

Australian Standard[®]

**Examination of ignitable liquids in fire
debris**



This Australian Standard® was prepared by Committee CH-041, Forensic Analysis. It was approved on behalf of the Council of Standards Australia on 23 November 2011. This Standard was published on 5 December 2011.

The following are represented on Committee CH-041:

- Australia New Zealand Policing Advisory Agency
 - Australian and New Zealand Forensic Science Society
 - Australian Federal Police
 - Consumer Action
 - Expertise, Evidence & Law Program, School of Law, University of New South Wales
 - National Association of Testing Authorities
 - National Institute of Forensic Science
 - New South Wales Police Force
 - Queensland Police Service
 - University of Canberra
 - Victoria Police Forensic Services Department
 - Victorian Institute Forensic Medicine
 - Western Australia Chemistry Centre
 - Western Australia Police
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Standards Australia wishes to acknowledge the participation of the expert individuals that contributed to the development of this Standard through their representation on the Committee and through the public comment period.

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Examination of ignitable liquids in fire debris

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PREFACE

This Standard was prepared by the Australian members of joint Standards Australia/Standards New Zealand Committee CH-041, Forensic Analysis.

The objective of this Standard is to outline procedures that are designed to maximize the recovery and evidential value of ignitable liquid residues (ILR) that may be present in fire debris samples submitted for analysis.

This Standard provides requirements and information on methods for the determination of the presence of ILR in fire debris for forensic purposes and covers the following processes:

- (a) Packaging and storage of fire debris samples.
- (b) Extract of sample.
 - (i) Solvent extraction.
 - (ii) Steam distillation.
 - (iii) Headspace sampling.
 - (iv) Passive headspace sampling.
 - (v) Dynamic headspace sampling.
 - (vi) Passive headspace sampling with SPME.
- (c) Analysis of extract.
 - (i) Gas chromatography (GC).
 - (ii) Gas chromatography/mass spectrometry (GC/MS).
- (d) Interpretation of results.
- (e) Classification scheme for ignitable liquids.
- (f) Reporting of results.

Reference was made to the following ASTM Standards in the preparation of this Standard:

ASTM

E1385	Standard Test Method for Ignitable Liquid Residues in Extracts from Fire Debris Samples by Steam Distillation (historical standard)
E1386	Standard Practice for Separation of Ignitable Liquid Residues from Fire Debris Samples by Solvent Extraction
E1388	Standard Practice for Sampling of Headspace Vapors from Fire Debris Samples
E1412	Standard Practice for Separation of Ignitable Liquid Residues from Fire Debris Samples by Passive Headspace Concentration with Activated Charcoal
E1618	Standard Test Method for Ignitable Liquid Residues in Extracts from Fire Debris Samples by Gas Chromatography—Mass Spectrometry
E2154	Standard Practice for Separation and Concentration of Ignitable Liquid Residues from Fire Debris Samples by Passive Headspace Concentration with Solid Phase Microextraction (SPME)

The terms ‘normative’ and ‘informative’ have been used in this Standard to define the application of the appendix to which they apply. A ‘normative’ appendix is an integral part of a Standard, whereas an ‘informative’ appendix is only for information and guidance.

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