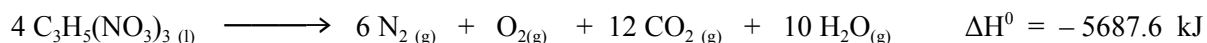


Review: Equations using Heats of Chemical Reactions

SCH4U_07 - 08

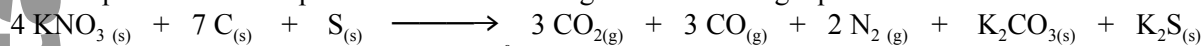
1. Nitroglycerine decomposes according to the following equation:



Determine ΔH° for the following:

- If 20 mol of nitroglycerine are detonated.
- If 30 mol of nitrogen gas form.
- If 36 mol of nitroglycerine form.
- If one mol of nitroglycerine are detonated.
- If one mol of nitroglycerine are formed.
- If 2.27 g of nitroglycerine are detonated.
- If 440.0 g of carbon dioxide are reacted with excess $\text{N}_2 (\text{g})$, $\text{O}_2 (\text{g})$ and $\text{H}_2\text{O} (\text{g})$.

2. Explosion of black powder occurs according to the following equation:



The enthalpy change for this reaction, ΔH° , is -2843.8 kJ .

Determine ΔH° for the following:

- If 1 mol of $\text{KNO}_3 (\text{s})$ are mixed to form black powder.
- $$6 \text{CO}_2 (\text{g}) + 6 \text{CO} (\text{g}) + 4 \text{N}_2 (\text{g}) + 2 \text{K}_2\text{CO}_3 (\text{s}) + 2 \text{K}_2\text{S} (\text{s}) \longrightarrow 8 \text{KNO}_3 (\text{s}) + 14 \text{C} (\text{s}) + 2 \text{S} (\text{s})$$
- If 500.0 g of $\text{KNO}_3 (\text{s})$ are reacted.
- If 1.00 kg of carbon monoxide are formed.