

TW

NAME
CHEMISTRY
Energy Content (Before vs. After)

$$\Delta H = \sum H_{\text{products}} - \sum H_{\text{reactants}}$$

Describe

1. ~~Define~~ Describe the process Endothermic in terms of the following words (system, surroundings, and universe)

$$E_{\text{universe}} = E_{\text{system}} + E_{\text{surrounding}}$$

2. In this process do we ever measure absolute energy?

NO, we use relative energy

3. What is the difference between $\Delta H^{\circ}_{\text{rxn}}$ and ΔH_{rxn} ?

ΔH° ← Runs at STP in thermodynamics
25°C (Not 0°C)

4. What is the difference between ΔH_{rxn} and ΔH_f ?

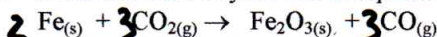
ΔH_{rxn} is any rxn
 ΔH_f ← specific type of rxn.
1 ATM

CALCULATIONS:

5. In order to determine the change in energy from reactants to products we must calculate the ΔH . What is the formula for calculation of ΔH .

$$\Delta H_{\text{rxn}} = \sum \Delta H_f \text{ Products} - \sum \Delta H_f \text{ Reactants}$$

6. From the chart in your text complete the following calculations of ΔH .



a. Balance Reaction:

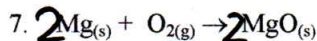
0 -393(3) -824 -110(3)

0 -1179 -824 -330

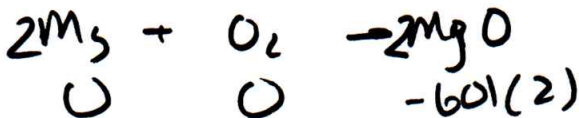
b. Calculate $\Delta H^{\circ}_{\text{rxn}}$

-1154 + 1179 = +25 kJ/Rxn

- c. Is your reaction exothermic or endothermic?



a. Balance reaction:



b. Calculate the $\Delta H^{\circ}_{\text{rxn}}$

←
-1202 - 0

$\Delta H = -1202 \text{ kJ/Rxn}$

- c. Is your reaction exothermic or endothermic?