

## Answer on the question #70258, Chemistry / Other

### Question:

A beaker containing 250.0 g of water is heated with 1500.0 J of heat energy. If the temperature of the water changed from 22.0000°C to 23.4354°C, what is the specific heat of water?

### Answer:

The relation between the heat transferred to body and change in its temperature is the following:

$$Q = cm\Delta T,$$

where  $c$  is the specific heat of the body,  $m$  is its mass and  $\Delta T$  is the change in its temperature.

Thus, we can easily find the specific heat:

$$c = \frac{Q}{m\Delta T} = \frac{1500.0 J}{250.0 g \cdot (23.4354 - 22.0000)^\circ C} = 4.180 J g^{-1} \text{ }^\circ C^{-1}$$

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