

MEASURING DENSITY OF SOLID BODIES - SAME VOLUME (CM³ CUBES)

MED 01.09a



Material:

Item-no.	Qty.	Description
DS090-1K	1	Claw base simple, L=200 mm
P7240-1C	1	Support rod, round, L=250 mm, D=10 mm
DS400-3K	1	Bosshead cross-pattern, Demo, green
DM725-ND	1	Newtonmeter
P3120-5B	1	S-shaped assembly platform
DM140-1A	1	Specific gravity-cubes, 6 pcs, each 1 cm ³
DG100-1L	1	Vernier calliper, metal

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Purpose

Determination of the density of different materials by weighing.

Concept of density: Masses of different sizes are more or less crowded together on the same volume.

Preparation

Insert the 25 cm rod into the claw base; afterwards fix the cross-patterned bosshead to the support rod. Place the Newtonmeter on the S-shaped assembly platform for a better visibility.

The weighing bar of the Newtonmeter should be mounted in the bosshead with the weighing plate on the top.

Experiment

Set the measuring range on the Newtonmeter to „g“ (grams); afterwards turn it on.

Place one mass body after another on the weighing plate and note the mass in the 2nd column of the chart below. The volume of each cube is 1 cm³.

	Mass (in g)	SI-System (kg/m ³)
Aluminum		2.700
Iron		7.874
Copper		8.920
Lead		11.342
Zinc		7.140
Wood (European)		470 - 750

Note

In this experiment the mass (in grams) is equal to the density in grams per cm³.

In the SI-system the unit is kilograms per m³.

For example: Aluminum 2,7 g/cm³ = 2700kg/m³