



Naming Inorganic Compounds

Topic Summary

- Compounds are divided into two big classes - organic (carbon chemistry) and inorganic (everything else)
- Metals donate electrons and are on the left of the periodic table, non-metals take or share electrons and are found on the right of the table.
- Simple ionic compounds are named by keeping the metal name the same and using the suffix '-ide' for the non-metal (e.g., NaCl, Sodium chloride).
- Learn the common polyatomic ions, such as: CO_3 (carbonate) and SO_4 (sulphate)
- Roman numerals are used to identify transition metal compounds based on ion charge (e.g., FeCl_2 is Iron(II) chloride whilst FeCl_3 is Iron(III) chloride).
- Covalent compounds (made from only nonmetal elements) start with the element from the lowest group number or the element furthest down the table if both are from the same group.
- Apply Greek prefixes to name covalent compounds (e.g., CO_2 is carbon **d**ioxide).
- Recognise exceptions with common names like water (H_2O) and ammonia (NH_3).



Easy ones first to build your confidence

Here are a few simple compounds to start with. For each one, write out the name of the compound. The first one has been done for you.

LiCl Lithium Chloride.....

MgO Magnesium oxide.....

CaO Calcium oxide.....

RbF Rubidium fluoride



Now a bit trickier

These next few have different ratios of ions in them.

K_2O Potassium oxide.....

CaF_2 Calcium fluoride.....

AlBr_3 Aluminium bromide.....

MgCl_2 Magnesium chloride.....

Li_2O Lithium oxide.....

Al_2O_3 Aluminium oxide.....





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These compounds contain polyatomic anions...

You'll need to remember the names of these anions as you won't find polyatomic ions in the periodic table (they are not elements!)

MgCO_3 Magnesium carbonate.....

CuSO_4 Copper sulphate.....(technically copper (II) sulphate),

That's because copper is a transition metal - you wouldn't need that '(II)' bit at GCSE but well done if you spotted it!

Al(OH)_3 Aluminium hydroxide.....

LiNO_3 Lithium nitrate.....

$\text{Al}_2(\text{CO}_3)_3$ Aluminium carbonate.....



Now some covalent ones...

Remember that you will need to use the Greek prefixes for your second element here, watch out.

CO Carbon monoxide.....

SO_2 Sulphur dioxide.....

NO_2 Nitrogen dioxide.....

PCl_3 Phosphorus trichloride.....



Do this later...

Give your brain a break and come back to these questions later. Cover the rest of the sheet while you have a go. By doing this 24-48 hours after watching the video you will boost your chances of remembering the key points in an exam. If you struggle with these questions, re-watch the video and then try again.

This is a mixed bag of examples to test you.

LiCl Lithium chloride.....

CaF_2 Calcium fluoride.....

Na_2SO_4 Sodium sulphate.....

Ba(OH)_2 Barium hydroxide.....

$\text{Al(NO}_3)_3$ Aluminium nitrate.....