

Table of Some Common Ions and Acids

| +1 | |
|---|-----------------|
| Ammonium | NH ₄ |
| Ammonia | NH ₃ |
| Copper (I) or Cuprous | Cu |
| | |
| Hydrogen | H |
| Lithium | Li |
| Potassium | K |
| *Mercury (I) or Mercurous | Hg ₂ |
| Sodium | Na |
| Silver | Ag |
| | |
| *Mercury (I) ions occur as groups of two (2) so; its symbol is Hg ₂ and its total charge is +2 | |

| +2 | |
|--------------------------|----|
| Barium | Ba |
| Beryllium | Be |
| Cadmium | Cd |
| Calcium | Ca |
| Cobalt (II) | Co |
| Chromium (II) | Cr |
| Copper (II) or Cupric | Cu |
| Iron (II) or Ferrous | Fe |
| Lead (II) or Plumbous | Pb |
| Magnesium | Mg |
| Manganese (II) | Mn |
| Mercury (II) or Mercuric | Hg |
| Nickel (II) | Ni |
| Strontium | Sr |
| Tin (II) or Stannous | Sn |
| Zinc | Zn |

| +3 | |
|-----------------|----|
| Aluminum | Al |
| Chromium (III) | Cr |
| Antimony (III) | Sb |
| Bismuth | Bi |
| Iron (III) | Fe |
| Arsenic | As |
| Cobalt (III) | Co |
| Manganese (III) | Mg |

| +4 | |
|----------------------|----|
| Lead (IV) or Plumbic | Pb |
| Tin (IV) or Stannic | Sn |
| Carbon | C |
| Silicon | Si |

| +5 | |
|--------------|----|
| Antimony (V) | Sb |
| Arsenic (V) | As |
| Bismuth (V) | Bi |

| -1 | |
|-----------------------------------|---|
| Acetate | C ₂ H ₃ O ₂ (CH ₃ COO) |
| Bromate | BrO ₃ |
| Bromide | Br |
| Chlorate | ClO ₃ |
| Chlorite | ClO ₂ |
| Chloride | Cl |
| Cyanide | CN |
| Fluoride | F |
| Hydride | H |
| Hydrogen Carbonate or Bicarbonate | HCO ₃ |
| Hydrogen Sulfate or Bisulfate | HSO ₄ |
| Hydrogen Sulfite or Bisulfite | HSO ₃ |
| Hydroxide | OH |
| Hypochlorite | ClO |
| Hydrogen Sulfide | HS |
| Iodate | IO ₃ |
| Iodide | I |
| Nitrate | NO ₃ |
| Nitrite | NO ₂ |
| Perchlorate | ClO ₄ |
| Permanganate | MnO ₄ |
| Thiocyanate | SCN |

| -2 | |
|--------------------|--|
| Carbonate | CO ₃ |
| Chromate | CrO ₄ |
| Cyanamide | CN ₂ |
| Dichromate | Cr ₂ O ₇ |
| Hydrogen Phosphate | HPO ₄ |
| Oxalate | C ₂ O ₄ |
| Oxide | O |
| Peroxide | O ₂ |
| Stannate | SnO ₃ |
| Stannite | SnO ₂ |
| Sulfate | SO ₄ |
| Sulfite | SO ₃ |
| Sulfide | S |
| Tartrate | C ₄ H ₄ O ₆ |

| -3 | |
|--|---------------------|
| Borate | BO ₃ |
| Hexacyanoferrate (III) or Ferricyanide | Fe(CN) ₆ |
| Phosphate | PO ₄ |
| Phosphite | PO ₃ |
| Phosphide | P |
| Nitride | N |

| -4 | |
|---------------------------------------|---------------------|
| Hexacyanoferrate (II) or Ferrocyanide | Fe(CN) ₆ |
| Silicate | SiO ₄ |

Mechanisms and rules for writing chemical formulas:

THE CRISS-CROSS METHOD

RULE 1: The resulting formula for a compound must have a total charge of zero (0).

RULE 2: Write the positive ion first and cross the valences.

RULE 3: Do not cross any signs.

RULE 4: Don't cross any ones.

RULE 5: If both valences are the same, don't cross them.

RULE 6: More than one atom, more than one time, use parentheses

RULE 7: If the final answer has subscripts that can be reduced, they must be reduced.

RULE 8: If the name of the compound has prefixes in it, change the prefixes to subscripts and do not cross the valences.

Some Common Acids

| | |
|--------------|---|
| Acetic | HC ₂ H ₃ O ₂ |
| Carbonic | H ₂ CO ₃ |
| Hydrochloric | HCl |
| Hydrobromic | HBr |
| Hydrofluoric | HF |
| Nitric | HNO ₃ |
| Phosphoric | H ₃ PO ₄ |
| Sulfuric | H ₂ SO ₄ |