

Multivalent metals and polyatomic ions

1. Define the following terms:

(a) ionic compound

a chemical compound composed of ions held together by ionic bonding

(b) multivalent metal

an element that forms more than 1 type of an electrically charged particle

(c) polyatomic ion

is an ion composed of 2 or more atoms

2. Write the formulae and names of the compounds with the following combination of ions. The first row is completed to help guide you.

	Positive ion	Negative ion	Formula	Compound name
(a)	Pb^{2+}	O^{2-}	PbO	lead(II) oxide
(b)	Sb^{3+}	S^{2-}	Sb_2S_3	Antimony sulfide
(c)	Tl^{+}	Cl^{-}	TlCl	Thallium chloride
(d)	$Sn^{(II)}$	F^{-}	SnF_2	tin(II) fluoride
(e)	$Mo^{(III)}$	S^{2-}	Mo_2S_3	Molybdenum sulfide
(f)	Rh^{+}	Br	$RhBr_4$	Radium Bromide
(g)	$Cu^{(I)}$	Te^{2-}	Cu_2Te	copper(I) telluride
(h)	$Nb^{(V)}$	I^{-}	NbI_5	Niobium Iodide
(i)	Pd^{2+}	Cl^{-}	$PdCl_2$	Palladium chloride

3. Write the chemical formula for each of the following compounds.

(a) manganese(II) chloride $MnCl_2$	(f) vanadium(V) oxide V_2O_5
(b) chromium(III) sulphide Cr_2S_3	(g) rhenium(VII) arsenide Re_3As_7
(c) titanium(IV) oxide Ti_2O_4	(h) platinum(IV) nitride Pt_3N_4
(d) uranium(VI) fluoride UF_6	(i) nickel(II) cyanide $Ni(CN)_2$
(e) nickel(II) sulphide NiS	(j) bismuth(V) phosphide Bi_3P_5