



Designation: ~~D8178—20~~ D8178 – 20a

## Standard Terminology Relating to Recovered Carbon Black (rCB)<sup>1</sup>

This standard is issued under the fixed designation D8178; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reapproval. A superscript epsilon ( $\epsilon$ ) indicates an editorial change since the last revision or reapproval.

### 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:<sup>2</sup>

[D3053 Terminology Relating to Carbon Black](#)

### 3. Terminology

#### 3.1 *Definitions:*

**carbon black, *n***—this definition is under the jurisdiction of Committee D24 and maintained in Terminology [D3053](#).

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

**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.

<sup>1</sup> 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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<sup>2</sup> 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.

**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.<sup>3</sup>

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 Fines 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
- D3192 Test Methods for Carbon Black Evaluation in NR (Natural Rubber)
- D3849 Test Method for Carbon Black—Morphological Characterization of Carbon Black Using Electron Microscopy
- D4122 Practice for Carbon Black—Evaluation of an Industry Reference Black
- D4821 Guide for Carbon Black—Validation of Test Method Precision and Bias
- D5230 Test Method for Carbon Black—Automated Individual Pellet Hardness
- D5817 Practice for Carbon Black, Pelleted—Reduction, Blending, and Drying of Gross Samples for Testing
- D6915 Practice for Carbon Black—Evaluation of Standard Reference Blacks
- D7771 Test Method for Determination of Benzo- $\alpha$ -Pyrene (BaP) Content in Carbon Black

X1.3 The Committee has concluded that typical Carbon black characterization methods based on structure level and surface area measurements do not seem to correlate to in-rubber performance in an equal matter for Recovered Carbon Black products. Therefore, the committee does not recommend such test methods for predicting the applications performance of recovered carbon black products. The committee is open to new research that can contradict above statement.

<sup>3</sup> These standards are available on the ASTM website ([www.astm.org](http://www.astm.org)).

If you have any questions regarding this list, please contact Pieter ter Haar at [terhaar@carbon-clean-tech.com](mailto:terhaar@carbon-clean-tech.com).