



Standard Test Methods for Chemical Analysis of Alpha Olefin Sulfonates¹

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1. Scope

1.1 These test methods cover the chemical analysis of alpha olefin sulfonates. The analytical procedures appear in the following order:

	Sections
Moisture by the Distillation Method	4 – 8
Sodium Sulfate	9 – 14
Neutral Oil	15 – 19
Chlorides Calculated as Sodium Chloride (NaCl)	20 – 24
Alkalinity	25 – 29
pH	30 and 31
Determination of Color	32 – 37
Determination of Active Content by Methylene Blue Titration	38 – 47

1.2 The values stated in SI units are to be regarded as standard. No other units of measurement are included in this 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.* For specific precaution statement see 36.1. Material safety data sheets are available for reagents and materials. Review them for hazards prior to usage.

2. Referenced Documents

2.1 ASTM Standards:²

D1172 Guide for pH of Aqueous Solutions of Soaps and Detergents

D1193 Specification for Reagent Water

D1209 Test Method for Color of Clear Liquids (Platinum-Cobalt Scale)

D3049 Test Method for Synthetic Anionic Ingredient by Cationic Titration

¹ These test methods are under the jurisdiction of ASTM Committee D12 on Soaps and Other Detergents and are the direct responsibility of Subcommittee D12.12 on Analysis and Specifications of Soaps, Synthetics, Detergents and their Components.

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² For referenced ASTM standards, visit the ASTM website, www.astm.org, or contact ASTM Customer Service at service@astm.org. For *Annual Book of ASTM Standards* volume information, refer to the standard's Document Summary page on the ASTM website.

3. Purity of Reagents

3.1 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.

3.2 Unless otherwise indicated, references to water shall be understood to mean Type III reagent water conforming to Specification D1193.

MOISTURE BY THE DISTILLATION METHOD

4. Apparatus

4.1 The apparatus required shall consist of a glass flask heated by suitable means and provided with a reflux condenser discharging into a trap and connected to the flask. The connections between the trap and the condenser and flask shall be interchangeable ground joints. The trap serves to collect and measure the condensed water and to return the solvent to the flask. A suitable assembly of the apparatus is illustrated in Fig. 1.

4.1.1 *Flask*, 1-L capacity, either the short-neck, round-bottom type, or the Erlenmeyer type.

4.1.2 *Heat Source*—Either an oil bath (for example, stearic acid or paraffin wax) or an electric heater provided with a sliding rheostat or other means of heat control.

4.1.3 *Condenser*—A water-cooled glass reflux condenser (Fig. 1), having a jacket approximately 15¾ in. (400 mm) in length, with an inner tube ⅜ to ½ in. (9.5 to 12.7 mm) in outside diameter, and not less than ¼ in. (6.35 mm) in inside diameter. The end of the condenser to be inserted in the trap may be ground off at an angle of 30° from the vertical axis of the condenser. When inserted into the trap, the tip of the

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. Pharmacopeial Convention, Inc. (USPC), Rockville, MD.