

**Calibration
Verification
Validation
Disposables**

Calibration & Verification Materials for Refractometers

Fluids

Bellingham + Stanley Ltd., a UKAS accredited calibration laboratory number 0834, offer a number of different calibration materials for verifying and calibrating refractometers, traceable to NIST. The standards are made to the highest quality and are supplied with certificates. Depending on the application and instrument type, a choice can be made from the following.

AG Calibration Fluids

Ideal for use where verification/calibration at the lower end of the °Brix or Refractive Index scale is required. AG fluids are despatched with at least 12-months validity and when purchased as a 'multi-pack' offer excellent value for money as the 'per bottle shipping cost' is significantly reduced.



	Type Specification		Order Code		
	Refractive Index ¹	°Brix ²	Single 5 ml bottle	Multi-pack of 5 x 5 ml Bottles	Multi-pack of 20 x 5 ml Bottles
AG 2.5	1.33659	2.50	90-401	90-501	90-601
AG 5	1.34026	5.00	90-402	90-502	90-602
AG 7.5	1.34401	7.50	90-403	90-503	90-603
AG 10	1.34782	10.00	90-404	90-504	90-604
AG 11.2	1.34968	11.20	90-405	90-505	90-605
AG 12	1.35093	12.00	90-406	90-506	90-606
AG 12.5	1.35171	12.50	90-407	90-507	90-607
AG 15	1.35568	15.00	90-408	90-508	90-608
AG 40	1.39986	40.00	90-418	90-518	90-618
			€ 60,00	€ 192,00	€ 626,00

Maximum Uncertainty: ± 0.000037 RI ± 0.019 °Brix Traceable to NIST.

Calibration Oils

Calibration Oils are supplied as a pack of 5 x 5ml glass bottles with 12-months validity from date of despatch.

Order Code	Description	Specification		Price in euro's
Multi-pack of 5 x 5 ml Bottles		Refractive Index ¹	°Brix ²	
90-525	Calibration Oil	1.46737	70.78	€ 192,00
90-530	Calibration Oil	1.51822	90.17	€ 192,00

Maximum Uncertainty: ± 0.000074 RI ± 0.030 °Brix Traceable to NIST.

Note:

1. Typical Refractive Index @ 589.3nm & 20.0 °C.
2. Equivalent °Brix value @ 589.3nm & 20.0 °C.

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

Sucrose/Fructose Solutions

Sucrose Solutions are an extremely easy to use medium for verifying and calibrating refractometers measuring in the °Brix scale, as no special consideration is required when testing instruments at ambient temperature fitted with ATC. Sucrose solutions are typically used in the food, beverage and sugar industry.

Sucrose Solutions are manufactured on a %weight/weight basis and are calibrated in accordance with EN ISO/IEC 17025:2005. A number of concentrations are available between 0 and 60 °Brix, all traceable to NIST and ICUMSA.

Sucrose Solutions are typically supplied in 15ml plastic dropper bottles complete with certificate of calibration but may also be supplied in a larger quantity for high volume users or for customers wishing to verify the performance of density meters operating in the °Brix scale. The Certificate of Calibration values for sucrose in %weight/weight, °Brix and refractive index as well as giving detail about traceability and uncertainty.

Sucrose Solutions –

Supply Contracts

As sucrose solutions have a limited shelf life of 6-weeks, they must be purchased at the time of requirement. If a frequent calibration regime is operated, the administration cost of issuing purchase orders every time can be relatively high. Many users therefore choose to take out a supply contract on a single order that ensures trouble free regular delivery on a twelve month period.

Description	Value (°Brix)	Value RI	Order Code 15 ml	Price in euro's
Refractive Index Standard (Sucrose)	0	1.33299	SS00	€ 82,00
Refractive Index Standard (Sucrose)	2.5	1.33659	SS025	€ 82,00
Refractive Index Standard (Sucrose)	5	1.34026	SS05	€ 82,00
Refractive Index Standard (Sucrose)	7.5	1.34401	SS075	€ 82,00
Refractive Index Standard (Sucrose)	10	1.34782	SS10	€ 82,00
Refractive Index Standard (Sucrose)	11.2	1.34968	SS112	€ 82,00
Refractive Index Standard (Sucrose)	11.5	1.35015	SS115	€ 82,00
Refractive Index Standard (Sucrose)	12	1.35093	SS12	€ 82,00
Refractive Index Standard (Sucrose)	12.5	1.35171	SS125	€ 82,00
Refractive Index Standard (Sucrose)	15	1.35568	SS15	€ 82,00
Refractive Index Standard (Sucrose)	20	1.36384	SS20	€ 82,00
Refractive Index Standard (Sucrose)	25	1.37233	SS25	€ 82,00
Refractive Index Standard (Sucrose)	30	1.38115	SS30	€ 82,00
Refractive Index Standard (Sucrose)	35	1.39032	SS35	€ 82,00
Refractive Index Standard (Sucrose)	40	1.39986	SS40	€ 82,00
Refractive Index Standard (Sucrose)	45	1.40978	SS45	€ 82,00
Refractive Index Standard (Sucrose)	50	1.42009	SS50	€ 82,00
Refractive Index Standard (Sucrose)	55	1.43080	SS55	€ 82,00
Refractive Index Standard (Sucrose)	60	1.44193	SS60	€ 82,00
Refractive Index Standard (Fructose)	70	N/A	FS70	€ 95,00

