

Question#21877

how much heat is needed to bring 20g of water from 30 degree C to boiling point?(specific heat capacity of water =4200jkg-10c-1)

Solution:

The heat quantity needed to bring water is:

$Q = m\alpha(T_2 - T_1)$, where: m is the mass of water, α is the heat capacity of water

$$m = 20g = 0.02 kg$$

$$T_2 = 100^\circ\text{C}$$

$$T_1 = 30^\circ\text{C}$$

$$Q = 0.02 * 4200 * (100 - 30) = 5880 J$$

Answer: 5880 J.