



Designation: D 4352 – 90 (Reapproved 1997)^{e1}

An American National Standard

Standard Test Method for Determination of Magnetic Material Impurities in Electrical Grade Magnesium Oxide¹

This standard is issued under the fixed designation D 4352; 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.

^{e1} NOTE—Keywords were added editorially in October 1997.

1. Scope

1.1 This test method covers the determination of magnetic material content of fused electrically insulating magnesium oxide powders.

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 the safety problems 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 for Sampling and Reduction to Test Weight of Electrical Grade Magnesium Oxide²

3. Summary of Test Method

3.1 A sample of electrical grade magnesium oxide is placed into the magnetic analyzer sample tube. The magnetic materials content is then read directly as percent contained.

4. Significance and Use

4.1 Free iron in magnesium oxide powder is detrimental to electrical characteristics of the powder when used as electrical insulation in heating elements.

5. Apparatus

5.1 *Magnetic Analyzer and Instrument Calibration Standards.*³

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 Model MA-1010A, obtainable from Buck and Co., Inc., 345 Grove St., P. O. Box 468, Franklin, MA 03038, or equivalent.

5.2 *Laboratory Balance*, capable of weighing 130 ± 0.1 g.

6. Calibration and Standardization

6.1 The magnetics analyzer should be calibrated according to the instrument instructions manual.

NOTE 1—This procedure may vary somewhat when using an analyzer other than the Netronics Magnetism Analyzer.

7. Procedure

7.1 Obtain a sample to be tested in accordance with Test Method D 2755.

7.2 Weigh a 130 ± 0.1 g specimen.

7.3 Set sample weight dial to 130.

7.4 Set range selector switch to 0.1.

7.5 Zero instrument with empty sample tube using the null adjustment.

7.6 Transfer test sample to sample tube.

7.7 Insert sample tube into sample compartment of the instrument and read percent magnetism content directly from display meter.

8. Report

8.1 Report the following:

8.1.1 Identification of the sample, and

8.1.2 Percentage magnetic material to nearest 0.001 %.

9. Precision and Bias

9.1 This test method is repeatable to within ± 4 % of measured value.

9.2 This test method has been found to demonstrate a bias of 81 % at 0.01 % to 95 % at 0.10 % magnetic iron relative to the true value.

10. Keywords

10.1 electrical grade; magnesium oxide; magnetic impurities



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