

$$H_x = nH_x$$

Chemistry 122

Molar Enthalpy Questions

You may need the table below to get some of the molar enthalpy values

1. How much heat is released by the burning of 10.0 kg of methane?
2. How much heat is given off when 10.0 kg of glucose is burned?
3. What can be concluded about the difference between burning glucose and methane?
4. What is the molar enthalpy of hydrogen if 55.00 grams are burned off releasing -7787 kJ of energy?
5. How many grams of ethanol are there if 6500.0 kJ of energy are released?
6. 20.0 kg of carbon are being burned off releasing how much energy?
7. Are all of these questions examples of endo or exothermic reactions? Explain.

Table 17.2

Heats of Combustion at 25°C

Substance	Formula	ΔH (kJ/mol)
Hydrogen	$H_2(g)$	-286
Carbon	$C(s)$, graphite	-394
Methane	$CH_4(g)$	-890
Acetylene	$C_2H_2(g)$	-1300
Ethanol	$C_2H_5OH(l)$	-1368
Propane	$C_3H_8(g)$	-2220
Glucose	$C_6H_{12}O_6(s)$	-2808
Octane	$C_8H_{18}(l)$	-5471
Sucrose	$C_{12}H_{22}O_{11}(s)$	-5645