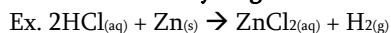


## Table of Polyatomic Ions

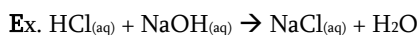
|   |   |                                      |   |
|---|---|--------------------------------------|---|
| <a href="#"><u>Acetate</u></a>                          | $\text{CH}_3\text{COO}^-$ or $\text{C}_2\text{H}_3\text{O}_2^-$ | <a href="#"><u>Hydronium</u></a>     | $\text{H}_3\text{O}^+$                    |
| <a href="#"><u>Aluminate</u></a>                        | $\text{AlO}_2^-$ , $\text{Al}_2\text{O}_4^{2-}$                 | <a href="#"><u>Hydroxide</u></a>     | $\text{OH}^-$                             |
| <a href="#"><u>Amide</u></a>                            | $\text{NH}_2^-$   | <a href="#"><u>Hypobromite</u></a>   | $\text{BrO}^-$                            |
| <a href="#"><u>Ammonium</u></a>                         | $\text{NH}_4^+$   | <a href="#"><u>Hypochlorite</u></a>  | $\text{ClO}^-$                            |
| <a href="#"><u>Antimonate</u></a>                       | $\text{SbO}_4^{3-}$   | <a href="#"><u>Hypoiodite</u></a>    | $\text{IO}^-$                             |
| <a href="#"><u>Antimonite</u></a>                       | $\text{SbO}_3^{3-}$   | <a href="#"><u>Hypophosphite</u></a> | $\text{PO}_2^{3-}$                        |
| <a href="#"><u>Arsenate</u></a>                         | $\text{AsO}_4^{3-}$   | <a href="#"><u>Hyposulfite</u></a>   | $\text{SO}_2^{2-}$                        |
| <a href="#"><u>Arsenite</u></a>                         | $\text{AsO}_3^{3-}$   | <a href="#"><u>Iodate</u></a>        | $\text{IO}_3^-$                           |
| <a href="#"><u>Bicarbonate (hydrogen carbonate)</u></a> | $\text{HCO}_3^-$  | <a href="#"><u>Iodite</u></a>        | $\text{IO}_2^-$                           |
| <a href="#"><u>Bromate</u></a>                          | $\text{BrO}_3^-$  | <a href="#"><u>Manganate</u></a>     | $\text{MnO}_4^{2-}$                       |
| <a href="#"><u>Bromite</u></a>                          | $\text{BrO}_2^-$  | <a href="#"><u>Nitrate</u></a>       | $\text{NO}_3^-$                           |
| <a href="#"><u>Carbide</u></a>                          | $\text{C}_2^{2-}$   | <a href="#"><u>Nitrite</u></a>       | $\text{NO}_2^-$                           |
| <a href="#"><u>Carbonate</u></a>                        | $\text{CO}_3^{2-}$  | <a href="#"><u>Ozonide</u></a>       | $\text{O}_3^-$                            |
| <a href="#"><u>Chlorate</u></a>                         | $\text{ClO}_3^-$  | <a href="#"><u>Perbromate</u></a>    | $\text{BrO}_4^-$                          |
| <a href="#"><u>Chlorite</u></a>                         | $\text{ClO}_2^-$  | <a href="#"><u>Perchlorate</u></a>   | $\text{ClO}_4^-$                          |
| <a href="#"><u>Chromate</u></a>                         | $\text{CrO}_4^{2-}$   | <a href="#"><u>Periodate</u></a>     | $\text{IO}_4^-$                           |
| <a href="#"><u>Chromite</u></a>                         | $\text{CrO}_2^-$  | <a href="#"><u>Permanganate</u></a>  | $\text{MnO}_4^-$                          |
| <a href="#"><u>Cyanate</u></a>                          | $\text{OCN}^-$  | <a href="#"><u>Peroxide</u></a>      | $\text{O}_2^{2-}$                         |
| <a href="#"><u>Cyanide</u></a>                          | $\text{CN}^-$   | <a href="#"><u>Phosphate</u></a>     | $\text{PO}_4^{3-}$                        |
| <a href="#"><u>Dichromate</u></a>                       | $\text{Cr}_2\text{O}_7^{2-}$                                    | <a href="#"><u>Phosphite</u></a>     | $\text{PO}_3^{3-}$                        |
| <a href="#"><u>Dihydrogen arsenate</u></a>              | $\text{H}_2\text{AsO}_4^-$                                      | <a href="#"><u>Plumbate</u></a>      | $\text{PbO}_3^{2-}$                       |
| <a href="#"><u>Dihydrogen phosphate</u></a>             | $\text{H}_2\text{PO}_4^-$                                       | <a href="#"><u>Plumbite</u></a>      | $\text{PbO}_2^{2-}$                       |
| <a href="#"><u>Dihydrogen phosphite</u></a>             | $\text{H}_2\text{PO}_3^-$                                       | <a href="#"><u>Stannate</u></a>      | $\text{SnO}_3^{2-}$                       |
| <a href="#"><u>Disulfide</u></a>                        | $\text{S}_2^{2-}$   | <a href="#"><u>Stannite</u></a>      | $\text{SnO}_2^{2-}$                       |
| <a href="#"><u>Ferrate</u></a>                          | $\text{FeO}_4^{2-}$   | <a href="#"><u>Sulfate</u></a>       | $\text{SO}_4^{2-}$                        |
| <a href="#"><u>Hydrogen carbonate (bicarbonate)</u></a> | $\text{HCO}_3^-$  | <a href="#"><u>Sulfite</u></a>       | $\text{SO}_3^{2-}$                        |
| <a href="#"><u>Hydrogen arsenate</u></a>                | $\text{HAsO}_4^{2-}$  | <a href="#"><u>Superoxide</u></a>    | $\text{O}_2^-$                            |
| <a href="#"><u>Hydrogen phosphate</u></a>               | $\text{HPO}_4^{2-}$   | <a href="#"><u>Tartrate</u></a>      | $(\text{CH}(\text{OH})\text{COO})_2^{2-}$ |
| <a href="#"><u>Hydrogen phosphite</u></a>               | $\text{HPO}_3^{2-}$   | <a href="#"><u>Tellurite</u></a>     | $\text{TeO}_3^{2-}$                       |
| <a href="#"><u>Hydrogen sulfate</u></a>                 | $\text{HSO}_4^-$  | <a href="#"><u>Thiocyanate</u></a>   | $\text{SCN}^-$                            |
| <a href="#"><u>Hydrogen sulfite</u></a>                 | $\text{HSO}_3^-$  | <a href="#"><u>Thiosulfate</u></a>   | $\text{S}_2\text{O}_3^{2-}$               |

### Reactions of Acids

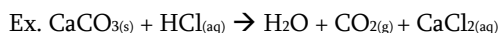
#### 1. Acid + Metal $\rightarrow$ Salt + Hydrogen Gas



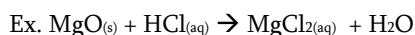
#### 2. Acid + Base $\rightarrow$ Salt + Water



#### 3. Acid + Metal Carbonate $\rightarrow$ $\text{CO}_2$ + $\text{H}_2\text{O}$ + Salt



#### 4. Metal Oxide + Acid $\rightarrow$ Salt + Water



### Evidence for Chemical Change:

#### Tests for Gases:

Oxygen

Hydrogen

Carbon Dioxide