

REGAL[®] 85 carbon black



GENERAL DESCRIPTION

REGAL[®] 85 carbon black is characterized by very low surface area and structure when compared to regular oil furnace semi-reinforcing carbon blacks. The morphological properties of REGAL 85 carbon black fall between those of ASTM N990 thermal process type carbon black and ASTM N762 or N772 furnace process type carbon blacks.

PERFORMANCE FEATURES

For a given modulus (or stiffness), REGAL 85 carbon black can be used at much higher loading than ASTM N660, N772 and N774 type carbon blacks. This feature can help to improve compound thermal conductivity of tire curing bladder compounds.

REGAL 85 carbon black used at higher loadings can reduce costs of the expensive synthetic butyl and halo-butyl polymers based compounds common in this application. Furthermore, REGAL 85 carbon black used at higher loadings can reduce air permeability of a rubber compound, thereby enabling thinner and lighter inner liners without sacrifice in permeability.

In other applications, rubber compounds produced with REGAL 85 carbon black show excellent flex, fatigue and tear properties when compared to compounds produced with ASTM N990 type carbon black.

TYPICAL APPLICATIONS

- Tire inner liners, curing bladders and butyl tubes

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TECHNICAL DATA

Test Formulation: 100 phr Bromo Butyl Rubber, 8 phr Napthenic Oil, 4 phr Phenolic resin, Sulphur cure system

| | REGAL [®] 85 | ASTM N660 |
|----------------------|-----------------------|-----------|
| Loading (phr) | 100 | 60 |

PROCESSING PROPERTIES

Mooney Viscosity

| | | |
|---------------------------|----|----|
| ML (1+4) at 100°C, (M.U.) | 48 | 55 |
|---------------------------|----|----|

PHYSICAL PROPERTIES

Hardness

| | | |
|---------|----|----|
| Shore A | 54 | 52 |
|---------|----|----|

Tensile Properties

| | | |
|------------------------|-----|-----|
| Tensile Strength, MPa | 7.7 | 9.3 |
| 100% Modulus, MPa | 1.2 | 1.2 |
| 300% Modulus, MPa | 3.1 | 3.5 |
| Elongation at Break, % | 940 | 900 |

Rebound

| | | |
|--------------------------|----|----|
| Zwick Rebound at 60°C, % | 25 | 26 |
|--------------------------|----|----|

Air Permeability *

| | | |
|--|-------|-------|
| Permeation rate, (cm ³ /hour) | 0.018 | 0.023 |
|--|-------|-------|

* at 100 psi and 65 °C; rubber sample dimension: 1mm thickness, 4.2 cm² area

NORTH AMERICA

Cabot Corporation
1095 Windward Ridge
Parkway
Suite 200
Alpharetta, GA 30005
USA
TEL +800 472 4889

SOUTH AMERICA

Cabot Brasil Industria e
Comércio Ltda.
Rua do Paraíso 148-5th floor
Sao Paulo - SP, Brazil
Paraiso CEP.: 04103-000
TEL +55 11 2144 6400
CUSTOMER SERVICE
0800 195959

EMEA*

Cabot EMEA Business Service Centre
SIA Cabot Latvia
101 Mukusalas Street
Riga, LV-1004
Latvia
TEL +371 67050700
*Europe, Middle East and Africa

CHINA

Cabot China Ltd.
558 Shuangbai Road
Minghang District
Shanghai 201108
China
TEL +86 21 5175 8800

ASIA PACIFIC NORTH

Cabot Japan K.K.
Sumitomo Shiba-Daimon Bldg. 3F
2-5-5 Shiba Daimon,
Minato-ku
Tokyo 105-0012
Japan
TEL +81 3 3431 1770

ASIA PACIFIC SOUTH

PT. Cabot Indonesia
Talavera Office Park
Jl. Letjen TB Simatupang
Kav 22-26, Cilandak
Jakarta 12430
Indonesia
TEL +62 21 27584100

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