

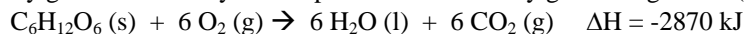
Name \_\_\_\_\_

Chemistry

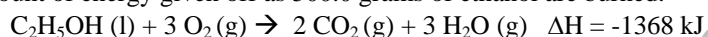
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### Energy Stoichiometry

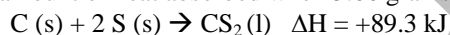
1. When suffering from a fever, your body temperature rises from 37°C to 40 °C, using 787 kJ of energy. Assume your body burns only glucose to raise your temperature. How many grams of glucose (C<sub>6</sub>H<sub>12</sub>O<sub>6</sub>) are consumed?



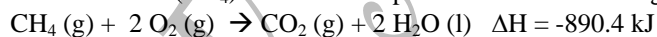
2. Gasohol contains ethanol, C<sub>2</sub>H<sub>5</sub>OH (l), which reacts with oxygen when burned to produce CO<sub>2</sub> (g) and H<sub>2</sub>O (g). Calculate the amount of energy given off as 500.0 grams of ethanol are burned.



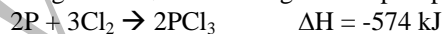
3. Calculate the amount of heat absorbed when 5.66 grams of carbon disulfide form from the synthesis of C (s) and S (s).



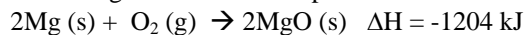
4. How many grams of methane (CH<sub>4</sub>) are needed to produce 2100 kJ of energy?



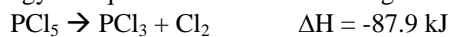
5. How much heat is given off when 1106 grams of phosphorus trichloride are formed?



6. How many grams of magnesium oxide are produced when 350 kJ of energy is released?



7. How much energy is required to break down 300 grams of phosphorus pentachloride?



8. How many liters of water vapor are released in the production of 3000. kilocalories of energy?



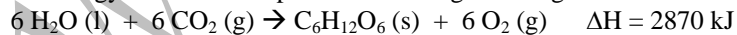
9. How much energy is released in the break down of 999 grams of iron(III) oxide?



10. A mountain climber, wanting a drink of water, must melt the snow from the mountain with a propane burner. How many grams of propane ( $\text{C}_3\text{H}_8$ ) would the mountain climber have to use to generate the 55.5 kJ of energy?



11. How many kJ of energy are needed to produce 2.0 kilograms of glucose?



12. How many kJ of energy are released when 560 liters of sulfur dioxide react with excess oxygen?

