PRODUCT INFORMATION

Newtonian Standard Specimen of Viscosity

Calibration laboratory for length, electrical, mechanical, thermodynamic, and analytical measurands

DAR-Registration Number: DKD-K-06901

Newtonian Standard Specimen of Viscosity are specimen of Newtonian liquids related and traceable to the National Standard of the unit of viscosity. This way they are viscosity standards themselve and they are used for calibration of viscosity measuring devices. Viscosity measuring devices calibrated according to device-specific procedures under defined conditions against these standard specimen are in respect of viscosity measurements of Newtonian liquids traceable to the National Standard of the unit of viscosity and correspond to the requirements of DIN EN ISO 9001:2000 and DIN EN ISO/IEC 17025.

According to the law of metrological units the National Standard of the unit of viscosity is kept at Physikalisch-Technische Bundesanstalt (PTB) Braunschweig, Germany.
Liquids used for standard specimen meet special requirements, e.g. on flow behaviour and long-term retention of viscosity. In respect of dissolved gases they are in equilibrium with atmosphere.

The standards used for determining the kinematic viscosity are Ubbelohde string-level viscometers, traced back to the National Standard of viscosity. Viscosity figures are related to the viscosity of water at 20°C (ν = 1.0035mm²/s). According to OIML-DI No. 17 and subject to International Temperature Scale ITS-90 this value is internationally agreed.
In our Calibration Laboratory **DKD-K-06901** the density for the calculation of the dynamic viscosity is traced to the National Standard via reference standard measuring equipment for liquid density according to the principle of Archimedes.

Viscosity figures given in the ***chart Newtonian Standard Specimen of Viscosity*** are guidelines. Exact values of kinematic and dynamic viscosity as well as viscosity temperature coefficient are noted for every single standard specimen at the standard temperatures ***20°C, 23°C, 25°C, 30°C, 40°C, 100°C*** in the ***DKD Calibration Certificate***.

We are accredited for determination of viscosity in the temperature range from 5 °C to 130 °C. In this range each wished measuring temperature (as extra temperature with additional costs) is available.

Availability: 50 ml, 100 ml, 250 ml, 500 ml

Remark:
The long-term stability of the viscosity standard specimen is influenced by handling and storage.
Supposition for the validity of the reported values of viscosity within 6 months is the storage at room temperature in dark coloured bottles. Multiple use of the standard specimen has to be avoided.
Out of the period of 6 months deviations of the viscosity figure, exceeding the measuring uncertainty, have to be taken into account.

ZMK -ANALYTIK- GmbH
Ortsteil Wolfen
P-D ChemiePark Bitterfeld-Wolfen
Areal A, Filmstraße Nr. 7
06766 Bitterfeld-Wolfen
Telefon: 03494/6973-0
Telefax: 03494/6973-34
E-Mail: info@zmk-wolfen.de

ZMK Unternehmensgruppe / ZMK Group

Geschäftsführung /
Board of Management:
Dr. Barbara Werner
Dr.-Ing. Olaf Schnelle-Werner

Sitz / Domicile: Bitterfeld-Wolfen
Handelsregister / Register Court:
Stendal, Nr./ No. HRB – 5250

Steuernr.: 113/106/01030
Ust-IdNr.: DE 814536428

Volksbank Dessau-Anhalt eG
Kto.-Nr.: 127 4449
BLZ: 800 935 74
SWIFT (BIC): GENODEF1DS1
IBAN: DE03 8009 3574 0001 2744 49

Deutsche Bank AG
Kto.-Nr.: 386 1309
BLZ: 860 700 24
SWIFT (BIC): DEUTDEDB864
IBAN: DE53 8607 0024 0386 1309 00

DIN EN ISO 9001
Reg.-Nr.: 054774 QM

Newtonian Standard Specimen of Viscosity

Guidelines of Viscosity

Standard Specimen	Kinematic Viscosity in mm^2 / s						Dynamic Viscosity in mPa · s						Measuring Uncertainty
	20 °C	23 °C	25 °C	30 °C	40 °C	100 °C	20 °C	23 °C	25 °C	30 °C	40 °C	100 °C	*U* in %
1 BW	1,25	1,19	1,16	1,01	0,95	-	0,97	0,92	0,9	0,84	0,73	-	0,24
2 AW	2,0	1,9	1,8	1,7	1,4	-	1,5	1,4	1,3	1,2	1,0	-	0,24
2 BW	3,0	2,9	2,7	2,5	2,1	-	2,4	2,2	2,1	1,9	1,6	-	0,24
5 AW	5,1	4,7	4,5	4,0	3,2	-	4,2	3,9	3,7	3,3	2,6	-	0,25
5 BW	7,4	6,7	6,4	5,5	4,3	-	6,0	5,5	5,2	4,5	3,5	-	0,25
10 AW	11	10	9,4	8,0	6,1	-	9,1	8,2	7,7	6,5	4,9	-	0,25
20 AW	23	20	19	15	11	-	20	17	16	13	9,1	-	0,25
20 BW	36	31	28	23	16	3,5	30	26	24	19	13	2,8	0,25
50 BW	65	56	50	39	25	4,6	57	48	43	34	22	3,8	0,32
100 AW	105	91	83	66	44	8,1	87	75	68	54	35	6,3	0,32
100 BW	160	135	125	98	63	11	130	110	100	80	52	8,4	0,32
200 AW	250	210	190	150	95	15	210	180	160	120	78	12	0,32
200 GW	355	290	255	185	105	12	310	250	220	160	90	10	0,32
500 AW	450	360	310	220	120	11	395	310	270	190	100	9	0,32
500 BW	880	700	600	420	220	17	780	620	530	370	190	14	0,32
1000 AW	1000	800	700	550	300	35	850	700	620	460	270	30	0,32
2000 AW	1800	1500	1300	980	560	55	1500	1300	1100	820	460	45	0,32
2000 BW	3300	2600	2300	1700	900	80	2800	2200	2000	1400	780	65	0,32
5000 AW	4500	3600	3200	2300	1200	100	3800	3100	2700	1900	1000	80	0,40
10 000 AW	9000	6800	5700	3700	1700	68	7900	6000	5000	3200	1500	57	0,40
10 000 BW	17 000	13 000	11 000	6900	3100	110	15 000	11 300	9400	6000	2700	91	0,40
20 000 AW	21 000	16 000	14 000	9000	4000	140	19 000	14 000	12 000	7800	3400	110	0,50
20 000 BW	37 000	28 000	24 000	15 000	7000	200	33 000	25 000	21 000	14 000	6300	180	0,60
50 000 AW	51 000	38 000	32 000	20 000	8700	250	45 000	34 000	28 000	18 000	7600	210	0,60
50 000 BW	68 000	51 000	42 000	27 000	12 000	320	60 000	45 000	37 000	24 000	10 000	270	0,80
100 000 AW	100 000	75 000	62 000	40 000	17 000	450	90 000	67 000	56 000	35 000	15 000	380	1,00
100 000 BW	140 000	110 000	88 000	56 000	24 000	620	130 000	95 000	79 000	50 000	21 000	530	1,00
200 000 BW	360 000	270 000	220 000	140 000	61 000	1500	320 000	240 000	200 000	130 000	54 000	1300	1,30
500 000 BW	770 000	580 000	480 000	300 000	130 000	3000	700 000	520 000	430 000	270 000	115 000	2600	1,30

Changes reserved