

CHAPTER 3

Polyatomic Ions

BLM 1-38

Goal • Practise writing the names and formulas of polyatomic ions.

What to Do

1. Complete the chart. You can use an ion chart to help you find the names and formulas of polyatomic ions.

Ions		Formula	Name	Number of Atoms in Formula
Na ⁺	SO ₄ ²⁻	Na ₂ SO ₄	sodium sulphate	7
NH ₄ ⁺	SO ₄ ²⁻	(NH ₄) ₂ SO ₄	ammonium sulphate	15
Cu ²⁺	NO ₃ ⁻	Cu(NO ₃) ₂	copper(II) nitrate	9
Ag ⁺	ClO ₃ ⁻	AgClO ₃	silver chlorate	5
NH ₄ ⁺	PO ₄ ³⁻	(NH ₄) ₃ PO ₄	ammonium phosphate	20
Zn ²⁺	HCO ₃ ⁻	Zn(HCO ₃) ₂	zinc bicarbonate	11
Ni ²⁺	OH ⁻	Ni(OH) ₂	nickel(II) hydroxide	5
Al ³⁺	CN ⁻	Al(CN) ₃	aluminum cyanide	7
U ⁵⁺	SO ₃ ²⁻	U ₂ (SO ₃) ₅	uranium(V) sulfite	22
Cr ²⁺	HSO ₄ ⁻	Cr(HSO ₄) ₂	chromium(II) bisulfate	13
Mn ⁴⁺	CH ₃ COO ⁻	Mn(CH ₃ COO) ₄	manganese(IV) acetate	26 29
Ca ²⁺	CO ₃ ²⁻	CaCO ₃	calcium carbonate	5
Cu ²⁺	NO ₂ ⁻	Cu(NO ₂) ₂	copper(II) nitrite	7
Au ³⁺	PO ₄ ³⁻	Au ₃ (PO ₄) ₃	gold(III) phosphate	6
K ⁺	CrO ₄ ²⁻	K ₂ CrO ₄	potassium chromate	7
Na ⁺	Cr ₂ O ₇ ²⁻	Na ₂ Cr ₂ O ₇	sodium dichromate	11

DATE:

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Co

Key

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continued

2. Complete the chart. You can use an ion chart to help you find the names and formulas of polyatomic ions.

Ions	Ions (optional)	Formula	Name	Number of Atoms
ammonium permanganate	$\text{NH}_4^+ \text{MnO}_4^-$	NH_4MnO_4	ammonium permanganate	10
gold(III) hydrogen sulphide	$\text{Au}^{3+} \text{HS}^-$	$\text{Au}(\text{HS})_3$	gold(III) hydrogen sulphide	7
cobalt(II) phosphate	$\text{Co}^{2+} \text{PO}_4^{3-}$	$\text{Co}_3(\text{PO}_4)_2$	cobalt(II) phosphate	13
sodium nitrate	$\text{Na}^+ \text{NO}_3^-$	NaNO_3		5
calcium nitrite	$\text{Ca}^{2+} \text{NO}_2^-$	$\text{Ca}(\text{NO}_2)_2$		7
magnesium acetate	$\text{Mg}^{2+} \text{CH}_3\text{COO}^-$	$\text{Mg}(\text{CH}_3\text{COO})_2$		15
potassium carbonate	$\text{K}^+ \text{CO}_3^{2-}$	K_2CO_3		6
uranium(VI) hydroxide	$\text{U}^{6+} \text{OH}^-$	$\text{U}(\text{OH})_6$		13
lithium nitrite	$\text{Li}^+ \text{NO}_2^-$	LiNO_2	lithium nitrite	4
zinc perchlorate	$\text{Zn}^{2+} \text{ClO}_4^-$	$\text{Zn}(\text{ClO}_4)_2$		11
cesium dichromate	$\text{Cs}^+ \text{Cr}_2\text{O}_7^{2-}$	$\text{Cs}_2\text{Cr}_2\text{O}_7$		11
sodium cyanide	$\text{Na}^+ \text{CN}^-$	NaCN		3
iron(II) chromate	$\text{Fe}^{2+} \text{CrO}_4^{2-}$	FeCrO_4		6
ammonium sulphate	$\text{NH}_4^+ \text{SO}_4^{2-}$	$(\text{NH}_4)_2\text{SO}_4$		15
calcium hypochlorite	$\text{Ca}^{2+} \text{ClO}^-$	$\text{Ca}(\text{ClO})_2$		5
aluminum permanganate	$\text{Al}^{3+} \text{MnO}_4^-$	$\text{Al}(\text{MnO}_4)_3$		16