# Chemistry 10 Acids Bases Worksheet

Identify the following as an ACID, BASE or NEITHER and name the compound.

Compound: Type: Name:

1. NaCl
2. Al(OH)3
3. H2S
4. H2O
5. HNO3
6. HNO2
7. FrOH
8. H2SO3
9. H2SO4
10. HCH3COO
11. SeH3
12. Na2O

13. NH4OH

14. HCN

15. HCl

Complete the following neutralization reactions by predicting the products and balancing the equation.

1. HCl + NaOH 🡪

2. HBr + Mg(OH)2 🡪

3. Be(OH)2 + HF 🡪

4. H2SO3 + Al(OH)3 🡪

5. KOH + HClO3 🡪

# Balance and classify the following equations:

1. H**2**SO**4** + NaOH 🡪 Na**2**SO**4** + H**2**O
2. H**3**PO**4** + NaOH 🡪 Na**3**PO**4** + H**2**O
3. NaCl + AgNO**3** 🡪 AgCl + NaNO**3**
4. Na + H**2**O 🡪 NaOH + H**2**
5. FeCl**3** + Na**2**CO**3** 🡪 NaCl + Fe**2** (CO**3**) **3**
6. Al**2** (SO**4**) **3** + Ca(OH) **2** 🡪 Al(OH) **3** + CaSO**4**
7. Al(OH) **3** + H**2**SO**4** 🡪 Al**2** (SO**4**) **3** + H**2**O
8. Ca**3** (PO**4**) **2** + H**2**SO**4** 🡪 CaSO**4** + H**3**PO**4**
9. NaHCO3 + H2SO4 🡪 Na2SO4 + H2O + CO2
10. Cu + HNO**3** 🡪 Cu(NO**3**) **2** + H**2**

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Write the formulae, classify and balance:

1. copper (II) nitrate 🡪 copper (II) oxide + nitrogen dioxide + oxygen

\_\_\_\_\_\_\_\_\_\_\_\_\_\_ 🡪 \_\_\_\_\_\_\_\_\_\_\_\_ + \_\_\_\_\_\_\_\_\_\_\_\_\_ + \_\_\_\_\_\_\_\_\_\_

1. aluminum + sulfuric acid 🡪 aluminum sulfate + hydrogen

\_\_\_\_\_\_\_\_ + \_\_\_\_\_\_\_\_\_\_ 🡪 \_\_\_\_\_\_\_\_\_\_\_\_ + \_\_\_\_\_\_\_\_\_

1. iron (III) hydroxide 🡪 iron (III) oxide + water

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ 🡪 \_\_\_\_\_\_\_\_\_\_\_\_ + \_\_\_\_\_\_\_\_\_

1. silver nitrate + calcium chloride 🡪 silver chloride + calcium nitrate

\_\_\_\_\_\_\_\_\_ + \_\_\_\_\_\_\_\_\_\_\_\_\_ 🡪 \_\_\_\_\_\_\_\_\_\_ + \_\_\_\_\_\_\_\_\_\_\_

1. potassium + water 🡪 potassium hydroxide + hydrogen

\_\_\_\_\_ + \_\_\_\_\_\_ 🡪 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ + \_\_\_\_\_\_\_

1. hydronitric acid + calcium hydroxide 🡪 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ + \_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_ + \_\_\_\_\_\_\_\_\_\_\_\_ 🡪 \_\_\_\_\_\_\_\_\_\_ + \_\_\_\_\_\_\_\_\_\_\_\_

1. barium + oxygen 🡪 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_ + \_\_\_\_\_\_ 🡪 \_\_\_\_\_\_\_\_\_\_

1. iron(III) chloride + magnesium bromide 🡪 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ + \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_ + \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ 🡪 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ + \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

