**Designation:** ~~E1732 – 18~~ E1732 – 18a

## Standard Terminology
## Relating to Forensic Science[1]

This standard is issued under the fixed designation E1732; 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 is a compilation of terms and corresponding definitions used in the forensic sciences. Legal or scientific terms that are generally understood or defined adequately in other readily available sources may not be included.

1.2 A definition is a single sentence with additional information included in a *Discussion*. It is reviewed every five years, and the year of last review or revision is appended.

1.3 Definitions identical to those published by another standards organization or ASTM committee are identified with the abbreviation of the name of the organization or the identifying document and ASTM committee; for example, ASME is the American Society of Mechanical Engineering.[2]

1.4 Definitions of terms specific to a particular field are identified with an abbreviation.[3]

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:*[4]

E177 Practice for Use of the Terms Precision and Bias in ASTM Test Methods
E456 Terminology Relating to Quality and Statistics
E1187 Terminology Relating to Conformity Assessment (Withdrawn 2006)[5]
E1301 Guide for Proficiency Testing by Interlaboratory Comparisons (Withdrawn 2012)[5]
E1402 Guide for Sampling Design
E2161 Terminology Relating to Performance Validation in Thermal Analysis and Rheology

2.2 *ISO Standards:*[6]

ISO 3534:1993 (E/F) Statistics—Vocabulary and Symbols
   Part 1: Probability and General Statistical Terms
   Part 2: Statistical Quality Control
ISO 3534–1:2006 Statistics—Vocabulary and Symbols—Part 1: General Statistical Terms and Terms Used in Probability
ISO 9000:2005 (E) Standard Quality Management Systems—Fundamentals and Vocabulary
ISO Guide 2 General Terms and Their Definitions Relating to Standardizing Activities
ISO Guide 30 Terms and Definitions Used in Connection with Reference Materials
ISO Guide 35 Reference Materials—General and Statistical Principles for Certification
ISO GUM Guide to the Expression of Uncertainty in Measurement (GUM)

2.3 *Other Sources:*

EURACHEM *The Fitness for Purpose of Analytical Methods*, EURACHEM Working Group, English Edition

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[1] This terminology is under the jurisdiction of ASTM Committee E30 on Forensic Sciences and is the direct responsibility of Subcommittee E30.92 on Terminology.
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[2] Any definition that is unsourced has been developed by ASTM Subcommittee E30.92.

[3] Abbreviations are as follows: CRIM = criminalistics, QD = questioned documents, ENGR = engineering, TOX = toxicology, PB = pathology ∕biology, ANTH = anthropology, and ODEN = odentology.

[4] 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.

[5] The last approved version of this historical standard is referenced on www.astm.org.

[6] Available from International Organization for Standardization (ISO), ISO Central Secretariat, BIBC II, Chemin de Blandonnet 8, CP 401, 1214 Vernier, Geneva, Switzerland, http://www.iso.org.

IAAI Glossary *Glossary of Terms Related to Chemical and Instrumental Analysis of Fire Debris*, IAAI Forensic Science Committee[7]

IUPAC Terminology *IUPAC Compendium of Chemical Terminology*, Second Edition, 1997

## 3. Significance and Use

3.1 These terms have particular application to the forensic sciences. In addition, a hierarchy of sources of definitions were used in the development of this terminology. The hierarchy is as follows: *Websters New Collegiate 7th Dictionary*; technical dictionaries; and the *Compilation of ASTM Standard Definitions*.[8] The subcommittee developed a suitable definition after all of the sources in the hierarchy were found wanting.

## 4. Terminology

4.1 *Definitions:*

**accelerant,** *n*—any material used to initiate or promote the spread of a fire. The most common accelerants are flammable or combustible liquids. Whether a substance is an accelerant depends not on its chemical structure but on its use. **IAAI Glossary**

**accuracy,** *n*—the closeness of agreement between a test result and the accepted reference value. **E177**

DISCUSSION—

(*1*) In practice, the accepted reference value is substituted for the true value.

(*2*) The term "accuracy," when applied to a set of test or measurement results, involves a combination of random components and a common systematic error or bias component.

(*3*) Accuracy refers to a combination of trueness and precision. **ISO 3534:1993(E/F)**

**associative evidence,** *n*—that evidence which tends to link a person, place, or thing with another person, place, or thing.

**calibration,** *n*—the set of operations that establishes, under specified conditions, the relationship between values indicated by a measuring instrument or measuring system or values represented by a material, and the corresponding known values of measurement.

DISCUSSION—

This definition was originally defined in Terminology E1187, a standard discontinued by ASTM.

**chain of custody,** *n*—procedures and documents that account for the possession of a sample by tracking its handling and storage from its point of collection to its final disposition.

**class,** *n*—a group, set or kind marked by common attributes or a common attribute. **Webster's Unabridged Dictionary**[9]

**class characteristic(s),** *n*—the attribute(s) that establish membership in a class.

**classification,** *n*—the systematic arrangement of persons or objects into categories (groups or classes) based on shared traits or characteristics. **Osterburg and Ward,**[10] **p. 835**

**comparison sample,** *n*—*fire debris*, (*1*) a sample of material collected from a fire scene which is, to the best of the ~~investigator's knowledge, identical in every respect to~~ collector's knowledge, similar with respect to relevant characteristics to a sample suspected of containing ignitable substance, but which ~~does~~is not expected to contain an ignitable substance; (*2*) a sample of suspected ignitable substance submitted for the purpose of comparing with any ignitable substance separated from a debris sample.

DISCUSSION—

A comparison sample should not be confused with a control sample. For example, a comparison sample might include unburned carpet or flooring that meets the requirements in (*1*).

**control sample,** *n*—material of established origin that is used to evaluate the performance of a test or comparison.

DISCUSSION—

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[7] Available from the International Association of Arson Investigators, Inc. (IAAI), 2111 Baldwin Avenue, Suite 203, Crofton, MD 21114, https://www.firearson.com.

[8] ASTM Committee on Terminology, *Compilation of ASTM Standard Definitions*, 7th ed., Philadelphia, PA: ASTM, 1990.

[9] *Webster's Unabridged Dictionary*, 1967, s.v. "class."

[10] Osterburg J.W., and Ward, R.H., *Criminal Investigation: A Method for Reconstructing the Past*, Anderson Pub. Co.: Cincinnati, OH: 1992.