

Question#22238

3. Determine the specific heat of a substance that absorbs 125 J of heat, has a mass of 67.8 g and has a temperature change of 15.9 °C

Solution:

Let:

$$Q = 125\text{J}$$

$$m = 67.8\text{ g} = 0.0678\text{ kg}$$

$$\Delta T = 15.9^\circ\text{C}$$

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$$c = ?$$

The specific heat capacity is:

$$c = \frac{Q}{m\Delta T} \left( \frac{\text{J}}{\text{kgK}} \right)$$

$$c = \frac{125}{0.0678 \times 15.9} = 115.95 \frac{\text{J}}{\text{kgK}}$$

**Answer: 115.95 J/kgK.**