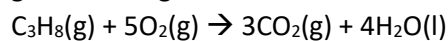


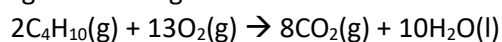
Worksheet – excess and limiting reagents

1. Propane reacts with oxygen gas according to the balanced chemical equation below.



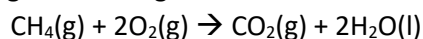
What mass of CO_2 is produced if 4.40 grams of propane gas is mixed with 10.0 grams of oxygen gas?

2. Butane reacts with oxygen gas according to the balanced chemical equation below.



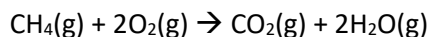
What mass of CO_2 is produced if 4.40 grams of butane gas is mixed with 50.0 grams of oxygen gas?

3. Methane reacts with oxygen gas according to the balanced chemical equation below.



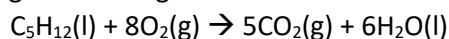
If 4.00 mol of methane gas is mixed with 6.00 mol of oxygen gas, what volume of gas remains after the reaction is complete at STC?

4. Methane reacts with oxygen gas according to the balanced chemical equation below.



If 4.00 g of methane gas is mixed with 6.00 g of oxygen gas in a 20.0 litre sealed vessel and ignited what is the pressure, in kPa, exerted on the walls of the reaction vessel if the temperature of the gas mixture was kept at 150°C?

5. Pentane reacts with oxygen gas according to the balanced chemical equation below.



3.50 mol of liquid pentane is mixed with 34.00 mol of oxygen gas and ignited. What is the total volume of greenhouse gases formed at SLC?

6. A racing car uses ethane as its fuel. Ethane and oxygen gases are mixed in the combustion chamber of the vehicle and ignited.

- a. Give the balanced chemical equation, states included, for the complete combustion of ethane in air at SLC?

- b. At every engine cycle, 2.45 litres of ethane is sprayed into the combustion chamber and mixed with 4.50 litres of oxygen gas.
 - i. Find the reactant that is in excess and calculate the excess amount, in mol.
 - ii. Is this a problem? Explain