION

Cabot Corporation (NYSE: CBT) is a global specialty chemicals and performance materials company headquartered in Boston, Massachusetts. We are a leading provider of rubber and specialty carbons, activated carbon, inkjet colorants, cesium formate drilling fluids, fumed silica, and aerogel.

For more information about our carbon black products for tire applications, please visit our website at [cabotcorp.com/tire](http://cabotcorp.com/tire) or by contacting our sales offices in the appropriate region:

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