

Honors Chemistry workbook answers

#9-4

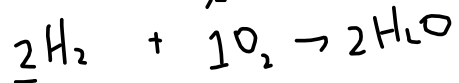
$$\Delta H = \sum \text{Bonds Broken} - \sum \text{Bonds Formed}$$

Energy Content (Bond Energy)
 (You will need bond energy charts for this worksheet)

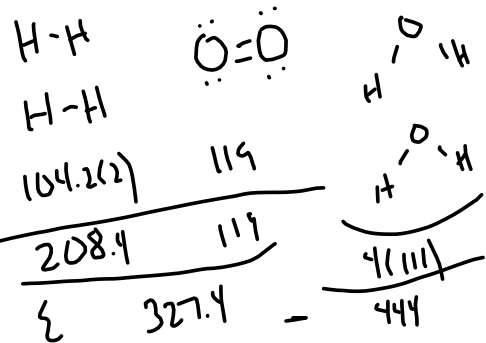
Hydrogen gas reacts with Oxygen gas to produce water

1. (True/false) Energy gets released when bonds are formed

2. Write out and balance the reaction.



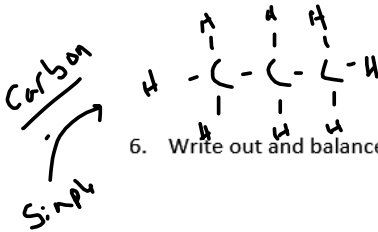
3. Draw Lewis structures of all reactants and products.



4. Determine ΔH_{rxn} based upon the bond energies.

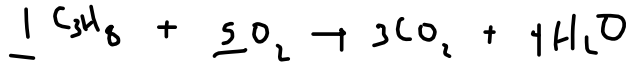
5. Is this reaction exothermic or endothermic?

$$\Delta H = -117$$

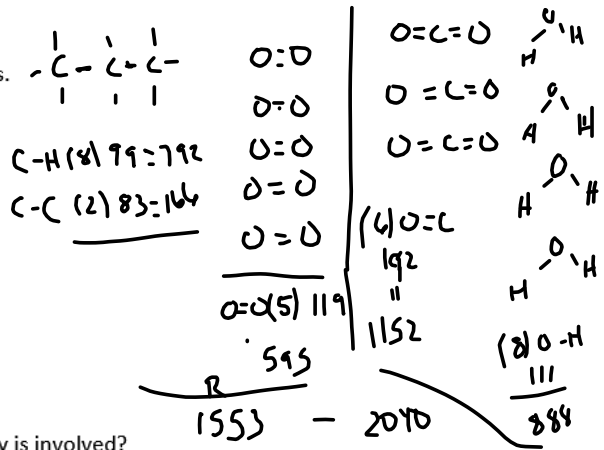


Propane from your grill burns in oxygen

6. Write out and balance the reaction.



7. Draw Lewis structures of all reactants and products.



8. Determine ΔH_{rxn} based upon the bond energies.

9. Is this reaction exothermic or endothermic?

$$-\Delta H$$

10. If 50 grams of propane is burned, how much energy is involved?

$$50 \text{ g} \cdot \frac{1 \text{ mol}}{44 \text{ g}} \cdot \frac{-497 \text{ kJ}}{1 \text{ mol}} = -553 \text{ kJ}$$

$$\Delta H = -497 \text{ kJ/mol rxn}$$