<u>N-16</u> "Quick" Guide to

Bonding and Naming Target: I can identify the types of bonds made in compounds/

molecules, and can name them.

Link to YouTube Presentation: https://youtu.be/ktPW9-jld0s

<u>N-16</u>

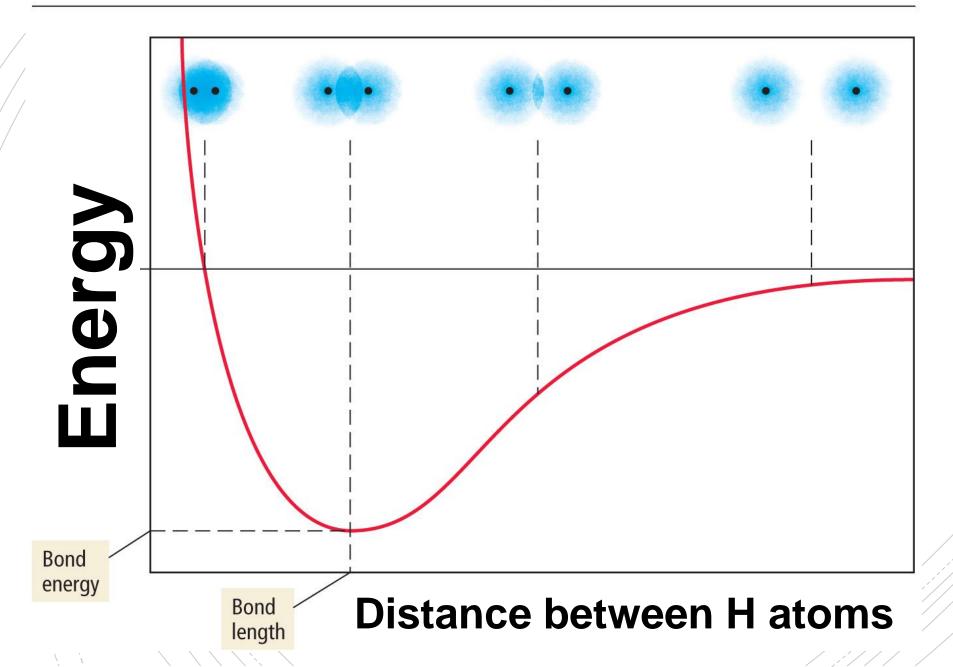
<u>"Quick" Guide to</u> Bonding and Naming

More details are found in the "reader" in your reference section, and will appear in practice problems on worksheets. Naming rules get very complex – as always focus on patterns and *common* exceptions

Why do bonds form?

- Lowers the potential energy between the charged particles that compose atoms.
- Bonds forms when the potential energy of the bonded atoms is less than the potential energy of the separate atoms.

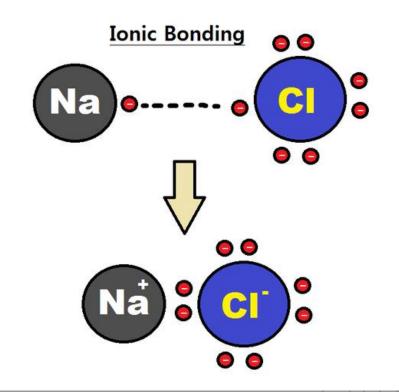
Interaction Energy of Two Hydrogen Atoms



Ionic Bonds

Transfer of electrons - makes charges

- Electrostatic bond between a positive charge and a negative charge
- Metal + Nonmetal Ca²⁺ O²⁻
- Polyatomic Ions, even if nonmetals NH₄⁺, SO₄²⁻



<u>Covalent Bonds</u>

Atoms can't fully transfer electrons, so they share them
 Nonmetal + Nonmetal
 CH₄

Electron from hydrogen Electron from carbon

Metallic Bonds

Electrons "detach" from the atoms they came from

- Creates a
- "sea of electrons"

that can flow when a charge is applied



Cation:

A positive ion

> Mg²⁺, NH₄⁺



A negative ion

Cl[−], SO₄^{2−}



▶<u>Monatomic Ion:</u>

consists of only one element >Mg²⁺, Na⁺

Polyatomic Ion:

