Designation: D2449 – 88 (Reapproved 2015)

Standard Specification for Rubber Bales From Natural Sources—Limit on Coating[1]

This standard is issued under the fixed designation D2449; 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 specification covers bale coating on bales of natural rubber (that have rubber wrapper sheets on the bales) and includes test method description. It specifies the maximum permissible amount of such coating.

1.2 This specification is not applicable to natural rubber that is packaged with plastic wrappers, as no bale coating is used.

1.3 The following safety hazards caveat pertains only to the test method portion, Section 5, of this specification: *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]

D1278 Test Methods for Rubber from Natural Sources—Chemical Analysis

D1485 Practice for Rubber from Natural Sources—Sampling and Sample Preparation

3. Requirements

3.1 The average amount of bale coating on the bales in the sample should not exceed 4 ± 0.1 g/kg of rubber. Lots may be rejected if the bale coating exceeds this amount.

NOTE 1—Four grams per kilogram of rubber *is equivalent to* a maximum of 1 lb/250 lb-bale.

4. Sampling

4.1 Carefully remove portions at random from the outside wrapper sheets from any three sides of the bale so as to lose a minimum of bale coating. Handle and store the sampled portions so as to lose a minimum of bale coating. The number of bales sampled from a lot shall be in accordance with Practice D1485, or as agreed upon between the purchaser and the seller.

5. Test Methods

5.1 *Summary of Methods:*

5.1.1 *Method A*—The amount of mineral filler from bale coating present on the outside wrapper sheets of the bales is determined using an ashing procedure.

5.1.2 *Method B*—The amount of bale coating on the outside wrapper sheets of all grades of smoked sheet rubbers only is determined by a brushing or scraping procedure.

5.1.3 The brushing or scraping procedure, while much faster, is not suitable for use on crepe sheet rubbers because of penetration through holes in the outside wrapper sheet and difficulties of removal from between wrapper sheets. This necessitates the use of the ash procedure on crepe sheet rubbers.

5.2 *Significance and Use*—The rubber bale coating is useful for eliminating the adhesion or sticking together of bales when in contact with each other during transportation and/or storage. Excessive coating may result in reduced compounded physical properties.

5.3 *Procedure:*

5.3.1 *Method A* (*Ash Method*)—Die out or cut two 50 by 50-mm test specimens, within a tolerance of ±1 mm, from each of three portions removed from the bale, taking care not to lose the bale coating. Test each specimen separately. Any bale coating falling from the test specimen should be added to the ash crucible together with the test specimen. Ash in accordance with Test Methods D1278, with the exception of the weight of the 50-mm square specimen to the nearest 0.01 g rather than a 5 to 6-g specimen of homogenized rubber.

5.3.2 *Method B* (*Brushing or Scraping Method*)—Die out or cut out a test specimen 150 by 150-mm, within a tolerance of ±1 mm, from each of the three portions removed from the bale, following the precautions given in 4.1. Weigh the test specimen to the nearest 0.01 g before and after removal of bale coating. Remove the bale coating, using a stiff wire brush or by scraping, taking care not to abrade rubber from the wrapper sheet while thoroughly removing as much of the bale coating as possible.

5.4 *Calculations:*

[1] This specification is under the jurisdiction of ASTM Committee D11 on Rubber and is the direct responsibility of Subcommittee D11.22 on Natural Rubber.

Current edition approved Sept. 1, 2015. Published December 2015. Originally approved in 1965. Last previous edition approved in 2011 as D2449 – 88 (2011). DOI: 10.1520/D2449-88R15.

[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.

5.4.1 *Method A* (*Ash Method*)—Calculate the amount of bale coating per bale as follows:

$$A = BC/SW \quad (1)$$

where:

A = amount of bale coating, g/kg rubber,
B = nominal surface area of bale, mm^2,
C = average amount of ash for the six test specimens, g,
S = surface area of test specimen, mm^2, and
W = nominal weight of bale, kg.

5.4.2 *Method B* (*Brushing or Scraping Method*)—Calculate the amount of bale coating per bale as follows:

$$A = BC/SW \quad (2)$$

where:

A = amount of bale coating, g/kg rubber,
B = nominal surface area of bale, mm^2,
C = average amount of bale coating, g, for the three test specimens determined from the difference in weights before and after removal of bale coating,
S = surface area of test specimen, mm^2, and
W = nominal weight of bale, kg.

5.5 *Precision and Bias*—No statement is made about either the precision or the bias of the test method in Specification D2449, because there is no way to obtain uniform samples that can be shipped without changing the coating adhering to the samples.

6. Keywords

6.1 ash method; bale coating; bareback bales; brushing method; mineral filler; natural rubber bales