Dougherty Valley HS Chemistry - AP
Thermochemistry – Enthalpy of Formations

Worksheet #3

Name: **Period:** **Seat#:**

Directions: Show all work in a way that would earn you credit on the AP Test! This is always the rule! Some answers are provided at the end in italics and underlined. If you need more space, use binder paper and staple to your worksheet.

$$\Delta H° = \Sigma \Delta H_f^\circ \, products - \Sigma \Delta H_f^\circ \, reactants$$

Formula	ΔH
$Br_2(l)$	0
$CCl_4(l)$	-139.5
$CH_4(g)$	-74.8
$Cl_2(g)$	0
$Fe_2O_3(s)$	-824.2
$FeCl_3(s)$	-399.5
$H_2(g)$	0

Formula	ΔH
$H_2O(g)$	-241.8
$H_2O(l)$	-285.8
HBr(g)	-36.2
HCl(g)	-92.3
HCl(g)	-92.3
$Mg(OH)_2(s)$	-924.7
MgO(s)	-601.8
$N_2(g)$	0

Formula	ΔH
$N_2O_4(g)$	9.1
$Na_2SO_4(s)$	-1387.1
NaOH(s)	-426.7
$O_2(g)$	0
$SiCl_4(l)$	-687.8
$SiO_2(s)$	-859.4
$SO_2(g)$	-296.1
$SO_3(g)$	-395.2

1) $\_\_SO_2(g) + \_\_O_2(g) \rightarrow \_\_SO_3(g)$

(–198.2 kJ)

2) $\_\_Mg(OH)_2(s) \rightarrow \_\_MgO(s) + \_\_H_2O(l)$

(37.1 kJ)

3) $\_\_N_2O_4(g) + \_\_H_2(g) \rightarrow \_\_N_2(g) + \_\_H_2O(g)$

(–976.3 kJ)

4) $\_\_SiCl_4(l) + \_\_H_2O(l) \rightarrow \_\_SiO_2(s) + \_\_HCl(g)$

(30.8 kJ)

5) __HBr(g) + __O_2(g) → __H_2O(l) + __Br_2(*l*)

(–426.8 kJ)

6) __NaOH(s) + __SO_3(g) → __Na_2SO_4(s) + __H_2O(g)

(–380.3 kJ)

7) __CH_4(g) + __Cl_2(g) → __CCl_4(*l*) + __HCl(g)

(–433.9 kJ)

8) __Fe_2O_3(s) + __HCl(g) → __$FeCl_3$(s) + __H_2O(g)

(–146.4 kJ)