consists of 2 or more elements > CN⁻, SO₄²⁻

<u>Group 1</u>: Lose 1 electron to form 1+ ions H⁺ Li⁺ Na⁺ K⁺

1 H 1.00794																	He 4.002602
3 Li 6.941	4 Be 9.012182											5 B 10.811	6 C 12.0107	7 N 14.00674	8 O 15.9994	9 F 18.9984032	10 Ne 20.1797
11 Na 22.989770	12 Mg 24.3050											13 Al 26.981538	14 Si 28.0855	15 P 30.973761	16 S 32.066	17 Cl 35.4527	18 Ar 39.948
19 K 39.0983	20 Ca 40.078	21 Sc 44.955910	²² Ti 47.867	23 V 50.9415	24 Cr 51.9961	²⁵ Mn 54.938049	26 Fe 55.845	CO 58.933200	28 Ni 58.6934	²⁹ Cu _{63.546}	30 Zn 65.39	31 Ga 69.723	32 Ge 72.61	33 As 74.92160	34 Se 78.96	35 Br 79.904	83.80
37 Rb 85.4678	38 Sr 87.62	39 Y 88.90585	40 Zr 91.224	41 Nb 92.90638	42 Mo 95.94	43 Tc (98)	44 Ru 101.07	45 Rh 102.90550	46 Pd 106.42	47 Ag 197.8682	48 Cd 112.411	49 In 114.818	50 Sn 118.710	51 Sb 121.760	52 Te 127.60	53 I 126.90447	54 Xe 131.29
55 Cs 132.90545	56 Ba 137.327	57 La 138.9055	72 Hf 178.49	73 Ta 180.9479	74 W 183.84	75 Re 186.207	76 Os 190.23	77 Ir 192.217	78 Pt 195.078	79 Au 196.96655	80 Hg 200.59	81 Tl 204.3833	82 Pb 207.2	83 Bi 208.98038	84 Po (209)	85 At (210)	86 Rn (222)
87 Fr (223)	88 Ra (226)	89 Ac (227)	104 Rf (261)	105 Db (262)	106 Sg (263)	107 Bh (262)	108 Hs (265)	109 Mt (266)	110 (269)	111 (272)	112 (277)		114 (289) (287)		116 (289)		

<u>Group 2</u>: Loses 2 electrons to form **2+** ions

 Be^{2+} Mg^{2+} Ca^{2+} Sr^{2+} Ba^{2+}

1 H 1.00794		_															He 4.002602
3 Li 6.941	4 Be 9.012182											5 B 10.811	6 C 12.0107	7 N 14.00674	8 O 15.9994	9 F 18.9984832	10 Ne 20.1797
11 Na 22.989770	12 Mg 24.3050											13 Al 26.981538	14 Si 28.0855	15 P 30.973761	16 S 32.066	17 Cl 35.4527	18 Ar 39.948
19 K 39.0983	20 Ca 40.078	21 Sc 4.955910	22 Ti 47.867	23 V 50.9415	24 Cr 51.9961	25 Mn 54.938049	26 Fe 55.845	27 Co 58.933200	28 Ni 58.6934	29 Cu 63.546	30 Zn 65.39	31 Ga 69.723	32 Ge 72.61	33 As 74.92160	34 Se 78.96	35 Br 79.904	83.80
37 Rb 85.4678	38 Sr 87.62	39 Y 88.90585	40 Zr 91.224	41 Nb 92.90638	42 Mo 95.94	43 Tc (98)	44 Ru 101.07	45 Rh 102.90550	46 Pd 106.42	47 Ag 187.8682	48 Cd 112.411	49 In 114.818	50 Sn 118.710	51 Sb 121.760	52 Te 127.60	53 I 126.90447	54 Xe 131.29
55 Cs 132.90545	56 Ba 137.327	57 La 138.9055	72 Hf 178.49	73 Ta 180.9479	74 W 183.84	75 Re 186.207	76 Os 190.23	77 Ir 192.217	78 Pt 195.078	79 Au 196.96655	80 Hg 200.59	81 Tl 204.3833	82 Pb 207.2	83 Bi 208.98038	84 Po (209)	85 At (210)	86 Rn (222)
87 Fr (223)	88 Ra (226)	89 Ac (227)	104 Rf (261)	105 Db (262)	106 Sg (263)	107 Bh (262)	108 HS (265)	109 Mt (266)	110 (269)	111 (272)	112 (277)		114 (289) (287)		116 (289)		

