

Chemistry

Chapter 10, 11, and 12

Jeopardy

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Round 1 – Chapter 11



Word Equations	Balancing Equations	Reaction Types	Ionic Equations	Predicting Precipitates	Surprise
100	100	100	100	100	100
200	200	200	200	200	200
300	300	300	300	300	300
400	400	400	400	400	400
500	500	500	500	500	500

Round 2 – Chapter 10 and 12

[Click to go to Round 2](#)

Word Equations 100

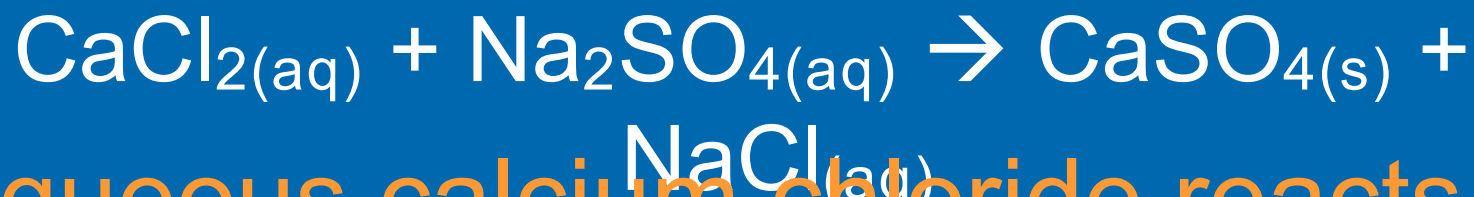
Write the word equations for the following reaction.



Potassium metal reacts with water to form aqueous potassium hydroxide and hydrogen gas.

Word Equations 200

Write the word equation for the following reaction.



Aqueous calcium chloride reacts with aqueous sodium sulfate to produce solid calcium sulfate and aqueous sodium chloride.

Word Equations 300

Write the chemical equation for the following reaction.

Heating oxygen difluoride gas yields oxygen gas and fluorine gas.



Don't forget the triangle!

Word Equations 400

Write the chemical equation for the following reaction.

Solid magnesium reacts with nitrogen gas to produce solid magnesium nitride.



Word Equations 500

Write the chemical equation for the following reaction.

Bubbling hydrogen sulfide gas through manganese (II) chloride dissolved in water results in the formation of the precipitate manganese (II) sulfide and hydrochloric acid.



Balancing Equations 100

Balance the following equation.



1, 1, 2

Balancing Equations 200

Balance the following equation.



1, 4, 1, 4

Balancing Equations 300

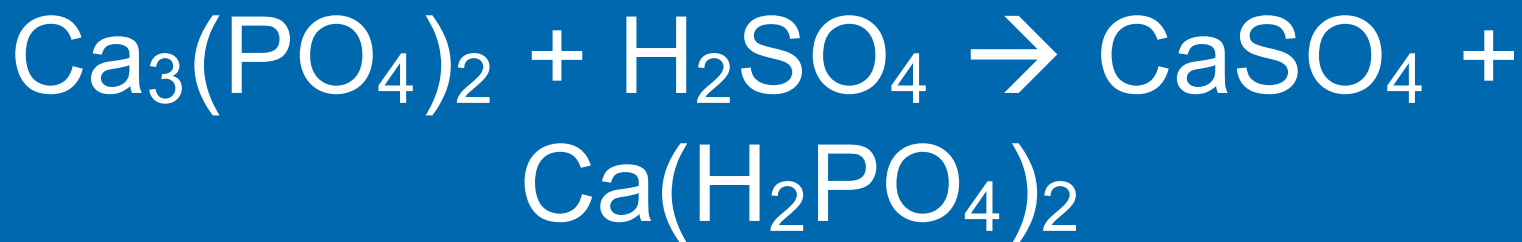
Balance the following equation.



