

Ions

Table 3.4 Common simple ions

+1	+2	+3	+4	-1	-2	-3
hydrogen H^+	magnesium Mg^{2+}	aluminium Al^{3+}	tin(IV) Sn^{4+}	hydride H^-	oxide O^{2-}	nitride N^{3-}
lithium Li^+	calcium Ca^{2+}	iron(III) Fe^{3+}	lead(IV) Pb^{4+}	fluoride F^-	sulfide S^{2-}	phosphide P^{3-}
sodium Na^+	strontium Sr^{2+}	chromium(III) Cr^{3+}		chloride Cl^-		
potassium K^+	barium Ba^{2+}	gold(III) Au^{3+}		bromide Br^-		
silver Ag^+	manganese(II) Mn^{2+}			iodide I^-		
gold(I) Au^+	iron(II) Fe^{2+}					
copper(I) Cu^+	cobalt(II) Co^{2+}					
	nickel(II) Ni^{2+}					
	copper(II) Cu^{2+}					
	zinc Zn^{2+}					
	mercury(II) Hg^{2+}					
	tin(II) Sn^{2+}					
	lead(II) Pb^{2+}					

Table 3.5 Common polyatomic ions

-1	-2	-3	+1	+2
hydroxide OH^-	carbonate CO_3^{2-}	phosphate PO_4^{3-}	ammonium NH_4^+	mercury(I) Hg_2^{2+}
nitrate NO_3^-	sulfate SO_4^{2-}			
nitrite NO_2^-	sulfite SO_3^{2-}			
hydrogencarbonate HCO_3^-	peroxide O_2^{2-}			
hydrogensulfate HSO_4^-	hydrogen phosphate HPO_4^{2-}			
dihydrogenphosphate H_2PO_4^-	dichromate $\text{Cr}_2\text{O}_7^{2-}$			
ethanoate(acetate) CH_3COO^-	chromate CrO_4^{2-}			
hypochlorite ClO^-	oxalate $\text{C}_2\text{O}_4^{2-}$			
cyanide CN^-				
permanganate MnO_4^-				

Covalent molecular compounds

Table 3.6 The molecular formulae of some common compounds

Molecular formula	Systematic name	Common name
CO	carbon monoxide	–
CO ₂	carbon dioxide	–
N ₂ O	dinitrogen monoxide	nitrous oxide
NO	nitrogen monoxide	nitric oxide
NO ₂	nitrogen dioxide	–
N ₂ O ₄	dinitrogen tetroxide	–
SO ₂	sulfur dioxide	–
SO ₃	sulfur trioxide	–
H ₂ O	dihydrogen oxide	water
H ₂ O ₂	dihydrogen dioxide	hydrogen peroxide
H ₂ S	dihydrogen sulfide	hydrogen sulfide
HF	hydrogen fluoride	hydrogen fluoride
HCl	hydrogen chloride	hydrogen chloride
NH ₃	–	ammonia
CH ₄	methane or carbon tetrahydride	methane
CCl ₄	tetrachloromethane	carbon tetrachloride