

Unit 5: Ch 10 – Word Equations & Chemical vs Nuclear Reactions

DETERMINING PHYSICAL STATES:

- **Ionic Compounds:** ALL _____ unless dissolved in water - _____
 - Ex) _____ Ex) _____
- **Acids:** ALL _____.
 - Ex) _____ Ex) _____
- **Binary Covalent Compounds:** _____ Ex) _____
- **Ternary Covalent Compounds:** _____ OR _____ Ex) _____
- **Diatomic Molecules:** ALWAYS _____ except _____ and _____.
- **Metals:** ALWAYS _____ except _____.

CHEMICAL EQUATION → WORD EQUATION:

- **Chemical Equation:** _____ $\text{KClO}_3 (s)$ → _____ $\text{KCl} (s)$ + _____ $\text{O}_2 (g)$
 - **Word Equation:**

- **Chemical Equation:** _____ $\text{HCl} (aq)$ + _____ $\text{NaOH} (aq)$ → _____ $\text{NaCl} (aq)$ + _____ $\text{H}_2\text{O} (l)$
 - **Word Equation:**

WORD EQUATION → CHEMICAL EQUATION:

- **Word Equation:** Sodium metal reacts with liquid water to produce aqueous sodium hydroxide and hydrogen gas.
 - **Chemical Equation:** _____
- **Word Equation:** Solid carbon reacts with oxygen gas to produce carbon dioxide gas.
 - **Chemical Equation:** _____

CHEMICAL VS NUCLEAR REACTIONS:

➤ CHEMICAL REACTIONS:

- Forms _____ chemical substances.
- _____ energy changes.
 - Breaking and forming of _____.
- Involves _____ ONLY.

➤ NUCLEAR REACTIONS:

- Forms *NEW* _____ OR different _____.
- Very _____ energy changes (_____, _____, _____ emitted) and thus becomes _____.
- Change in _____ and _____ in the _____.
- **Nuclear Fission:** Energy released is _____ times _____ than *chemical* reactions.
- **Nuclear Fusion:** Energy released is _____ times _____ than *fission*.

BALANCING CHEMICAL EQUATIONS/REACTION TYPES/PREDICTING PRODUCTS PRACTICE:

1. ____ Al + ____ O₂ → Reaction Type: _____
2. ____ Pb(NO₃)₂ + ____ KBr → Reaction Type: _____
3. ____ Al(OH)₃ → Reaction Type: _____
4. ____ Zn + ____ BaCl₂ → Reaction Type: _____
5. ____ C₄H₁₀ + ____ O₂ → Reaction Type: _____
6. ____ H₂SO₄ + ____ Ba(OH)₂ → Reaction Type: _____
7. ____ Ba + ____ H₂O → Reaction Type: _____
8. ____ NaCl → Reaction Type: _____
9. ____ ZnO + ____ H₂O → Reaction Type: _____
10. ____ C₃H₈ + ____ O₂ → Reaction Type: _____