

## Calorimeter with heating coil, 1200 ml 1000821

### Instruction sheet

10/15 ALF



- 1 Heating coil
- 2 4-mm sockets
- 3 Stirrer
- 4 Opening for thermometer
- 5 Calorimeter lid
- 6 Calorimeter vessel
- 7 Lid clamp

### 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.
- When inserting solid test bodies into the calorimeter, make sure that they do not bang against the side of the glass.

### 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 an opening for a thermometer, two 4-mm sockets for connecting the power for the heating filament and a stirrer made of heat-resistant plastic. The calorimeter is equipped with a heating filament, electrically insulated to avoid decomposition of filament and terminals due to electrolytic processes.

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

- Take out the beaker before using the equipment.



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.
- 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  
and  
1 K-Type NiCr-Ni Immersion Sensor 1002804  
or  
1 Tube thermometer 1003526

#### 5.2 For determining specific heat capacity of solids

Aluminium shot, 100 g 1000832  
Copper shot, 200 g 1000833  
Glass shot, 100 g 1000834

#### 5.3 To power the heater

1 DC power supply 0 - 20 V, 0 - 5 A @230 V  
1003312  
or  
1 DC power supply 0 - 20 V, 0 - 5 A @115 V  
1003311

#### 5.4 To measure time

1 Stopwatch, 15 min 1003369