

Question #82874, Chemistry / General Chemistry | for completion

How much energy, in kJ, is needed to raise the temperature of 42.7 g of ice at -10°C to steam at +150°C.

Answer:

Formula:

$$Q=mc(T_2 - T_1)$$

$$m=42.7 \text{ g} = 0.0427 \text{ kg}$$

$$T_1= -10 \text{ }^\circ\text{C}$$

$$T_2= 150 \text{ }^\circ\text{C}$$

$$c=4.184 \text{ kilojoules / kg K}$$

$$Q=mc(T_2 - T_1) = 0.0427 \times 4.184 \times (150 - (-10))= 28.585 \text{ kJ}$$

$$Q=28.585 \text{ kJ}$$

Answer provided by www.AssignmentExpert.com