

CHEMICAL CALCULATIONS**Exit Ticket 8**

1. Calculate each of the following:

a) number of C atoms in 0.325 mol C.

b) moles of Fe in 5.22×10^{22} atoms of Fe.

c) number of molecules of CO₂ in 0.0180 mol CO₂.

d) mol of S in 125 g of SO₂.

2. Calculate each of the following quantities in 0.185 mol of C₆H₁₄O:

a) mol of C atoms.

b) mol of H atoms.

c) number of C atoms.

3. Benadryl, an over-the-counter allergy medicine has the formula $C_{17}H_{21}NO$.

a) How many moles of C are present in 0.735 mol of Benadryl?

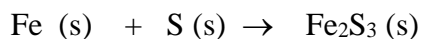
b) How many N atoms are present in 1.54 mol of Benadryl?

4. Dinitrogen monoxide (N_2O), also known as laughing gas, is widely used as an anesthetic in dentistry.

a) How many moles of the compound are in 34.0 g of N_2O ?

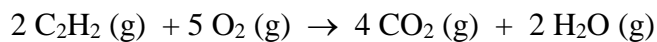
b) How many grams of N are in 34.0 g of N_2O ?

5. Iron and sulfur react with each other according to the unbalanced equation shown below:

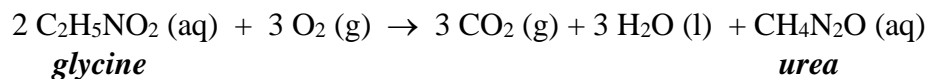


How many moles of S are needed to react with 1.42 mol of S according to the reaction above?

6. Acetylene, C₂H₂, burns in oxygen to produce high temperatures, used in welding. How many grams of CO₂ are produced when 54.6 g of C₂H₂ burns according to the reaction shown below:



7. In the body, the amino acid glycine, C₂H₅NO₂, reacts according to the following equation:



a) How many grams of O₂ are needed to react with 15.0 g of glycine?

b) How many grams of urea are produced from 15.0 g of glycine?