

# Viscometer



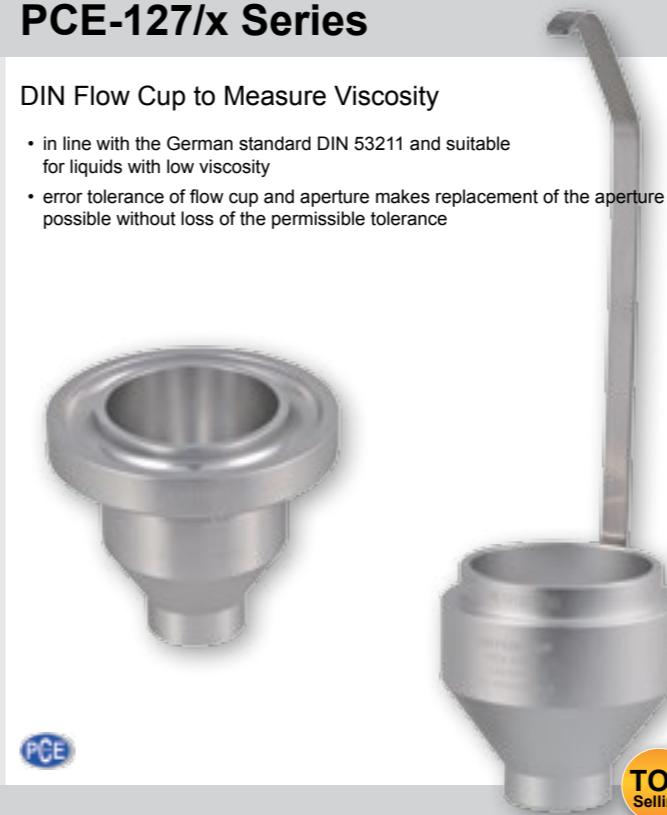
Viscometers are used to determine the viscosity of a fluid. The higher the viscosity value of a fluid, the thicker it is. The elastic capacity of a fluid is called viscosity. There are different viscometers in various designs and with several operating principles. Rotational viscometers as well as Stabinger viscometers use the rotational movement of a cylinder in a sample to determine the torque.

In regular rotational viscometers, the measurement is carried out without contact by means of magnetic fields and eddy current brakes. Lossy influences like bearing friction are fully avoided, which leads to much more precise measurement results. Viscosity is a typical characteristic of liquids and it plays an important part when classifying lacquers, paints, lubricants or adhesives. This parameter is also crucial in the food industry and in medicine. Therefore, viscometers are also used in these fields.

PCE-127/x Series

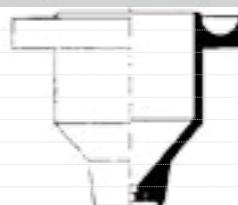
## DIN Flow Cup to Measure Viscosity

- in line with the German standard DIN 53211 and suitable for liquids with low viscosity
  - error tolerance of flow cup and aperture makes replacement of the aperture possible without loss of the permissible tolerance



## TECHNICAL SPECIFICATIONS

PCE-127/1	standard DIN flow cup
PCE-127/2	portable DIN flow cup
Measurement range	100 ... 500 cS t
Volume	1000 ml ( $\pm 1$ ml)
Nozzles Ø	4 mm ( $\pm 0.02$ mm)
Material	flow cup: anodised aluminium nozzle: stainless steel, high-gloss polished interior
Norm	German standard DIN 53211



## INCLUDES

DIN flow cup (one of the models), glass plate, factory calibration certificate, manual

ITEM NO.

