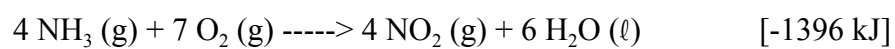


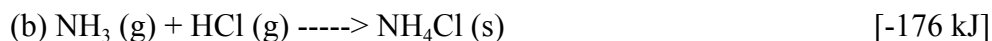
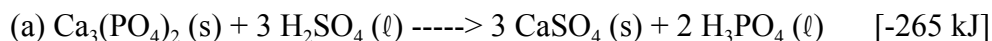
Chemistry II Standard Enthalpy of Formation Problems

ex> Calculate the standard enthalpy change for the combustion of methane [-891 kJ/mol]

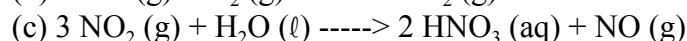
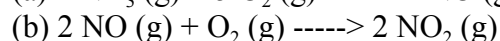
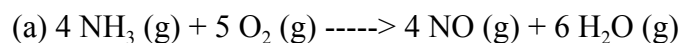
ex2> Calculate the standard enthalpy change for the following reaction:



- 1) Use standard enthalpies of formation to calculate the standard enthalpy of reaction for the following reactions:

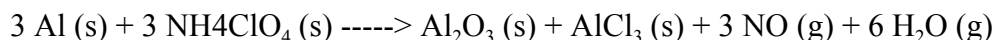


- 2) The Ostwald process for the commercial production of nitric acid from ammonia and oxygen involves the following steps:



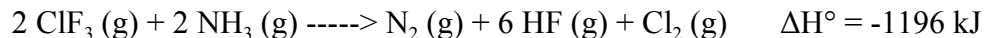
Use the standard enthalpies of formation to calculate the standard heat of reaction for each of the reactions above. [(a) -908 kJ, (b) -112 kJ, (c) -140. kJ]

- 3) The reusable booster rockets of the space shuttle use a mixture of aluminum and ammonium perchlorate as fuel. A possible reaction is



Calculate the enthalpy of reaction. [-2677 kJ]

- 4) Consider the following reaction



Calculate the ΔH_f° for $\text{ClF}_3 (g)$ [-169 kJ/mol]

Additional book practice:

p. 693 sample problem and #5,6 (answers in back of book)

p. 707 #33, 34 [a. -153.88 kJ, b. -24.8 kJ]