

Writing Chemical Formulas

Common cationic charges are shown below:

	1 IA	2 IIA											13 IIIA	14 IVA
2	Li ⁺													
3	Na ⁺	Mg ²⁺											Al ³⁺	
4	K ⁺	Ca ²⁺				Cr ³⁺	Mn ²⁺	Fe ²⁺ Fe ³⁺	Co ²⁺ Co ³⁺	Ni ²⁺	Cu ²⁺ Cu ⁺	Zn ²⁺		
5		Sr ²⁺									Ag ⁺	Cd ²⁺		Sn ⁴⁺ Sn ²⁺
6		Ba ²⁺										Hg ²⁺ Hg ₂ ²⁺		Pb ⁴⁺ Pb ²⁺
7														

The alkali metals in Group IA, when ionized, have a charge of +1, the Alkaline Earths in Group IIA have a charge of +2, etc.

Anionic charges also are determined by the Roman numeral on top of the Group or Family.

For example, P is in Group VA and has 5 valence electrons and a charge of -3 (wants three electrons to be isoelectronic with a Noble gas)

O and S are in Group VIA and have a charge of -2

The halogens are in Group VIIA and have a charge of -1 when they are halides

When chemical formulas are written, the overall charge of the molecule must equal zero. This means that the cationic positive charges must equal the anionic negative charges.

The sodium ion has a charge of +1 and the chloride anion has a charge of -1 → NaCl

The sulfide anion has a charge of -2 → Na₂S (must have two Na's to get a +2 charge to balance the -2 charge on the sulfide)



For iron (III) oxide, the chemical formula is Fe₂O₃ (use the crossover rule)

Polyatomic anions:

