

THERMOCHEMISTRY CALCULATIONS WORKSHEET 1

Using reaction equation ratios

- How much heat will be released when 6.44 g of Sulfur reacts with excess O_2 according to the following equation?
 $2S + 3O_2 \rightarrow 2SO_2 \quad \Delta H^\circ = -791.4 \text{ kJ}$
- How much heat will be released when 4.72 g of Carbon reacts with excess O_2 according to the following equation?
 $C + O_2 \rightarrow CO_2 \quad \Delta H^\circ = -393.5 \text{ kJ}$
- How much heat will be absorbed when 38.2 g of Bromine reacts with excess H_2 according to the following equation?
 $H_2 + Br_2 \rightarrow 2HBr \quad \Delta H^\circ = 72.80 \text{ kJ}$
- How much heat will be released when 1.48 g of Chlorine reacts with excess phosphorus according to the following equation?
 $2P + 3Cl_2 \rightarrow 2PCl_3 \quad \Delta H^\circ = -886 \text{ kJ}$
- How much heat will be released when 4.77 g of ethanol (C_2H_5OH) reacts with excess O_2 according to the following equation?
 $C_2H_5OH + 3O_2 \rightarrow 2CO_2 + 3H_2O \quad \Delta H^\circ = -1366.7 \text{ kJ}$
- How much heat will be absorbed when 13.7 g of Nitrogen reacts with excess O_2 according to the following equation?
 $N_2 + O_2 \rightarrow 2NO \quad \Delta H^\circ = -180 \text{ kJ}$
- How much heat will be released when 11.8 g of Iron reacts with excess O_2 according to the following equation?
 $3Fe + 2O_2 \rightarrow Fe_2O_3 \quad \Delta H^\circ = -1120.5 \text{ kJ}$
- How much heat will be released when 18.6 g of Hydrogen reacts with excess O_2 according to the following equation?
 $2H_2 + O_2 \rightarrow H_2O \quad \Delta H^\circ = -571.6 \text{ kJ}$
- How much heat will be transferred when 14.9 g of ammonia reacts with excess O_2 according to the following equation?
 $4NH_3 + 5O_2 \rightarrow 4NO + 6H_2O \quad \Delta H^\circ = -1170 \text{ kJ}$
- How much heat will be transferred when 5.81 g of graphite reacts with excess H_2 according to the following equation?
 $6C(\text{graphite}) + 3H_2 \rightarrow C_6H_6 \quad \Delta H^\circ = 49.03 \text{ kJ}$

Using $\Delta H = mC\Delta T$

- How many kilojoules of heat energy are required to heat all the aluminum (C_p of Al = $.902 \text{ J/g}\cdot^\circ\text{C}$) in a roll of aluminum foil (500.0 g) from room temperature (25.0°C) to the temperature of a hot oven (250.0°C)?
- One way to cool down your cup of coffee is to plunge an ice-cold piece of aluminum into it. Suppose you store a 20.0 g piece of aluminum (C_p of Al = $.902 \text{ J/g}\cdot^\circ\text{C}$) in the refrigerator at 4.40°C and then drop it into your coffee. The coffee temperature drops from 90.0°C to 55.0°C . How many joules of heat energy did the aluminum block absorb? (Ignore the cooling of the cup)
- Suppose you pick up a 16.0-kilogram ball of iron (such as a "shot-put" ball at a track event). The iron (C_p = $.451 \text{ J/g}\cdot^\circ\text{C}$) ball has the same temperature as the atmosphere on a cool day say 16.0°C . How many kilojoules of heat energy must the iron ball absorb to reach the temperature of your body (37.0°C)?
- The specific heat of silver is $0.24 \text{ J/g}\cdot^\circ\text{C}$. How much heat in joules must be added to a silver block of mass 86.0 g to raise its temperature by 9.00°C ?
- An 18.7 g sample of platinum metal increases in temperature by 2.30°C when 5.70 J of heat are added. What is the specific heat of platinum?

Answers: 1) -79.4kJ 2) -155kJ 3) 17.4kJ 4) -3.75kJ 5) -142kJ 6) -88.1kJ 7) -78.7kJ 8) -2660kJ 9) -256kJ 10) 3.96kJ
11) 101kJ 12) 912J 13) 152kJ 14) 186J 15) $.132 \text{ J/g}\cdot^\circ\text{C}$

Thermochemistry Calculations Answer

Terry C. Jones



Thermochemistry Calculations Answer:

The Enigmatic Realm of **Thermochemistry Calculations Answer**: Unleashing the Language is Inner Magic

In a fast-paced digital era where connections and knowledge intertwine, the enigmatic realm of language reveals its inherent magic. Its capacity to stir emotions, ignite contemplation, and catalyze profound transformations is nothing in short supply of extraordinary. Within the captivating pages of **Thermochemistry Calculations Answer** a literary masterpiece penned by a renowned author, readers attempt a transformative journey, unlocking the secrets and untapped potential embedded within each word. In this evaluation, we shall explore the book's core themes, assess its distinct writing style, and delve into its lasting affect the hearts and minds of those who partake in its reading experience.

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web v i r i v r as you can see in this circuit diagram we use an r1 load resistor to convert current into voltage in this circuit a voltage divider is used but we can also use an operational amplifier to step down the voltage across the load resistor how to measure the secondary side current of ct

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web you mean with a microcontroller the impedance note about analog sources probably means that if the sources are higher than 2 5k the input on the pic will start to load them down you usually want a source impedance to be at least ten times smaller than the load impedance so that it is not disturbed by the load impedance

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current approach below i have two schematics that add two voltages one direct one alternating added to that the both the ac and dc signals are going through voltage divider but that isn't important

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