

Chem 100

Name _____

Zewail- Answers to: Practice Chemical Formulas

Last First

Write chemical formulas for the ionic compounds made from each set of ions:

	Name of cation	Name of anion	formula of cation	Formula of anion	Formula of compound	number of ions
1	sodium	chloride	Na ⁺	Cl ⁻	NaCl	2
2	calcium	chloride	Ca ²⁺	Cl ⁻	CaCl ₂	3
3	aluminum	chloride	Al ³⁺	Cl ⁻	AlCl ₃	4
4	calcium	nitrite	Ca ²⁺	NO ₂ ⁻	Ca(NO ₂) ₂	3
5	calcium	sulfate	Ca ²⁺	SO ₄ ²⁻	CaSO ₄	2
6	sodium	phosphate	Na ⁺	PO ₄ ³⁻	Na ₃ PO ₄	4
7	potassium	bromide	K ⁺	Br ⁻	KBr	2
8	calcium	bicarbonate	Ca ²⁺	HCO ₃ ⁻	Ca(HCO ₃) ₂	3
9	magnesium	bisulfate	Mg ²⁺	HSO ₄ ⁻	Mg(HSO ₄) ₂	3
10	barium	nitrate	Ba ²⁺	NO ₃ ⁻	Ba(NO ₃) ₂	3
11	ammonium	bromide	NH ₄ ⁺	Br ⁻	NH ₄ Br	2
12	aluminum	phosphate	Al ³⁺	PO ₄ ³⁻	AlPO ₄	2
13	potassium	phosphate	K ⁺	PO ₄ ³⁻	K ₃ PO ₄	4
14	potassium	sulfate	K ⁺	SO ₄ ²⁻	K ₂ SO ₄	3
15	aluminum	bicarbonate	Al ³⁺	HCO ₃ ⁻	Al(HCO ₃) ₃	4
16	aluminum	bisulfate	Al ³⁺	HSO ₄ ⁻	Al(HSO ₄) ₃	4
17	calcium	hydroxide	Ca ²⁺	OH ⁻	Ca(OH) ₂	3
18	potassium	chlorate	K ⁺	ClO ₃ ⁻	KClO ₃	2
19	magnesium	chlorate	Mg ²⁺	ClO ₃ ⁻	Mg(ClO ₃) ₂	3
20	sodium	nitride	Na ⁺	N ³⁻	Na ₃ N	4
21	sodium	nitrite	Na ⁺	NO ₂ ⁻	NaNO ₂	2
22	sodium	nitrate	Na ⁺	NO ₃ ⁻	NaNO ₃	2
23	lithium	sulfide	Li ⁺	S ²⁻	Li ₂ S	3
24	lithium	sulfite	Li ⁺	SO ₃ ²⁻	Li ₂ SO ₃	3
25	lithium	sulfate	Li ⁺	SO ₄ ²⁻	Li ₂ SO ₄	3
26	lithium	hydroxide	Li ⁺	OH ⁻	LiOH	2
27	aluminum	hydroxide	Al ³⁺	OH ⁻	Al(OH) ₃	4

	Name of cation	Name of anion	Formula of cation	formula of anion	formula of compound	number of ions
28	aluminum	carbonate	Al^{3+}	CO_3^{2-}	$Al_2(CO_3)_3$	5
29	strontium	carbonate	Sr^{2+}	CO_3^{2-}	$SrCO_3$	2
30	strontium	nitrate	Sr^{2+}	NO_3^-	$Sr(NO_3)_2$	3
31	strontium	nitrite	Sr^{2+}	NO_2^-	$Sr(NO_2)_2$	3
32	strontium	nitride	Sr^{2+}	N^{3-}	Sr_3N_2	5
33	sodium	acetate	Na^+	$C_2H_3O_2^-$	$NaC_2H_3O_2$	2
34	sodium	oxalate	Na^+	$C_2O_4^{2-}$	$Na_2C_2O_4$	3
35	barium	oxalate	Ba^{2+}	$C_2O_4^{2-}$	BaC_2O_4	2
36	aluminum	phosphide	Al^{3+}	P^{3-}	AlP	2
37	aluminum	phosphate	Al^{3+}	PO_4^{3-}	$AlPO_4$	2
38	ammonium	iodide	NH_4^+	I^-	NH_4I	2
39	ammonium	phosphate	NH_4^+	PO_4^{3-}	$(NH_4)_3PO_4$	4
40	ammonium	acetate	NH_4^+	$C_2H_3O_2^-$	$NH_4C_2H_3O_2$	2
41	ammonium	oxalate	NH_4^+	$C_2O_4^{2-}$	$(NH_4)_2C_2O_4$	3
42	ammonium	sulfite	NH_4^+	SO_3^{2-}	$(NH_4)_2SO_3$	3
43	ammonium	bicarbonate	NH_4^+	HCO_3^-	NH_4HCO_3	2
44	strontium	bisulfate	Sr^{2+}	HSO_4^-	$Sr(HSO_4)_2$	3
45	silver	chloride	Ag^+	Cl^-	$AgCl$	2
46	silver	sulfate	Ag^+	SO_4^{2-}	Ag_2SO_4	3
47	zinc	bromide	Zn^{2+}	Br^-	$ZnBr_2$	3
48	zinc	phosphate	Zn^{2+}	PO_4^{3-}	$Zn_3(PO_4)_2$	5
49	cobalt (II)	chloride	Co^{2+}	Cl^-	$CoCl_2$	3
50	cobalt (III)	chloride	Co^{3+}	Cl^-	$CoCl_3$	4
51	nickel (II)	bromide	Ni^{2+}	Br^-	$NiBr_2$	3
52	nickel (III)	perchlorate	Ni^{3+}	ClO_4^-	$Ni(ClO_4)_3$	4
53	iron (II)	nitrate	Fe^{2+}	NO_3^-	$Fe(NO_3)_2$	3
54	copper (I)	carbonate	Cu^+	CO_3^{2-}	Cu_2CO_3	3

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	Name of cation	Name of anion	Formula of cation	Formula of anion	Formula of compound	number of ions
55	copper (II)	carbonate	Cu^{2+}	CO_3^{2-}	CuCO_3	2
56	tin (II)	hydroxide	Sn^{2+}	OH^-	Sn(OH)_2	3
57	tin (IV)	hydroxide	Sn^{4+}	OH^-	Sn(OH)_4	5
58	gold (I)	bromide	Au^+	Br^-	AuBr	2
59	gold (III)	bromide	Au^{3+}	Br^-	AuBr_3	4
60	lead (II)	sulfite	Pb^{2+}	SO_3^{2-}	PbSO_3	2
61	lead (IV)	sulfite	Pb^{4+}	SO_3^{2-}	$\text{Pb(SO}_3)_2$	3

Memorize ALL names and formulas of the monoatomic and polyatomic ions listed on pages 15 and 16 in the syllabus.