

SPECIFIC HEAT

Specific Heat Constants for Selected Substances

	J / g °C
Water (<i>liquid</i>)	4.18
Water (<i>gas</i>)	1.87
Water (<i>solid</i>)	2.06
Aluminum, Al(<i>s</i>)	0.897
Iron, Fe(<i>s</i>)	0.449
Silver, Ag(<i>s</i>)	0.235
Mercury, Hg(<i>l</i>)	0.139
Lead, Pb(<i>s</i>)	0.129

The formula for calculations involving specific heat:

$$Q = m \times C \times \Delta t$$

Q: _____

m: _____

C: _____

Δt : _____

1. How much energy is absorbed when 10 grams of aluminum is heated from 25°C to 55°C?
2. How much energy is absorbed when 10 grams of water is heated from 25°C to 55°C?
3. How much energy is absorbed when 25 grams of iron is heated from 5°C to 155°C?

Try these next two if your feeling like the last three were easy.

4. A 15 gram sample of liquid mercury at 25°C is heated. A total of 8.6 joules of energy is added. What is the new temperature of this sample?
5. A sample of Iron with a temperature of 39°C is placed in a beaker containing 150 grams of water at 21°C. After several minutes the temperature of both the iron and the water equilibrates at 25°C. What is the mass of the sample of iron? Hint the energy gained by the water will equal the energy lost by the iron...