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SKIM AKREDITASI MAKMAL MALAYSIA (SAMM)
LABORATORY ACCREDITATION SCHEME OF MALAYSIA

STR 1.8 - SPECIFIC TECHNICAL REQUIREMENTS FOR ACCREDITATION OF ANALYSIS OF ACCELERANTS IN FIRE DEBRIS FOR FORENSIC SCIENCE TESTING LABORATORIES

Issue 1, 19 December 2006
(Supplementary to MS ISO/IEC 17025)

MS ISO/IEC 17025

JABATAN STANDARD MALAYSIA
Department of Standards Malaysia

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1.0 Introduction and scope

The purpose of this document is to specify Specific Technical Requirements for Accreditation of Analysis of Accelerants in Fire Debris for Forensic Science Testing Laboratories.

2.0 Normative references

i) MS ISO/IEC 17025:2005 – General Requirements for the Competence of Testing and Calibration Laboratories
ii) SC 1.1 – Specific Criteria for Accreditation of Forensic Science Testing

3.0 Definition

Accelerant means any material, solid, liquid or gas used to initiate or promote the spread of fire.

4.0 Management Requirements

As in the MS ISO/IEC 17025.

5.0 Technical Requirements

5.1 General

In addition to the general requirements and specific criteria described in MS ISO/IEC 17025 and SC 1.1, the laboratory needs to comply with the following specific technical requirements.

5.2 Personnel

5.2.1 The testing laboratories shall have sufficient personnel having the necessary training, technical knowledge and experience for the assigned functions.

The signatory shall possess a bachelor degree in Science, Forensic Science or higher qualification in Chemistry or relevant discipline with at least one year working experience in the related field of chemical testing.

Laboratory technicians and assistants shall have a minimum qualification of *Sijil Pelajaran Malaysia* or equivalent with relevant practical training and shall be competent before being assigned to the job.

5.3 Accommodation and environmental conditions

The laboratory shall have all the necessary safety procedures in place.

5.4 Test and calibration methods and method validation

5.4.1 General

Accelerants shall be isolated from the burnt or partially burnt fire debris using appropriate sample preparation technique which shall be validated and verified before being adopted for use by the laboratory.

5.4.2 Selection of methods

When multiple techniques are used, nondestructive techniques shall be performed first.

For liquid accelerants, American Society for Testing Materials (ASTM) designation E 1387 or other appropriate method shall be used.

5.4.3 Laboratory-developed methods

Any laboratory-developed method shall be appropriately validated before being adopted for use.

5.4.4 Non-standard methods

Before any non-standard method is being used, appropriate validation shall be carried out.

5.4.5 Validation of methods

Any standard or published method shall be verified before being adopted for use by the laboratory.

Records of method validation and verification shall be documented by the laboratory.

5.5 Equipment

5.5.1 The laboratory shall have a program and documented records of regular calibration and maintenance of all test equipment.

5.5.2 Each time before use, any instrument to be used for testing accelerants from a burnt or partially burnt fire debris sample shall be subjected to checks using blank and appropriate standards.

In addition, prior to case work analysis, instrument performance check for gas chromatograph using appropriate mixed hydrocarbon standards shall be carried out by the laboratory.

5.6 Measurement traceability

5.6.1 General

Any measurement equipment used in the test shall be calibrated and traceable to the International System of Units (SI) or National Metrology Laboratory (NML).

5.6.2 Specific requirements

Any equipment used in the laboratory shall be calibrated by SAMM accredited laboratory.

5.6.3 Reference standards and reference materials

Each hydrocarbon reference material shall be appropriately identified (e.g. name of material, batch number, date manufactured, expiry date, etc).

When not in use, reference materials shall be stored in tightly-closed container away from sparks, heat source and flame.

Any other reference material to be used in the laboratory shall be verified against authentic hydrocarbon before use.

5.7 Sampling

Where the sampling is carried out by the laboratory, proper documented procedures shall be followed.

5.8 Handling of test and reference items

5.8.1 Samples shall be collected and kept in nylon or polypropylene or polyvinylidene chloride bags or in clean, airtight containers. If not analyzed immediately, these samples shall be kept in a refrigerator.

5.8.2 All samples submitted shall be accompanied by a formal request form or letter from the customer and upon registration at the counter, an official receipt shall be issued by the laboratory.

5.9 Assuring the quality of test and calibration results

5.9.1 Where appropriate, the absorbent materials used for trapping the accelerants must be analyzed and verified free of any substance that can be used as accelerant before use.

5.9.2 A random sample from each batch of the above bags or containers used for collecting fire debris evidence shall be analyzed for any incidental contamination prior to use.

Each laboratory shall participate in at least one external proficiency test in accelerant analysis annually.

5.10 Reporting the results

5.10.1 General

Results shall be reported accurately and unambiguously in accordance with any specific instructions in the test methods and requests from the customers.

5.10.2 Test reports

Liquid accelerant from fire debris shall be reported specifically, or as in the ASTM Ignitable Liquid Classification Scheme (Designation: E 1387).

All casework shall be subjected to technical and administrative review.

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