K-PCE-127/1 standard DIN flow cup  
K-PCE-127/2 portable DIN flow cup

#### **OPTIONAL ACCESSORIES**

K-BDG 130 V-shaped tripod for flow cup viscometers  
K-PCE-1-RG spare glass plate  
K-38 2016 digital stopwatch



PCE-128/x Series

## ISO Flow Cup to Measure Viscosity

- international standards ISO 2431, DIN 53224, EN 535, ASTM D5125
  - high-gloss polished and high-quality finished for high flow accuracy
  - ISO flow cups are suitable to determine the flow time of Newtonian or nearly Newtonian liquids
  - made of high-quality aluminium and includes a stainless steel nozzle



## TECHNICAL SPECIFICATIONS

Model	Meas. range (cS t)	Flow time (s)	Discharge nozzle Ø (mm)
PCE-128/3	7 ... 42 cS t	25 ... 150 s	3.0 mm
PCE-128/4	34 ... 135 cS t	30 ... 100 s	4.0 mm
PCE-128/5	91 ... 326 cS t	30 ... 100 s	5.0 mm
PCE-128/6	188 ... 684 cS t	30 ... 100 s	6.0 mm
PCE-128/8	600 ... 2.000 cS t	30 ... 100 s	8.0 mm
Material	flow cup: anodised aluminium / nozzle: stainless steel		
Norms	ISO 2431, DIN 53224, EN 535, ASTM D5125		
Weight	approx. 0.38 kg		

## INCLUDES

ISO flow cup (one of the models), glass plate, factory calibration certificates, manual

ISO flow cap (one of the two)

ITEM NO.	ITEM
K-PCE-128/3	ISO flow cup, range 7 ... 42
K-PCE-128/4	ISO flow cup, range 34 ... 135
K-PCE-128/5	ISO flow cup, range 91 ... 326
K-PCE-128/6	ISO flow cup, range 188 ... 684
K-PCE-128/8	ISO flow cup, range 600 ... 2,000

#### OPTIONAL ACCESSORIES

K-BDG 130 V-shaped tripod for flow cup viscometers  
K-PCE-1-RG spare glass plate  
K-38 2016 digital stopwatch

## PCE-125/x Series

### Ford Cup to Measure Viscosity

- international standard ASTM D1200, D333, y D365
- viscosity measurement of paints, ink, lacquers and other liquids
- cups are made of anodised aluminium with a removable stainless steel panel



### TECHNICAL SPECIFICATIONS

Model	PCE-125/2	PCE-125/3	PCE-125/4	PCE-125/5
Meas. range (cSt)	25 ... 120	40 ... 220	70 ... 370	215 ... 1413
Internal height	43 ± 0.1 mm	43 ± 0.1 mm	43 ± 0.1 mm	43 ± 0.1 mm
Ø inside	2.53 mm	3.4 mm	4.1 mm	5.2 mm
Ø outside	5.0 ± 0.5 mm	5.5 ± 0.5 mm	6.0 ± 0.5 mm	7.6 ± 0.5 mm
Flow time (±0.2)	40 ... 100 s	25 ... 105 s	20 ... 105 s	20 ... 105 s
Material	flow cup: anodised aluminium nozzle: stainless steel			
Applications	paint, ink, lacquer			
Norm	ASTM D1200, D333 and D365			

### INCLUDES

Ford flow cup (one of the models), glass plate, factory calibration certificate, manual

### ITEM NO.

ITEM NO.	ITEM
K-PCE-125/2	Ford flow cup, range 25 ... 120
K-PCE-125/3	Ford flow cup, range 49 ... 220
K-PCE-125/4	Ford flow cup, range 70 ... 370
K-PCE-125/5	Ford flow cup, range 215 ... 1413

### OPTIONAL ACCESSORIES

K-BDG 130	V-shaped tripod for flow cup viscometers
K-PCE-1-RG	spare glass plate
K-38.2016	digital stopwatch

## PCE-RVI 3

### Battery Powered Rotational Viscometer

- 24 operating hours
- fixed revolutions
- LC display / IP 20 protection
- includes a 6-piece set of measuring spindles
- optional laboratory tripod



