



Designation: D 2076 – 92 (Reapproved 1998)

Standard Test Methods for Acid Value and Amine Value of Fatty Quaternary Ammonium Chlorides¹

This standard is issued under the fixed designation D 2076; 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.

These test methods were prepared jointly by ASTM and the American Oil Chemists' Society.

1. Scope

1.1 These test methods cover the determination of acid value and amine value in fatty quaternary ammonium chlorides.

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:*

D 1193 Specification for Reagent Water²

3. Terminology

3.1 *Definitions:*

3.1.1 *acid value*—the number of milligrams of potassium hydroxide needed to neutralize 1 g of sample, and is usually due to amine hydrochloride.

3.1.2 *amine value*—the number of milligrams of potassium hydroxide equivalent to the fatty amine basicity in 1 g of sample.

4. Apparatus

4.1 *Erlenmeyer Flasks*, wide-mouth, alkali-resistant, borosilicate glass, 250-mL capacity.

4.2 *Micro Buret*, 10-mL capacity graduated to 0.02 mL.

5. Reagents

5.1 *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 Commit-

tee 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.

5.2 *Purity of Water*—Unless otherwise indicated, references to water shall be understood to mean reagent water conforming to Type II of Specification **D 1193**.

5.3 *Bromphenol Blue Indicator Solution*—Dissolve 0.2 g of bromphenol blue in 100 mL of methanol, ethanol, or isopropanol.

5.4 *Hydrochloric Acid, Standard Solution (0.1 N)*—Add 17 mL of concentrated hydrochloric acid (HCl, sp gr 1.19) to 1000 mL of isopropyl alcohol in a 2-L volumetric flask. Make up to volume after cooling to room temperature. Standardize with sodium carbonate using 0.1 % bromocresol green as the indicator.

5.5 *Hydrochloric Acid, Standard Solution (0.2 N)*—Add 34 mL of concentrated HCl (sp gr 1.19) to 1000 mL of isopropyl alcohol in a 2-L volumetric flask. Make up to volume after cooling to room temperature. Standardize with sodium carbonate using 0.1 % bromocresol green as the indicator.

5.6 *Isopropyl Alcohol (99 %)*—Neutralize to the phenolphthalein end point with 0.1 N methanolic sodium hydroxide (NaOH) just before running the acid value test.

5.7 *Phenolphthalein Indicator Solution (10 g/L)*—Dissolve 1 g of phenolphthalein in 100 mL of methanol, ethanol, or isopropanol.

5.8 *Sodium Hydroxide, Standard Solution (0.1 N)*—Dissolve 4.0 g of sodium hydroxide (NaOH) in 1000 mL of cold methyl alcohol. Allow to stand overnight in a cold room. Siphon the supernatant liquid into a clean bottle. After coming

¹ These test methods are under the jurisdiction of ASTM Committee D-1 on Paint and Related Coatings, Materials, and Applications and are the direct responsibility of Subcommittee D01.32 on Drying Oils.

Current edition approved March 15, 1992. Published May 1992. Originally published as D 2076 – 62 T. Last previous edition D 2076 – 64 (1987) ^{ϵ 1}.

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

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.