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## Manual Viscometer PCE-127 Series



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Thank you for purchasing a flow cup meter from PCE Instruments.

## 1 Safety notes

Please read this manual carefully and completely before you use the device for the first time. The device may only be used by qualified personnel and repaired by PCE Instruments personnel. Damage or injuries caused by non-observance of the manual are excluded from our liability and not covered by our warranty.

- The device must only be used as described in this instruction manual. If used otherwise, this can cause dangerous situations for the user and damage the meter.
- You must not make any technical changes to the device.
- The appliance should only be cleaned with a cloth and suitable cleaning agents. Do not use aggressive agents or abrasives and do not use wire brushes, metal scrapers or other metallic tools for cleaning.
- Clean the flow cup meter after each use and make sure that it is dry and free from residues before storing it.
- The device must only be used with accessories from PCE Instruments or equivalent.
- Before each use, inspect the cup for visible damage. If any damage is visible, do not use the device.

This user's handbook is published by PCE Instruments without any guarantee.

We expressly point to our general guarantee terms which can be found in our general terms of business.

If you have any questions please contact PCE Instruments.

## 2 Specification

### 2.1 Technical specifications

	Immersion cup PCE-127/4P	Flow cup PCE-127/4
Capacity	100 ml	
Ø nozzle	4 mm ( $\pm 0.02$ mm)	
Standard	DIN 53211	
Flow time	25 ... 150 s	
Dynamic viscosity	96.2 ... 680 mPa * s	
Material	Cup: anodized aluminium Nozzle: stainless steel	
Dimensions	Inner Ø: 50 mm Outer Ø: 65 mm Height: 78 mm Handle length: 170 mm	Inner Ø: 50 mm Outer Ø: 65 mm Height: 70 mm
Weight	Approx. 215 g	Approx. 200 g

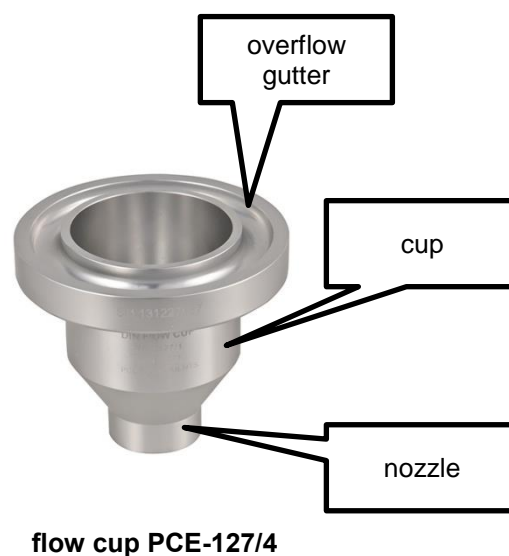
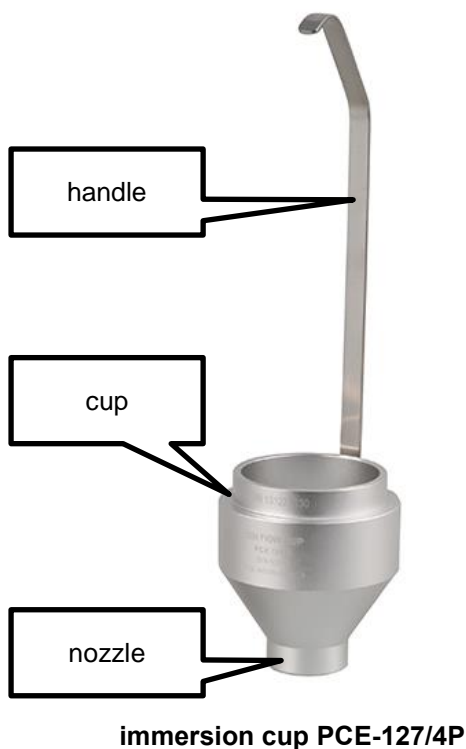
### 2.2 Delivery contents

- 1 x flow cup PCE-127/4 or immersion cup PCE-127/4P
- 1 x glass plate (PCE-127/4 only)
- 1 x factory certificate
- 1 x instruction manual

### 2.3 Optional accessories

- Stand BDG 130

## 3 System description



## 4 Operation

### 4.1 Preparing the measurement

To perform a measurement, you need a stopwatch.

Also, please mind the following notes to prepare the measurement:

- Make sure that the cup and the nozzle are clean and free from residues.
- The liquid to be measured has to be homogeneous and free from air bubbles. Do not let the sample rest for too long. The sample should be freshly strained (e. g. by stirring) before starting the measurement.
- Allow some time for the fluid and the cup for temperature compensation.
- Measure and note down the temperature of the liquid.
- You can only measure Newtonian fluids with the flow cup. To check if the sample is Newtonian, observe the measuring procedure (see chapter 4.2) and follow these steps:
  - Fill the cup and measure the flow time immediately.
  - Fill the cup again and wait one minute before measuring the flow time.
  - If the deviation between both results is above 10 %, the sample is a non-Newtonian fluid. In this case, you cannot measure it with the flow cup.

### 4.2 Taking a measurement

#### Immersion cup PCE-127/4P

1. Immerse the flow cup into the sample until it is filled completely.
2. Quickly pull the flow cup out of the fluid and start the flow time measurement at the same time. Make sure that you hold the flow cup vertically during the whole measurement.
3. Watch the fluid coming out of the nozzle. Once the flow breaks, stop the flow time measurement.
4. Repeat the measurement.
5. If the results of both measurements do not deviate by more than 5 %, calculate the average and note it down.
6. After that, you can calculate the viscosity by using a viscosity nomogram, for example.

#### Flow cup PCE-127/4

1. Place the cup in a way that the nozzle is aligned vertically and not blocked.
2. Place a finger on the nozzle to cover it.
3. Fill the cup to the brim. Pour the fluid into the cup gently to prevent the formation of air bubbles.
4. Slide the glass plate over the rim of the cup until it is covered completely. Excess sample is absorbed by the overflow gutter.
5. Remove your finger from the nozzle and wait a while to allow air bubbles to get to the surface.
6. Remove the glass plate and start the flow time measurement at the same time.
7. Watch the fluid coming out of the nozzle. Once the flow breaks, stop the flow time measurement.
8. Repeat the measurement.
9. If the results of both measurements do not deviate by more than 5 %, calculate the average and note it down.
10. After that, you can calculate the viscosity by using a viscosity nomogram, for example.

### 4.3 Maintenance

The flow cups of the PCE-127 series are low-maintenance devices.

If you need to perform calibration checks on a regular basis (e. g. in line with a quality management system) we offer a variety of calibration oils.

## 5 Warranty

You can read our warranty terms in our General Business Terms which you can find here:  
<http://www.industrial-needs.com/business-terms.htm>.

## 6 Disposal

For the disposal of batteries, the 2006/66/EC directive of the European Parliament applies. Due to the contained pollutants, batteries must not be disposed of as household waste. They must be given to collection points designed for that purpose.

In order to comply with the EU directive 2012/19/EU we take our devices back. We either re-use them or give them to a recycling company which disposes of the devices in line with law.

If you have any questions, please contact PCE Instruments.



## 7 Contact

If you have any questions about our range of products or measuring instruments please contact PCE Instruments.

### 7.1 PCE Instruments UK

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