### TECHNICAL SPECIFICATIONS

Measurement range	PCE-RVI 3 VP 20      200 ... 200000 mPa·s
Measurement principle	PCE-RVI 3 VP 60      66 ... 66600 mPa·s
Rotational speed	Rotational viscometer (Principle of Brookfield) PCE-RVI 3 VP 20      20 RPM
Accuracy	±2 %
Reproducibility	±1 %
Display indications	revolutions, measurement system, viscosity, percentage of the full scale value, battery level
Power supply	4 x AA batteries
Operating conditions	+10 ... +40 °C / <80 % non-condensing
Dimensions / weight	105 x 160 x 255 mm / 1.150 kg

### INCLUDES

Viscometer (one of the models), set of spindles R2 ... R7, protection device for measuring spindle, calibration certificate, case, instruction manual

### ITEM NO.

ITEM NO.	ITEM
K-PCE-RVI 3 VP20	rotational viscometer, 20 RPM
K-PCE-RVI 3 VP60	rotational viscometer, 60 RPM

### OPTIONAL ACCESSORIES

K-501000	calibration oil 1000 mPa·s / 500 ml
K-505000	calibration oil 5000 mPa·s / 500 ml

## PCE-RVI 1

### Analogue Rotational Viscometer (Principle of Brookfield)

- suitable for Newtonian fluids / for use in laboratories, in production control or in the control of incoming processing materials
- analogue viscosity indication / electric drive for smooth operation
- 4 spindles included in the shipping content / easy adjustment of rotational speed
- appropriate to check the viscosity of lacquers, paints, pastes (also for non-stationary use)



### TECHNICAL SPECIFICATIONS

Measurement range	10 ... 100000 mPa·s
Measurement principle	rotational viscometer (principle of Brookfield)
Indication	needle scale
Accuracy	±5 % (for Newtons, liquid)
Rotors / spindles	no. 1 ... 4 (standardised set of spindles)
Rotational speed	6, 12, 30, 60 RPM
Power supply	220 V, 50 ... 60 Hz
Case / foot	painted steel
Guide rod	stainless steel
Dimensions	300 x 300 x 450 mm
Weight	1.5 kg

### INCLUDES

Analogue viscometer, 4 x spindles (stainless steel), mains cable, wooden transport box, instruction manual

### ITEM NO.

ITEM NO.	ITEM
K-PCE-RVI 1	analogue viscometer

### OPTIONAL ACCESSORIES

K-RVI1-SPIN	spare spindles (4 x)
K-500500	calibration oil 500 mPa·s / 500 ml
K-501000	calibration oil 1000 mPa·s / 500 ml
K-505000	calibration oil 5000 mPa·s / 500 ml

## PCE-RVI 2

### Rotational Viscometer with LC Display and RS-232

- measures viscosity and temperature / 19 rotational speed levels
- 4 digit LC display
- RS-232 interface
- multilingual menu
- includes a spindle set of 4 or 6 pieces (depending on the model)
- DIN ISO 2555



### TECHNICAL SPECIFICATIONS

Measurement range	PCE-RVI 2 V1L      3 ... 2,000,000 mPa·s
Measurement principle	PCE-RVI 2 V1R      20 ... 13,000,000 mPa·s
Rotational speed	principle of Brookfield/ ASTM / DIN ISO 2555 0.3 / 0.5 / 0.6 / 1 / 1.5 / 2 / 2.5 / 3 / 4 / 5 / 6 / 10 / 12 / 20 / 30 / 40 / 50 / 60 / 100 / 200 RPM
Resolution	0.1 °C
Accuracy	±1 %
Temperature	- 15 ... +180 °C
Display indications	temperature, revolutions, measurement system, viscosity
Power supply	100 ... 240 V AC; 50 / 60 Hz
Operating conditions	10 ... 40 °C / <80 % RH
Dimensions / weight	330 x 300 x 430 mm / 10 kg

