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An American National Standard

Standard Test Method for Sieve Analysis of Electrical Grade Magnesium Oxide[1]

This standard is issued under the fixed designation D 2772; 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.

ε[1] NOTE— Keywords were added editorially in October 1997.

1. Scope

1.1 This test method covers the determination of the particle size distribution in a representative sample of granular electrical grade magnesium oxide.

1.2 The values stated in acceptable metric units are to be regarded as the standard.

1.3 *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:*

D 2755 Test Method of Sampling and Reduction to Test Weight of Electrical Grade Magnesium Oxide[2]

E 11 Specification for Wire-Cloth Sieves for Testing Purposes[3]

3. Summary of Test Method

3.1 A representative sample of MgO is sifted through a series of sieves and the amount caught on each sieve is weighed and recorded as a percentage of the total sample.

4. Apparatus

4.1 *Sieve Shaker.*[4]

4.2 *U. S. Standard Brass or Stainless Steel Sieve*—(half-height):

4.2.1 *Required:* 40, 60, 80, 100, 140, 200, 325, pan, and cover.

4.2.2 *Optional:* 35, 45, 50, 120, and 170.

4.3 *Timer*.

4.4 *Triple-Beam Balance.*

4.5 *Receiving Pan*, approximately 20 cm (8 in.) long by 10 cm (4 in.) wide by 7.6 cm (3 in.) deep.

4.6 *Nonmetallic Brush.*

4.7 *Small Rubber-Rod or Mallet.*

5. Calibration of Sieves

5.1 Each test station should possess two sets of sieves. The first set should be in normal use. The second set should be kept as a calibration set[5] and run on a comparison sample with the first set after every 50 sieve analyses.

5.2 When the sieves on the first set wear out, they shall be replaced by ones from the second set. New sieves shall be obtained to replace the second or calibration set.

5.3 Sieve openings may be checked using one of the following methods:

5.3.1 *Comparison with a New Sieve*—This may be done by obtaining two similar 100-g test samples of MgO from the same lot of material, using Test Method D 2755. One sample lot of material should then be put through each sieve, using the same procedure. The amount of MgO through the sieve being tested must be within a tolerance of ±3 % by weight when compared with that put through the new sieve.

5.3.2 *Follow the Procedure Outlined in Specification E 11*. Table 1 is from Specification E 11.

5.4 Sieve openings should be checked (*a*) if a sieve becomes slack, (*b*) if a sieve becomes clogged and (*c*) when a sieve has been used 200 times or after a period of 6 months, whichever occurs first.

5.5 Sieves used for testing electrical grade MgO should be used for this purpose only.

5.6 Sieves should be kept clean by using a soft brush and when necessary, may be cleaned by using (*a*) a trichloroethylene degreaser, (*b*) ultrasonic cleaning, or (*c*) by tapping with a small rubber hammer. Wire brushes should not be used.

6. Procedure

6.1 Nest the desired sieves in order, with the coarsest being uppermost and the pan being on the bottom.

6.2 Obtain a sample between 100 and 125 g, using Test Method D 2755.

6.3 Weigh to the nearest 0.1 g and record the sample weight.

[1] This method is under the jurisdiction of ASTM Committee D-9 on Electrical and Electronic Insulating Materials and is the direct responsibility of Subcommittee D09.14 on Electric Heating Unit Insulation.

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[2] *Annual Book of ASTM Standards*, Vol 10.02.

[3] *Annual Book of ASTM Standards*, Vol 14.02.

[4] Ro-Tap Sieve Shaker, W. S. Tyler Co., has been found suitable for this purpose.

[5] National Institute of Standards and Technology (NIST) Standards 1017A, 1017B, and 1004A can be used to calibrate this set of sieves.