2, 1, 1, 2, 2

Balancing Equations 400

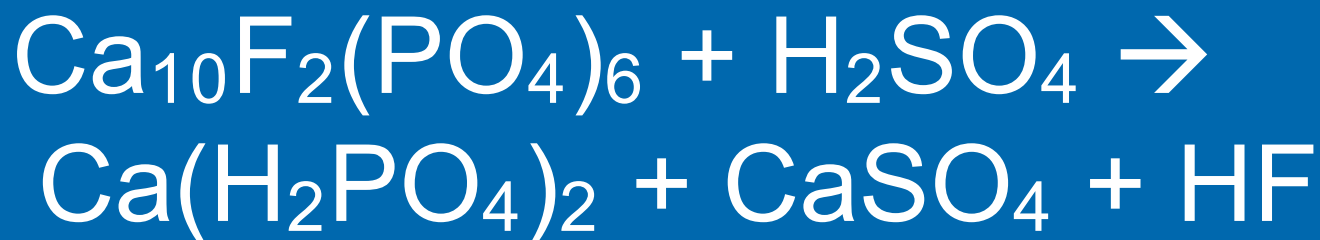
Balance the following equation.



1, 2, 2, 1

Balancing Equations 500

Balance the following equation.



1, 7, 3, 7, 2

Reaction Types 100

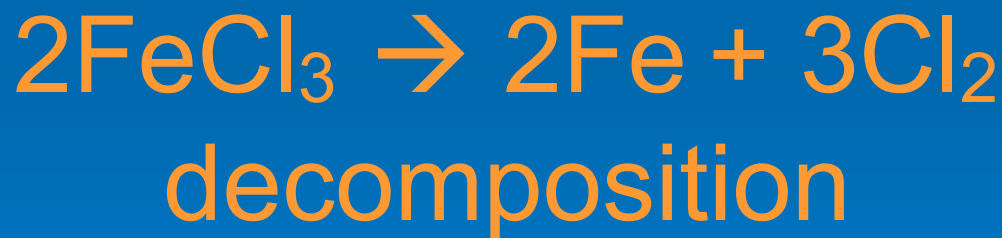
Write the full BALANCED equation
and tell which type of reaction it is.



synthesis

Reaction Types 200

Write the full BALANCED equation
and tell which type of reaction it is.



Reaction Types 300

Write the full BALANCED equation and tell which type of reaction it is.



Single displacement

Reaction Types 400

Write the full BALANCED equation
and tell which type of reaction it is.



Reaction Types 500

Write the full BALANCED equation and tell which type of reaction it is.

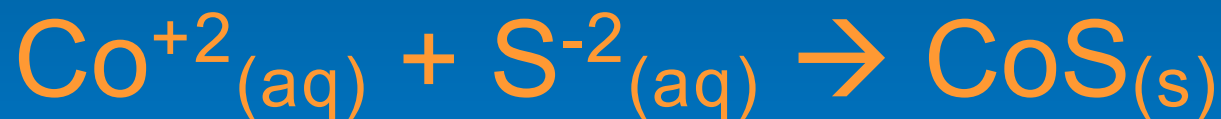


combustion



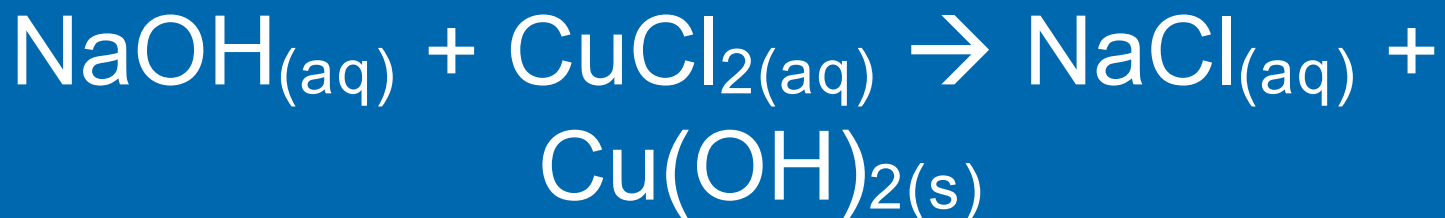
Ionic Equations 100

Write the net ionic equation for the following reaction.



