

6. How much heat is required to heat 325.0 g of water from 20.00 °C to 95.00 °C? The specific heat of water is 4.18 J/g°C.

7. You have a sample of magnesium sulfate, MgSO₄. You “zap” it with 605.5 J of heat; its temperature increases from 19.0 °C to 33.8 °C. If the specific heat of MgSO₄ is 0.8015 J / g · °C, what is the mass of the sample?

8. You apply 100.0 J of heat to an 8.020-gram sample of an unknown substance. Its temperature increases from 20.00 °C to 34.28 °C. What is the specific heat of this substance?

9. A 5.5 g sample of metal at 100.0 °C is placed in a calorimeter with 20.0 g of water at 15.0°C. if the temperature of the water rises to 21.0°C, what is the specific heat of the metal?

10. A 17.5 g sample of metal at 125.0 °C is placed in a calorimeter with 15.0 g of water at 25.0°C. if the temperature of the water rises to 30.0°C, what is the specific heat of the metal?