

# Yr 12 VALENCY

Students should be able to recognise and write the formula of the following ions and molecules:

Ion name	Formula
ammonium	$\text{NH}_4^+$
caesium	$\text{Cs}^+$
hydrogen	$\text{H}^+$
lithium	$\text{Li}^+$
potassium	$\text{K}^+$
rubidium	$\text{Rb}^+$
silver	$\text{Ag}^+$
sodium	$\text{Na}^+$
barium	$\text{Ba}^{2+}$
calcium	$\text{Ca}^{2+}$
cobalt(II)	$\text{Co}^{2+}$
copper(II)	$\text{Cu}^{2+}$
iron(II)	$\text{Fe}^{2+}$
lead(II)	$\text{Pb}^{2+}$
magnesium	$\text{Mg}^{2+}$
manganese(II)	$\text{Mn}^{2+}$
nickel(II)	$\text{Ni}^{2+}$
strontium	$\text{Sr}^{2+}$
zinc	$\text{Zn}^{2+}$
aluminium	$\text{Al}^{3+}$
chromium(III)	$\text{Cr}^{3+}$
iron(III)	$\text{Fe}^{3+}$

Ion name	Formula
bromide	$\text{Br}^-$
chloride	$\text{Cl}^-$
cyanide	$\text{CN}^-$
dihydrogenphosphate	$\text{H}_2\text{PO}_4^-$
ethanoate (acetate)	$\text{CH}_3\text{COO}^-$
fluoride	$\text{F}^-$
hydrogencarbonate	$\text{HCO}_3^-$
hydrogensulfate	$\text{HSO}_4^-$
hydroxide	$\text{OH}^-$
iodide	$\text{I}^-$
nitrate	$\text{NO}_3^-$
nitrite	$\text{NO}_2^-$
permanganate	$\text{MnO}_4^-$
carbonate	$\text{CO}_3^{2-}$
chromate	$\text{CrO}_4^{2-}$
dichromate	$\text{Cr}_2\text{O}_7^{2-}$
hydrogenphosphate	$\text{HPO}_4^{2-}$
oxalate	$\text{C}_2\text{O}_4^{2-}$
oxide	$\text{O}^{2-}$
sulfate	$\text{SO}_4^{2-}$
sulfide	$\text{S}^{2-}$
sulfite	$\text{SO}_3^{2-}$
nitride	$\text{N}^{3-}$
phosphate	$\text{PO}_4^{3-}$

Common molecules that have non-systematic names:

Molecule name	Formula
ammonia	$\text{NH}_3$
water	$\text{H}_2\text{O}$
hydrogen peroxide	$\text{H}_2\text{O}_2$
ethanoic acid	$\text{CH}_3\text{COOH}$
hydrochloric acid	$\text{HCl}$
nitric acid	$\text{HNO}_3$
carbonic acid	$\text{H}_2\text{CO}_3$
sulfuric acid	$\text{H}_2\text{SO}_4$
sulfurous acid	$\text{H}_2\text{SO}_3$
phosphoric acid	$\text{H}_3\text{PO}_4$