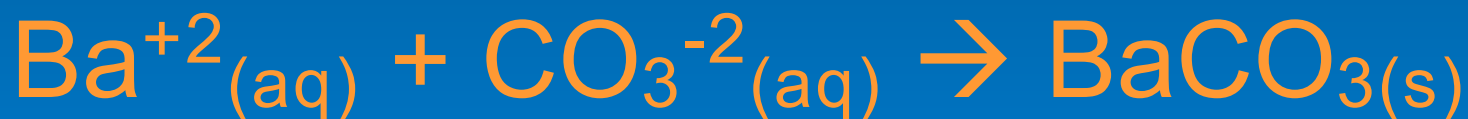
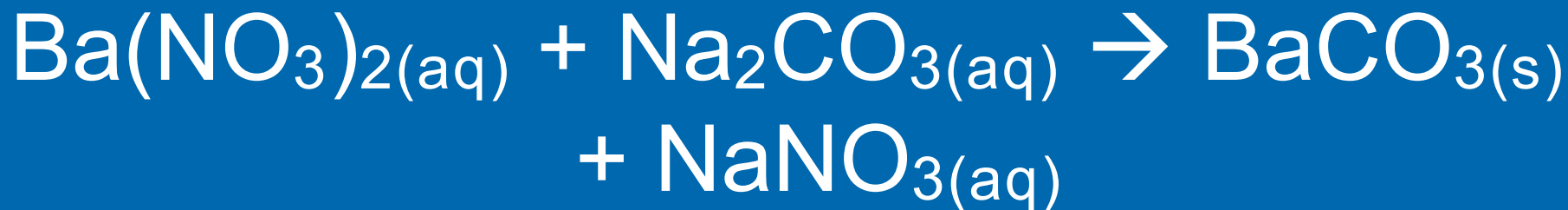
Ionic Equations 200

Write the net ionic equation for the following reaction.



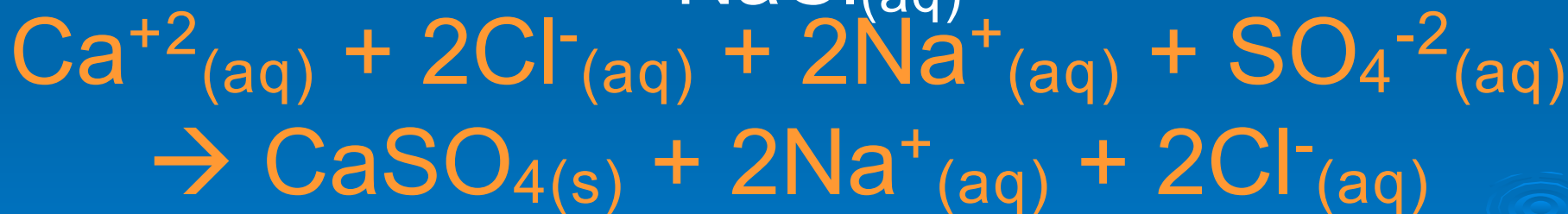
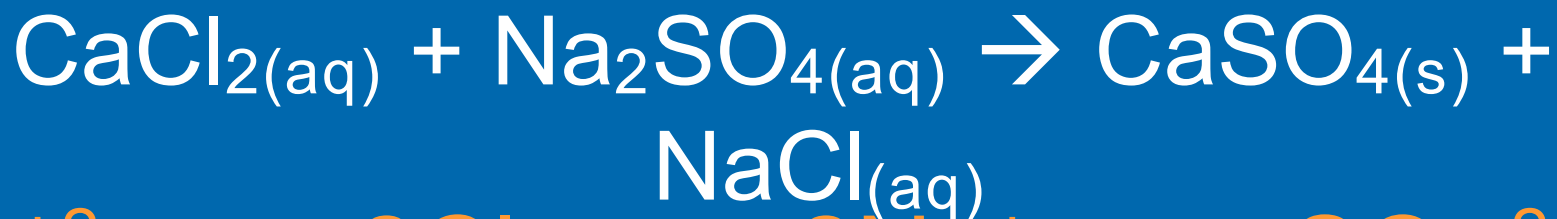
Ionic Equations 300

Write the net ionic equation for the following reaction.



