

Name _____
Class _____ Date _____

KEY

Chemical Reactions

A. Conservation of Mass and Atoms

The total number of atoms of each kind must remain the same in a chemical reaction. How many atoms of each kind should be present among the product molecules and formula units in reactions involving the following reactants?



Number of Fe atoms

1

Number of N atoms

3

Number of O atoms

12

Number of Li atoms

3

Number of H atoms

3



Number of Zn atoms

1

Number of Ag atoms

2

Number of S atoms

1

Number of O atoms

4



Number of S atoms

2

Number of O atoms

6



Number of C atoms

2

Number of H atoms

4

Number of O atoms

6



Number of N atoms

4

Number of H atoms

10

Number of O atoms

6

Number of S atoms

1



Number of K atoms

2

Number of H atoms

4

Number of O atoms

2



Number of F atoms

4

Number of C atoms

1

Number of O atoms

2

Balancing Chemical Equations - Answer Key

Balance the equations below:

- 1) $1 \text{ N}_2 + 3 \text{ H}_2 \rightarrow 2 \text{ NH}_3$
- 2) $2 \text{ KClO}_3 \rightarrow 2 \text{ KCl} + 3 \text{ O}_2$
- 3) $2 \text{ NaCl} + 1 \text{ F}_2 \rightarrow 2 \text{ NaF} + 1 \text{ Cl}_2$
- 4) $2 \text{ H}_2 + 1 \text{ O}_2 \rightarrow 2 \text{ H}_2\text{O}$
- 5) $1 \text{ Pb(OH)}_2 + 2 \text{ HCl} \rightarrow 2 \text{ H}_2\text{O} + 1 \text{ PbCl}_2$
- 6) $2 \text{ AlBr}_3 + 3 \text{ K}_2\text{SO}_4 \rightarrow 6 \text{ KBr} + 1 \text{ Al}_2(\text{SO}_4)_3$
- 7) $1 \text{ CH}_4 + 2 \text{ O}_2 \rightarrow 1 \text{ CO}_2 + 2 \text{ H}_2\text{O}$
- 8) $1 \text{ C}_3\text{H}_8 + 5 \text{ O}_2 \rightarrow 3 \text{ CO}_2 + 4 \text{ H}_2\text{O}$
- 9) $2 \text{ C}_8\text{H}_{18} + 25 \text{ O}_2 \rightarrow 16 \text{ CO}_2 + 18 \text{ H}_2\text{O}$
- 10) $1 \text{ FeCl}_3 + 3 \text{ NaOH} \rightarrow 1 \text{ Fe(OH)}_3 + 3 \text{ NaCl}$
- 11) $4 \text{ P} + 5 \text{ O}_2 \rightarrow 2 \text{ P}_2\text{O}_5$
- 12) $2 \text{ Na} + 2 \text{ H}_2\text{O} \rightarrow 2 \text{ NaOH} + 1 \text{ H}_2$
- 13) $2 \text{ Ag}_2\text{O} \rightarrow 4 \text{ Ag} + 1 \text{ O}_2$
- 14) $1 \text{ S}_8 + 12 \text{ O}_2 \rightarrow 8 \text{ SO}_3$
- 15) $6 \text{ CO}_2 + 6 \text{ H}_2\text{O} \rightarrow 1 \text{ C}_6\text{H}_{12}\text{O}_6 + 6 \text{ O}_2$
- 16) $2 \text{ K} + 1 \text{ MgBr}_2 \rightarrow 2 \text{ KBr} + 1 \text{ Mg}$
- 17) $2 \text{ HCl} + 1 \text{ CaCO}_3 \rightarrow 1 \text{ CaCl}_2 + 1 \text{ H}_2\text{O} + 1 \text{ CO}_2$
- 18) $1 \text{ HNO}_3 + 1 \text{ NaHCO}_3 \rightarrow 1 \text{ NaNO}_3 + 1 \text{ H}_2\text{O} + 1 \text{ CO}_2$
- 19) $2 \text{ H}_2\text{O} + 1 \text{ O}_2 \rightarrow 2 \text{ H}_2\text{O}_2$
- 20) $2 \text{ NaBr} + 1 \text{ CaF}_2 \rightarrow 2 \text{ NaF} + 1 \text{ CaBr}_2$
- 21) $1 \text{ H}_2\text{SO}_4 + 2 \text{ NaNO}_2 \rightarrow 2 \text{ HNO}_2 + 1 \text{ Na}_2\text{SO}_4$

Word Equations - Answer Key

- 1) Zinc and lead (II) nitrate react to form zinc nitrate and lead.



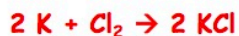
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- 2) Aluminum bromide and chlorine gas react to form aluminum chloride and bromine gas.



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- 3) Sodium phosphate and calcium chloride react to form calcium phosphate and sodium chloride.



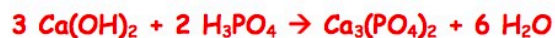
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- 4) Potassium metal and chlorine gas combine to form potassium chloride.



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- 5) Aluminum and hydrochloric acid react to form aluminum chloride and hydrogen gas.



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- 6) Calcium hydroxide and phosphoric acid react to form calcium phosphate and water.



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- 7) Copper and sulfuric acid react to form copper (II) sulfate and water and sulfur dioxide.



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- 8) Hydrogen gas and nitrogen monoxide react to form water and nitrogen gas.

