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Standard Terminology Relating to Recovered Carbon Black (rCB)¹

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1. Scope

1.1 This terminology covers a compilation of definitions of technical terms used in the recovered carbon black industry. Terms that are generally understood or adequately defined in other readily available sources are not included.

1.2 *This international standard was developed in accordance with internationally recognized principles on standardization established in the Decision on Principles for the Development of International Standards, Guides and Recommendations issued by the World Trade Organization Technical Barriers to Trade (TBT) Committee.*

2. Referenced Documents

2.1 *ASTM Standards:*²

D1508 Test Method for Carbon Black, Pelleted Fines and Attrition

D1509 Test Methods for Carbon Black—Heating Loss

3. Terminology

3.1 *Definitions:*

aciniform, *adj*—shaped like a cluster of grapes.

DISCUSSION—The original spheroidal primary particles of carbon black fused into aggregates of colloidal dimension forming an aciniform morphology. Recovered carbon blacks retain these aciniform aggregate structures.

carbon black, furnace, *n*—a type of carbon black produced by the decomposition reaction of primarily liquid hydrocarbons when injected into a high-velocity stream of combustion gases under controlled conditions.

¹ This terminology is under the jurisdiction of ASTM Committee D36 on Recovered Carbon Black (rCB) and is the direct responsibility of Subcommittee D36.30 on Nomenclature.

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² For referenced ASTM standards, visit the ASTM website, www.astm.org, or contact ASTM Customer Service at service@astm.org. For *Annual Book of ASTM Standards* volume information, refer to the standard's Document Summary page on the ASTM website.

DISCUSSION—The primary type of carbon black used in production of rubber compound, especially used in tires and other black rubber articles.

carbon black, thermal, *n*—a type of carbon black produced under controlled conditions by the thermal decomposition of gaseous hydrocarbons in the absence of air or flames.

DISCUSSION—This carbon black lacks significant aciniform morphology and as such is used primarily in non-tire applications. Use of non-tire rubber feedstock may result in the recovery of this carbon black type.

char, *n*—solid carbonaceous residue formed during carbonization of organic compounds.

fines, *n*—that portion of pelletized recovered carbon black that passes through a specified sieve under standard conditions.

DISCUSSION—See Test Method D1508.

heating loss, *n*—mass loss, in percent, when recovered carbon black is heated at 125°C for 1 h; the heating loss is primarily attributed to moisture content.

DISCUSSION—See Test Method D1509.

raw rCB, *n*—solid material resulting from thermal decomposition of rubber goods which contain carbon black; exhibiting poor dispersion so requiring milling to become rCB.

recovered carbon black (rCB), *n*—solid product recovered via thermal decomposition from rubber goods which contain carbon black, which is free of wire and fabric, and when milled typically gives semi-reinforcing properties in rubber.

DISCUSSION—A type of filler derived from post-consumer rubber goods (feedstock) via a variety of thermal decomposition processes. This semi-reinforcing filler predominantly consisting of carbon, also containing inorganic compounding ingredients originating from the feedstock but is free of wire and fabric. This material, typically pelletized currently marketed under the name recovered carbon black (rCB), should not be confused with “Raw rCB” which exhibits poor dispersion and minimal reinforcing properties when used in rubber compounding.

recovered carbon black pellet, *n*—a relatively large agglomerate mass that has been densified in spheroidal form to facilitate handling and processing.