# Chemistry 10 Acids Bases Worksheet #5 ANSWER KEY

Identify the following as an ACID, BASE or NEITHER and name the compound

1. **NaCl Neither sodium chloride**
2. **Al(OH)3 Base aluminum hydroxide**
3. **H2S Acid hydrosulfuric acid**
4. **H2O Neither water**
5. **HNO3 Acid nitric acid**
6. **HNO2 Acid nitrous acid**
7. **FrOH Base francium hydroxide**
8. **H2SO3 Acid sulfurous acid**
9. **H2SO4 Acid sulfuric acid**
10. **CH3COOH Acid acetic acid**
11. **SeH3 Neither selenium trihydride**
12. **Na2O Neither sodium oxide**
13. **NH4OH Base ammonium hydroxide**
14. **HCN Acid cyanic acid**
15. **HCl Acid hydrochloric acid**

Complete the following neutralization reactions by predicting the products and balancing the equation.

1. 1 HCl + 1 NaOH 🡪 **1 H2O + 1 NaCl**

2. 2 HBr + 1 Mg(OH)2 🡪 **2 H2O + 1 MgBr2**

3. 1 Be(OH)2 + 2 HF 🡪 **2 H2O + 1 BeF2**

4. 3 H2SO3 + 2 Al(OH)3 🡪 **6 H2O + 1 Al2(SO3)3**

5. 1 KOH + 1 HClO3  🡪 **1 H2O + 1 KClO3**

# Balance and classify the following equations:

1. 1 H2SO4 + 2 NaOH 🡪 1 Na2SO4 + 2 H2O **N**
2. 1H3PO4 + 3 NaOH 🡪 1 Na3PO4 + 3 H2O **N**
3. 1 NaCl + 1 AgNO3 🡪 1 AgCl + 1 NaNO3  **DR**
4. 2 Na + 2 H2O 🡪 2 NaOH + 1 H2 **SR**
5. 2 FeCl**3** + 3 Na**2**CO**3** 🡪 6 NaCl + 1 Fe**2** (CO**3**)**3 DR**
6. 1 Al2(SO4)3 + 3 Ca(OH)2 🡪 2 Al(OH)3 + 3 CaSO4 **DR**
7. 2 Al(OH) 3 + 3 H2SO4 🡪 1 Al2(SO4)3 + 6 H2O **N**
8. 1 Ca3(PO4)2 + 3 H2SO4 🡪 3 CaSO4 + 2 H3PO4 **DR**
9. 2 NaHCO3 + 1 H2SO4 🡪 1 Na2SO4 + 2 H2O + 2 CO2 **DR, D**
10. 1 Cu + 2 HNO3 🡪 1 Cu(NO3) 2 + 1 H2 **SR**

Write the formulae, classify and balance:

1. copper (II) nitrate 🡪 copper (II) oxide + nitrogen dioxide + oxygen

**2 Cu(NO3)2 🡪 2 CuO + 4 NO2 + 1 O2 D**

1. aluminum + sulfuric acid 🡪 aluminum sulfate + hydrogen

**2 Al + 3 H2SO4 🡪 1 Al2(SO4)3 + 3 H2 SR**

1. iron (III) hydroxide 🡪 iron (III) oxide + water

**2 Fe(OH)3 🡪 1 Fe2O3 + 3 H2O D**

1. silver nitrate + calcium chloride 🡪 silver chloride + calcium nitrate

**2 AgNO3 + 1 CaCl2 🡪 2 AgCl + 1 Ca(NO3)2 DR**

1. potassium + water 🡪 potassium hydroxide + hydrogen

**2 K + 2 H2O 🡪 2 KOH + 1 H2 SR**

1. hydronitric acid + calcium hydroxide 🡪 \_\_\_**water\_\_\_\_ + \_\_calcium nitride**\_

**2 H3N + 3 Ca(OH)2 🡪 6 H2O + 1 Ca3N2 N**

1. barium + oxygen 🡪 **\_\_barium oxide\_**

**2 Ba + 1 O2 🡪 2 BaO S**

1. iron(III) chloride + magnesium bromide 🡪 **\_iron(III) bromide\_ + \_\_\_magnesium chloride\_\_\_**

**2 FeCl3 + 3 MgBr2 🡪 2 FeBr3 + 3 MgCl2 DR**