Designation: D 2358 – 89 (Reapproved 1995)ε1

Standard Test Method for Separation of Active Ingredient from Surfactant and Syndet Compositions[1]

This standard is issued under the fixed designation D 2358; 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 February 1995.

1. Scope

1.1 This test method covers the procedure for the separation and purification of active ingredient from surfactants and syndet compositions. The separated active ingredient may be used for qualitative examinations. This test method also permits the estimation of total active ingredient level present in the sample under test.

1.2 This test method yields the active ingredient together with other alcohol-soluble materials and therefore is useful only in estimating the actual active ingredient level. Correction for the amount of the most common contaminant, sodium chloride, is shown by a separate determination.

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.* Material Safety Data Sheets are available for reagents and materials. Review them for hazards prior to usage.

2. Referenced Documents

2.1 *ASTM Standards:*

D 1681 Test Method for Synthetic Anionic Active Ingredient in Detergents by Cationic Titration Procedure[2]

3. Summary of Test Method

3.1 The test method involves the extraction of the active ingredient with alcohol. Reprecipitation of the insolubles is specified to remove the last traces of active ingredient. Dilution of the alcoholic extract to a known volume and the evaporation of a suitable aliquot permits measurement of total alcohol-soluble matter. An estimation of sodium chloride content is made so that a corrected total active ingredient level may be obtained. Provision is made for purification of the active ingredients in Section 14.

4. Reagents

4.1 *Purity of Reagents*:

4.1.1 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.[3] Other grades may be used, provided it is first ascertained that the reagent is of sufficiently high purity to permit its use without lessening the accuracy of the determination.

4.2 Unless otherwise indicated, references to water shall be understood to mean distilled water or water of equal purity.

SEPARATION OF TOTAL ALCOHOL-SOLUBLE MATTER

5. Reagents

5.1 *Ethyl Alcohol* (95 percent)—Freshly boiled ethyl alcohol conforming to Formula No. 3A or No. 30 of the U. S. Bureau of Internal Revenue. The alcohol should not be neutralized. Redistilled alcohol shall be used if alkali absorption is more than 0.2 mL of 0.1 *N* NaOH solution/100 mL of alcohol.

5.2 *Ethyl Alcohol* (Absolute)—Freshly boiled 200-proof ethyl alcohol conforming to either Formulas No. 3A or No. 30 of the U. S. Bureau of Internal Revenue.

5.3 *Phenolphthalein Indicator Solution* (10 g/L)—Dissolve 1 g of phenolphthalein in 50 mL of ethyl alcohol (95 %) and then mix with 50 mL of water.

5.4 *Sulfuric Acid* (1 + 100)—Add 1 mL of concentrated sulfuric acid (H_2SO_4, sp gr 1.84) to 100 mL of water.

[1] This test method is under the jurisdiction of ASTM Committee D-12 on Soaps and Other Detergents and is the direct responsibility of Subcommittee D12.12 on Analysis of Soaps and Synthetic Detergents.

Current edition approved May. 26, 1989. Published July 1989. Originally published as D 2358 – 65 T. Last previous edition D 2358 – 82 (1987).

[2] *Annual Book of ASTM Standards*, Vol 15.04.

[3] *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 Pharmacopeia and National Formulary*, U.S. Pharmaceutical Convention, Inc. (USPC), Rockville, MD.