

Specific heat capacity of aluminium

It is assumed that you:

- a know the meaning of 'specific heat capacity' and 'thermal equilibrium'
- b are able to accurately weigh out given masses of substances
- c are able to manipulate algebraic equations and solve them
- d know the equation $E = mc\Delta T$.

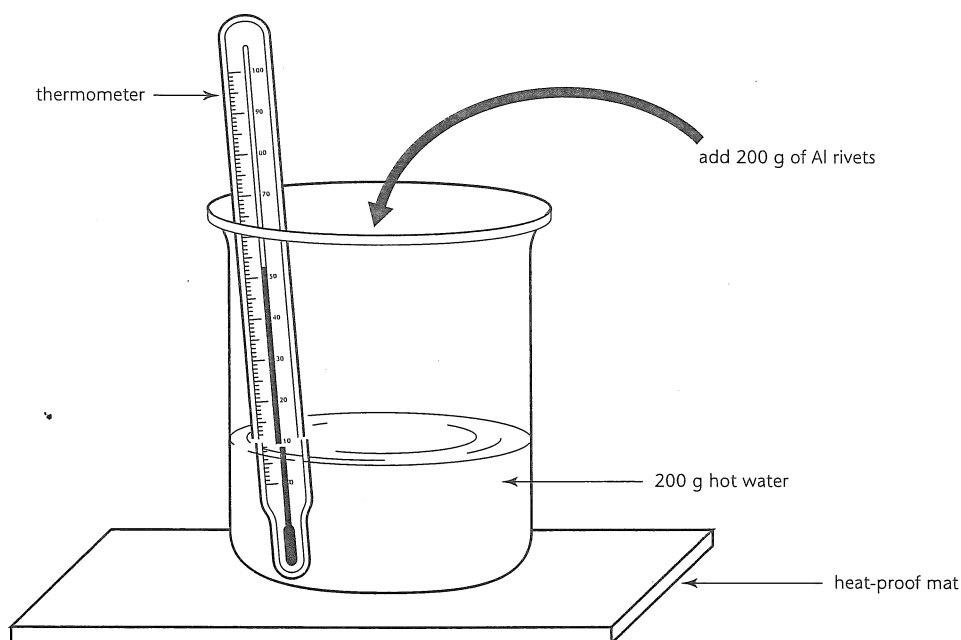
★ Equipment required

- electronic balance
- one thermometer
- 500 mL beaker
- approximately 200 g of aluminium pop rivets
- foam to act as insulation around beaker
- heat-proof mat to act as insulation under the beaker (or use a thermos flask if you have one available)

Purpose of this experiment

To determine the specific heat capacity (c) of aluminium relative to that of water.

Diagram of the experiment



Method

Take about 200 g of aluminium rivets and measure their temperature and mass. Take a similar mass of hot water and measure its temperature and mass. Add the rivets to the hot water.

The water and rivets should be stirred for a few minutes and the temperature monitored until equilibrium is reached. The thermal energy lost by the water is assumed to be equal to the thermal energy gained by the aluminium rivets. Improved insulation of the beaker will improve the accuracy of the energy transfer. Repeat the method three times.