Designation: C 562 – 91 (Reapproved 2000)

An American National Standard

Standard Test Method for
Moisture in a Graphite Sample[1]

This standard is issued under the fixed designation C 562; 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.

This standard has been approved for use by agencies of the Department of Defense.

1. Scope

1.1 This test method provides a practical determination for the percentage of moisture in a graphite sample.

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:*
C 561 Test Method for Ash in a Graphite Sample[2]

3. Significance and Use

3.1 This test method is feasible only for the volatile moisture present on the graphite due to adsorption from the atmosphere and is not intended to give representative moisture data for graphite that has been exposed to liquid water contamination.

4. Interferences

4.1 Final weights (and therefore percent moisture values) may be influenced by the following:

4.1.1 Type and condition of desiccant.

4.1.2 Ambient relative humidity at the time of the test.

4.1.3 Timing and procedure for moving samples from desiccator to the balance.

4.1.4 Adsorptivity of the graphite sample relative to the adsorptivity of the desiccant used.

4.1.5 Residency time in the desiccator.

5. Apparatus

5.1 *Alumina Ceramic or Platinum Crucible or Dish*, suitable for holding sample (subsequently called sample holder).

5.2 *Analytical Balance*, capable of weighing to ±0.0002 g.

5.3 *Drying Oven*, air convection type, capable of being controlled to 110 ± 2°C (230± 4°F).

5.4 *Desiccator*, charged with indicating desiccant.

6. Sampling

6.1 Samples may be solid or particulate. Solid bodies may be sampled by removing one or more solid pieces from the body by, for example, sawing, turning, milling, or fracturing. Particulate samples may be generated from solid bodies by drilling, using a carbide drill to minimize contamination, or by other crushing and grinding methods.

7. Procedure

7.1 Tare a dried sample holder using an analytical balance. Weigh a 25 to 50-g sample into the tared sample holder and reweigh both. (Perform all weighings to a precision of ±0.002 g.)

7.2 Place the sample holder containing the sample in a drying oven maintained at 110 ± 2°C (230 ± 4°F) for 2 h. Remove from the oven and immediately place in the desiccator. When the sample has reached room temperature, remove from the desiccator and weigh immediately.

7.3 Repeat the procedure prescribed in 7.2 until a constant weight of ±0.002 g is achieved.

7.4 The dried sample may be reserved for ash determination. (See Test Method C 561.)

8. Calculation

8.1 Calculate the percentage of moisture as follows:

$$\text{Moisture, \%} = [(B - C)/(B - A)] \times 100$$

where:
A = weight of sample holder,
B = weight of sample holder and sample, and
C = weight of sample holder and dried sample.

9. Report

9.1 The report shall include the following information:

9.1.1 Proper identification of the sample, and

9.1.2 Results obtained from at least two moisture determinations, and their average.