

Accuracy Encyclopedia Article

Accuracy

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Accuracy

Accuracy is the closeness of an experimental measurement to the "true value" (i.e., actual or specified) of a measured quantity. A "true value" can be determined by an experienced analytical scientist who performs repeated analyses of a sample of known purity and/or concentration using reliable, well-tested methods.

Measurement is inexact, and the magnitude of that inexactness is referred to as the error. Error is inherent in measurement and is a result of such factors as the **precision** of the measuring tools, their proper adjustment, the method, and competency of the analytical scientist.

Statistical methods are used to evaluate accuracy by predicting the likelihood that a result varies from the "true value." The analysis of probable error is also used to examine the suitability of methods or equipment used to obtain, portray, and utilize an acceptable result. Highly accurate data can be difficult to obtain and costly to produce. However, different applications can require lower levels of accuracy that are adequate for a particular study.

Resources

Books

Jaisingh, Lloyd R. *Statistics for the Utterly Confused*. New York, NY: McGraw-Hill Professional, 2000.

Salkind, Neil J. *Statistics for People Who (Think They) Hate Statistics*. Thousand Oaks, CA: Sage Publications, Inc., 2000.