

# Ions in Chemical Compounds

Name Key

Complete the following table, being sure that the total charge on the resulting compound is zero.

<u>Ions</u>	Chloride $\text{Cl}^-$	Hydroxide $\text{OH}^-$	Nitrate $\text{NO}_3^-$	Sulfide $\text{S}^{2-}$	Carbonate $\text{CO}_3^{2-}$	Phosphate $\text{PO}_4^{3-}$
Sodium $\text{Na}^+$	$\text{NaCl}$	$\text{NaOH}$	$\text{NaNO}_3$	$\text{Na}_2\text{S}$	$\text{Na}_2\text{CO}_3$	$\text{Na}_3\text{PO}_4$
Ammonium $\text{NH}_4^+$	$\text{NH}_4\text{Cl}$	$\text{NH}_4\text{OH}$	$\text{NH}_4\text{NO}_3$	$(\text{NH}_4)_2\text{S}$	$(\text{NH}_4)_2\text{CO}_3$	$(\text{NH}_4)_3\text{PO}_4$
Potassium $\text{K}^+$	$\text{KCl}$	$\text{KOH}$	$\text{KNO}_3$	$\text{K}_2\text{S}$	$\text{K}_2\text{CO}_3$	$\text{K}_3\text{PO}_4$
Calcium $\text{Ca}^{2+}$	$\text{CaCl}_2$	$\text{Ca}(\text{OH})_2$	$\text{Ca}(\text{NO}_3)_2$	$\text{CaS}$	$\text{CaCO}_3$	$\text{Ca}_3(\text{PO}_4)_2$
Magnesium $\text{Mg}^{2+}$	$\text{MgCl}_2$	$\text{Mg}(\text{OH})_2$	$\text{Mg}(\text{NO}_3)_2$	$\text{MgS}$	$\text{MgCO}_3$	$\text{Mg}_3(\text{PO}_4)_2$
Aluminum $\text{Al}^{3+}$	$\text{AlCl}_3$	$\text{Al}(\text{OH})_3$	$\text{Al}(\text{NO}_3)_3$	$\text{Al}_2\text{S}_3$	$\text{Al}_2(\text{CO}_3)_3$	$\text{AlPO}_4$
Iron (II) $\text{Fe}^{2+}$	$\text{FeCl}_2$	$\text{Fe}(\text{OH})_2$	$\text{Fe}(\text{NO}_3)_2$	$\text{FeS}$	$\text{FeCO}_3$	$\text{Fe}_3(\text{PO}_4)_2$
Iron (III) $\text{Fe}^{3+}$	$\text{FeCl}_3$	$\text{Fe}(\text{OH})_3$	$\text{Fe}(\text{NO}_3)_3$	$\text{Fe}_2\text{S}_3$	$\text{Fe}_2(\text{CO}_3)_3$	$\text{FePO}_4$
Copper (I) $\text{Cu}^+$	$\text{CuCl}$	$\text{CuOH}$	$\text{CuNO}_3$	$\text{Cu}_2\text{S}$	$\text{Cu}_2\text{CO}_3$	$\text{Cu}_3\text{PO}_4$

## Naming Ionic Compounds – Answer Key

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

		<b>Name</b>	<b>Molar Mass</b>
1)	Na <sub>2</sub> CO <sub>3</sub>	sodium carbonate	105.96 grams/mole
2)	NaOH	sodium hydroxide	39.98 grams/mole
3)	MgBr <sub>2</sub>	magnesium bromide	184.10 grams/mole
4)	KCl	potassium chloride	74.54 grams/mole
5)	FeCl <sub>2</sub>	iron (II) chloride	126.74 grams/mole
6)	FeCl <sub>3</sub>	iron (III) chloride	162.19 grams/mole
7)	Zn(OH) <sub>2</sub>	zinc hydroxide	99.37 grams/mole
8)	Be <sub>2</sub> SO <sub>4</sub>	beryllium sulfate	114.04 grams/mole
9)	CrF <sub>2</sub>	chromium (II) fluoride	89.97 grams/mole
10)	Al <sub>2</sub> S <sub>3</sub>	aluminum sulfide	150.14 grams/mole
11)	PbO	lead (II) oxide	223.19 grams/mole
12)	Li <sub>3</sub> PO <sub>4</sub>	lithium phosphate	115.75 grams/mole
13)	TiI <sub>4</sub>	titanium (IV) iodide	555.46 grams/mole
14)	Co <sub>3</sub> N <sub>2</sub>	cobalt (II) nitride	204.79 grams/mole
15)	Mg <sub>3</sub> P <sub>2</sub>	magnesium phosphide	134.84 grams/mole
16)	Ga(NO <sub>2</sub> ) <sub>3</sub>	gallium nitrite	207.66 grams/mole
17)	Ag <sub>2</sub> SO <sub>3</sub>	silver sulfite	295.77 grams/mole
18)	NH <sub>4</sub> OH	ammonium hydroxide	34.99 grams/mole
19)	Al(CN) <sub>3</sub>	aluminum cyanide	105.01 grams/mole
20)	Be(C <sub>2</sub> H <sub>3</sub> O <sub>2</sub> ) <sub>2</sub>	beryllium acetate	127.01 grams/mole

For the following compounds, give the formulas and the molar masses:

		<b>Formula</b>	<b>Molar Mass</b>
22)	sodium phosphide	$\text{Na}_3\text{P}$	99.94 grams/mole
23)	magnesium nitrate	$\text{Mg}(\text{NO}_3)_2$	148.24 grams/mole
24)	lead (II) sulfite	$\text{PbSO}_3$	287.23 grams/mole
25)	calcium phosphate	$\text{Ca}_3(\text{PO}_4)_2$	310.07 grams/mole
26)	ammonium sulfate	$(\text{NH}_4)_2\text{SO}_4$	132.02 grams/mole
27)	silver cyanide	$\text{AgCN}$	133.88 grams/mole
28)	aluminum sulfide	$\text{Al}_2\text{S}_3$	150.14 grams/mole
29)	beryllium chloride	$\text{BeCl}_2$	79.91 grams/mole
30)	copper (I) arsenide	$\text{Cu}_3\text{As}$	265.54 grams/mole
31)	iron (III) oxide	$\text{Fe}_2\text{O}_3$	159.65 grams/mole
32)	gallium nitride	$\text{GaN}$	83.72 grams/mole
33)	iron (II) bromide	$\text{FeBr}_2$	215.64 grams/mole
34)	vanadium (V) phosphate	$\text{V}_3(\text{PO}_4)_5$	627.47 grams/mole
35)	calcium oxide	$\text{CaO}$	56.06 grams/mole
36)	magnesium acetate	$\text{Mg}(\text{CH}_3\text{COO})_2$	142.30 grams/mole
37)	aluminum sulfate	$\text{Al}_2(\text{SO}_4)_3$	342.02 grams/mole
38)	copper (I) carbonate	$\text{Cu}_2\text{CO}_3$	187.06 grams/mole
39)	barium oxide	$\text{BaO}$	153.32 grams/mole
40)	ammonium sulfite	$(\text{NH}_4)_2\text{SO}_3$	116.03 grams/mole
41)	silver bromide	$\text{AgBr}$	187.77 grams/mole
42)	lead (IV) nitrite	$\text{Pb}(\text{NO}_2)_4$	391.12 grams/mole