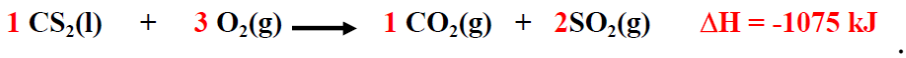
Chem. 202

H.W. of chapter(6)

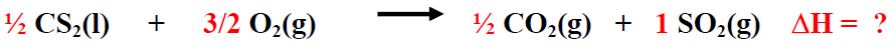
Student name	Student number	Section

Select the correct answer:

1.Liquid carbon disulfide burns in air, producing carbon dioxide gas and sulfur dioxide gas



What is ΔH for the following equation ?



A. -537.5kJ

B. 5.375kJ

C. -2150 kJ

D. None of the above

2.How much heat (**in joules**) must be used to raise the temperature of 185 g of water from 15 ^{0} C to 96 ^{0} C ?

A. 62697.2J

B. 6.3 kJ

C. 63 kJ

D. None of the above

3.Calculate the standard enthalpy change for the reaction

$C_2H_2(g) + H_2(g) \rightarrow C_2H_4(g)$

based on the following standard enthalpies of formation:

$\Delta H^\circ_f[C_2H_2(g)] = +226.7$ kJ/mol

and $\Delta H^\circ_f[C_2H_4(g)] = +52.3$ kJ/mol

A. -56.4 kJ

B. -174.4 kJ

C. -279.0 kJ

D. -321.1 kJ

4.Calculate the standard enthalpy change of reaction for the process

$CH_4(g) + 3\ Cl_2(g) \rightarrow CHCl_3(g) + 3\ HCl(g)$

using the following reactions:

$HCl(g) \rightarrow 1/2\ H_2(g) + 1/2\ Cl_2(g)$ $\Delta H^\circ = +92.3$ kJ

$C(s) + 2\ H_2(g) \rightarrow CH_4(g)$ $\Delta H^\circ = -74.8$ kJ

$C(s) + 1/2\ H_2(g) + 3/2\ Cl_2(g) \rightarrow CHCl_3(g)$ $\Delta H^\circ = -103.1$ kJ

A. -120.6 kJ

B. -212.9 kJ

C. -305.2 kJ

D. -454.8 kJ

5. What is the value of the molar enthalpy (or heat) of combustion of ethane, a simple hydrocarbon having the formula C_2H_6, if the combustion of 3.01 grams of this gas at constant pressure releases 8.47 kilojoules of heat?

A. -0.847 kJ/mol

B. -8.47 kJ/mol

C. -84.7 kJ/mol

D. -847 kJ/mol

6.A gas absorbs 0.0 J of heat and then performs 15.2 J of work. The change in internal energy of the gas is

A. –24.8 J

B. 14.8 J

C. 55.2 J

D. –15.2 J

7.A gas expands in volume from 26.7 mL to 89.3 mL at constant temperature. Calculate the work done (in joules) if the gas expands against a constant pressure of 2.8 atm.

A. –18000 J

B. –18 J

C. 0.18 J

D. –0.18 J

Good luck

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