

Naming Acid Rules

- **HE**lement = **hydro** *element* **ic** acid (ex. HCl = hydrogen + chlorine = **hydrochloric** acid)
- **HP**olyatomic ion ending in **ate** = polyatomic ion **ic** acid (ex. HClO₃ = hydrogen + chlorate = chlor**ic** acid)
- **HP**olyatomic ion ending in **ite** = polyatomic ion **ous** acid (ex. HClO₂ = hydrogen + chlor**ite** = chlor**ous** acid)

Naming Base Rules

- Metal**OH** = metal name hydroxide

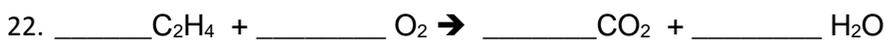
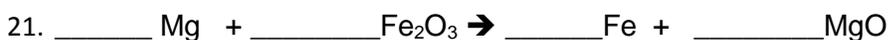
Practice A: Label below as an acid, base, ionic, or covalent compound. Name/Determine the chemical formula of each.

- | | |
|-----------------------------------|---|
| 1. NaOH | 11. HBr |
| 2. Hydrofluoric acid | 12. H ₂ S |
| 3. H ₂ SO ₄ | 13. Li ₂ S |
| 4. Calcium hydroxide | 14. Carbonic acid |
| 5. water | 15. KOH |
| 6. Cu(OH) ₂ | 16. PbSO ₄ |
| 7. phosphoric acid | 17. Nitric acid |
| 8. ammonia | 18. Hydroiodic acid |
| 9. ammonium hydroxide | 19. HC ₂ H ₃ O ₂ |
| 10. NaHCO ₃ | 20. CH ₃ COOH |

Neutralization Reaction:

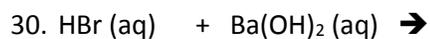
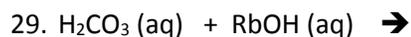
Strong acid (aq)	+	Strong Base(aq)	→	Salt(aq)	+	HOH (l)
Acid that completely breaks apart	+	base that completely breaks apart	→	ionic compound	+	water
Acid that ionizes	+	base that dissociates	→	metal-nonmetal	+	water
HCl (aq)	+	NaOH(aq)	→	NaCl (aq)	+	HOH (l)

Practice B: Label below as decomposition (d), double replacement (dr), single replacement (sr), synthesis (syn), combustion (combust), or neutralization (a/b). Balance each of the reactions and name each reactant and product.





Practice C: Predict the products in each neutralization reaction. Balance each of the reactions, name each reactant and product, and label each as an acid, base, salt, or water.



At the neutralization point, the number of moles of acid = number of moles of base; therefore

$$M_{\text{acid}}V_{\text{acid}} = M_{\text{base}}V_{\text{base}}$$

Practice D: Calculate

32. How much 2.0M HCl will it take to neutralize 500 mL of 1.0M NaOH?

33. How much 4.0M HCl will it take to neutralize 250 mL of 1.5 M NaOH ?

34. 35.7 mL of 0.1MNaOH is necessary to neutralize a 50.0 mL sample of acetic acid. What is the concentration of the acetic acid?