

PRESSURE CHANGE DUE TO DENSITY CHANGE

MED 16.02



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
P7422-2B	1	Glass tube straight, L=80 mm
C6230-1B	1	Stopcock 3 way, PP
C7445-7G	1	Hose, rubber, D=7/10 mm, L=100 cm
C6100-2A	1	Syringe, 120ml, plastics
C1010-1H	1	Beaker glass, 1000 ml, tall form, Borosilicate

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Purpose

Demonstrating that the pressure of a gas increases with density.

Preparation

- the three-way valve is inserted into the stopper as shown on the image
- insert the glass tube into the same hole from the bottom side
- fill the Erlenmeyer flask with 200 ml coloured water
- insert the stopper into the Erlenmeyer flask, make sure that the glass tube reaches the water
- connect the silicone hoses as shown on the image
- the piston of the syringe is pulled outwards, connect the hose with the syringe

Experiment

The valve is set so that air can be inserted into the pressure flask with the syringe, do this immediately afterwards.

Set the valve to the blocking position and then in the position with vertical permeability.

The increase in the amount of air causes an increased density which results in an increased pressure on the water surface. More particles are now hitting the surface at the same time.

Result

The increase in air pressure in the Erlenmeyer flask causes the liquid in the tube to rise.

Note

The pressure can be increased so carefully that the liquid escapes slowly or so strongly that the water splashes into the beaker.