MEASUREMENT OF PRESSURE CHANGE WITH DENSITY CHANGE

MED 16.03

Material:

Item-no.	Qty.	Description
C3020-6D	1	Erlenmeyer flask glass, 250 ml, SB 29
C7320-4B	1	Stopper silicone, 26/32/30 mm, 1 hole, for SB 29
C6230-1B	1	Stopcock 3 way, PP
C7445-7G	1	Hose, rubber, D=7/10 mm, L=100 cm
C7445-5S	1	Hose, silicone, D=5/8 mm, L=100 cm
C6095-1K	1	Tubing connector for di= 7-10 mm
C6100-2A	1	Syringe, 120ml, plastics
DE722-2D	1	Manometer, differential, "inno"
P3120-4A	1	L-shaped assembly platform

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Purpose
Measuring the increase of pressure increase with increasing density.

Preparation

- the three-way valve is inserted into the stopper as shown on the image
- insert the stopper into the Erlenmeyer flask
- the outlet on the side of the valve is connected to the Manometer via a silicone hose
- the piston of the syringe is pulled outwards and connect it with the upper end of the valve via another silicone hose
- the three-way valve is set so that there is a connection between the piston and the measuring device (measuring position)
- turn on the Manometer and set a measuring range of „1000 hPa“, afterwards tare (set to 0)

Experiment
The three-way valve is set so that there is a connection between the Erlenmeyer flask and the piston. Push air with the piston into the Erlenmeyer flask.

Afterwards bring the three-way valve back into „measuring position“ and read off the result on the Manometer.

Result
After turning to the measuring position while maintaining the piston pressure, the increased pressure is determined - caused by the larger number of impacting particles per unit area.

Note
If you also want to establish a relationship between the increase in density and the increase in pressure, special attention must be paid to a constant temperature.