

Common properties of bodies

Density

Determining the density of a liquid - Measurement using an areometer

Object of the experiment

1. Measuring the density of a liquid by means of an areometer

Setup**Measuring example**

Liquid	Appropriate areometer	Density ρ in g/cm ³
water	0.700-1.000 g/cm ³	0.995
salt water	1.000-1.500 g/cm ³	1.135
meth. spirit	0.700-1.000 g/cm ³	0.833

Evaluation

An areometer is a buoyant body that enables the density of a liquid to be measured directly.

As the buoyancy in a liquid depends on the density, an areometer is immersed to different levels in different liquids.

Apparatus

1 Areometers, set of 3	316 46
1 Methylated spirits, 1 l.....	670 9990
1 Sodium chloride, 1 kg	673 5720
1 Self-supporting cylinder, 400 ml, smooth-ground....	664 215
1 Measuring beaker, 1000 ml	604 211
1 Polymide spatula, 150 mm	604 570

Carrying out the experiment

Remark concerning density measurement with the set of 3 areometers:

If the density of the liquid is not known, the measurement should always start with the areometer that has the smallest measuring range.

If this areometer does not dip into the liquid up to the scale, the areometer with the subsequent measuring range can be used.

- Fill the self-supporting cylinder with cold water of approx. 20 °C and select the areometer that is appropriate for the measurement.
- Read the density at the scale of the areometer on the level of the water surface. When you read the scale, your direction of view should always be parallel to the liquid surface.
- Repeat the experiment with salt water and methylated spirit. Before changing the liquid, rinse the self-supporting cylinder with water.