

Specific Heat and Heat Capacity Worksheet

1. The temperature of 335 g of water changed from 24.5°C to 26.4°C. How much heat did this sample absorb? c for water = 4.18 J/g°C (ans. 2.66 kJ)
2. How much heat in kilojoules has to be removed from 225g of water to lower its temperature from 25.0°C to 10.0°C? (ans. -14.1 kJ)
3. To bring 1.0kg of water from 25°C to 99°C takes how much heat input? (ans. 309 kJ)
4. An insulated cup contains 75.0g of water at 24.00°C. A 26.00g sample of metal at 82.25°C is added. The final temperature of the water and metal is 28.34°C. What is the specific heat of the metal? (ans 0.971 J/g°C)
5. A calorimeter has a heat capacity of 1265 J/°C. A reaction causes the temperature of the calorimeter to change from 22.34°C to 25.12°C. How many joules of heat were released in this process? (ans. 3.52 kJ released)
6. What is the specific heat of silicon if it takes 192J to raise the temperature of 45.0g of Si by 6.0°C? (ans. 0.71 J/g°C)