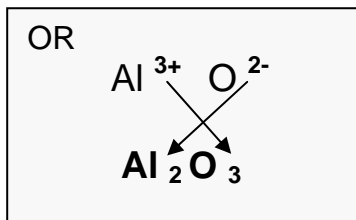


WRITING & NAMING FORMULAE SHEET 3

Complete the following chart by writing the formula formed by pairing up the positive ion down the side with the negative ion across the top.

The first one has been done for you.



+1	+2	+3	-3	-2	-1
NH_4^+	Ca^{2+}	Al^{3+}		O^{2-}	OH^-
Na^+	Mg^{2+}	Fe^{3+}		S^{2-}	Cl^-
K^+	Cu^{2+}			CO_3^{2-}	NO_3^-
Ag^+	Pb^{2+}			SO_4^{2-}	HCO_3^-
H^+	Fe^{2+}				
	Ba^{2+}				
	Zn^{2+}				

	O^{2-}	OH^-	Cl^-	SO_4^{2-}
Al^{3+}	Al_2O_3			
	aluminium oxide			
Fe^{3+}				
Pb^{2+}				
K^+				

Write the formulae for the following compounds. The first one has been done for you.

sodium oxide	Na_2O	magnesium hydroxide	
magnesium sulfate		sodium carbonate	
calcium hydrogen carbonate		potassium nitrate	
zinc oxide		iron(II) sulfate	
ammonium sulfate		copper sulfide	

ANSWERS - WRITING & NAMING FORMULAE SHEET 3

	O^{2-}	OH^-	Cl^-	SO_4^{2-}
Al^{3+}	Al_2O_3	$Al(OH)_3$	$AlCl_3$	$Al_2(SO_4)_3$
	aluminium oxide	aluminium hydroxide	aluminium chloride	aluminium sulfate
Fe^{3+}	Fe_2O_3	$Fe(OH)_3$	$FeCl_3$	$Fe_2(SO_4)_3$
	iron(III) oxide	iron(III) hydroxide	iron(III) chloride	iron(III) sulfate
Pb^{2+}	PbO	$Pb(OH)_2$	$PbCl_2$	$PbSO_4$
	lead oxide	lead hydroxide	lead chloride	lead sulfate
K^+	K_2O	KOH	KCl	K_2SO_4
	potassium oxide	potassium hydroxide	potassium chloride	potassium sulfate

sodium oxide	Na_2O	magnesium hydroxide	$Mg(OH)_2$
magnesium sulfate	$MgSO_4$	sodium carbonate	Na_2CO_3
calcium hydrogen carbonate	$Ca(HCO_3)_2$	potassium nitrate	KNO_3
zinc oxide	ZnO	iron(II)sulfate	$FeSO_4$
ammonium sulfate	$(NH_4)_2SO_4$	copper sulfide	CuS

FAQ.

Has the hydrogen carbonate ion HCO_3^- got another name? Yes HCO_3^- is also called the bicarbonate ion – you can use either.

When should I use brackets? When you use a group more than once eg if you write $MgOH_2$ it's wrong because this means a Mg and an O and two H's, when you need Mg^{2+} and OH^- and another OH^- ion.

What's the difference between sulfate and sulfide? The sulfate ion is SO_4^{2-} and is a "group" consisting of a S and 4x O with a 2- charge; sulfide is the ion formed from sulfur, and is S^{2-} . Notice that all the "ates" are elements with some O's added eg nitrate NO_3^- , carbonate CO_3^{2-} , sulfate SO_4^{2-} .

Does it really matter if I write ZNO or ZnO? Yes! The symbol for an element always has the first letter as a capital and if there is a second letter, then it is lower case. Zn ✓ ZN ✗.