Designation: D5560 – 95 (Reapproved 2018)

Standard Test Method for Determination of Neutral Fatty Matter Contained in Fats and Oils[1]

This standard is issued under the fixed designation D5560; 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 covers all degraded glycerides, since they are neutral fats. However, this procedure does not necessarily determine all the mono and diglycerides that may be present in the sample. This is due to the water soluble characteristics of some mono and diglycerides.

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, health, and environmental practices and determine the applicability of regulatory limitations prior to use.*

1.4 *This international standard was developed in accordance with internationally recognized principles on standardization established in the Decision on Principles for the Development of International Standards, Guides and Recommendations issued by the World Trade Organization Technical Barriers to Trade (TBT) Committee.*

2. Referenced Documents

2.1 *ASTM Standards:*[2]

D5553 Test Method for Determination of the Unsaponifiable Nonvolatile Matter in Sulfated Oils

3. Significance and Use

3.1 This test method is intended for the determination of the neutral fatty matter contained in fats and oils by means of ether extraction.

4. Apparatus and Reagents

4.1 *Erlenmeyer Flask,* 125 mL.

4.2 *Separatory Funnel.*

4.3 *NaOH,* 0.5 *N.*

4.4 *Petroleum Ether.*

4.5 *Phenolphthalein Indicator.*

4.6 *Ethyl Alcohol,* denatured.

5. Procedure

5.1 Weigh 5 g of sample into a 125-mL assay flask and add 50 mL of alcohol. Warm and rotate, if necessary, to dissolve. Titrate with 0.5 *N* NaOH to end point using phenolphthalein indicator. Cool, then add 1 mL excess 0.5 *N* NaOH and rotate flask. Extract three times with 50-mL portions of petroleum ether and wash combined ether layers with water until free from alkali. Evaporate ether and dry to constant weight.

6. Calculation

6.1 Calculate the total neutral oily matter as follows:

$$\textit{total neutral oily matter} = \frac{\textit{weight of residue} \times 100}{\textit{weight of sample}} \quad (1)$$

6.2 Determine the total neutral oily matter including unsaponifiables, if any, as in Test Method D5553, and subtract to obtain neutral fatty matter.

7. Precision and Bias

7.1 This test method is adopted from the procedures of the American Leather Chemists Association where it has long been in use and where it was approved for publication before the inclusion of precision and bias statements was mandated. The original interlaboratory test data are no longer available. The user is cautioned to verify by the use of reference materials, if available, that the precision and bias (or reproducibility) of this test method is adequate for the contemplated use.

8. Keywords

8.1 fats and oils; leather; neutral fatty matter

[1] This test method is under the jurisdiction of ASTM Committee D31 on Leather and is the direct responsibility of Subcommittee D31.08 on Fats and Oils. This test method was developed in cooperation with the American Leather Chemists Assn. (Method H 53-1957).

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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.