

Answer on Question#59321 – Chemistry – General chemistry

Question: Water (2390 g) is heated until it just begins to boil. If the water absorbs 5.59×10^5 J of heat in the process, what was the initial temperature of the water.

Solution:

$$Q = Cm\Delta T$$

$$\Delta T = \frac{Q}{Cm} = \frac{5.59 \cdot 10^5 J}{4.18 \frac{J}{g \cdot ^\circ C} \cdot 2390 g} = 56^\circ C$$

$$T_{in} = 100^\circ C - 56^\circ C = 44^\circ C$$

Answer: 44°C