ISO 17034 Training Course: Competence of Reference Material Producers

21 – 25 June 2027
London - Central London four-star

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Ref: 2186_31155 **Date:** 21 – 25 June 2027 **Location:** London - Central London four-star **Fees:** 23000 SAR

Introduction:

ISO 17034 training course on the competence of reference material producers is a 1-week course for production, technical, quality and metrology staff, ending with a Reference Material Production and Certification File for one candidate material. Many producers release materials whose homogeneity and stability studies cannot support the stated values, whose uncertainty budgets omit key contributions and whose certificates leave users unsure of intended use. Nominees already plan production, run characterisation measurements or approve certificates, and teaching is by case study on production plans, study data and certificates. CoreConcept Training Center delivers this ISO 17034 training course.

Course Objectives:

- Interpret the general, structural, resource, technical and management system requirements of ISO 17034 for reference materials and certified reference materials
- Plan the production of a reference material from material selection and processing to packaging and release
- Design and evaluate homogeneity and stability studies using the approaches in ISO 33405
- Assign property values with metrological traceability and an uncertainty budget that combines characterisation, homogeneity and stability contributions
- Prepare certificates, labels and accompanying documentation that meet ISO 33401 and support intended use
- Produce a Reference Material Production and Certification File for technical approval and accreditation preparation

Target Audience:

- Production staff responsible for planning, processing and packaging reference material batches
- Technical staff responsible for homogeneity, stability and characterisation studies
- Metrology staff responsible for traceability statements and measurement uncertainty budgets
- Quality staff responsible for the producer's management system, complaints and nonconforming material
- Laboratory staff responsible for producing in-house reference or quality control materials

Course Outline:

Day 1: Reference Materials and the Producer's Role

- ISO 17034 Scope, Structure and ISO/IEC 17000 Series Position
- Reference Material Versus Certified Reference Material Requirements
- ISO 33403 Intended Use and User Expectations
- ISO 17034 Revision Draft Status and Change Watch
- Current-State Mapping of the Producer Against ISO 17034

Day 2: General, Structural and Resource Requirements

- Impartiality, Confidentiality and Producer Legal Responsibility
- Personnel Competence, Authorisation and Production Team Roles
- Subcontractors and Collaborators for Processing and Measurement
- Facilities, Equipment and Environmental Conditions Control
- Management System Requirements and Risk Assessment Records

Day 3: Production Planning and Technical Studies

- Production Planning From Material Selection to Packaging
- Material Processing, Batch Definition and Sample Handling
- ISO 33405 Homogeneity Study Design and Between-Unit Evaluation
- ISO 33405 Short-Term and Long-Term Stability Studies
- Characterisation Approaches Using Single or Multiple Laboratories

Day 4: Values, Uncertainty, Certificates and Distribution

- Property Value Assignment and Metrological Traceability Statements
- Certified Value Uncertainty Budget Combining Characterisation, Homogeneity and Stability
- ISO 33401 Certificate, Label and Accompanying Documentation Content
- Storage, Transport and Distribution Controls With Post-Release Monitoring
- Complaints, Nonconforming Material and Recall Decisions

Day 5: Case Study Work and the Production File

- Case Candidate Material Production Plan Review
- Case Homogeneity and Stability Data Evaluation
- Case Uncertainty Budget and Certified Value Defence
- Case Certificate Draft Check Against ISO 33401
- Reference Material Production and Certification File Completion

Skills You Will Gain:

- Reference Material Production Planning
- Homogeneity Study Design
- Stability Monitoring
- Characterisation Planning
- Uncertainty Budgeting
- Traceability Statement Writing
- Certificate Preparation
- Post-Release Material Control

Why Attend This Course:

- Deliver a Reference Material Production and Certification File to the technical manager and top management before the candidate material is released
- Decide whether study data are strong enough to release a material as a certified reference material or only as a reference material
- Avoid recalls and assessment findings caused by unsupported stability claims, incomplete uncertainty budgets and unclear certificates
- Brief production, laboratory and quality colleagues on study designs, uncertainty contributions and certificate content agreed in the course

Conclusion:

Back at work, the participant presents the Reference Material Production and Certification File to the technical manager and top management. The producer uses it to approve the production plan, homogeneity and stability study designs, characterisation route and certificate content for the candidate material, and to decide whether it can be released as a certified reference material. After the first batch is released, the producer should review stability monitoring results, user complaints and uncertainty contributions, and track the revision of ISO 17034 for changes to its procedures.

Frequently Asked Questions FAQ:

What should participants know before an ISO 17034 training course for reference material producers?

Participants should already plan production, run measurements or approve certificates for reference or quality control materials and know basic measurement uncertainty. No accreditation experience is required. Bringing anonymised study data or a certificate draft helps apply the case studies to their own materials.

How does an ISO 17034 training course differ from a proficiency testing provider course?

Proficiency testing courses cover designing rounds and scoring participant laboratories. This course concentrates on producing reference materials: production planning, homogeneity and stability studies, characterisation, value assignment, uncertainty budgets, certificates and distribution.

Why do ISO 17034 reference material producers need both homogeneity and stability studies?

A certified value applies to every unit for its whole shelf life. Homogeneity studies show units agree with each other, and stability studies show values hold during transport and storage; both feed the uncertainty stated on the certificate.

What do participants take back from the ISO 17034 training course?

Participants take back a Reference Material Production and Certification File, with a production plan, homogeneity and stability study designs, a characterisation route, an uncertainty budget, a traceability statement and a checked certificate draft for one candidate material.