

CHEMICAL FORMULAS, NOMENCLATURE AND COMPOUND TYPES

Fill-in the following table by providing the missing entry. Place “NA” if not applicable. Be sure to balance the count of ions shown inside the bracket. You should use a periodic table.

Chemical Name	Compound Type	Ions present (if ionic)	Chemical Formula
Ex. aluminum sulfide	ionic	[2 Al ⁺ , 3 S ²⁻]	Al ₂ S ₃
chromium(III) oxide	ionic	[Cr ³⁺ , O ²⁻]	Cr ₂ O ₃
zinc chloride	ionic	[Zn ²⁺ , Cl ⁻]	ZnCl ₂
carbon dioxide	covalent	n/a	CO ₂
iron(II) cyanide	ionic	[Fe ²⁺ , CN ⁻]	Fe(CN) ₂
aluminum sulfate	ionic	[Al ³⁺ , SO ₄ ²⁻]	Al ₂ (SO ₄) ₃
arsenic trihydride	covalent	n/a	AsH ₃
ammonium chromate	ionic	[NH ₄ ⁺ , CrO ₄ ²⁻]	(NH ₄) ₂ CrO ₄
calcium phosphate	ionic	[Ca ²⁺ , PO ₄ ³⁻]	Ca ₃ (PO ₄) ₂
silicon tetrafluoride	covalent	n/a	SiF ₄
copper(II) chloride	ionic	[Cu ²⁺ , Cl ⁻]	CuCl ₂
Iron(II) permanganate	ionic	[Fe ²⁺ , MnO ₄ ⁻]	Fe(MnO ₄) ₂
nitrous acid	ionic	[H ⁺ , NO ₂ ⁻]	HNO ₂
cobalt(II) hydrogen phosphate	ionic	[Co ²⁺ , HPO ₄ ²⁻]	CoHPO ₄
potassium dichromate	ionic	[K ⁺ , Cr ₂ O ₇ ²⁻]	K ₂ Cr ₂ O ₇
magnesium phosphide	ionic	[Mg ²⁺ , P ³⁻]	Mg ₃ P ₂
sodium carbonate	ionic	[Na ⁺ , CO ₃ ²⁻]	Na ₂ CO ₃
nickel(II) perchlorate	ionic	[Ni ²⁺ , ClO ₄ ⁻]	Ni(ClO ₄) ₂
copper(II) acetate	ionic	[Cu ²⁺ , C ₂ H ₃ O ₂ ⁻]	Cu(C ₂ H ₃ O ₂) ₂
cobalt(III) hydroxide	ionic	[Co ³⁺ , OH ⁻]	Co(OH) ₃

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cadmium chlorate	ionic	[Cd ²⁺ , ClO ₃ ⁻]	Cd(ClO ₃) ₂
chloric acid	ionic	[H ⁺ , ClO ₃ ⁻]	HClO ₃
manganese(II) hypobromite	ionic	[Mn ²⁺ , BrO ⁻]	Mn(BrO) ₂
calcium hypoiodite	ionic	[Ca ²⁺ , IO ⁻]	Ca(IO) ₂
mercury(I) chloride	ionic	[Hg ₂ ²⁺ , Cl ⁻]	Hg ₂ Cl ₂
dinitrogen tetroxide	covalent	n/a	N ₂ O ₄
chlorine dioxide	covalent	n/a	ClO ₂
silver nitrate	ionic	[Ag ⁺ , NO ₃ ⁻]	AgNO ₃
nickel(II) hydroxide	ionic	[Ni ²⁺ , OH ⁻]	Ni(OH) ₂
sodium bicarbonate	ionic	[Na ⁺ , HCO ₃ ⁻]	NaHCO ₃
hydroiodic acid	ionic	[H ⁺ , I ⁻]	HI _(aq)
tin(IV) chloride	ionic	[Sn ⁴⁺ , Cl ⁻]	SnCl ₄
mercury(II) nitrate	ionic	[Hg ²⁺ , NO ₃ ⁻]	Hg(NO ₃) ₂
gallium sulfide	ionic	[Ga ³⁺ , S ²⁻]	Ga ₂ S ₃
lead(IV) oxide	ionic	[Pb ⁴⁺ , O ²⁻]	PbO ₂
hydrogen chloride	covalent	n/a	HCl
calcium bisulfate	ionic	[Ca ²⁺ , HSO ₄ ⁻]	Ca(HSO ₄) ₂
aluminum bisulfite	ionic	[Al ³⁺ , HSO ₃ ⁻]	Al(HSO ₃) ₃
hydroiodic acid	ionic	[H ⁺ , I ⁻]	HI _(aq)
aluminum hydrogen sulfate	ionic	[Al ³⁺ , HSO ₄ ⁻]	Al(HSO ₄) ₃
selenium trioxide	covalent	n/a	SeO ₃
boron trichloride	covalent	n/a	BCl ₃

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cuprous nitrate	ionic	[Cu^+ , NO_3^-]	CuNO_3
mercury(I) bromide	ionic	[Hg_2^{2+} , Br^-]	Hg_2Br_2
nitric acid	ionic	[H^+ , NO_3^-]	HNO_3
lead(II) acetate	ionic	[Pb^{2+} , $\text{C}_2\text{H}_3\text{O}_2^-$]	$\text{Pb}(\text{C}_2\text{H}_3\text{O}_2)_2$
sulfurous acid	ionic	[H^+ , SO_3^{2-}]	H_2SO_3
chromic acid	ionic	[H^+ , CrO_4^{2-}]	H_2CrO_4
hydrochloric acid	ionic	[H^+ , Cl^-]	$\text{HCl}_{(\text{aq})}$
mercurous sulfide	ionic	[Hg_2^{2+} , S^{2-}]	Hg_2S
sodium hydrogen sulfate	ionic	[Na^+ , HSO_4^-]	NaHSO_4
perbromic acid	ionic	[H^+ , BrO_4^-]	HBrO_4
sulfur hexafluoride	covalent	n/a	SF_6
bromous acid	ionic	[H^+ , BrO_2^-]	HBrO_2
hydrogen fluoride	covalent	n/a	HF
gallium arsenide	ionic	[Ga^{3+} , As^{3-}]	GaAs
dichlorine heptoxide	covalent	n/a	Cl_2O_7
potassium peroxide	ionic	[K^+ , O_2^{2-}]	K_2O_2
iron(II) phosphite	ionic	[Fe^{2+} , PO_3^{3-}]	$\text{Fe}_3(\text{PO}_3)_2$
perchloric acid	ionic	[H^+ , ClO_3^-]	HClO_3