**Ionic Compound Formula Writing Worksheet**

*Write chemical formulas for the compounds in each box. The names are found by finding the intersection between the cations and anions. Example: The first box is the intersection between the “zinc” cation and the “chloride” anion, so you should write “ZnCl2”, as shown.*

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | *zinc* | *iron (II)* | *iron (III)* | *gallium* | *silver* | *lead (IV)* |
| *chloride* | ZnCl2 |  |  |  |  |  |
| *acetate* |  |  |  |  |  |  |
| *nitrate* |  |  |  |  |  |  |
| *oxide* |  |  |  |  |  |  |
| *nitride* |  |  |  |  |  |  |
| *sulfate* |  |  |  |  |  |  |

*Write the formulas for the following compounds:*

1) copper (II) chloride \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

2) lithium acetate \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

3) vanadium (III) selenide \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

4) manganese (IV) nitride \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

5) beryllium oxide \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

6) sodium sulfate \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

7) aluminum arsenide \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

8) potassium permanganate \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

9) chromium (VI) cyanide \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

10) tin (II) sulfite \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

11) vanadium (V) fluoride \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

12) ammonium nitrate \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Chemical Formula Writing Worksheet Solutions**

*Write chemical formulas for the compounds in each box. The names are found by finding the intersection between the cations and anions. Example: The first box is the intersection between the “zinc” cation and the “chloride” anion, so you should write “ZnCl2”, as shown.*

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | *zinc* | *iron (II)* | *iron (III)* | *gallium* | *silver* | *lead (IV)* |
| *chloride* | **ZnCl2** | **FeCl2** | **FeCl3** | **GaCl3** | **AgCl** | **PbCl4** |
| *acetate* | **Zn(C2H3O2)2** | **Fe(C2H3O2)2** | **Fe(C2H3O2)3** | **Ga(C2H3O2)3** | **Ag C2H3O2** | **Pb(C2H3O2)4** |
| *nitrate* | **Zn(NO3)2** | **Fe(NO3)2** | **Fe(NO3)3** | **Ga(NO3)3** | **AgNO3** | **Pb(NO3)4** |
| *oxide* | **ZnO** | **FeO** | **Fe2O3** | **Ga2O3** | **Ag2O** | **PbO2** |
| *nitride* | **Zn3N2** | **Fe3N2** | **FeN** | **GaN** | **Ag3N** | **Pb3N4** |
| *sulfate* | **ZnSO4** | **FeSO4** | **Fe2(SO4)3** | **Ga2(SO4)3** | **Ag2SO4** | **Pb(SO4)2** |

*Write the formulas for the following compounds:*

1) copper (II) chloride **CuCl2**

2) lithium acetate **LiC2H3O2**

3) vanadium (III) selenide **V2Se3**

4) manganese (IV) nitride **Mn3N4**

5) beryllium oxide **BeO**

6) sodium sulfate **Na2SO4**

7) aluminum arsenide **AlAs**

8) potassium permanganate **KMnO4**

9) chromium (VI) cyanide **Cr(CN)6**

10) tin (II) sulfite **SnSO3**

11) vanadium (V) fluoride **VF5**

12) ammonium nitrate **NH4NO3**

**Names & Formulas for Ionic Compounds**

*Give the name or formula of the following ionic compounds:*

**Name**

1) Na2CO3 ­­­­­\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

2) NaOH \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

3) MgBr2  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

4) KCl \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

5) FeCl2 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

6) FeCl3 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

7) Zn(OH)2 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

8) Be2SO4  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

9) CrF2  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

10) Al2S3  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

11) PbO \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

12) Li3PO4 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

13) TiI4  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

14) Co3N2  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

15) Mg3P2 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

16) Ga(NO2)3  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

17) Ag2SO3  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

18) NH4OH \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

19) Al(CN)3 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

20) Be(CH3COO)2  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Formula**

21) sodium phosphide \_\_\_\_\_\_\_\_\_\_\_\_\_

22) magnesium nitrate \_\_\_\_\_\_\_\_\_\_\_\_\_

23) lead (II) sulfite \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

24) calcium phosphate \_\_\_\_\_\_\_\_\_\_\_\_\_

25) ammonium sulfate \_\_\_\_\_\_\_\_\_\_\_\_\_

26) silver cyanide \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

27) aluminum sulfide \_\_\_\_\_\_\_\_\_\_\_\_\_\_

28) beryllium chloride \_\_\_\_\_\_\_\_\_\_\_\_\_\_

29) copper (I) arsenide \_\_\_\_\_\_\_\_\_\_\_\_\_

30) iron (III) oxide \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

31) gallium nitride \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

32) iron (II) bromide \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

33) vanadium (V) phosphate \_\_\_\_\_\_\_\_

34) calcium oxide \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

35) magnesium acetate \_\_\_\_\_\_\_\_\_\_\_\_

36) aluminum sulfate \_\_\_\_\_\_\_\_\_\_\_\_\_\_

37) copper (I) carbonate \_\_\_\_\_\_\_\_\_\_\_\_

38) barium oxide \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

39) ammonium sulfite \_\_\_\_\_\_\_\_\_\_\_\_\_\_

40) silver bromide \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Naming Ionic Compounds – Answer Key**

*Give the name and molar mass of the following ionic compounds:*

**Name**

1) Na2CO3 **sodium carbonate**

2) NaOH **sodium hydroxide**

3) MgBr2  **magnesium bromide**

4) KCl **potassium chloride**

5) FeCl2 **iron (II) chloride**

6) FeCl3 **iron (III) chloride**

7) Zn(OH)2 **zinc hydroxide**

8) Be2SO4  **beryllium sulfate**

9) CrF2  **chromium (II) fluoride**

10) Al2S3  **aluminum sulfide**

11) PbO **lead (II) oxide**

12) Li3PO4 **lithium phosphate**

13) TiI4 **titanium (IV) iodide**

14) Co3N2  **cobalt (II) nitride**

15) Mg3P2  **magnesium phosphide**

16) Ga(NO2)3  **gallium nitrite**

17) Ag2SO3  **silver sulfite**

18) NH4OH **ammonium hydroxide**

19) Al(CN)3 **aluminum cyanide**

20) Be(CH3COO)2  **beryllium acetate**  *For the following compounds, give the formulas and the molar masses:*

**Formula**

21) sodium phosphide **Na3P**

22) magnesium nitrate **Mg(NO3)2**

23) lead (II) sulfite **PbSO3**

24) calcium phosphate **Ca3(PO4)3**

25) ammonium sulfate **(NH4)2SO4**

26) silver cyanide **AgCN**

27) aluminum sulfide **Al2S3**

28) beryllium chloride **BeCl2**

29) copper (I) arsenide **Cu3As**

30) iron (III) oxide **Fe2O3**

31) gallium nitride **GaN**

32) iron (II) bromide **FeBr2**

33) vanadium (V) phosphate **V3(PO4)5**

34) calcium oxide **CaO**

35) magnesium acetate **Mg(CH3COO)2**

36) aluminum sulfate **Al2(SO4)3**

37) copper (I) carbonate **Cu2CO3**

38) barium oxide **BaO**

39) ammonium sulfite **(NH4)2SO3**

40) silver bromide **AgBr**