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Calibration and Services
Refractometer Calibration

Calibration Oils

UKAS CALIBRATION 0834

Calibration Oils are one of the most commonly used materials for calibrating refractometers as they have good traceability, particularly to NIST. Having a high temperature co-efficient, calibration oils are used where strict temperature control is adopted, either by Peltier or external waterbath between 10 and 75 °C (from batches BSLP24 & BSDC17 onwards – previous batches between 20 and 75°C only). Calibration Oils are batch manufactured and so values may differ slightly from published data. Oils are supplied in multipacks of 5 x 5ml bottles with a certificate of calibration, MSDS and pipettes and have an expiry date 12-months from date of dispatch.

For refractometers operating at high temperatures where water starts to evaporate, an oil may be used as a zero calibration medium. Typical applications include those in the confectionery, edible oil and mineral oil marketplaces.

Order Code	Description	Specification	
Multi-pack of 5 x 5ml Bottles	Calibration Oil	Refractive Index*	°Brix**
90-525	BSLP	1.46990	71.81
90-530	BSDC	1.52256	91.75
90-535	BSDD	1.56138	--.--

Maximum Uncertainty: ±0.000074 RI ±0.030 °Brix Traceable to NIST.
Note:
(BSDD: ±0.000103 RI)
* Typical Refractive Index @ 589.3nm & 20.0°C.
**Equivalent °Brix value @ 589.3nm & 20.0°C.

All quoted values for calibration oils are subject to minor batch to batch variations.

Specification

Certificate:	UKAS (ISO17025)
Uncertainty (k=2) (BSDD)	±0.000074RI ±0.030 °Brix (±0.000103RI)
Shelf Life:	12-months (minimum)
Storage:	Room temperature. Keep sealed
Traceability:	ICUMSA NIST

Uncertainties

The reported expanded uncertainty of measurement is stated as the standard uncertainty of measurement in units of °Brix (equivalent to weight % sucrose in water) multiplied by the coverage factor k=2, which for a normal distribution corresponds to a coverage probability of approximately 95%. The standard uncertainty of measurement has been determined in accordance with publication EA-4/02.

Frequentley Asked Questions

Calibration Fluids – Calibration Oils at temperatures other than 20°C. FAQ-GRP-049 (pdf)
Calibration Fluids – Use in glass free environment. FAQ-GRP-051 (pdf)