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.

Designation: D3244 – 20

An American National Standard

Standard Practice for Utilization of Test Data to Determine Conformance with Specifications[1]

This standard is issued under the fixed designation D3244; 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.

INTRODUCTION

The properties of commercial petroleum products are measured by standardized laboratory test methods to assess their conformance to specifications. Two or more measurement results obtained by performing the same test method for the same property of a specific sample usually will not be numerically identical. Therefore, the test methods generally include a paragraph on the precision of results. This precision (or, a more appropriate term is imprecision) is an expression of the degree of agreement that can be expected between the aforementioned measurements.

Many difficulties that arise in assessing conformance to specifications are due to test imprecision. Because of this, a true value of a property can never be determined exactly; and it is necessary to infer from measured values the range within which the "true value" is likely to lie. The main purpose of this practice is to indicate how test imprecision should be interpreted relative to specification limit values.

1. Scope*

1.1 This practice covers guidelines and statistical methodologies with which two parties, usually a supplier and a receiver, can compare and combine independently obtained test results to obtain an Assigned Test Value (*ATV*) for the purpose of resolving a product quality dispute.

1.2 This practice defines a technique for establishing an Acceptance Limit (*AL*) to determine acceptance or rejection of the product in dispute by comparing an *ATV* to the *AL*.

1.3 This practice applies only to those test methods which specifically state that the repeatability and reproducibility values conform to the definitions herein.

1.4 The statistical principles and methodology outlined in this practice can also be used to obtain an *ATV* for specification conformance decision when multiple results are obtained for the same batch of product within a single laboratory. For this application, site precision (R') as defined in Practice D6299 shall be used in lieu of test method published reproducibility (R).

1.5 *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]

D1319 Test Method for Hydrocarbon Types in Liquid Petroleum Products by Fluorescent Indicator Adsorption

D4057 Practice for Manual Sampling of Petroleum and Petroleum Products

D4177 Practice for Automatic Sampling of Petroleum and Petroleum Products

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

D6300 Practice for Determination of Precision and Bias Data for Use in Test Methods for Petroleum Products, Liquid Fuels, and Lubricants

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

[1] This practice is under the jurisdiction of ASTM Committee D02 on Petroleum Products, Liquid Fuels, and Lubricants and is the direct responsibility of D02.94 on Coordinating Subcommittee on Quality Assurance and Statistics.

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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.

*A Summary of Changes section appears at the end of this standard

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