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Standard Terminology Relating to Industrial and Specialty Chemicals¹

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1. Scope

1.1 This standard covers terminology relating to industrial and specialty chemicals. It is intended to provide an understanding of terms commonly used in test methods, practices, and specifications throughout the industry.

NOTE 1—The boldface numbers following each definition refer to E15 standards in which the definition appears. Lightface numbers refer to the E15 subcommittee having jurisdiction.

2. Referenced Documents

2.1 ASTM Standards:²

- D891 Test Methods for Specific Gravity, Apparent, of Liquid Industrial Chemicals
- E12 Terminology Relating to Density and Specific Gravity of Solids, Liquids, and Gases (Withdrawn 1996)³
- E70 Test Method for pH of Aqueous Solutions With the Glass Electrode
- E180 Practice for Determining the Precision of ASTM Methods for Analysis and Testing of Industrial and Specialty Chemicals (Withdrawn 2009)³
- E200 Practice for Preparation, Standardization, and Storage of Standard and Reagent Solutions for Chemical Analysis
- E201 Test Method for Calculation of Volume and Weight of Industrial Chemical Liquids (Withdrawn 2001)³
- E222 Test Methods for Hydroxyl Groups Using Acetic Anhydride Acetylation
- E223 Test Methods for Analysis of Sulfuric Acid
- E224 Test Methods for Analysis of Hydrochloric Acid
- E234 Test Method for Total Bromine Number of Unsaturated Aliphatic Chemicals (Withdrawn 2008)³
- E300 Practice for Sampling Industrial Chemicals
- E324 Test Method for Relative Initial and Final Melting

- Points and the Melting Range of Organic Chemicals
- E326 Test Method for Hydroxyl Groups by Phthalic Anhydride Esterification (Withdrawn 2001)³
- E335 Test Method for Hydroxyl Groups by Pyromellitic Dianhydride Esterification (Withdrawn 2002)³
- E347 Test Method for Ash in Polybasic Acids (Withdrawn 2003)³
- E410 Test Method for Moisture and Residue in Liquid Chlorine
- E1899 Test Method for Hydroxyl Groups Using Reaction with *p*-Toluenesulfonyl Isocyanate (TSI) and Potentiometric Titration with Tetrabutylammonium Hydroxide

3. Terminology

3.1 Definitions:

accuracy—the agreement between an experimentally determined value and the accepted reference value. In chemical work, this term is frequently used to express freedom from bias, but in other fields it assumes a broader meaning as a joint index of precision and bias. To avoid confusion, the term *bias* will be used in appraising of the systematic error of test methods for industrial chemicals. See also **bias**. E180, E15.04

ash—the residual inorganic matter obtained on ignition of a sample in air at a specified temperature. E347, E15.51

Baumé gravity—a unit of density based on specific gravity and defined by the following equation:

$$\text{Baumé gravity} = 145 - [145/\text{sp gr}] \text{ at } 15.5/15.5^{\circ}\text{C} (60/60^{\circ}\text{F}) \quad (1)$$

See also **density** and **specific gravity**. E223, E224, E324, E15.51

bias—a constant or systematic error as opposed to a random error. It manifests itself as a persistent positive or negative deviation of the method average from the accepted reference value. See also **accuracy**. E180, E15.04

bromine number, total—number of centigrams of bromine equivalent to the total unsaturation present in 1 g of sample. It is a measure of the total ethylenic unsaturation present in the designated aliphatic compound. E234, E15.22

coefficient of variation—a measure of relative precision calculated as the standard deviation of a series of values

¹ This terminology is under the jurisdiction of ASTM Committee D16 on Aromatic Hydrocarbons and Related Chemicals and is the direct responsibility of Subcommittee D16.15 on Industrial and Specialty General Standards.

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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 The last approved version of this historical standard is referenced on www.astm.org.