Schedule of Accreditation

issued by

United Kingdom Accreditation Service

2 Pine Trees, Chertsey Lane, Staines-upon-Thames, TW18 3HR, UK

27393

Accredited to ISO/IEC 17025:2017

ARO Scientific Ltd

Issue No: 002 **Issue date:** 30 August 2025

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Calibration performed at the above address only

Calibration and Measurement Capability (CMC)

Measured Quantity Instrument or Gauge	Range	Expanded Measurement Uncertainty (k = 2)		Remarks
VISCOSITY				
Capillary Viscometer Calibration				
Viscosity Constant •C•	•C• $(mm^2s^{-1})s^{-1}$			
Master viscometers – Ubbelohde	0.001 0.002 0.005 0.01 0.03 0.08 0.2 0.5 1.2 3 8 22 50	0.10 % 0.10 % 0.15 % 0.20 % 0.23 % 0.26 % 0.29 % 0.33 % 0.36 % 0.38 % 0.41 % 0.44 % 0.46 %		Calibrated to ASTM D2162
Viscosity Measurement				
Kinematic and Dynamic Viscosity Temperature range to be defined 20 °C to 100 °C	mm^2s^{-1} 0.3 to 6 6 to 14 14 to 26 26 to 75 75 to 180 180 to 520 520 to 1400 1400 to 2700 2700 to 6800 6800 to 18 000 18 000 to 25 000 25 000 to 170 000	Kinematic 0.13 % 0.19 % 0.22 % 0.26 % 0.29 % 0.32 % 0.35 % 0.38 % 0.41 % 0.43 % 0.46 % 0.49 %	Dynamic 0.13 % 0.19 % 0.22 % 0.26 % 0.29 % 0.32 % 0.35 % 0.38 % 0.41 % 0.43 % 0.46 % 0.49 %	Viscosity reference standards calibrated to ASTM D2162 Viscosity values at intermediate temperatures can be determined in accordance with ASTM D341 Viscosity index can be calculated in accordance with ASTM D2270
DENSITY				
Liquids 15 °C to 100 °C	0.60 g/ml to 1.65 g/ml	0.010 %		Calibrated to ASTM D1480

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Measured Quantity Instrument or Gauge	Range	Expanded Measurement Uncertainty (k = 2)	Remarks

Flexible Scope

The laboratory is accredited to ISO/IEC17025:2017 for calibration activities in accordance with the standards highlighted in the schedule. This may also include new versions of existing accredited standard test methods to be introduced in accordance with documented in-house procedures, providing that:

(1) The method or standard does not introduce new principles of measurement.

(2) The method or standard does not require measurements to be made outside the parametric boundaries defined within the standard specifications already accredited and detailed within this Schedule of Accreditation.

Information about flexible scopes of accreditation is available in UKAS document GEN 4 and EA document EA-2/05.

END

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Appendix - Calibration and Measurement Capabilities

Introduction

The definitive statement of the accreditation status of a calibration laboratory is the Accreditation Certificate and the associated Schedule of Accreditation. This Schedule of Accreditation is a critical document, as it defines the measurement capabilities, ranges and boundaries of the calibration activities for which the organisation holds accreditation.

Calibration and Measurement Capabilities (CMCs)

The capabilities provided by accredited calibration laboratories are described by the Calibration and Measurement Capability (CMC), which expresses the lowest measurement uncertainty that can be achieved during a calibration. If a particular device under calibration itself contributes significantly to the uncertainty (for example, if it has limited resolution or exhibits significant non-repeatability) then the uncertainty quoted on a calibration certificate will be increased to account for such factors.

The CMC is normally used to describe the uncertainty that appears in an accredited calibration laboratory's schedule of accreditation and is the uncertainty for which the laboratory has been accredited using the procedure that was the subject of assessment. The measurement uncertainty is calculated according to the procedures given in the GUM and is normally stated as an expanded uncertainty at a coverage probability of 95 %, which usually requires the use of a coverage factor of $k = 2$. An accredited laboratory is not permitted to quote an uncertainty that is smaller than the published measurement uncertainty in certificates issued under its accreditation.

Expression of CMCs - symbols and units

It should be noted that the percentage symbol (%) represents the number 0.01. In cases where the measurement uncertainty is stated as a percentage, this is to be interpreted as meaning percentage of the measurand.
Thus, for example, a measurement uncertainty of 1.5 % means $1.5 \times 0.01 \times q$, where q is the quantity value.

The notation Q[a, b] stands for the root-sum-square of the terms between brackets: $Q[a, b] = [a^2 + b^2]^{1/2}$