

Name: _____ Per: _____

Binary Ionic Compounds using Transition Elements

Up to this point we have been naming and writing formulas for compounds that are made of main-block elements. Remember the main block elements include groups 1, 2, 13-18. Groups 3-12 are part of the D-block (transition metals) elements. These metals have the ability to form different ions.

For example: copper can form an ion with a +1 charge, (Cu^+) or a +2 charge, (Cu^{+2}).

If you are given the name of a compound containing a transition element we are all set, the number in parenthesis tells us the charge on our transition element. However when we are trying to identify the name the compound it's a bit more tricky. Since many of the transition metals can form more than one ion we cannot just name them as cations, we have to indicate what charge they have. The only exceptions to this are The three most common transition metals that only have one charge are the silver ion, Ag^+ , Zinc ion, Zn^{2+} , and cadmium ion, Cd^{2+} . You NEVER use roman numerals with these three elements when writing their formulas or naming them.

Cation (+)	Anion (-)	Chemical Formula	Compound Name
			Copper (I) Bromide
			Copper (II) Bromide
			Lead (IV) Iodide
			Lead (II) Iodide
		Fe_2O_3	
		FeO	
		Cu_3N_2	
		Cu_3N	

Directions: Complete the table below. *Remember that transition metals can have multiple oxidation states, so you are required to indicate the appropriate oxidation state in parenthesis when naming them.*

Cation (+)	Anion (-)	Chemical Formula	Compound Name
			tin (IV) oxide
			copper (II) nitride
			lithium chloride
			beryllium fluoride
			sodium fluoride
			beryllium sulfide
			manganese (IV) bromide
			lithium nitride
			copper (II) chloride
			aluminum fluoride
			Sodium chloride
			aluminum oxide
			sodium nitride
			chromium (VI) phosphide
			lead (IV) fluoride
			iron (II) bromide
			copper (II) oxide
			lead (IV) oxide
			lead (IV) sulfide
			beryllium chloride

Cation (+)	Anion (-)	Chemical Formula	Compound Name
		Be_3N_2	
		CuF	
		Cu_2O	
		Cu_3N	
		Na_2O	
		PbF_2	
		PbS	
		LiF	
		Li_2O	
		Li_3P	
		BeO	
		BeF_2	
		Pb_3N_4	
		FeF_3	
		Fe_2O_3	
		FeP	
		AlI_3	
		Mn_2O_7	
		SnSe	
		BeBr_2	

