



National Measurement System Guidance Documents

Health & Underpinning Metrology

For more information visit www.nmo.bis.gov.uk. Further support is available for UK industry via the NMI metrology helplines which provide up to two hours of consultancy, paid for by the NMS. Engineering measurement helpline: **01355 593870** or nmshelp@tuvnel.com; Physical science measurement helpline: **020 8943 6880** or enquiry@npl.co.uk; Chemistry and bio-sciences helpline: 020 8943 7393 or nmshelp@lgc.co.uk

<ul style="list-style-type: none"> Document Title and Hyperlink 	<ul style="list-style-type: none"> Document Description
A beginner's guide to uncertainty in measurement.	The guide explains the concept and importance of measurement uncertainty, using examples from everyday life. It illustrates how to estimate uncertainty in real measurement situations, showing a detailed uncertainty calculation step by step.
Accreditation for Microbiological Laboratories	This document supplements ISO 17025 by providing specific guidance for both assessors and for laboratories carrying out microbiological testing.
Best Practice Guide for Generating Mass Spectra	The guide takes the user, step-by-step, through the process of generating mass spectra that are fit for purpose.
Callipers and micrometers.	This guide covers the use of callipers and micrometers for internal, external and depth measurements.
Characterisation of polymeric tissue scaffolds.	This Guide describes current good measurement practice for obtaining structural information for polymer-based tissue scaffolds and methods for quantifying these data.
Determination of residual stresses by magnetic methods.	This guidance document describes determination of residual stresses by magnetic methods.
Determination of residual stresses by X-ray diffraction.	This guide is applicable to X-ray stress measurements on crystalline materials.
Estimating uncertainties in testing	This guide presents principles and guidance for the estimation of measurement uncertainty.

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Eurachem Guide: The Fitness for Purpose of Analytical Methods. A Laboratory Guide to Method Validation and Related Topics	A guide for laboratory managers responsible for setting up and evaluating validation studies, as well as for analysts carrying out validation work.
EURACHEM Guide: The selection and use of reference materials	This guide gives detailed guidance for the establishment of measurement traceability in quantitative chemical analysis and will assist laboratories in meeting the traceability requirements of ISO 17025.
Eurachem/CITAC Guide: Measurement uncertainty arising from sampling: A guide to methods and approaches	This Guide aims to describe various methods that can be used to estimate the uncertainties arising from the processes of sampling and the physical preparation of samples.
Eurachem/Citac Guide: Quality Assurance for Research and Development and Non-routine Analysis	This guide provides those working in the non-routine environment with advice on good practice to facilitate the implementation of quality systems.
Eurachem/Citac Guide: Quantifying Uncertainty in Analytical Measurement, 2nd Edition	This guide gives detailed guidance on the evaluation of uncertainty in quantitative chemical analysis, based on the approach taken in the ISO 'Guide to the Expression of Uncertainty in Measurement'.
EURACHEM/CITAC guide: Traceability in chemical measurement	This guide gives detailed guidance for the establishment of measurement traceability in quantitative chemical analysis and will assist laboratories in meeting the traceability requirements of ISO 17025.
Eurachem/CITAC Guide: Use of uncertainty information in compliance assessment	The guide is applicable to decisions on compliance with regulatory or manufacturing limits where a decision is made on the basis of a measurement result accompanied by information on the uncertainty associated with the result.
Force.	The guide aims to help anyone wishing to measure force in any industrial or laboratory environment. (not available to download, must be requested)
Fundamental good practice guide in the design and interpretation of engineering drawings for measurement processes	This good practice guide is written for engineers, designers and metrology technicians who wish to understand the basics of the interpretation of engineering drawings in relation to the measurement process.

