

VULCAN[®] 3-LP carbon black



GENERAL DESCRIPTION

Specific regulations and guidelines are in place and in progress in the European Union (EU) and China (CN) that limit the content of polycyclic aromatic hydrocarbons (PAH) in certain rubber articles and/or in the carbon black used to prepare them, and in food and potable water contact applications.

As part of Cabot's ongoing commitment to address changing marketplace needs and deliver solutions to meet our customers' future product design and processing challenges, Cabot has developed a series of low PAH carbon blacks, identified by the suffix "LP." The Cabot LP carbon black series is manufactured via a special process resulting in a controlled, very low level of PAH. The Cabot LP carbon black series complies with the above-mentioned regulations and can be used to achieve GS Mark certification under certain loading conditions.

VULCAN[®] 3-LP carbon black is a member of the Cabot LP carbon black series. It is a pelletized reinforcing carbon black and is characterized by a controlled, very low PAH content.

PERFORMANCE FEATURES

VULCAN 3-LP carbon black is suitable for rubber articles that require a very low PAH and higher reinforcement, strength, abrasion and tearing resistance level than is offered by semi-reinforcing carbon blacks. It can be used in rubber applications currently based on ASTM N300 series carbon blacks that require very low PAH content.



VULCAN® 3-LP carbon black

TYPICAL APPLICATIONS

- 1) Rubber products to be placed in the EU market and categorized under Regulation EU 1272/2013 may include consumer articles such as:
 - ◆ Toys and childcare articles
 - ◆ Sport equipment such as bicycles, golf clubs and racquets
 - ◆ Household utensils, trolleys and walking frames
 - ◆ Tools for domestic use
 - ◆ Clothing, footwear, gloves and sportswear, watch straps, wrist bands, masks and head bands
- 2) GS Mark certification includes rubber products intended to be taken in the mouth or with foreseeable long or repeated short-term skin contact such as those mentioned in the above EU regulation
- 3) Materials used in rubber components that can come into direct contact with drinking water in the EU may include:
 - ◆ Hoses, membranes
 - ◆ Liners in drinking water system (pipes, tanks)
- 4) Rubber products in contact with food in the EU and China such as:
 - ◆ Gaskets
 - ◆ O-rings, seals
 - ◆ Food transportation belts
 - ◆ Liquid food transmission hoses
 - ◆ Milk inflation liners
 - ◆ Wrapping, packaging material

VULCAN3-LP carbon black is used in rubber articles which require high reinforcement, strength, abrasion and tearing resistance.

TECHNICAL DATA

VULCAN 3-LP carbon black is a reinforcing carbon black and is characterized by a controlled, very low PAH content.

| PROPERTY | TEST METHOD | UNITS | TYPICAL VALUE |
|------------------------------|-------------|-------------------|---------------|
| Iodine adsorption number | ASTM D1510 | mg/g | 82 |
| STSA surface area | ASTM D6556 | m ² /g | 76 |
| Oil absorption number (OAN) | ASTM D2414 | ml/100g | 102 |
| OAN after compression (COAN) | ASTM D3493 | ml/100g | 88 |

| PAH CONTENT*: | TEST METHOD | UNITS | MAXIMUM VALUE |
|--|---------------------|-------|---------------|
| Benzo(a)pyrene | Cabot internal test | ppm | 0.25 |
| For each of 8 PAH included in EU list | Cabot internal test | ppm | 1 |
| For sum of 18 PAH included in GS Mark list** | Cabot internal test | ppm | 20 |

* Cabot internal test method requires 48 hours toluene extraction (Soxhlet)

** For products certified after July 1, 2020, GS Mark has reduced the list of PAH to 15. Cabot will continue to report the sum of 18 PAH, which covers all GS Mark certifications.

Please contact your Cabot Technical Service representative to learn more about the use of our LP series of low PAH carbon blacks to achieve EU and CN industry specifications/requirements.

For more information, please contact your Cabot representative at cabotcorp.com/contact.

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One or more of these Cabot carbon black products may be covered by one or more of the following patents and pending patent applications. **PATENTS:** CN101573417B, EP2087046 (CZ, FR, DE, IT, NL, ES), JP6096399, MY16000, TWI0414564, US8034316B, US8710136B
PENDING PATENT APPLICATION: TH100036