



Designation: ~~D8178—19~~ D8178 – 20

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~~

2. Terminology

2.1 Definitions:

aciniiform, *adj*—shaped like a cluster of grapes. [ASTM D8178-20](#)

DISCUSSION— [standards.iteh.ai/catalog/standards/sist/44521b5c-b1be-44dd-a93e-e428c4acad70/astm-d8178-20](#)

The original spheroidal primary particles of carbon black fused into aggregates of colloidal dimension forming an aciniiform morphology. Recovered carbon blacks retain these aciniiform 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.

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 aciniiform 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.

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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finer, *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.

APPENDIX

(Nonmandatory Information)

X1. EXISTING STANDARDS RECOGNIZED BY COMMITTEE D36

X1.1 The following is a list of existing standards that are currently available for use in the industry. These standards are maintained by ASTM Committee D24 on Carbon Black; however, they can be applied for use in the rCB industry.²

X1.2 In 2017, Committee D36 approved to recognize these standards as acceptable for use in the rCB industry until rCB statistical data is available that may suggest otherwise.

- D1506 Test Methods for Carbon Black—Ash Content
- D1508 Test Method for Carbon Black, Pelleted Finer and Attrition
- D1509 Test Methods for Carbon Black—Heating Loss
- D1511 Test Method for Carbon Black—Pellet Size Distribution
- D1512 Test Methods for Carbon Black—pH Value
- D1513 Test Method for Carbon Black, Pelleted—Pour Density
- D1514 Test Method for Carbon Black—Sieve Residue
- D1618 Test Method for Carbon Black Extractables – Transmittance of Toluene Extract
- D1619 Test Methods for Carbon Black—Sulfur Content
- D1799 Practice for Carbon Black—Sampling Packaged Shipments
- D1900 Practice for Carbon Black—Sampling Bulk Shipments
- D1937 Test Method for Carbon Black, Pelleted—Mass Strength
- D2663 Test Methods for Carbon Black—Dispersion in Rubber
- D3053 Terminology Relating to Carbon Black
- D3191 Test Methods for Carbon Black in SBR (Styrene-Butadiene Rubber)—Recipe and Evaluation Procedures

² These standards are available on the ASTM website (www.astm.org).

If you have any questions regarding this list, please contact Pieter ter Haar at terhaar@carbon-clean-tech.com.