

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



WHAT IS AN AAFS STANDARD FACTSHEET?

The AAFS produces clear, concise, and easy to understand factsheets to summarize the contents of technical and professional forensic science standards on the OSAC Registry. They are not intended to provide an interpretation for any portion of a published standard.

WHAT IS THE PURPOSE OF THIS STANDARD?

This guide describes a systematic approach to the extraction, analysis, and classification of ignitable liquids and their residues in solid samples (e.g., fire debris) and liquid samples.

This guide addresses evidence handling, extraction methodologies, instrumental analysis techniques, and analytical data interpretation.

This standard provides the roadmap flowchart to the general analytical approach for the analysis of ignitable liquids.

WHY IS THIS STANDARD IMPORTANT? WHAT ARE ITS BENEFITS?

Adherence to the standard ensures that the ignitable liquid evidence evaluation, screening, and sample preparation for analytical testing are fit-for-purpose.

The standard provides direction related to the specific instrumental techniques, interpretation, and reporting of results. It informs forensic science service providers (FSSPs) of the testing scheme available to them.

FSSPs that test ignitable liquids and residues are encouraged to meet this standard.



HOW IS THIS STANDARD USED AND WHAT ARE THE KEY ELEMENTS?

The scope of the standard is to provide a systemic approach for each of the steps involved when testing for ignitable liquids and their residues in fire debris or other samples.

Requirements for analytical testing of ignitable liquids and residues where there is a suspected intentionally set fire are described in this standard. This includes considerations associated with each step in the process: evidence assessment, preliminary screening, sample preparation, instrumental analysis techniques, data analysis and interpretation, reporting, and preservation of evidence.

Requirements for each approach and their related ASTM standards are offered. These standards provide further guides, practices, or test methods, as well as an extensive list of references to support forensic science service providers that incorporate the standards into the quality system program for their scope of testing in fire debris.

This is a standard guide. Additional tests beyond those required in the standard may be necessary.

