PSL Certified Reference Materials

Certified Reference Materials

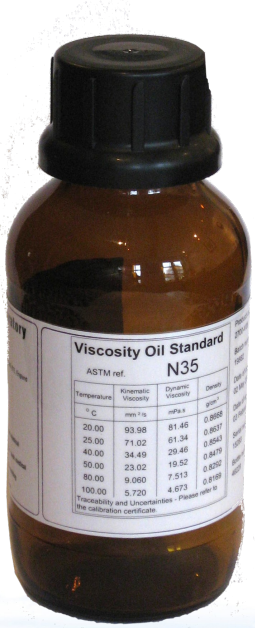
PSL Viscosity Reference Standards are suitable for calibration and verification of all types of viscometers. The accuracy of Glass Capillary viscometers, rotational viscometers & falling ball is easily monitored by running a certified viscosity standard. Certification in accordance with UKAS (ISO 17025) guarantees a third party control result - without the inconvenience of having to ship the viscometer for recalibration or verification.

The UKAS (ISO 17025) certification of the PSL reference standards documents direct traceability to the internationally agreed standard value of distilled water at 20 degrees C. At the PSL calibration laboratory a primary viscosity scale is maintained in accordance with internationally agreed procedures.

Each bottle with reference liquid has a unique number and is directly traceable to the primary viscosity scale held in the laboratory. Calibration details on the certified reference materials are obtained using the master viscometer procedures detailed in ASTM D2162.

The accreditation of the PSL Laboratory includes kinematic and dynamic viscosity. Further details available on www.ukas.org, laboratory No. 0247.

All Viscosity Reference Standards from the PSL Calibration Laboratory meet the precision requirements set out in ASTM D445/D446.



PSL Viscosity Reference Standards are supplied in 500 ml sturdy glass bottles complete with calibration certificate and MSDS. The calibration values are also printed on the bottle label. The label is laminated for durability in the laboratory environment.

ACCREDITED TO ISO 17025

CERTIFICATE OF CALIBRATION

ISSUED BY THE PSL CALIBRATION LABORATORY

DATE OF ISSUE 19 December 2008 SERIAL NUMBER 18887

UKAS CALIBRATION 0247

Poulten Selfe & Lee Ltd
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Burnham-on-Crouch,
Essex CM0 8TE, England

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www.rheotek.com

Supplied to: Poulten Selfe and Lee Ltd.
Russell House,Burnham-on-Crouch, Essex CMO 8TE

Labelled:
ASTM reference: **S200**
Product code: 2700-V11
Batch number: 21518
Date of calibration: 11 December 2008
Date of expiry: 18 December 2010
Bottle number: 55303

PAGE 1 OF 2 PAGES
APPROVED SIGNATORY
Quality Manager S.P. Sims

A sample taken from this calibrated reference oil was measured against reference viscometers traceable to ASTM D 2162 held at the Laboratory and the following values were determined.

CERTIFIED VALUES

Temperature °C	Kinematic viscosity mm²/s	Dynamic viscosity mPa.s	Density g/cm³
20.00	657.5	583.0	0.8867
25.00	458.4	405.1	0.8838
40.00	178.5	156.1	0.8745
50.00	104.7	90.94	0.8686
80.00	30.30	25.77	0.8504
100.00	16.47	13.81	0.8383

UNCERTAINTIES

Kinematic viscosity mm²/s	Dynamic viscosity mPa.s	Uncertainty %
Up to 6	Up to 6	+/- 0.22
6 to 19	6 to 19	+/- 0.22
19 to 100	19 to 100	+/- 0.27
100 to 450	100 to 450	+/- 0.34
451 to 1750	450 to 1750	+/- 0.46
1750 and over	1750 and over	+/- 0.70

These uncertainties are largely random in nature.

The reported expanded uncertainty is based on a standard uncertainty multiplied by a coverage factor k=2, providing a level of confidence of approximately 95%. The uncertainty evaluation has been carried out in accordance with UKAS requirements.

