Chemical Reactions

NAMING IONIC COMPOUNDS

Ionic bond - metal + non-metal
↳ charges

* Polyatomic ions indicate ionic compound

Cations (positive ions/metals) don't change when named.

Na^+ = Sodium Al^{3+} = Aluminum

anions (negative ions/non-metals) change their name.

root + ide → rootide

O O^{2-}
Oxygen = oxide

F F^-
Fluorine = Fluoride

Rules

1. Positive ion always goes first
2. Negative goes second with changed name
   - ↳ polyatomic ions have already changed
3. NO PREFIXES
4. Charges MUST cancel out
5. If metal has variable (more than one option) charge name (not formula) requires Roman Numeral after metal to indicate charge.

Fe^{2+}	Fe^{3+}	V^{4+}	V^{5+}
Iron(II)	Iron(III)	Vanadium(IV)	Vanadium(V)

1 = I 2 = (II) 3 = (III) 4 = (IV) 5 = (V)

Na_2O = Sodium Oxide

$Li(OH)$ = Lithium hydroxide

↳ polyatomic

$Na_3(PO_4)$ = Sodium phosphate

$Ca(NO_3)_2$ = Calcium Nitrate

$Ti(PO_4)$ = Titanium (III) phosphate

Calcium oxide = $Ca^{2+}O^{2-}$

Silver oxide = $Ag_2^{+}O^{2-}$

Ammonium phosphide = $(NH_4^{+})_3P^{3-}$

Nickel (III) Sulfide = $Ni_2^{3+}S_3^{2-}$ (charge!)

Copper (II) Nitrate = $Cu^{2+}(NO_3^{-})_2$

NaCl = Sodium Chloride

Al_2O_3 - Aluminum oxide

VO_2 Vanadium (IV) oxide

Ammonium Carbonate $(NH_4)_2CO_3$

$Cr(NO_3)_3$ Chromium Nitrate

Sodium Acetate $NaC_2H_3O_2$

Calcium Carbonate $CaCO_3$ (eggshells!)

FeI_3 Iron (III) Iodide