Chemistry CP

Name:

Heat Calculations

Section:

Substance	Specific Heat (J /g ^{o}C)
Water(l)	4.18
Gold(s)	.129
Copper(s)	.385
Mercury(l)	.14

1. A piece of copper allow with a mass of 85.0 g is heated from 30.^{o}C to 45^{o}C. In the process, it absorbs 523 J of heat. What is the specific heat of this copper alloy? (0.41 J/g ^{o}C)

2. The temperature of a 74 g sample of material increases from 15^{o}C to 45^{o}C when is absorbs 2.0 kJ of heat. What is the specific heat of this material? (0.90 J/g ^{o}C)

3. How much heat is needed to raise the temperature of 5.0 g of gold by 25^{o}C? (16 J)

4. What mass of liquid water at room temperature (25^{o}C) can be raised to its boiling point with the addition of 24 kJ of heat energy? (77g)

5. How much heat will be given off by 55 g of water as it cools from 87^{o}C to 25^{o}C? (14254 J)

6. Calculate the temperature change for mercury if 160 g of the metal absorb 1500 J of heat energy. (67^{o}C)

Challenge Question

7. Heat in the amount of 420 J is added to a 35 g sample of water at a temperature of 10. ^{o}C. What will be the final temperature of the water? (13^{o}C)