Uncertainty: ±0.02 °Brix



Sucrose Solutions specific to brewing applications

Description	Value (°Brix)	Value (Zeiss)	Order Code 15 ml	Price in euro's
Refractive Index Standard (Sucrose)	2.5	23.80	SS025Z	€ 82,00
Refractive Index Standard (Sucrose)	5.0	33.42	SS05Z	€ 82,00
Refractive Index Standard (Sucrose)	7.5	43.35	SS075Z	€ 82,00
Refractive Index Standard (Sucrose)	10	53.55	SS10Z	€ 82,00
Refractive Index Standard (Sucrose)	15	74.96	SS15Z	€ 82,00
Refractive Index Standard (Sucrose)	20	97.74	SS20Z	€ 82,00

DECAGON Water Activity

Performance Verification Standards	Order Code	Price in euro's
0.760aw NaCl	VS76A	€ 130,00 per box
0.500aw LiCl	VS50B	€ 130,00 per box
0.250aw LiCl	VS25A	€ 130,00 per box
0.984aw KCL	VSKCL	€ 130,00 per box
1.000aw Distilled water	VSH2O	€ 130,00 per box

Each box contains 50 vials of the same salt

Sample Cups and lids	Order Code	Price in euro's
Box with 500 cups and lids	ADSD	€ 300,00
Sample Cups only	Order Code	Price in euro's
Box with 500 cups (no lids)	ADSD500	€ 300,00
Cleaning Kit	Order Code	Price in euro's
Specially designed for cleaning the AquaLab sensor block	CLEAN	€ 30,00

HOSPITEX Reagents - flame fotometry

Description	Pack	Order Code	Price in euro's
Lithium 3000 mEq/L	4x100 ml	80010060	€ 28,00
Lithium 15 mEq/L	1x5 L	80010010	€ 11,00
Standaard Na/K/Li 140/5.0/1.0 mEq/L	40x2 ml	80010015	€ 40,00
Standard Na/K 100/100 mEq/L	6x10 ml	80010021	€ 5,00
Standard K 75 mEq/L	4x100 ml	80010026	€ 12,00
Cleaning Solution	4x100 ml	80010035	€ 11,00

SENTRON Buffers in twin-neck bottle - pH measurement

Description	Order Code	Price in euro's
0,5 liter buffer pH 2,00 @ 25°C in twin neck bottle	A116-002	€ 34,00
0,5 liter buffer pH 4,00 @ 25°C in twin neck bottle	A116-004	€ 30,00
0,5 liter buffer pH 7,00 @ 25°C in twin neck bottle	A116-007	€ 30,00
0,5 liter buffer pH 10,00 @ 25°C in twin neck bottle	A116-010	€ 30,00
0,5 liter buffer pH 12,00 @ 25°C in twin neck bottle	A116-012	€ 39,00

RHEOTEC Reference liquid - viscosity

Description	Order Code	Price in euro's
500 ml ASTM STANDARD. In code gewenste viscositeit invoeren (4...70000 mPas)	REF...mPas	€ 237,00

Calibration oils

Description	Order Code	Price in euro's
100 ml DKD STANDARD. In code gewenste viscositeit invoeren (1...20000 mPas)	CAL...mPas 100 m	€ 165,00
250 ml DKD STANDARD. In code gewenste viscositeit invoeren (1...20000 mPas)	CAL...mPas 250 m	€ 215,00
500 ml DKD STANDARD. In code gewenste viscositeit invoeren (1...20000 mPas)	CAL...mPas 500 m	€ 330,00
100 ml DKD STANDARD. In code gewenste viscositeit invoeren (20000...200000 mPas)	CAL...mPas 100 m	€ 275,00
250 ml DKD STANDARD. In code gewenste viscositeit invoeren (20000...200000 mPas)	CAL...mPas 250 m	€ 352,00
500 ml DKD STANDARD. In code gewenste viscositeit invoeren (20000...200000 mPas)	CAL...mPas 500 m	€ 539,00
100 ml DKD STANDARD. In code gewenste viscositeit invoeren (tot 500000 mPas)	CAL...mPas 100 m	€ 325,00
250 ml DKD STANDARD. In code gewenste viscositeit invoeren (tot 500000 mPas)	CAL...mPas 250 m	€ 462,00
500 ml DKD STANDARD. In code gewenste viscositeit invoeren (tot 500000 mPas)	CAL...mPas 500 m	€ 649,00