### INCLUDES

Viscometer, set of spindles, spindle stand, laboratory stand, temperature sensor, mains cable, certificate, case, instruction manual

### ITEM NO.

ITEM NO.	ITEM
K-PCE-RVI 2 V1L	rotational viscometer up to 2 million mPa·s
K-PCE-RVI 2 V1R	rotational viscometer up to 13 million mPa·s

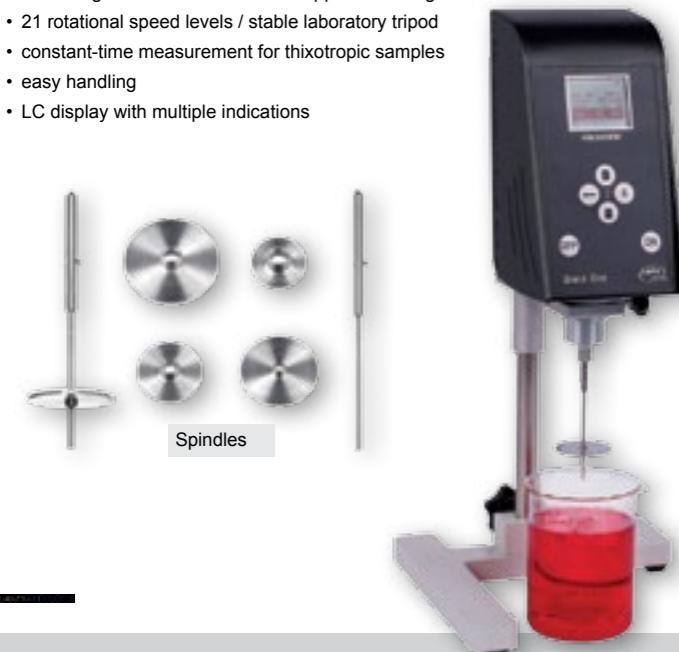
### OPTIONAL ACCESSORIES FOR PCE-RVI

K-500500	calibration oil 500 mPa·s / 500 ml
K-501000	calibration oil 1000 mPa·s / 500 ml
K-505000	calibration oil 5000 mPa·s / 500 ml

## Black One 600000

Rotational Viscometer up to 156,000,000 mPa·s - ASTM / DIN ISO 2555

- according to DIN ISO 2555 / wide application range
- 21 rotational speed levels / stable laboratory tripod
- constant-time measurement for thixotropic samples
- easy handling
- LC display with multiple indications



### TECHNICAL SPECIFICATIONS

Rotational speed	0.3 / 0.5 / 0.6 / 1 / 1.5 / 2 / 2.5 / 3 / 4 / 5 / 6 / 10 12 / 20 / 30 / 40 / 50 / 60 / 100 / 200 / 250 rpm
Spindle size	2, 3, 4, 5, 6 y 7
Torque	0.05 ... 10 mNm
Viscosity	20 ... 156,000,000 mPa·s (cP)
Display	LC display
Norms	Revolutions / minute; torque; measuring system; viscosity; time
Power supply	ASTM / DIN ISO 2555
Material	90 ... 240 V AC 50 / 60 Hz
Dimensions	tripod: supporting stand / case (painted steel); guide rod (stainless steel)
Weight	122 x 130 x 660 mm
	6 kg

### INCLUDES

Viscometer, spindle set (sizes no. 2, 3, 4, 5, 6 and 7), laboratory tripod, instruction manual

ITEM NO.	ITEM
K-600000	viscometer

### OPTIONAL ACCESSORIES

K-111947	set of spare spindles, sizes 2 ... 7
K-500500	calibration oil 500 mPa·s / 500 ml
K-501000	calibration oil 1000 mPa·s / 500 ml
K-505000	calibration oil 5000 mPa·s / 500 ml

## PCE-RVI 6

Krebs Stormer viscometer (in KU)

- in line with ASTM D 562-81 and GB/T 9269-88
- for paints, lacquers and coating materials



