

HW 10
CH301H
Fall 2010

Not to be turned in.

You'll need to find certain data to complete this such as the heat capacity of iron, the enthalpy of formation of certain compounds etc...

You can either find these from a variety of online resources or from the book...

Heat capacities.
It is all about the units

For each of the following determine the amount of heat flow for the system initially at the a temperature of 300K that is brought into contact with a constant temperature surroundings at 380K.

1 kg of iron
300 cm³ of iron
4 moles of iron

How much energy is released if 30 g of carbon are combusted at constant pressure in the presence of excess oxygen to form CO₂? If this reaction were performed in a container submersed in an ice bath at 0°C, how much ice would melt? (You can assume the enthalpy of the reaction is the same at 0°C) does this reaction produce any work at constant temperature? Why or why not?

How much energy is released if 20 g of methanol are combusted at constant pressure in the presence of excess oxygen to form water vapor and CO₂?