

Calorimeter with heating coil, pluggable, 1200 ml 1021155

Instruction sheet

01/18 ALF



- 1 Calorimeter lid
- 2 4-mm sockets
- 3 Stirrer opening
- 4 Plastic nets
- 5 Opening for thermometer
- 6 Lid clamp
- 7 Stirrer
- 8 Heating coil
- 9 Plastic beaker
- 10 Calorimeter vessel

1. Safety instructions

Experiments are conducted with hot liquid. Caution: danger of burns and scalding!

- During use, always fasten the calorimeter lid.
- Set up the experiment on an even surface.
- Take extreme care while emptying the calorimeter of its contents after conducting the experiment.

The calorimeter is made of glass, which is fragile and could therefore break and cause injury.

- Be careful with the calorimeter vessel.
- Using the carrier nets, place the calorimeter cylinder or other sample types in the glass vessel. Make sure that nothing strikes the glass vessel.

2. Description

The calorimeter is for determining specific heat capacities, conversion energies of materials, mixing temperatures as well as measurement of electrical equivalents of heat.

The equipment consists of a double-walled, heat-insulating plastic container with an insulating vessel inside made of reflecting glass. The lid has openings for a thermometer and the stirring strip. The heating coil has two jacks as contacts, and can be disconnected from the inside of the lid, if needed. Two plastic nets serve for safe loading of samples. The nets remain in the vessel during measurements.

The calorimeter is supplied with a plastic beaker for protection during transport (see Fig 1).

- Take out the beaker before using the equipment.

- If necessary, connect the heating coil to the contacts on the inside of the lid (depending on the experiment's requirements).



Fig 1 Taking out the transport protection

3. Technical data

| | |
|----------------------------------|-------------------|
| Max. heater voltage: | 25 V |
| Max. heating power: | approx. 160 W |
| Heat capacity: | approx. 200 J/K |
| Contents of insulated container: | approx. 1200 ml |
| Dimensions: | 240 x 120 mm dia. |
| Weight: | approx. 0.8 kg |

4. Operation

When in use, the heating filament must be immersed in the water to a depth of at least 2 cm.

- Never use the filament in the dry.
- Experiments should be conducted using distilled water.
- Temperature sensors should not touch the sample (calorimeter cylinder) as this would lead to measurement errors.
- Stir continuously while performing temperature measurements.
- After each series of measurements, the calorimeter and heating filament should be cleaned and dried.

5. Additionally required equipment

5.1 For measuring temperature

| | |
|----------------------------------|---------|
| 1 Digital Thermometer, 1 Channel | 1002793 |
| Alternatively | |
| 1 VinciLab | 1021477 |
| 1 Thermocouple Type K | 1021498 |

5.2 For determining specific heat capacity of solids

| | |
|----------------------------------|---------|
| 1 Set of 4 Calorimeter Cylinders | 1003253 |
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5.3 To power the heater

| | |
|------------------------------------|---------|
| 1 DC power supply 20 V, 5 A @230 V | 1003312 |
| or | |
| 1 DC power supply 20 V, 5 A @115 V | 1003311 |

5.4 To measure time

| | |
|---------------------|---------|
| 1 Stopwatch, 15 min | 1003369 |
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