Designation: E1388 – 24

An American National Standard

Standard Practice for Static Headspace Sampling of Vapors from Fire Debris Samples[1]

This standard is issued under the fixed designation E1388; 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 describes the procedure for removing a vapor sample from the headspace of a fire debris container for the purpose of detecting or identifying ignitable liquid residues.

1.2 Separation and concentration procedures are listed in the referenced documents. (See Practices E1386, E1412, E1413, E2154, and E3189.)

1.3 This practice is intended for use by competent forensic science practitioners with the requisite formal education, discipline-specific training (see Practice E2917), and demonstrated proficiency to perform forensic casework.

1.4 The values stated in SI units are to be regarded as standard. No other units of measurement are included in this standard.

1.5 *This standard does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user of this standard to establish appropriate safety, health, and environmental practices and determine the applicability of regulatory limitations prior to use.*

1.6 *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]

E1386 Practice for Separation of Ignitable Liquid Residues from Fire Debris Samples by Solvent Extraction

E1412 Practice for Separation of Ignitable Liquid Residues from Fire Debris Samples by Passive Headspace Concentration with Activated Charcoal

E1413 Practice for Separation of Ignitable Liquid Residues from Fire Debris Samples by Dynamic Headspace Concentration onto an Adsorbent Tube

E1459 Guide for Physical Evidence Labeling and Related Documentation

E1492 Practice for Receiving, Documenting, Storing, and Retrieving Evidence in a Forensic Science Laboratory

E1618 Test Method for Ignitable Liquid Residues in Extracts from Fire Debris Samples by Gas Chromatography-Mass Spectrometry

E1732 Terminology Relating to Forensic Science

E2154 Practice for Separation and Concentration of Ignitable Liquid Residues from Fire Debris Samples by Passive Headspace Concentration with Solid Phase Microextraction (SPME)

E2917 Practice for Forensic Science Practitioner Training, Continuing Education, and Professional Development Programs

E3189 Practice for Separation of Ignitable Liquid Residues from Fire Debris Samples by Static Headspace Concentration onto an Adsorbent Tube

E3197 Terminology Relating to Examination of Fire Debris

E3245 Guide for Systematic Approach to the Extraction, Analysis, and Classification of Ignitable Liquids and Ignitable Liquid Residues in Fire Debris Samples

E3255 Practice for Quality Assurance of Forensic Science Service Providers Performing Forensic Chemical Analysis

3. Terminology

3.1 *Definitions*—For definitions of terms used in this practice, refer to Terminology E1732 and Terminology E3197.

4. Significance and Use

4.1 This practice is intended for use as a sampling technique within a general scheme for the analysis of ignitable liquids and ignitable liquid residues from fire debris samples in accordance with Guide E3245.

4.2 Headspace samples obtained using this practice are screened using a gas chromatograph with a flame ionization detector (GC-FID) or analyzed using a gas chromatograph with a mass spectrometer (GC-MS, refer to Test Method E1618).

[1] This practice in under the jurisdiction of ASTM Committee E30 on Forensic Sciences and is the direct responsibility of Subcommittee E30.01 on Criminalistics.

Current edition approved March 1, 2024. Published March 2024. Originally approved in 1990. Last previous edition approved in 2017 as E1388 – 17. DOI: 10.1520/E1388-24.

[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.