

## Common properties of bodies

## Volume

## Determining the volume of air

**Object of the experiment**

1. Determining the volume of air by filling an evacuated sphere with water

**Setup****Evaluation**

The volume of the air in a glass sphere can be determined by evacuating the sphere and by filling it with water.

The volume of the water then corresponds to the volume of the air.

The volume of the air in the glass sphere is 1000 ml.

**Remark:**

The sphere should only be filled with distilled water.

After carrying out the experiment, unscrew the stopcocks and allow the sphere to dry completely.

**Apparatus**

1 Sphere with 2 stop-cocks, glass, 1 l .....	379 07
1 Support ring for round flask, 250 ml, cork.....	667 072
1 Hand vacuum pump.....	375 58
1 Measuring beaker, PP, 1000 ml.....	604 211
1 Measuring cylinder, 1000 ml, with plastic base .....	665 757
1 Silicone tubing, 6 mm diam., 1 m.....	604 432
1 Water, pure, 5 l .....	675 3410

**Carrying out the experiment**

- Open the right stopcock, evacuate the sphere with the vacuum pump, and close the stopcock again.
- Hold the sphere vertically over the measuring beaker, which is filled with distilled water, so that the tubing dips into the water.
- Carefully open the lower stopcock and observe the inflow of the water.
- Then hold the sphere vertically over the graduated cylinder and open the upper stopcock, too.
- Allow the entire amount of water to flow into the graduated cylinder.
- Read the volume of the water from the graduated cylinder.