P	'ei	lic	;ti	ng) N	ic	<u>Ci</u>	18	rg	<u>es</u>		f S	in	gl	e	Ato	DMS
/							/				<u>G</u>	rc)u]	p	<u>13</u>	:		
	B ³⁻	• / /	A 1	3/+ /	6	a ³	+]	Lo	se	s 3	3						
							ele	ect	ro	ns	s to							
	1 H 1.00794		_			fo)ri	n	3+	ic	ns	5						He 4.002602
/	3 Li 6941	4 Be 9.012182											5 B 10.811	6 C 12.0107	7 N 14.00674	8 O 15.9994	9 F 18.9984032	10 Ne 20.1797
i T T	11 Na 22.989770	12 Mg 24.3050											13 Al 26.981538	14 Si 28.0855	15 P 30.973761	16 S 32.866	17 Cl 35.4527	18 Ar 39.948
	19 K 39.0983	20 Ca 40.078	21 Sc 44.955910	22 Ti 47.867	23 V 50.9415	24 Cr 51.9961	25 Mn 54.938049	26 Fe 55.845	27 Co 58.933200	28 Ni 58.6934	29 Cu 63.546	30 Zn 65.39	31 Ga 69.723	32 Ge 72.61	33 As 74.92160	34 Se 78.96	35 Br 79.904	36 Kr 83.80
1	37 Rb 85.4678	38 Sr 87.62	39 Y 88.90585	40 Zr 91.224	41 Nb 92.90638	42 Mo 95.94	43 Tc (98)	44 Ru 101.07	45 Rh 102.90550	46 Pd 106.42	47 Ag 107.8682	48 Cd 112.411	49 In 114.818	50 Sn 118.710	51 Sb 121.760	52 Te 127.60	53 I 126.90447	54 Xe 131.29
	55 CS 132.90545	56 Ba 137.327	57 La 138.9055	72 Hf 178.49	73 Ta 180.9479	74 W 183.84	75 Re 186.207	76 Os 190.23	77 Ir 192.217	78 Pt 195.078	79 Au 196.96655	80 Hg 200.59	81 Tl 204 3833	82 Pb 207.2	83 Bi 208.98038	84 Po (209)	85 At (210)	86 Rn (222)
	87 Fr (223)	88 Ra (226)	89 Ac (227)	104 Rf (261)	105 Db (262)	106 Sg (263)	107 Bh (262)	108 Hs (265)	109 Mt (266)	110 (269)	111 (272)	112 (277)		114 (289) (287)		(289)		

Group 14:

Lose 4 electrons <u>or</u>

gain 4 electrons

1																	2
H 1.00794																	He 4.002602
3	4	1										5	6	7	8	9 F	10
L1 6.941	Be 9.012182											B 10.811	C 12.0107	N 14.00674	O 15.9994	F 18.9984032	Ne 20.1797
11	12	1										13	14	ы D	16	17	18
Na 22.98977	Mg 24.3050											Al 26.981538	Si 28.0855	P 0.973761	32.866	Cl 35.4527	Ar 39.948
19 K	Ca	Sc 21	²² Ti	23 V	Cr ²⁴	Mn ²⁵	Fe	27 Co	Ni	Cu 29	³⁰ Zn	Ga	Ge 32	as As	34 Se	Br	Kr
N 39.0983	40.078	44.955910	47.867	v 50.9415	51,9961	54.938049	55.845	58.933200		63.546	65.39	69.723	72.61	74.92160	78.96	79.904	83.80
Rb	38 Sr	39 V	⁴⁰ Zr	41 Nb	Mo ⁴²	43 Tc	44 Ru	⁴⁵ Rh	46 Pd	47 Ag	48 Cd	49 In	50 Sn	sı Sb	Te ⁵²	53 I	Xe 54
85,4678	87.62	88.90585	91.224	92.90638	95.94	(98)	101.07	102.90550	106.42	107.8682	112.411	114.818	118.710	121.760	127.60	126.90447	131.29
Čs	Ba	La	72 Hf	Ta	74 W	Re	Os	Ir	78 Pt	79 Au	80 Hg	Tl	⁸² Pb	Bi	84 Po	At	86 Rn
132.9054		138.9055	178.49	180.9479	183.84	186.207	190.23	192.217	195.078	196.96655	200.59	204.3833	207.2	108.98038		(210)	(222)
Fr	Ra	89 Ac	Rf	105 Db	sg^{106}	Bh	108 Hs	109 Mt	110	111	112		114		116		
(223)	(226)	(227)	(261)	(262)	(26)	(262)	(265)	(266)	(269)	(272)	(277)		(289) (287)		(289)		

