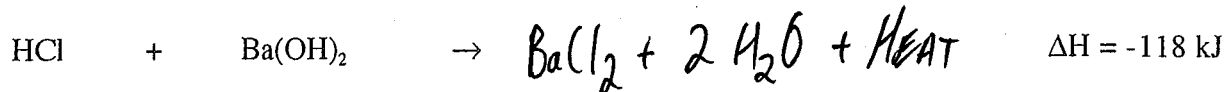


NAME KEY PER _____ DATE _____
REVIEW QUIZ

1) Hydrochloric acid (HCl) and barium hydroxide react with another to form barium chloride and water according to the equation below.



A) Complete the above equation by writing in the formulas of the 2 products.

B) What type of a reaction is this (SR, DR, SYN, DEC, or COMB)?

C) Is this reaction exothermic or endothermic? Explain.

EXO

D) Why is ΔH for this reaction negative? Your answer should include a reference to heat energy.

HEAT IS RELEASED

E) In the reaction given above part A, add the word "heat" to the appropriate side of the equation.

HEAT IS A PRODUCT

F) In this reaction is chemical heat being transformed into physical heat or is physical heat being transformed into chemical heat?

CHEMICAL HEAT IS TRANSFORMED INTO PHYSICAL HEAT

G) For this reaction, which possesses more chemical heat – the reactants or the products?

PRODUCTS

H) If a thermometer were used to monitor this reaction, would the temperature reading increase or decrease as the reaction proceeds?

INCREASE

I) If 80.0 grams of HCl react, how many kJ of heat would be produced from this reaction.

-129 KJ

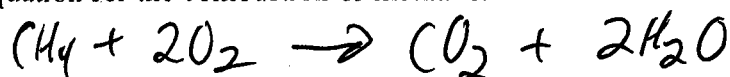
J) If all of this heat is used to warm up 420. mL of water at an initial temperature of 20 degrees Celsius, would the water begin to boil?

$$\Delta T = 73.48^\circ\text{C} \quad T_f = 93.48^\circ\text{C}$$

NO IT WILL NOT BOIL

2) Methane (CH_4) is a common fuel used in the home and in industry. It reacts readily with oxygen, and releases much heat in the process.

A) Write the balanced equation for the combustion of methane.



B) How many grams of water vapor could be produced from the combustion of 20.0 liters of methane?

$$32.14 \text{ g H}_2\text{O}$$

C) Is this reaction endothermic or exothermic? Explain.

EXOTHERMIC

D) Draw a simple energy profile for this reaction.



E) The ΔH for the reaction written in part A is -891 kJ . How many kJ of heat would be produced from the reaction of 20.0 liters of methane?

$$-795.54 \text{ kJ}$$

F) Convert this heat value from kJ to J .

$$795,540 \text{ J}$$

G) Imagine that the reaction described in part C was performed in 5000. grams of some unknown liquid at an initial temperature of 25°C . The liquid's temperature rises to 63°C . What is the specific heat capacity (C value) of this unknown liquid.

$$4.18 \text{ J/g}^\circ\text{C}$$