

Names and formulae of ionic compounds

Information

Positive ion (cation)		
hydrogen	H ⁺	
lithium	Li ⁺	Group 1
sodium	Na ⁺	
potassium	K ⁺	
magnesium	Mg ²⁺	
calcium	Ca ²⁺	Group 2
barium	Ba ²⁺	
silver	Ag ⁺	
iron(II)	Fe ²⁺	Transition metals
iron(III)	Fe ³⁺	
copper(II)	Cu ²⁺	
zinc	Zn ²⁺	
aluminium	Al ³⁺	
lead(II)	Pb ²⁺	Group 4
ammonium	NH ₄ ⁺	Polyatomic ion

Negative ion (anion)		
oxide	O ²⁻	Group 16 (6)
sulfide	S ²⁻	
fluoride	F ⁻	Group 17 (7)
chloride	Cl ⁻	
bromide	Br ⁻	
iodide	I ⁻	
nitrate	NO ₃ ⁻	Polyatomic ion
carbonate	CO ₃ ²⁻	
sulfate	SO ₄ ²⁻	

These tables show the names and formulae of some common ions.

You need to be able to write the formulae of compounds containing these ions or others that may be given to you.

Questions

Complete the following table. One row has been done for you.

Use the Information above to help you.

Name	Positive ion	Negative ion	Formula
ammonium sulfate	NH ₄ ⁺	SO ₄ ²⁻	(NH ₄) ₂ SO ₄
lithium iodide			LiI
	Ag ⁺		AgNO ₃
	NH ₄ ⁺	NO ₃ ⁻	
calcium oxide			
potassium hydroxide			
magnesium sulfide			
copper(II) chloride			
iron(III) sulfate			
barium nitrate			
aluminium bromide			
			PbCl ₂

Names and formulae of ionic compounds

Complete the following table. One row has been done for you.

Name	Positive ion	Negative ion	Formula
ammonium sulfate	NH_4^+	SO_4^{2-}	$(\text{NH}_4)_2\text{SO}_4$
lithium iodide			LiI
	Ag^+		AgNO_3
	NH_4^+	NO_3^-	
calcium oxide			
potassium hydroxide			
magnesium sulfide			
copper(II) chloride			
iron(III) sulfate			
barium nitrate			
aluminium bromide			
			PbCl_2

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lithium iodide			LiI
	Ag^+		AgNO_3
	NH_4^+	NO_3^-	
calcium oxide			
potassium hydroxide			
magnesium sulfide			
copper(II) chloride			
iron(III) sulfate			
barium nitrate			
aluminium bromide			
			PbCl_2

Names and formulae of ionic compounds – ANSWERS

Name	Positive ion	Negative ion	Formula
ammonium sulfate	NH_4^+	SO_4^{2-}	$(\text{NH}_4)_2\text{SO}_4$
lithium iodide	Li^+	I^-	LiI
silver nitrate	Ag^+	NO_3^-	AgNO_3
ammonium nitrate	NH_4^+	NO_3^-	NH_4NO_3
calcium oxide	Ca^{2+}	O^{2-}	CaO
potassium hydroxide	K^+	OH^-	KOH
magnesium sulfide	Mg^{2+}	S^{2-}	MgS
copper(II) chloride	Cu^{2+}	Cl^-	CuCl_2
iron(III) sulfate	Fe^{3+}	SO_4^{2-}	$\text{Fe}_2(\text{SO}_4)_3$
barium nitrate	Ba^{2+}	NO_3^-	$\text{Ba}(\text{NO}_3)_2$
aluminium bromide	Al^{3+}	Br^-	AlBr_3
lead(II) chloride	Pb^{2+}	Cl^-	PbCl_2

Names and formulae of ionic compounds – ANSWERS

Name	Positive ion	Negative ion	Formula
ammonium sulfate	NH_4^+	SO_4^{2-}	$(\text{NH}_4)_2\text{SO}_4$
lithium iodide	Li^+	I^-	LiI
silver nitrate	Ag^+	NO_3^-	AgNO_3
ammonium nitrate	NH_4^+	NO_3^-	NH_4NO_3
calcium oxide	Ca^{2+}	O^{2-}	CaO
potassium hydroxide	K^+	OH^-	KOH
magnesium sulfide	Mg^{2+}	S^{2-}	MgS
copper(II) chloride	Cu^{2+}	Cl^-	CuCl_2
iron(III) sulfate	Fe^{3+}	SO_4^{2-}	$\text{Fe}_2(\text{SO}_4)_3$
barium nitrate	Ba^{2+}	NO_3^-	$\text{Ba}(\text{NO}_3)_2$
aluminium bromide	Al^{3+}	Br^-	AlBr_3
lead(II) chloride	Pb^{2+}	Cl^-	PbCl_2