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Fundamental good practice in dimensional metrology.	This good practice guide is written for those who need to make dimensional measurements but are not necessarily trained metrologists.
Glycoanalysis Best Practice Guide	The “Best Practice Guide” details the practical evaluation of different characterisation methods, broken down into sections for glycoproteins, glycopeptides, glycans and monosaccharides
Good practice guide to phase noise measurement.	This guidance document describes good practice in phase noise measurement.
Good Practice Guide: Introduction to Flow Meter Installation	This good practice guide describes Good Practice Guide: Introduction to Flow Meter Installation Effects
Guide to Quality in Analytical Chemistry: An Aid to Accreditation	The aim of this guide is to provide laboratories with guidance on best practice for the analytical operations they carry out.
Guide to the Measurement of Humidity	A detailed guide to many aspects of humidity measurement. It covers humidity concepts and definitions, methods of measurement, instrument performance and calibration, and good measurement practices for humidity. (not available to download, must be requested)
Human factors in measurement and calibrations.	This guide takes as its central theme the impact of human strengths and weaknesses on the accuracy and efficiency of measurement calibration services.
Laboratory Skills Training Handbook	The aim of the Laboratory Skills Training Handbook is to provide a basic training package in key laboratory skills and to provide an introduction to important quality topics.
Mass & Weight -	This Guide offers valuable information about a wide range of issues affecting weighing from traceability to practical aspects of weighing. (not available to download, must be requested)

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Meeting the traceability requirements of ISO 17025: An analyst's guide (3rd ed)	This guide provides essential practical advice to analysts and laboratory managers on how to establish the traceability of their results to reliable and appropriate measurement standards
Practical radiation monitoring.	This guide describes procedures and methods for assessing radiation levels, outlines the thought processes needed to carry out the measurements and gives practical advice.
Preparation of Calibration Curves: A Guide to Best Practice	The aim of this guide is to highlight good practice in setting up calibration experiments, and to explain how the results should be evaluated.
Pressure & Vacuum.	This guide provides advice for those wishing to select and use instruments for measuring pressure or vacuum.. (not available to download, must be requested)
Protocol for establishing and maintaining the calibration of medical radionuclide calibrators and their quality control.	Guidance is given on the quality controls that should be undertaken on a routine basis for medical radionuclide calibrators to ensure the accuracy and traceability of measurements of the activities of radiopharmaceuticals.
Qualitative Analysis: A Guide to Best Practice. Forensic Science Extension	This guide presents a set of generic principles covering best practice in qualitative analysis, focusing on issues specific to forensic science.
Radiometric non-destructive assay.	This guide provides recommended procedures for the operation, testing and calibration of equipment used for radiometric non-destructive assay of fissile and radioactive materials.
Recommended ultrasound field safety classification for medical diagnostic devices.	This guide will provide basic principals for assessing the safety of medical diagnostic ultrasonic fields, a topic of great importance to the patient, clinical user and manufacturer.
Selecting a Flow Meter	This guidance document describes Selecting a Flow Meter

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The assessment of uncertainty in radiological calibration and testing	This guidance document describes the assessment of uncertainty in radiological calibration and testing
The calibration and use of piston pipettes.	This guidance document describes the calibration and use of piston pipettes.
The Development and Application of Guidance on Equipment Qualification of Analytical Instruments	This document provides guidance on equipment qualification (EQ) of analytical instruments.
The examination and testing of equipment for monitoring airborne radioactive particulate in the workplace.	This guidance document describes the examination and testing of equipment for monitoring airborne radioactive particulate in the workplace.
The examination, testing and calibration of installed radiation protection instruments.	This guide describes recommended procedures for the examination, testing and calibration of installed radiation protection instruments.
The examination, testing and calibration of portable radiation protection instruments.	This Good Practice Guide describes the recommended procedures for the examination, testing and calibration of portable dose rate and surface contamination monitors that can be used to comply with those statutory obligations.
The measurement of mass and weight.	This Good Practice Guide is intended as a useful reference for those involved in the practical measurement of mass and weight.
Uncertainty and statistical modelling.	This guide provides best practice on the evaluation of uncertainties within metrology, and on the support to this topic given by statistical modelling.
Weighing in the pharmaceutical industry.	This guidance document describes weighing in the pharmaceutical industry.

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