### TECHNICAL SPECIFICATIONS

Measurement range	.53 ... 141 KU; 32 ... 1099 g
	27 ... 5.250 cp
Accuracy	±1.5 %
Sample volume	max. 5 ... 500 g
Rotational speed	fixed at 200 ±0.5 RPM
Display	4 digits, LED
Norms	ASTM D 562-81; GB/T 9269-8
Power supply	220 V, 50 Hz
Dimensions	spindle: 54 x 7.9 x 0.8 mm spindle blade: 85 x 85 mm device: 220 x 220 x 390 mm
Weight	9.2 kg

### INCLUDES

Viscometer, spindle, instruction manual

ITEM NO.	ITEM
K-PCE-RVI 6	viscometer

### OPTIONAL ACCESSORIES

K-RVI6-SPIN	spare spindle
K-RVI6-CUP	spare flow cup

## ZXCON

Bostwick Consistometer (Viscometer)

- low sample quantity required
- ideal for mobile use
- integrated circular level
- made of stainless steel
- easy cleaning



### TECHNICAL SPECIFICATIONS

Bostwick consistometer ZXCON	stainless steel
Material	stainless steel
Length	355 mm
Width	88 mm
Height	104 mm
Scale length	240 mm
Bostwick consistometer ZXCON „Extended“	
Material	stainless steel
Length	414 mm
Width	88 mm
Height	104 mm
Scale length	354 mm

### INCLUDES

consistometer (one of the models), instruction manual

ITEM NO.	ITEM
K-ZXCON	viscometer, 355 mm
K-ZXCON Extended	viscometer, 414 mm



## Polyvisc FV

Flow Viscometer with Digital Display

- for inhomogeneous and lumpy products
- digital indication of flow speed in mm/s
- mobile use
- automatic calculation of values
- easy cleaning



### TECHNICAL SPECIFICATIONS

Min. viscosity	approx. 6000 mPa·s
Meas. distances	7.5, 15 or 30 s
Sample temperature	80 °C
Humidity	90 %
Protection class	IP 54
Period of use	continuous operation
Value calculation	automatic
Display	digital
Power supply	4 x 1.5 V batteries
Operating cond.	max. +40 °C
Dimensions	114 x 57 x 325 mm
Weight	900 g

### INCLUDES

Flow viscometer, CE certificate, batteries, manual

ITEM NO.	ITEM
K-Polyvisc FV	viscometer



## Viscolite dxx Series

### Portable Viscometer for Liquid Food

- no openly rotating parts (nearly maintenance-free, minimum long-time drift over the years) / "Safe Area" safety certificate
- useful in production processes due to mobility / suitable for outdoors and laboratories
- easy to handle and to read / IP 65 protection
- accurate and reproducible measurement values / delivered calibrated



#### TECHNICAL SPECIFICATIONS

	Viscolite d15	Viscolite d21
Measurement range	0 ... 5.000 cP	0 ... 10.000 cP
Min. sample volume	15 ml (15 ccm)	100 ml (100 ccm)
	(smaller volumes falsify the viscosity measurement values extremely)	
Min. sample weight	500 g	700 g
Probe length	215 mm	305 mm
Reproducibility	better than 1 %	
Temperature compensation	automatic	
Display	min. 500 g	
Material	wetted parts: 316 stainless steel	
Power supply	4 x AA batteries	
Operating conditions	-20 ... +120 °C	

#### INCLUDES

Portable viscometer, stainless steel probe, ISO calibration certificate, carrying case, instruction manual

