







**Table 3.3** Some Common Polyatomic Ions

Name	Formula	Name	Formula
Hydronium ion	$\text{H}_3\text{O}^+$	Nitrate ion	$\text{NO}_3^-$
Ammonium ion	$\text{NH}_4^+$	Nitrite ion	$\text{NO}_2^-$
Acetate ion	$\text{CH}_3\text{CO}_2^-$	Oxalate ion	$\text{C}_2\text{O}_4^{2-}$
Carbonate ion	$\text{CO}_3^{2-}$	Permanganate ion	$\text{MnO}_4^-$
Hydrogen carbonate ion (bicarbonate ion)	$\text{HCO}_3^-$	Phosphate ion	$\text{PO}_4^{3-}$
Chromate ion	$\text{CrO}_4^{2-}$	Hydrogen phosphate ion (biphosphate ion)	$\text{HPO}_4^{2-}$
Dichromate ion	$\text{Cr}_2\text{O}_7^{2-}$	Dihydrogen phosphate ion	$\text{H}_2\text{PO}_4^-$
Cyanide ion	$\text{CN}^-$	Sulfate ion	$\text{SO}_4^{2-}$
Hydroxide ion	$\text{OH}^-$	Hydrogen sulfate ion (bisulfate ion)	$\text{HSO}_4^-$
Hypochlorite ion	$\text{OCl}^-$	Sulfite ion	$\text{SO}_3^{2-}$

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-ate ion → -ic acid  
 -ite ion → -ous acid  
 -ide ion → hydro-ic acid

**Table 4.3** Molecular Geometry Around Atoms with 2, 3, and 4 Charge Clouds

Number of Bonds	Number of Lone Pairs	Total Number of Charge Clouds	Molecular Geometry	Example
2	0	2	 Linear	$\text{O}=\text{C}=\text{O}$
3	0	3	 Trigonal planar	$\text{H}-\text{C}=\text{O}$
	1		 Bent	$\text{O}=\text{S}:$
4	0	4	 Tetrahedral	$\text{H}-\text{C}-\text{H}$
	1		 Pyramidal	$\text{H}-\text{N}-\text{H}$
	2		 Bent	$\text{H}-\text{O}-\text{H}$

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**Table 4.4** Numerical Prefixes Used in Chemical Names

Number	Prefix
1	mono-
2	di-
3	tri-
4	tetra-
5	penta-
6	hexa-
7	hepta-
8	octa-
9	nona-
10	deca-

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Element	Electronegativity
H	2.1
He	
Li	1.0
Be	1.5
B	2.0
C	2.5
N	3.0
O	3.5
F	4.0
Ne	
Na	0.9
Mg	1.2
Al	1.5
Si	1.8
P	2.1
S	2.5
Cl	3.0
Ar	
K	0.8
Ca	1.0
Sc	1.3
Ti	1.5
V	1.6
Cr	1.6
Mn	1.5
Fe	1.8
Co	1.9
Ni	1.9
Cu	1.9
Zn	1.6
Ga	1.6
Ge	1.8
As	2.0
Se	2.4
Br	2.8
Kr	
Rb	0.8
Sr	1.0
Y	1.2
Zr	1.4
Nb	1.6
Mo	1.8
Tc	1.9
Ru	2.2
Rh	2.2
Pd	2.2
Ag	1.9
Cd	1.7
In	1.7
Sn	1.8
Sb	1.9
Te	2.1
I	2.5
Xe	

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