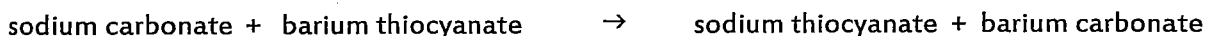


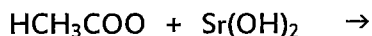
## Equation Stoichiometry Practice Sheet



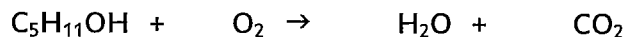
1. Translate and balance the above reaction.
2. If T.Cherrs Rewl reacts 3.27 moles of sodium carbonate with excess barium thiocyanate:
  - a. Produce how many moles of each product will form?
  - b. Produce how many grams of each product does this work out to be?
  - c. How many grams of each reactant will be used up?
  - d. Compare the answers from 2b and 2c. Is the Law of Conservation of Mass being broken? Explain your answer.
3. If Zeke wanted to produce 160 g of sodium thiocyanate
  - a. How many moles of each reactant would you need?
  - b. How many grams of barium carbonate would also be produced?
4. If 3.71 g of sodium carbonate are added to 7.10 g of barium thiocyanate
  - a. Which reactant is the limiting reactant?
  - b. How many grams of barium carbonate should have formed?
  - c. How many grams of the non-limiting reactant were leftover?

Oxygen gas reacts with iron (III) iodide to produce iron (III) oxide and iodine crystals.

5. Translate and balance the above reaction.
6. 0.047 STP L of oxygen gas reacting with excess iron (III) iodide will produce how many grams of iodine crystals?
7. In order to produce  $2.95 \times 10^{25}$  molecules of iron (III) oxide, how many moles of iron (III) iodide will be needed?
8. If 134.4 STP L of oxygen gas react with 3143 g of iron (III) iodide
  - a. Which of the two is the limiting reactant?
  - b. How many molecules of iodine crystals should form?
  - c. How many moles of the non-limiting reactant will be leftover?



9. Predict the products. Balance the equation.
10. 19.5 g of  $\text{HCH}_3\text{COO}$  with excess  $\text{Sr}(\text{OH})_2$  will produce how many grams of each product?
11. In order to produce 5.14 g of the product that is a salt, how many moles of the acid will be required?
12. If 180 g of  $\text{HCH}_3\text{COO}$  reacts with 201 g of  $\text{Sr}(\text{OH})_2$ 
  - a. How many grams of each product should form?
  - b. How many grams of the non-limiting reactant will be leftover?
  - c. How many molecules of the non-limiting reactant will be leftover?



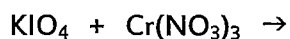
13. Balance the above reaction.
14. Mephibosheth burns 0.0045 moles of  $\text{C}_5\text{H}_{11}\text{OH}$  with excess  $\text{O}_2$ . How many grams of each product should be made?
15. If you wanted to produce 33.6 STP L of  $\text{CO}_2$ , how many STP L of  $\text{O}_2$  will be needed?
16. If 330 g of  $\text{C}_5\text{H}_{11}\text{OH}$  are burned in 575 STP L of  $\text{O}_2$ .
  - a. How many STP L of water vapour should form?
  - b. If 391 STP L of water vapour actually form, calculate the % yield.
  - c. How many moles of the non-limiting reactant will be leftover?

Aluminum metal reacts with copper (II) sulphate to produce \_\_\_\_\_.

17. Translate. Predict the products. Balance.
18. In order to produce 0.0762 g of copper metal, how many grams of each reactant will be needed?
19. If 43.1 g of copper (II) sulphate react with 7.29 g of aluminum metal and 25 g of aluminum sulphate are actually recovered.
  - a. Which of the two reactants is the limiting reactant?
  - b. Calculate % yield
  - c. Determine how many grams of the non-limiting reactant are leftover.

Disulphur tetraoxide reacts with dihydrogen monoxide and nitrogen trihydride to form ammonium sulphite.

20. Translate and balance the above reaction.
21. In order to produce  $1.505 \times 10^{24}$  molecules of ammonium sulphite, how many STP L of each reactant will be needed?
22. If 359 g of disulphur tetraoxide, 7.0 moles of water and 313.6 STP L of mononitrogen trihydride are all reacted together,
  - a. Which was the limiting reactant?
  - b. How many moles of product should have formed?
  - c. If 325 g of product are actually recovered, calculate the % yield.



23. Predict products and balance.
24. Ben Thare and Dawn Thaat mixed 17.25 g of  $\text{KIO}_4$  with 5.95 g of  $\text{Cr}(\text{NO}_3)_3$ .
  - a. Which was the limiting reactant?
  - b. They recovered 36.8 g of the product that contains an alkali metal. Calculate the % yield.
  - c. How many moles of the non-limiting reactant were leftover?
  - d. (Brutal exam question) If they had wanted to get a 75.0% yield of the product containing the transition metal, how many grams of that product were actually recovered?