#### ITEM NO.

K-Viscolite d21 standard viscometer  
K-Viscolite d15 small sensor viscometer

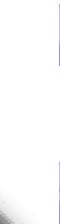
#### OPTIONAL ACCESSORIES

K-CAL-Viskolite ISO calibration certificate

## LEMIS VM-250.1

### Hand-Held Viscometer (ATEX Approved)

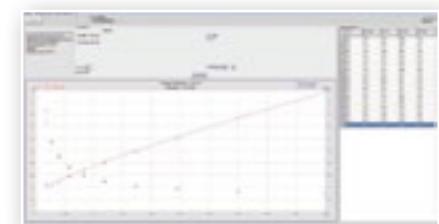
- direct viscosity measurement / low maintenance
- automatic temperature compensation
- easy handling / no sample preparation necessary
- applicable under roughest conditions
- can measure in containers of up to 6 m depth
- large internal data memory; data transfer via Bluetooth



## RM 100L

### Online Viscometer for High or Low Flow Rates

- uses a magnetic coupling for optimal tightness
- optional software Visco-RM offers automatic measurement via PC
- real-time viscosity determination
- 19 rotational speed levels: 5 ... 600 RPM



#### TECHNICAL SPECIFICATIONS

Measurement range viscosity	10000 mPa·s (cP)
Temperature range	-40 ... +85 °C
Max. immersion depth	6 m (20 ft.)
Approvals	ATEX II (2G) EEx ib [ia] IIB T4 / ATEX II 1G EEx ia IIB T4
Internal memory	1980 measurement data
Interface	Bluetooth
Temperature compensation	automatic
Display	LCD (2 x 16); with backlight
Power supply	NiMH 3.6V / 1200 mAh
Battery life	approx. 12 h
Dimensions	180 x 80 x 40 mm
Weight	0.6 kg

#### INCLUDES

Hand-held viscometer, external probe, software, carrying case, instruction manual

#### ITEM NO.

K-VM-250.1 viscometer

#### OPTIONAL ACCESSORIES

K-CAL-V2 calibration certificate 1 ... 200 cP  
K-CAL-V3 calibration certificate 1 ... 700 cP

#### TECHNICAL SPECIFICATIONS

Measurement principle	rotational viscometer
Rotational speed	5 / 6 / 10 / 12 / 20 / 30 / 40 / 50 / 60 / 70 / 80 / 90 / 100 / 200 / 250 / 300 / 400 / 500 / 600
Torque	0.1 ... 20 mPa·s (cP)
Viscosity	1 ... 1,000,000 mPa·s (cP)
Temperature	-20 ... +80 °C
Display	LCD with multiple indication (temperature, RPM, torque, measurement system, viscosity, time)
Interface	PC: serial, USB / printer: parallel/ analogue: 4 ... 20 mA
Power supply	90 ... 240 V ac, 50 / 60 Hz
Dimensions	display: 105 x 175 x 261 mm / sensor head: 312 x 92 mm (Ø x h)
Weight	total 4 kg

#### INCLUDES

Online viscometer, sensor head, instruction manual

#### ITEM NO.

K-220300 online viscometer RM 100L

#### OPTIONAL ACCESSORIES

K-121038 online measuring cell CD-25 (see dimensions on the right)  
K-121035 online measuring cell CD-50 (see dimensions on the right)  
K-121034 online measuring cell CD-75 (see dimensions on the right)  
K-121033 online measuring cell LD-75 (see dimensions on the right)  
K-121032 online measuring cell LD-100 (see dimensions on the right)  
K-311003 Visco-RM software

#### OPTIONAL ACCESSORIES

Model	Ø mm	Ø inches
CD-25	25.4	1
CD-50	50.8	2
CD-75	76.1	3
LD-75	76.1	3
LD-100	101.6	4

LD-type measuring cells are suitable for high flow rates of >10m³/h and tube diameters of 75 mm (3").

CD-type measuring cells are suitable for low flow rates of <1m³/h and smaller pipes.

The Visco-RM software is especially suitable for quality supervision or industrial control, thanks to measuring process automation.

It guarantees viscosity measurements corresponding to considering time or temperature, as well as gradually speed measurement with evaluation / processing of the resulting measurements.