Designation: D 3244 – 97 (Reapproved 2002)

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 D 3244; 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 check their conformance to specifications. Two or more measurements of the same property of a specific sample by any given test method usually will not give precisely the same answer. Therefore, the test methods generally include a paragraph on the precision of results. This precision is an expression of the reliability of the value of the measured property.

Many difficulties that arise in interpreting 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 values.

1. Scope

1.1 This practice covers guidelines with which two parties, usually a supplier and a receiver, can compare and combine independently obtained test results whenever there is a product quality dispute.

1.2 This practice defines a technique for comparing an assigned test value with a specification limit.

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

2. Referenced Documents

2.1 *ASTM Standards:*

D 1319 Test Method for Hydrocarbon Types in Liquid Petroleum Products by Fluorescent Indicator Adsorption[2]

D 4057 Practice for Manual Sampling of Petroleum and Petroleum Products[3]

D 4177 Practice for Automatic Sampling of Petroleum and Petroleum Products[3]

E 29 Practice for Using Significant Digits in Test Data to Determine Conformance with Specifications[4]

2.2 *ISO Standard:*[5]

ISO 4259 Determination and Application of Precision Data in Relation to Methods of Test

3. Terminology

3.1 *Definitions:*

3.1.1 *acceptance limit (AL)*, *n*—a numerical value that defines the point between acceptable and unacceptable quality.

3.1.1.1 *Discussion*—The AL is not necessarily the specification limit. It is a value that takes into account the specification value, the test method precision, and the confidence level desired for defining minimum acceptable quality relative to the specification value.

3.1.2 *assigned test value (ATV)*, *n*—the average of all results obtained in the several laboratories which are considered acceptable based on the reproducibility of the test method.

3.1.3 *determination*, *n*—the process of carrying out the series of operations specified in the test method whereby a single value is obtained.

3.1.4 *dispute*, *n*—when there is a question as to product quality because a test value obtained falls outside the acceptance limit.

3.1.5 *operator*, *n*—a person who normally and regularly carries out a particular test.

3.1.6 *precision*, *n*—the degree of agreement between two or more results on the same property of identical test material. In

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

Current edition approved Dec. 10, 2002. Published March 2003. Originally published as an appendix to the *1968 Annual Book of ASTM Standards*, Part 18. Last previous edition approved in 1997 as D 3244 – 97.

[2] *Annual Book of ASTM Standards*, Vol 05.01.

[3] *Annual Book of ASTM Standards*, Vol 05.02.

[4] *Annual Book of ASTM Standards*, Vol 14.02.

[5] Available from American National Standards Institute, 25 W. 43nd St., 4th floor, New York, NY 10036.

This document is now PUBLIC

Copyright © ASTM International, 100 Barr Harbor Drive, PO Box C700, West Conshohocken, PA 19428-2959, United States.