



ISO/IEC 17025

ISO/IEC 17025 specifies the general requirements for the competence to carry out tests and/or calibrations, including sampling. It is applicable to all organizations where testing and/or calibration forms part of inspection and product certification. ISO/IEC 17025 Accreditation is defined as a procedure by which an authoritative body gives formal recognition that a laboratory is competent to perform its work correctly and according to appropriate standards.

Important facts that affect you

- ISO 17025 is the single most important metrology standard for test and measurement products.
- It is the global standard for the technical competence of calibration and test laboratories.
- It will help to give you confidence in the calibration decisions you make.

Key Advantages

The standard enables key advantages to users of Scott calibration mixtures. You can now determine the relative quality and capability of different calibration laboratories. With ISO 17025 it is easier to compare the measurement expertise from different calibration mixture suppliers, and for multinational companies to compare suppliers in different countries. As a result, companies gain a higher confidence level in the calibrations they purchase, which in turn gives them higher confidence in their finished product quality. The quality and competence of the calibration mixtures sold by Scott is now independently verified through the accreditation process. This can eliminate the need for supplier auditing and provides you with greater confidence in your supplier decisions.

What is it and Why is it Important?

It is a global standard for the technical competence of calibration and testing laboratories. In addition to establishing quality system, documentation and personnel requirements, it directs calibration laboratories to analyze the uncertainty of each measurement, incorporate the uncertainty into the test procedure and/or test limits and provide the uncertainties with the calibration certificate and results.

Reporting the uncertainty qualifies the accuracy of the measurement and aids understanding when results from different labs are compared. The ratio of specification-to-calibration uncertainty is one way that equipment users gauge their confidence in a product's performance.

ISO17025 is the single most important metrology standard for test and measurement products. Nearly all national standards bodies and accreditation agencies around the world have adopted it. A growing number of companies require it and some industries have even incorporated it into sector-specific standards.

Air Liquide is committed to meet this international standard and is currently upgrading processes and expanding capabilities. Various manufacturing sites within the Air Liquide Group are now accredited; Scott Specialty Gases in the Netherlands is accredited by the Dutch Accreditation Council (RvA) as Calibration Laboratory.

ISO/IEC 17025 Calibration Laboratory Accreditation

This International Standard contains all of the requirements that Scott Specialty Gases as Calibration laboratory has to meet to demonstrate its technical competence. Accreditation bodies use this international standard as the basis for their accreditation. Scott's Calibration Laboratory has been accredited by the Dutch Accreditation Council (RvA) and is registered under # K064. Its test and calibration certificates are fully accepted throughout the European Community. The Dutch Accreditation Council (RvA) is a member of the ILAC Multi Recognition Agreement (MRA) and the multi recognition of the calibration

Test versus Calibration Laboratory Accreditation

Calibration Laboratory Accreditation provides conformation of traceability and uncertainty of reference values to fundamental units (SI-unit) versus a Test Laboratory Accreditation that is provides test results that are based on calibration values that are being used for testing and not for calibration!

Note that you may NOT be COMPLIANT if you use calibration mixtures from an accredited TEST Laboratory. You can easily recognize a TEST Laboratory on the Accreditation Body Logo where you will see TEST or TL etc.

Scott Specialty Gases ISO17025 Calibration Laboratory Scope

- Stack Emission Mixtures (ISO6143)
- Natural Gas Mixtures (ISO6143)
- Physical Property Certification (ISO6976)
- Batch Certification (ISO Guide 35)
- Unit of Measurement Conversion (ISO14912)

Certified Reference Gas Mixtures (CRM)

CRM is produced by Scott Specialty Gases under ISO/IEC 17025 Calibration Laboratory Accreditation scope. CRM's are available from Scott and used to calibrate the measurement system in order to obtain an independent reference value with proven tractability and an indisputable link to the SI-unit. The CRM also provides a true expanded uncertainty, as per the GUM uncertainty budget rules.

Fundamental Principles of Traceability

Calibration Gas Mixtures are traceable if they are analyzed using a validated method, a traceable reference gas standard and the calibration work is performed under an accredited quality management system. There are three levels of gaseous reference materials within the metrology hierarchy:

- Primary Reference Gas Mixture (PRM): Hierarchy Level 1 realizes a particular composition at the highest quality level, particularly in accuracy and stability, and is available from national metrology organizations such as VSL (former Netherlands Metrology Institute -NMI) in the Netherlands, National Physical Laboratory (NPL) in the U.K. and National Institute of Standards (NIST) in the U.S.A.
- Certified Reference Gas Mixture (CRM): Hierarchy Level 2 realizes a particular composition that is certified and validated by direct analytical comparison with level-1 primary reference gas mixture with a closely related concentration. This secondary reference gas is available from national metrology organizations and Scott Specialty Gases under ISO/IEC 17025 Calibration Laboratory Accreditation scope.
- Working Reference Gas Mixture (WRM): Hierarchy Level 3 realizes a particular composition that is certified and validated by direct analytical comparison with level-2 certified reference materials with a closely related concentration. These gas mixtures are used for routine procedures. Scott Specialty Gases produces a portfolio of ten different gas mixture classes containing different levels of tractability and accuracy.