Designation: D7849 – 14

# Standard Classification for Nomenclature of Reference Materials of Committee D24[1]

This standard is issued under the fixed designation D7849; 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 (ε) indicates an editorial change since the last revision or reapproval.

## 1. Scope

1.1 This classification covers instructions for naming the reference materials used by Committee D24.

1.2 *This standard does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user of this standard to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.*

## 2. Referenced Documents

2.1 *ASTM Standards:*[2]

D1510 Test Method for Carbon Black—Iodine Adsorption Number

D2414 Test Method for Carbon Black—Oil Absorption Number (OAN)

D3265 Test Method for Carbon Black—Tint Strength

D3493 Test Method for Carbon Black—Oil Absorption Number of Compressed Sample (COAN)

D6556 Test Method for Carbon Black—Total and External Surface Area by Nitrogen Adsorption

## 3. Significance and Use

3.1 Standard reference materials are used for calibration and verification of many carbon black tests under the jurisdiction of D24. This practice defines a systematic means of naming these reference materials and does so in a manner to clearly differentiate between the various reference materials as well as their version.

## 4. Basis of Classification

4.1 ASTM Committee D24 has established four different types of reference materials which serve to improve test precision of analytical tests on carbon black as well as in-rubber evaluation of carbon black.[3]

4.1.1 *SRB (Standard Reference Blacks)*—A set of seven carbon blacks, six furnace blacks with defined target values for iodine adsorption number (Test Method D1510), STSA (Test Method D6556), NSA (Test Method D6556), OAN (Test Method D2414), COAN (Test Method D3493) and Tint Strength (Test Method D3265) and one thermal black with defined values for STSA (Test Method D6556), NSA (Test Method D6556) and OAN (Test Method D2414). The SRBs can be used to verify analytical test equipment and test procedures. For OAN and COAN, their application is mandatory to normalize measured data.

4.1.2 *ITRB (Industry Tint Reference Black)*—ITRB represents a standard carbon black of the N330 type. It is used for verification and standardization in the test method for Tint Strength (Test Method D3265).

4.1.3 *INR (Iodine Number Reference, previously designated "HT")*—INR consist of three different reference blacks which have been heat-treated in order to provide particularly high stability of the iodine number over a long period of time, that is, over many years.

4.1.4 *IRB (Industry Reference Black)*—IRB is a carbon black of the N330 type which is produced in large quantities in order to serve as a reference material in rubber compounds. In-rubber properties of this reference black are determined during a round robin tests when the material is introduced.

4.2 *Nomenclature:*

4.2.1 All letters in the designation are in caps with no spaces or special characters used.

4.2.2 The reference material is identified by its type: SRB, ITRB, INR or IRB.

4.2.3 The set number follows, with no special characters or space as separator, for example: SRB8.

4.2.4 In the case where several materials form a set (like SRB and INR), a letter is added, starting with A in ascending order (for example, SRB8A). Preferably the order of the

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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.

[3] Target values and control limits are published on the website of the distributor of these reference materials, Balentine Enterprise Inc.: http://carbonstandard.com/.

materials is in line with a relevant property, like iodine adsorption number for INR.

4.2.5 It may occur that a second lot of the same material is produced after depletion of the initial lot. In order to distinguish between both lots, a number is added in chronological order, for example: SRB8A2 (second lot of SRB8A).

NOTE 1—While the same letters will be used from one set to the next, the materials carrying the same letter designation may or may not be the same carbon black.

4.3 Examples of how to identify reference materials follow:

4.3.1 *IRB and ITRB:*

4.3.1.1 The IRB currently in use in 2013 is identified as IRB8.

4.3.1.2 The next IRB in the series will be identified as IRB9.

4.3.1.3 The ITRB currently in use in 2013 is identified as ITRB since this was the original version of this reference material.

4.3.1.4 The next ITRB in the series will be identified as ITRB2.

4.3.2 SRB and INR are sets.

4.3.2.1 The SRB set currently in use in 2013 is identified as SRB8. Materials within SRB8 are SRB8A through SRB8G ranked in order of tread, carcass, thermal, and then OAN number within each.

4.3.2.2 The next SRB set will be identified as SRB9.

4.3.2.3 The INR currently in use in 2013 is identified as INR since it is the first set of this reference material. This material is similar to the materials identified as HT1, HT2, and HT3 that are no longer commercially available. The HT identification does not comply with this identification system but will be used historically as long as the HT materials are in use.

4.3.2.4 The current INR set is INRA, INRB, and INRC ranked in order of iodine number.

4.3.2.5 The next INR set will be identified as INR2A, INR2B, and INR2C.

## 5. Keywords

5.1 industry reference black; industry tint reference black; INR; iodine number reference; IRB; ITRB; SRB; standard reference black