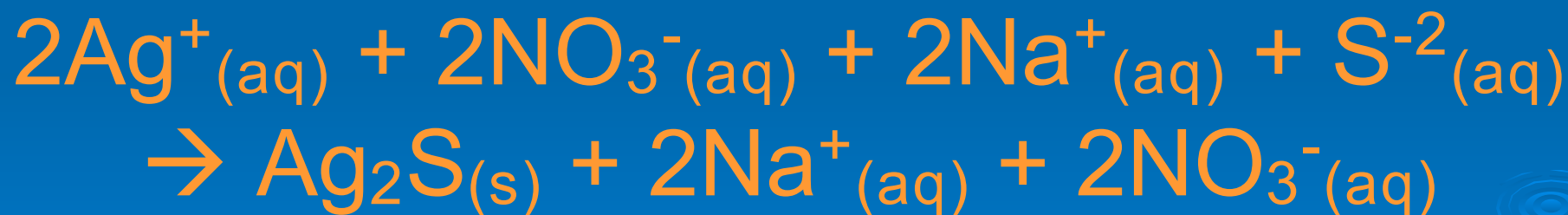
Ionic Equations 400

Write the complete ionic equation for the following reaction.



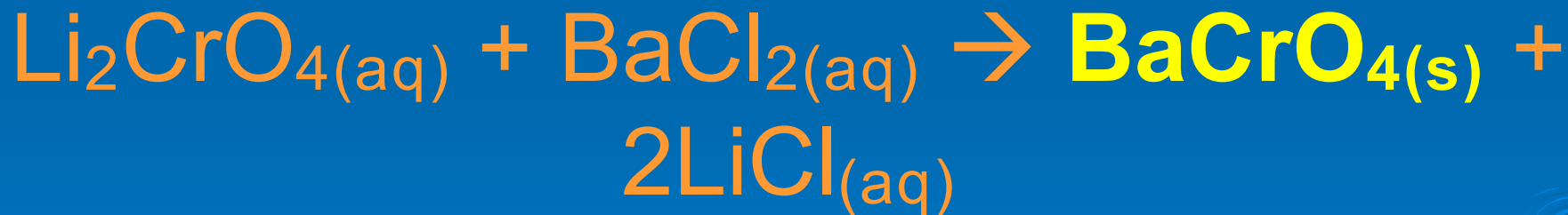
Ionic Equations 500

Write the complete ionic equation for the following reaction.



Predicting Precipitates 100

Predict the products and indicate any precipitates.



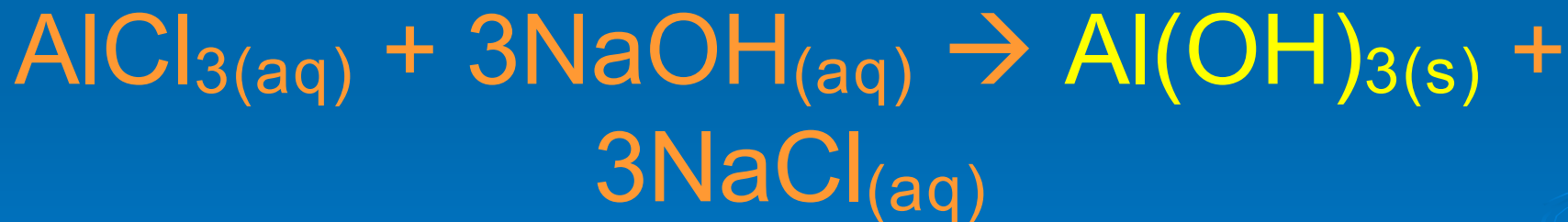
Predicting Precipitates 200

Predict the products and indicate any precipitates.



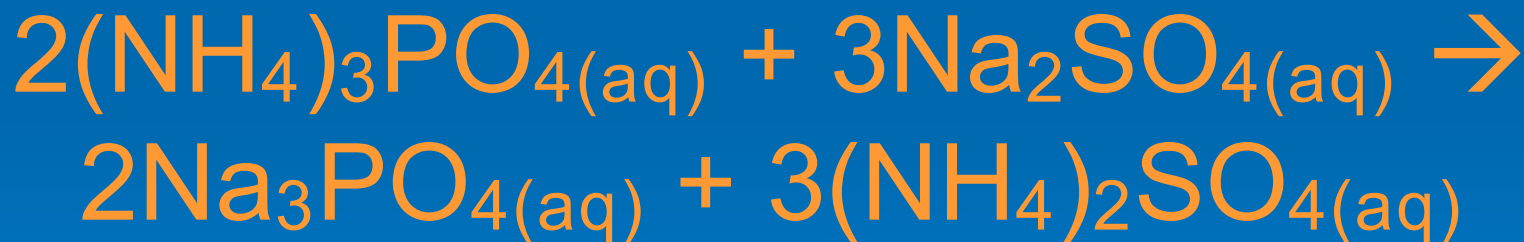
Predicting Precipitates 300

Predict the products and indicate any precipitates.



