

Exercise 6.3a

Name: _____

Ionic Formula Writing - Answers

Date: _____ Per: _____

Ionic formulas represent ratios in which two ions exchange electrons. The cation(s) will always have electrons stripped away by the anion(s). Writing a correct ionic formula is about accounting for the exchange of these electrons. If the formula is written correctly, the total charge of the cation(s) will be equal to the total charge of the anion(s). The net charge of the formula unit will be zero.

- Write the formulas for the ions that make the compound, with their respective charges. Cations are always listed first.
- Find the lowest common multiple of the ions' charges. This represents the number of electrons exchanged.
- Use subscripts to show how many of each ion are necessary for the exchange to take place. If only one ion is required, no subscript is required.
- If more than one polyatomic ion is required, place the formula of the polyatomic ion in parentheses and place the subscript behind the parentheses.
- The final formula for an ionic compound should have no charges written.
- Examples: Mg^{2+} & Cl^- (LCM of 2 & 1 is 2, so 2 e^- are exchanged. Mg^{2+} loses 2 e^- , so only one is required. Cl^- gains only 1 e^- so 2 are required.) $\rightarrow \text{MgCl}_2$
 Al^{3+} & OH^- (LCM of 3 & 1 is 3, so 3 e^- are exchanged. Al^{3+} loses 3 e^- , so only one is required. OH^- gains only 1 e^- so 3 are required.) $\rightarrow \text{Al}(\text{OH})_3$

DIRECTIONS: In each box write the formula of the compound that would result from the combination of the cation at left and the anion at the top. Make sure the compound has a net charge of 0 (is electrically neutral).

Cation	Anion	bromide Br^-	nitrate NO_3^-	hydroxide OH^-	oxide O^{2-}	sulfate SO_4^{2-}	phosphate PO_4^{3-}	hydrogen carbonate HCO_3^-	chlorate ClO_3^-	acetate $\text{C}_2\text{H}_3\text{O}_2^-$
potassium K^+		KBr	KNO₃	KOH	K₂O	K₂SO₄	K₃PO₄	KHCO₃	KClO₃	KC₂H₃O₂
silver Ag^+		AgBr	AgNO₃	AgOH	Ag₂O	Ag₂SO₄	Ag₃PO₄	AgHCO₃	AgClO₃	AgC₂H₃O₂
ammonium NH_4^+		NH₄Br	NH₄NO₃	NH₄OH	(NH₄)₂O	(NH₄)₂SO₄	(NH₄)₃PO₄	NH₄HCO₃	NH₄ClO₃	NH₄C₂H₃O₂
mercury (I) Hg_2^{2+}		Hg₂Br₂	Hg₂(NO₃)₂	Hg₂(OH)₂	Hg₂O	Hg₂SO₄	(Hg₂)₃(PO₄)₂	Hg₂(HCO₃)₂	Hg₂(ClO₃)₂	Hg₂(C₂H₃O₂)₂
mercury (II) Hg^{2+}		HgBr₂	Hg(NO₃)₂	Hg(OH)₂	HgO	HgSO₄	Hg₃(PO₄)₂	Hg(HCO₃)₂	Hg(ClO₃)₂	Hg(C₂H₃O₂)₂
calcium Ca^{2+}		CaBr₂	Ca(NO₃)₂	Ca(OH)₂	CaO	CaSO₄	Ca₃(PO₄)₂	Ca(HCO₃)₂	Ca(ClO₃)₂	Ca(C₂H₃O₂)₂
copper (II) Cu^{2+}		CuBr₂	Cu(NO₃)₂	Cu(OH)₂	CuO	CuSO₄	Cu₃(PO₄)₂	Cu(HCO₃)₂	Cu(ClO₃)₂	Cu(C₂H₃O₂)₂
iron (II) Fe^{2+}		FeBr₂	Fe(NO₃)₂	Fe(OH)₂	FeO	FeSO₄	Fe₃(PO₄)₂	Fe(HCO₃)₂	Fe(ClO₃)₂	Fe(C₂H₃O₂)₂
iron(III) Fe^{3+}		FeBr₃	Fe(NO₃)₃	Fe(OH)₃	Fe₂O₃	Fe₂(SO₄)₃	FePO₄	Fe(HCO₃)₃	Fe(ClO₃)₃	Fe(C₂H₃O₂)₃
antimony Sb^{3+}		SbBr₃	Sb(NO₃)₃	Sb(OH)₃	Sb₂O₃	Sb₂(SO₄)₃	SbPO₄	Sb(HCO₃)₃	Sb(ClO₃)₃	Sb(C₂H₃O₂)₃

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