FORMULAS AND NAMES OF SOME COMMON POLYATOMIC IONS AND THE ACIDS THEY COME FROM

ACIDS		KEY ELEMENT	FORMULA	NAME OF ION
Nitric Acid	**HNO_3**	**Nitrogen**	**NO_3^-**	**nitrate**
Nitr**ous** Acid	HNO_2		NO_2^-	nitr**ite**
			NH_4^+	**ammonium**
Sulfuric Acid	**H_2SO_4**	**Sulfur**	**SO_4^{2-}**	**sulfate**
			HSO_4^-	bisulf**ate** or hydrogen sulfate
Sulfur**ous** Acid	H_2SO_3		SO_3^{2-}	sulf**ite**
			HSO_3^-	bisulf**ite** or hydrogen sulfite
Phosphoric Acid	**H_3PO_4**	**Phosphorus**	**PO_4^{3-}**	**phosphate**
			HPO_4^{2-}	hydrogen phosphate
			$H_2PO_4^-$	dihydrogen phosphate
Phosphor**us** Acid	H_3PO_3		PO_3^{3-}	phosph**ite**
Carbonic Acid	**H_2CO_3**	**Carbon**	**CO_3^{2-}**	**carbonate**
			HCO_3^-	**bicarbonate** or hydrogen carbonate
			$C_2O_4^{2-}$	**oxalate**
Acetic Acid	**$HC_2H_3O_2$**		**$C_2H_3O_2^-$**	**acetate**
			CN^-	**cyanide**
		Chlorine	ClO_4^-	perchlor**ate**
Chloric Acid	**$HClO_3$**		**ClO_3^-**	**chlorate**
Chlor**ous** Acid	$HClO_2$		ClO_2^-	chlor**ite**
			ClO^-	hypochlor**ite**
Boric Acid	**H_3BO_3**	**Boron**	**BO_3^{3-}**	**borate**
		Hydrogen	**H_3O^+**	**hydronium**
			OH^-	**hydroxide**
		Metals	**MnO_4^-**	**permanganate**
			CrO_4^{2-}	**chromate**
			$Cr_2O_7^{2-}$	**dichromate**

Note the following concerning polyatomic ions:

1. Most of the ions have a negative charge, which can vary from 1^- to 3^-. Only two positive ions are listed in the table: NH_4^+ (ammonium) and H_3O^+ (hydronium).
2. Two of the polyatomic ions, OH^- (hydroxide) and CN^- (cyanide), have names ending in ***-ide***. These names represent exceptions to the rule that the suffix ***-ide*** be reserved for use in naming binary ionic compounds.
3. A number of ***-ate***, ***-ite***, pairs of ions exist, for example, SO_4^{2-} (sulfate) and SO_3^{2-} (sulfite). The ion in the pair with the higher number of oxygens is always the ***-ate*** ion. The ***-ite*** ion always contains one less oxygen than the ***-ate*** ion.
4. A number of pairs of ions exist where one member of the pair differs from the other by having a hydrogen atom present, for example CO_3^{2-} (carbonate) and HCO_3^- bicarbonate or hydrogen carbonate). In such pairs, the charge on the hydrogen containing ion is always one less than that on the other ion.

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			HPO_4^{2-}	hydrogen phosphate
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Acetic Acid	**$HC_2H_3O_2$**		**$C_2H_3O_2^-$**	**acetate**
			CN^-	**cyanide**
		Chlorine	ClO_4^-	perchlor**ate**
Chloric Acid	**$HClO_3$**		**ClO_3^-**	**chlorate**
Chlor**ous** Acid	$HClO_2$		ClO_2^-	chlor**ite**
			ClO^-	hypochlor**ite**
Boric Acid	**H_3BO_3**	**Boron**	**BO_3^{3-}**	**borate**
		Hydrogen	**H_3O^+**	**hydronium**
			OH^-	**hydroxide**
		Metals	**MnO_4^-**	**permanganate**
			CrO_4^{2-}	**chromate**
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