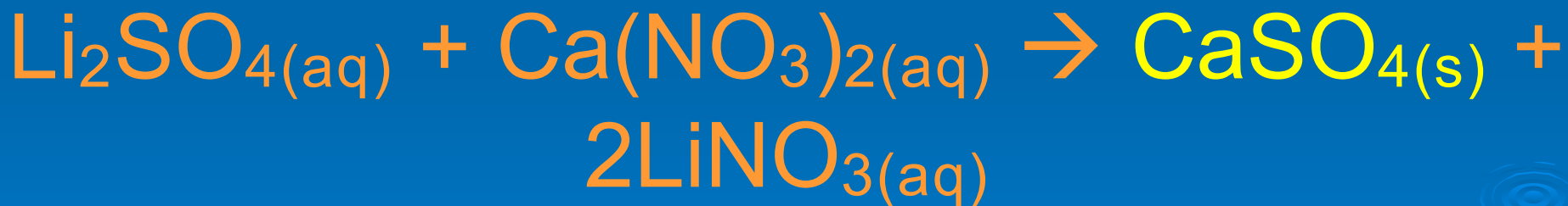
Predicting Precipitates 400

Predict the products and indicate any precipitates.



Predicting Precipitates 500

Predict the products and indicate any precipitates.



Surprise 100

Is the following compound soluble or insoluble: KOH?

soluble



Surprise 200

Is the following compound soluble or insoluble: PbCl_2 ?

insoluble



Surprise 300

What is a precipitate?

A solid formed from ions in a solution.



Surprise 400

What are spectator ions?

**Ions that do not actually react.
They remain aqueous throughout
the reaction.**



Surprise 500

Why do we balance equations?

(Hint: The answer is NOT to get the same number of atoms on each side.)

Law of Conservation of Mass

The background of the slide is a solid blue color. In the bottom right corner, there are several sets of concentric circles, resembling ripples in water, rendered in a lighter blue shade. These circles are of varying sizes and are arranged in a way that suggests movement or a series of events.

Molar Mass and Conversions	Percent Composition	Empirical and Molecular Formula	Stoichiometry	Limiting Reagents	Percent Yield
200	200	200	200	200	200
400	400	400	400	400	400
600	600	600	600	600	600
800	800	800	800	800	800
1000	1000	1000	1000	1000	1000

Molar Mass and Conversions

200

What is the molar mass of H_3PO_4 ?

98 g/mol



Molar Mass and Conversions

400

What is the molar mass of ammonium sulfate?

132.15 g/mol

Molar Mass and Conversions

600

How many liters is in 2.30 moles of
iron (III) chloride?

51.52L FeCl_3

Molar Mass and Conversions

800

How many representative particles are in 7.50 moles of SO_2 ?

$$4.515 \times 10^{24} \text{ m/c } \text{SO}_2$$

Molar Mass and Conversions

1000

How many moles is 937g nickel (II) oxide?

12.55 mol NiO

Percent Composition 200

Calculate the percent composition of hydrogen in H_2S .

5.9% H

Percent Composition 400

Calculate the percent composition of
 Na_3PO_4 .

42.07% Na

18.89% P

39.04% O

Percent Composition 600

Calculate the percent composition of magnesium hydroxide.

41.67% Mg

54.87% O

3.46% H

Percent Composition 800

If 7.36g of a compound that contains hydrogen and oxygen is decomposed to form 6.93g O, what is the percent composition?

94.16%O

5.84%H

Percent Composition 1000

Calculate the percent composition of a compound that forms when 222.6g nitrogen combines with 77.4g oxygen.

74.2% N

25.8% O

Empirical and Molecular Formulas 200

Write the empirical formula of
 $\text{C}_6\text{H}_{10}\text{O}_4$.



