Calibration and Services
Refractometer Calibration

Calibration Oils

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.

UKAS CALIBRATION 0834

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)