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Standard Guide for Establishing Analyst Competence to Perform a Test Method¹

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1. Scope

1.1 This guide covers general guidance on assessing the competence of an analyst to perform a specific test method for a specific product or set of products (for example, light distillates). It also provides guidance on some of the possible approaches that may be taken to perform the assessment.

1.2 This guide is intended for the establishment of competence for the entire performance of a test method (that is, sample preparation, instrument set up, preparation of standards and reagents, performance of the test method, calculations, etc.) or the establishment of competence may be limited to a specific aspect in the performance of a test method (for example, sample preparation).

1.3 The establishment of analyst competence should only be performed if the laboratory itself is capable of performing the test in strict conformance with the test method (that is, has the equipment, standards and reagents, materials, etc. which meet test method requirements).

1.4 This guide does not cover training of an analyst, other than a review of training records to indicate the analyst has been trained.

1.5 This guide does not cover the establishment of general technical competence of an analyst.

1.6 *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.*

1.7 *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.*

¹ This guide is under the jurisdiction of ASTM Committee D02 on Petroleum Products, Liquid Fuels, and Lubricants and is the direct responsibility of Subcommittee D02.94.01 on Task Group A: Quality Assurance and Quality Control.

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2. Referenced Documents

2.1 ASTM Standards:²

D6299 Practice for Applying Statistical Quality Assurance and Control Charting Techniques to Evaluate Analytical Measurement System Performance

D6792 Practice for Quality Management Systems in Petroleum Products, Liquid Fuels, and Lubricants Testing Laboratories

D7372 Guide for Analysis and Interpretation of Proficiency Test Program Results

E456 Terminology Relating to Quality and Statistics

2.2 ISO Standards:³

ISO Guide 30 Reference materials - Selected terms and definitions

ISO/IEC 17025 General Requirements for the Competence of Testing and Calibration Laboratories

ISO 17034 General Requirements for the Competence of Reference Material Producers

ANSI/ISO/ASQ Q9000 Quality Management System Standards

2.3 Other Standards:

AASHTO R-18 Standard Recommended Practice for Establishing and Implementing a Quality Management System for Construction Materials Testing Laboratories⁴

3. Terminology

3.1 Definitions:

3.1.1 *accepted reference value, ARV, n*—a value that serves as an agreed upon reference for comparison, and which is derived as: (1) a theoretical or established value, based on scientific principles, (2) an assigned value, based on experimental work of some national or international organization such as the U.S. National Institute of Standards and Technology (NIST), or (3) a consensus value, based on collaborative

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 Available from International Organization for Standardization (ISO), ISO Central Secretariat, Chemin de Blandonnet 8, CP 401, 1214 Vernier, Geneva, Switzerland, <https://www.iso.org>.

⁴ Available from American Association of State Highway and Transportation Officials (AASHTO), 444 N. Capitol St., NW, Suite 249, Washington, DC 20001, <http://www.transportation.org>.