Sample calibration certificate

For further details, please see: www.rheotek.com

Catalogue #	Viscosity Standard	Nominal Values	Kinematic Viscosity (KV) in cSt, mm^2/s, Dynamic Viscosity (DV) in cP, mPa.s, Saybolt Viscosity (SUS) values						
			20ºC	25ºC	37.78ºC	40ºC	50ºC	98.89ºC	100.00ºC
			68.00 ºF	77.00 ºF	100.00 ºF	104.00 ºF	122.00 ºF	210.00 ºF	212.00 ºF
2700-V01H	**N.4**	**KV**	**0.47**	**0.45**	**0.41**	**0.40**			
		DV	0.31	0.29	0.27	0.26			
2700-V02H	**N.8**	**KV**	**1**	**0.98**	**0.76**	**0.75**			
		DV	0.77	0.72	0.57	0.56			
2700-V03H	**N1.0**	**KV**	**1.3**	**1.2**	**0.98**	**0.97**			
		DV	**1**	0.93	0.77	0.76			
2700-V04	**N2**	**KV**	**2.9**	**2.6**	**2.1**	**2**	**1.7**		
		DV	2.2	2	1.6	1.5	1.3		
2700-V05	**S3**	**KV**	**5**	**4.4**	**3**	**2.9**	**2.6**	**1.3**	**1.3**
		DV	4.1	3.6	2.5	2.4	2.1	0.98	0.98
2700-V06	**S6**	**KV**	**11**	**8.9**	**5.8**	**5.7**	**4.6**	**1.9**	**1.9**
		DV	8.8	7.4	4.9	4.8	3.7	1.5	1.5
2700-V07	**N10**	**KV**	**21**	**17**	**11**	**10**	**7.5**	**2.7**	**2.7**
		DV	17	14	10	9	6.2	2.2	2.1
2700-V08	**S20**	**KV**	**47**	**37**	**20**	**18**	**13**	**4.4**	**4**
		DV	40	31	17	16	11	3.3	3.2
		SUS			100				
2700-V09	**N35**	**KV**	**95**	**72**	**38**	**32**	**23**	**5.9**	**5.8**
		DV	82	62	33	27	19	4.8	4.7
		SUS			170				
2700-V10	**S60**	**KV**	**160**	**120**	**61**	**54**	**35**	**7.8**	**7.7**
		DV	140	104	54	47	30	6.4	6.3
		SUS			280				
2700-V11	**N100**	**KV**	**320**	**230**	**110**	**97**	**59**	**11**	**11**
		DV	280	200	94	84	51	9.3	9.1
		SUS			500				
2700-V12	**N140**	**KV**	**400**	**300**	**160**	**140**	**90**	**19**	**18**
		DV	350	260	135	120	77	16	15
2700-V13	**S200**	**KV**	**660**	**460**	**210**	**180**	**110**	**18**	**17**
		DV	590	410	180	150	91	15	14
		SUS			930			86	
2700-V14	**N230**	**KV**	**860**	**600**	**270**	**230**	**145**	**23**	**21**
		DV	770	535	230	190	120	19	17
2700-V15	**N350**	**KV**	**1400**	**920**	**370**	**310**	**180**	**25**	**24**
		DV	1200	790	320	270	150	21	20
		SUS						110	
2700-V16	**N415**	**KV**	**1900**	**1240**	**500**	**415**	**240**	**35**	**34**
		DV	1630	1065	430	360	200	29	28
2700-V17	**S600**	**KV**	**2400**	**1600**	**560**	**520**	**290**	**37**	**35**
		DV	2100	1400	490	450	240	31	29
		SUS						150	130
2700-V18	**N730**	**KV**	**3390**	**2260**	**790**	**730**	**410**	**52**	**49**
		DV	2970	1980	690	630	340	43	40
2700-V19	**N1000**	**KV**	**4800**	**3100**	**980**	**940**	**520**	**58**	**55**
		DV	4100	2700	840	800	450	48	45
2700-V20	**N1300**	**KV**	**6760**	**4365**	**1380**	**1320**	**730**	**81**	**77**
		DV	5775	3800	1180	1120	630	67	63
2700-V21	**S2000**	**KV**	**8600**	**5600**	**2000**	**1700**	**880**	**85**	**81**
		DV	7500	4800	1750	1500	760	70	68
		SUS						361	
2700-V22	**N4000**	**KV**	**18000**	**11000**	**3300**	**3400**	**1700**	**140**	**130**
		DV	16000	10000	2800	2900	1500	120	112
2700-V23	**S8000**	**KV**	**35000**	**22000**	**6400**	**6700**	**3200**	**240**	**220**
		DV	31000	20000	6200	5900	2700	210	190
2700-V24	**N15000**	**KV**	**65000**	**41000**	**17000**	**13000**	**5800**	**400**	**370**
		DV	58000	37000	15000	11000	5100	350	320
2700-V25	**S30000**	**KV**		**82000**	**32000**	**23000**	**11000**		**670**
		DV		74000	30000	21000	9900	640	580