

MEMORIZE THESE

Common Polyatomic Ions

| +1 CHARGE | | -1 CHARGE | | -2 CHARGE | | -3 CHARGE | |
|------------------------|------------|------------------------------------|-----------|------------------------------|------------|---------------------|-----------|
| ion | name | ion | name | ion | name | ion | name |
| NH_4^+ | ammonium | FO_3^- | fluorate | CO_3^{2-} | carbonate | BO_3^{3-} | borate |
| H_3O^+ | hydronium | ClO_3^- | chlorate | SiO_3^{2-} | silicate | PO_4^{3-} | phosphate |
| Hg_2^{2+} | mercury(I) | BrO_3^- | bromate | SO_4^{2-} | sulfate | AsO_4^{3-} | arsenate |
| | | IO_3^- | iodate | CrO_4^{2-} | chromate | | |
| | | MnO_3^- | manganate | $\text{Cr}_2\text{O}_7^{2-}$ | dichromate | | |
| | | NO_3^- | nitrate | $\text{C}_2\text{O}_4^{2-}$ | oxalate | | |
| | | CH_3COO^- | acetate | S_2^{2-} | disulfide | | |
| | | $\text{C}_2\text{H}_3\text{O}_2^-$ | acetate | C_2^{2-} | carbide | | |
| | | OH^- | hydroxide | | | | |
| | | CN^- | cyanide | | | | |
| | | N_3^- | azide | | | | |

Oxyanions that ates = O_3

Oxyanions that ates = O_4

- Example
- CO_3

| | | | | |
|--------------------------------|--------------------------------|---------------------------------|---------------------------------|--------------------------------|
| boron 5 B 10.811 | carbon 6 C 12.011 | nitrogen 7 N 14.007 | oxygen 8 O 15.999 | fluorine 9 F 18.998 |
| aluminum 13 Al 26.982 | silicon 14 Si 28.086 | phosphorus 15 P 30.974 | sulfur 16 S 32.065 | chlorine 17 Cl 35.453 |
| gallium 31 Ga 69.723 | germanium 32 Ge 72.61 | arsenic 33 As 74.922 | seletem 34 Se 78.96 | bromine 35 Br 79.904 |
| indium 49 In 114.82 | tin 50 Sn 118.71 | antimony 51 Sb 121.76 | tellurium 52 Te 127.60 | iodine 53 I 126.90 |

- Example
- SO_4

| | | | | |
|--------------------------------|--------------------------------|---------------------------------|---------------------------------|--------------------------------|
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Oxyanion nomenclature*

| | | | | | | | |
|----------------|-------------|------------------|-----------------|--------------------|----------------|--------------------|------------------|
| Great +1 | per - - ate | ClO_4^- | perchlorate | SO_5^{2-} | persulfate | PO_5^{3-} | perphosphate |
| Greater | ate | ClO_3^- | chlorate | SO_4^{2-} | sulfate | PO_4^{3-} | phosphate |
| Lesser | ite | ClO_2^- | chlorite | SO_3^{2-} | sulfite | PO_3^{3-} | phosphite |
| Lesser -1 | hypo - -ite | ClO^- | hypochlorite | SO_2^{2-} | hyposulfite | PO_2^{3-} | hypophosphite |

*3 examples ó but they all follow the same nomenclature (very few exceptions)

Common anions

| -3 Charge | | -2 Charge | | -1 Charge | |
|------------------|-----------|------------------|-----------|------------------|----------|
| N^{-3} | nitride | O^{2-} | Oxide | F^- | Fluoride |
| P^{-3} | phosphide | S^{2-} | Sulfide | Cl^- | Chloride |
| As^{-3} | arsenide | Se^{2-} | Selenide | Br^- | Bromide |
| | | Te^{2-} | Telluride | I^- | Iodide |
| | | | | At^- | Astatide |

Acid nomenclature

| Name | Ion | Acid Name | Formula |
|-------------|------------------|--------------------|-----------------|
| Per - - ate | ClO_4^- | Perchloric acid | HClO_4 |
| ate | ClO_3^- | Chloric acid | HClO_3 |
| Ite | ClO_2^- | Chlorous acid | HClO_2 |
| Hypo - -ite | ClO^- | Hypochlorous acid | HClO |
| ide | Cl^- | Hydrochloric acid* | HCl |

*No oxygen then Hydro ____ic acid - HCN = Hydrocyanic, HCl = Hydrochloric

Oxygen Ions

| | |
|-------------------|------------|
| O^{2-} | oxide |
| O_2^{2-} | peroxide |
| O_2^- | superoxide |