



Standard Test Method for Percent Suspensibility¹

This standard is issued under the fixed designation E 1673; 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 test method is used to determine the percent suspensibility of dry pesticide formulations.

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.* For specific precautionary statements see Section 7.

2. Referenced Documents

2.1 ASTM Standards:

D 1126 Test Method for Hardness in Water²

D 1193 Specification for Reagent Water²

3. Summary of Test Method

3.1 A known quantity of dry pesticide is slurried into 50 mL of test water in a 100-mL beaker. The slurry is quantitatively transferred to a 250-mL mixing cylinder using additional test water to rinse the beaker. The 250-mL mixing cylinder is then filled to volume with test water. The mixing cylinder is stoppered and inverted 15 complete cycles. The mixing cylinder is allowed to stand for 30 min. After 30 min the top 225 mL is drawn off and the remaining suspension is dried. The residue weight will determine the percent suspensibility.

4. Significance and Use

4.1 This test method is designed specifically for dry formulations, but need not be restricted to these materials.

4.2 Either option of this test method (see Section 8) may be used to determine the percent suspensibility.

4.3 This test method may not be applicable to all dry formulations such as those containing either liquids or ingredients that rise to the top upon separation.

4.4 This test method may not be applicable to formulations containing ingredients that decompose under the test conditions.

4.5 This test method may not give reproducible results if flocculation occurs.

¹ This test method is under the jurisdiction of ASTM Committee E-35 on Pesticides and is the direct responsibility of Subcommittee E35.22 on Pesticide Formulation and Application Systems.

Current edition approved Aug. 10, 1996. Published October 1996. Originally published as E 1673 – 95. Last previous edition E 1673 – 95.

² *Annual Book of ASTM Standards*, Vol 11.01.

4.6 This test method should be run in duplicate.

4.7 Products containing water soluble or volatile components may result in errors.

5. Apparatus

5.1 *Balance*, top loading, with an accuracy of ± 0.01 g or better.

5.2 *Beaker*, 100 mL.

5.3 *Mixing Cylinder*, stoppered, 250 mL, flat bottom, KIMAX series 20039³ or equivalent.

5.4 *Timer*, adjustable, with an accuracy of \pm min.

5.5 *Magnetic Stirrer*, 120 to 1200 rpm, or equivalent.

5.6 *Stir Bar*, magnetic 1 in. in length and $\frac{3}{8}$ in. in diameter (2.5 cm \times 1 cm).

5.7 *Weighing Dish*, aluminum (57 \times 18 mm) or petri dish, or equivalent.

5.8 *Vacuum Apparatus*, see Fig. 1, equipped with a vented stopper to prevent the formation of a vacuum.

5.9 *Filtering Flask*, heavy wall, 500 mL, KIMAX Series 27060³ or equivalent.

5.10 *Gravity Oven*.

5.11 *Centrifuge*, any centrifuge capable of holding a 50 mL or larger tube and maintaining a minimum speed of 1500 rpm.

5.12 *Centrifuge Tube*, plastic or glass, 50 mL or larger.

6. Reagents (Test Water)

6.1 *Purity of Reagents*—Reagent grade chemicals shall be used in all tests. Unless otherwise indicated, it is intended that all reagents shall conform to the specifications of the Committee on Analytical Reagents of the American Chemical Society where such specifications are available.⁴

6.2 *Purity of Water*—Unless otherwise indicated, reference to water shall be understood to mean reagent water, Type IV, as defined by Specification D 1193.

NOTE 1—Type IV grade reagent water may be prepared by distillation, ion exchange, reverse osmosis, electrodialysis, or a combination thereof.

³ Available from Fisher Scientific, 711 Forbes Avenue, Pittsburgh, PA 15219. Also available from Curtin Matheson Scientific, Inc., P.O. Box 1546, Houston, TX 77251-1546.

⁴ *Reagent Chemicals, American Chemical Society Specifications*, American Chemical Society, Washington, DC. For suggestions on the testing of reagents not listed by the American Chemical Society, see *Analar Standards for Laboratory Chemicals*, BDH Ltd., Poole, Dorset, U.K., and the *United States Pharmacopoeia and National Formulary*, U.S. Pharmaceutical Convention, Inc. (USPC), Rockville, MD.