



Designation: D 6299 – 00a2

An American National Standard

Standard Practice for Applying Statistical Quality Assurance Techniques to Evaluate Analytical Measurement System Performance¹

This standard is issued under the fixed designation D 6299; 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 practice provides information for the design and operation of a program to monitor and control on-going stability and precision and bias performance of selected analytical measurement systems using a collection of generally accepted statistical quality control (SQC) procedures and tools.

NOTE 1—A complete list of criteria for selecting measurement systems to which this practice should be applied and for determining the frequency at which it should be applied is beyond the scope of this practice. However, some factors to be considered include (1) frequency of use of the analytical measurement system, (2) criticality of the parameter being measured, (3) system stability and precision performance based on historical data, (4) business economics, and (5) regulatory, contractual, or test method requirements.

1.2 This practice is applicable to stable analytical measurement systems that produce results on a continuous numerical scale.

1.3 This practice is applicable to laboratory test methods.

1.4 This practice is applicable to validated process stream analyzers.

NOTE 2—For validation of univariate process stream analyzers, see also Practice D 3764.

1.5 This practice assumes that the normal (Gaussian) model is adequate for the description and prediction of measurement system behavior when it is in a state of statistical control.

NOTE 3—For non-Gaussian processes, transformations of test results may permit proper application of these tools. Consult a statistician for further guidance and information.

1.6 This practice does not address statistical techniques for comparing two or more analytical measurement systems applying different analytical techniques or equipment components that purport to measure the same property(s).

2. Referenced Documents

2.1 *ASTM Standards:*

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, 2000. Published January 2001. Originally published as D 6299–98. Last previous edition D 6299–00.