Empirical and Molecular Formulas 400

Determine the empirical formula for a compound made of 71.72% Cl, 16.16% O, and 12.12% C.



Empirical and Molecular Formulas 600

What is the molecular formula for a compound that has a molar mass of 90 g/mol and an empirical formula of CH_2O ?



Empirical and Molecular Formulas 800

Determine the molecular formula for a compound containing 50.7% C, 4.2% H, and 45.1% O if it has a molar mass of 142 g/mol.

(Hint: This is an empirical and molecular formula problem.)



Empirical and Molecular Formula Problem 1000

A 0.4791g sample was analyzed and found to contain 0.1929g C, 0.01079g H, 0.08566g O, and 0.1898g Cl. Determine the empirical formula.

(Hint: This is a percent composition and empirical formula problem.)



Stoichiometry 200

Nitrogen trihydride and nitrogen monoxide react to form nitrogen and water. How many liters of nitrogen are formed from 7.40×10^{18} m/c of nitrogen trihydride?

$$3.44 \times 10^{-4} \text{ L N}_2$$

Stoichiometry 400

How many m/c of iron (III) oxide are formed from 93.2L of oxygen?



4.55×10^{23} m/c Fe_2O_3

Stoichiometry 600

How many grams of ammonium
nitrate are needed to produce
111.2g of water?



247.17g NH_4NO_3

Stoichiometry 800

Calcium carbonate and phosphoric acid react to form calcium phosphate, carbon dioxide, and water. How many moles of calcium phosphate are formed from 5.83 moles of calcium carbonate?

1.94 mol $\text{Ca}_3(\text{PO}_4)_2$

Stoichiometry 1000

Calcium carbonate reacts with hydrochloric acid to form calcium chloride, carbon dioxide, and water. How many grams of calcium chloride are produced from 7.43×10^8 m/c of hydrochloric acid?

$6.85 \times 10^{-14} \text{ g CaCl}_2$

Limiting Reagents 200

How many grams of CH_4 can be made from 10.0g H_2 and 5.0g of C? Identify the limiting and excess reagents.



6.68g CH_4

LR = C, ER = H_2

Limiting Reagents 400

How many grams of NaOH can be made from 12.4g of sodium oxide and 42.1g of water? Identify the limiting and excess reagents.



16g NaOH

LR = Na₂O, ER = H₂O

Limiting Reagents 600

If you have 58.1g of magnesium nitride and 20.4g of water, how much magnesium hydroxide is produced? Identify the limiting and excess reagents.



33.04g $\text{Mg}(\text{OH})_2$
LR = H_2O , ER = Mg_3N_2

Limiting Reagents 800

What mass of $\text{C}_3\text{H}_3\text{N}$ can be made when 21.6g of C_3H_6 reacts with 21.6g of nitrogen monoxide? Identify the limiting and excess reagents.



25.47g $\text{C}_3\text{H}_3\text{N}$

LR = NO, ER = C_3H_6

Limiting Reagents 1000

Sulfur combines with iron to form iron (II) sulfide. If 7.62g of iron are allowed to react with 8.67g of sulfur, how many grams of iron (II) sulfide will be produced? Identify the limiting and excess reagents.

11.99g FeS

LR = Fe, ER = S

Percent Yield 200

Determine the percent yield if 125g of zinc reacts with iodine to form 515.6g of zinc (II) iodide.



84%

Percent Yield 400

What is the percent yield if 200g of PbS is heated and produces 170g PbO?



91.1%

Percent Yield 600

Silver (I) nitrate and potassium chromate react to form silver (I) chromate and potassium nitrate. If 0.5g of silver (I) nitrate react to form 0.455g silver (I) chromate, what is the percent yield?

92.9%

Percent Yield 800

When copper wire is placed into a silver (I) nitrate solution, silver crystals and copper (II) nitrate solution form. If 20g of copper was used and 60g of silver was formed, what is the percent yield?

88.9%

Percent Yield 1000

Silicon dioxide and hydrofluoric acid react to form H_2SiF_6 and water. If 40g silicon dioxide and 40g of hydrofluoric acid react to form H_2SiF_6 with a 95.4% yield, what is the actual yield?

45.8g H_2SiF_6