

Determination of density using the pycnometer

Chemicals

- Sample solution
- Water, distilled

Material

- Pycnometer
- Analytical balance
- Water bath

Task:

Determination of the density of a liquid using the pycnometer

Operating instruction:

- The density of a liquid is to be determined using the pycnometer and the analytical balance at 20° C
- The determination of density is to be carried out two or three times ($\rho(\text{H}_2\text{O})=0,9982 \text{ g/mL}$)

	1. Determination	2. Determination	3. Determination
Pycnometer empty:	_____ g	_____ g	_____ g
Pycnometer filled with water at 20°C	_____ g	_____ g	_____ g
Pycnometer filled with sample solution at 20°C	_____ g	_____ g	_____ g

Waste disposal:

- Dispose of the wastes in the sink

Analysis:

- Specify the density of the liquid at 20°C with four places after the decimal point
- Sample number: _____
- Found result: _____

Preparation list

Chemicals:

- Sodium chloride
- Water, distilled.

Tools:

- Water bath
- Analytical balance
- 100 mL volumetric flask

Preparation of the sample solution:

- Solutions of sodium chloride are to be produced. The densities shall be between 1,0707 g/mL, $w(\text{NaCl})=10\%$, and 1,1478 g/mL, $w(\text{NaCl})=20\%$
- The numbers are approximate values
- Densities are to be specified in advance

- Every student is to be handed out 100 mL of sample solution