

DENSITY COMPARISON OF TWO LIQUIDS

MED 01.11



Material

Item-no.	Qty.	Description
DS090-1K	1	Claw base simple, L=200 mm
P7240-1G	1	Support rod, round, L=500 mm, D=10 mm
DS400-3K	1	Bosshead cross-pattern, Demo, green
DS404-1G	1	Plate clamp on support
DM450-1U	1	U-tube with extension tube
C6100-2A	1	Syringe, 120ml, plastics
C7445-7S	1	Hose, silicone, D=7/9 mm, L=100cm
C1000-1B	2	Beaker glass, 100 ml, low form, Borosilicate

Liquids with various densities:
For example water, alcohol, cooking oil

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Purpose

Visualization of the difference in density of liquids.

Preparation

Insert the 10 cm rod into the claw base; afterwards fix the cross-patterned bosshead to the support rod. Next mount the plate clamp on support on the bosshead.

Moisten the extension tube of the U-tube and the tip of the syringe and connect them with the silicone hose. Draw the syringe up to 50 ml.

Now pour 50 ml of liquid with different densities into the two beakers, afterwards position the beakers as shown on the image to the left.

Experiment

Mount the U-tube carefully in the plate clamp as shown on the image.

Position the beakers so that the U-tube can be immersed in the centre of the beakers.

Now loosen the bosshead and move the U-tube down until the tubes are immersed in the liquids. Draw up the syringe slowly and observe the liquid pillars in the beakers.

Conclusion

The liquid pillar has to be longer (at the same mass) if the density is smaller.

Note

At water and alcohol the difference is approximately 1/5.

For a better visibility it is recommended to colour the water.