

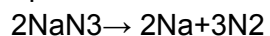
Session 24

Warm-up: A 550. g piece of copper was heated to a temperature of 70.1°C and dropped 250. g sample of water ($c=4.184 \text{ J/g}^{\circ}\text{C}$) at 60.1°C . The final temperature was 64.5°C . What is the specific heat of copper?

Question 1: A sample of natural gas contains 1.88 atm of methane, 0.99 atm of ethane, and 0.0976 atm of propane. If the total moles of all gasses is 9.22 moles, how many moles of each gas exist in the sample?

Question 2: A 1.00 L sample at 100. °C and 750. Torr contains 60% helium and 40% Argon by mass. What are the partial pressures of the individual gasses in torr?

Question 3: If 71.2 g of sodium azide (MM = 65.02 g/mol) is decomposed at 75 °C and 850. mmHg, what volume (in L) of sodium is produced?



Question 4:

Consider the following reaction:



A) How much heat is evolved when 4.32 g of sodium gas is reacted with 5.61 g oxygen gas?

B) How much sodium oxide must be created in order to produce 634. KJ?