P	101		;ti	ng		DN	ic	Ci	1 81	rg	es		f S	in	gl	e I	Atc	DM	S
	N ³⁻ P ³⁻ As ³	P	ho	sp	hie			- - ·	ect	tro		s to	3	<u>G</u>	<u>ro</u>	<u>u</u> j	<u>5</u>]	<u>.5</u> :	
	1 H 1.00794 3 Li 6.941 11 Na 22.989770	4 Be 9.912182 12 Mg 24.3059					-						5 B 10.811 13 Al 26.981538	6 C 12.0107 14 Si 28.0855	N 14.00674 15 P 30.973761	8 O 15.9994 16 S 32,866	9 F 18.9984032 17 Cl 35.4527	² He 4.002602 ¹⁰ Ne 20.1797 ¹⁸ Ar 39.948	
 	19 K 39.0983	20 Ca 40.078	21 Sc 44.955910	22 Ti 47.867	23 V 50.9415	24 Cr 51.9961	25 Mn 54.938049	26 Fe 55.845	27 Co 58.933200	28 Ni 58.6934	29 Cu 63.546	30 Zn 65.39	31 Ga 69.723	32 Ge 72.61	33 As 74.92160	34 Se 78.96	35 Br 79.904	36 Kr 83.80	
	37 Rb 85.4678	38 Sr 87.62	39 Y 88.90585	40 Zr 91.224	41 Nb 92.90638	42 Mo 95.94	43 Tc (98)	44 Ru 101.07	45 Rh 102.90550	46 Pd 106.42	47 Ag 107.8682	48 Cd 112.411	49 In 114.818	50 Sn 118.710	51 Sb 121.760	52 Te 127.60	53 I 126.90447	54 Xe 131.29	
	55 Cs 132.90545	56 Ba 137.327	57 La 138.9055	72 Hf 178.49	73 Ta 180.9479	74 W 183.84	75 Re 186.207	76 Os 190.23	Ir 192.217	78 Pt 195.078	79 Au 196.96655	80 Hg 200.59	81 TI 204.3833	82 Pb 207.2	83 Bi 208 98033	84 Po (209)	85 At (210)	86 Rn (222)	
	87 Fr (223)	88 Ra (226)	89 Ac (227)	104 Rf (261)	105 Db (262)	106 Sg (263)	107 Bh (262)	108 Hs (265)	109 Mt (266)	110 (269)	(272)	112 (277)		114 (289) (287)		116 (289)			

/	O ²	2-	0;	77/7			/							<u>C</u>	<u>}r</u>	<u>ou</u>	p	<u>16</u>
	S ² Se ²	-/ /				le			ai		_				ns	5		
	1 H 1.00794	4	I					τΟ	fo	rr	n 4	5-]	5	1S	7	8	9	² He 4.002602
 	Li 6.941 11 Na 22.989770	Be 9.012182 12 Mg 24.3050											B 10.811 13 Al 26.981538	C 12.0107 14 Si 28.0855	N 14.00674 15 P 30.973761	O 15.9994 16 S 32.066	F 18.9984032 17 Cl 35.4527	Ne 20.1797 18 Ar 39.948
	19 K 39.0983	20 Ca 40.078	21 Sc 44.955910	Ti 47.867	23 V 50.9415	24 Cr 51.9961	25 Mn 54.938049	26 Fe 55.845	27 Co 58.933200	28 Ni 58.6934	29 Cu 63.546	30 Zn 65.39	31 Ga 69.723	32 Ge 72.61	33 As 74.92160	34 Se 78.96	35 Br 79.904	83.80
1	37 Rb 85.4678	38 Sr 87.62	39 Y 88.90585	40 Zr 91.224	41 Nb 92,90638	42 Mo 95.94	43 Tc (98)	44 Ru 101.07	45 Rh 102.90550	46 Pd 106.42	47 Ag 187.8682	48 Cd 112.411	49 In 114.818	50 Sn 118.710	51 Sb 121.760	52 Te 127.60	53 I 126.90447	54 Xe 131.29
	55 CS 132.90545	56 Ba 137,327	57 La	72 Hf 178.49	73 Ta 180.9479	74 W 183.84	75 Re 186,207	76 Os 190.23	77 Ir 192.217	78 Pt 195.078	79 Au 196.96655	80 Hg 200.59	81 T1 204.3833	82 Pb 207.2	83 Bi 208.98038	84 Po (209)	85 At (210)	86 Rn (222)
	87 Fr (223)	88 Ra	89 AC (227)	104 Rf (261)	105 Db (262)	106 Sg (263)	107 Bh	108 Hs (265)	109 Mt	110	(272)	(277)	204.3833	(289) (287)	2.00.90036	(205)	(210)	(***)

F ¹⁻	Fl	/	rid	/ / /					es				<u>ro</u>			
Cl ¹⁻ Br ¹⁻			nid				G				elo n]					2 He
1.00794 3 4 Li Be 6.941 9.01218 11 12 Na Mg 22.989770 24.3050	-										5 B 10.811 13 Al 26.981538	6 C 12.0107 14 Si	7 N 14.00674 15 P 30.973761	8 O 15.9994 16 S 32,866	9 F 18.998403 17 Cl 35.4527	4.002602 10 20.1797 18 Ar 39.948
¹⁹ 28 K Ca 39.0983 40.078	21 Sc 44.955910	²² Ti 47.867	23 V 50.9415	24 Cr 51.9961	25 Mn 54.938049	26 Fe 55.845	27 Co 58.933200	28 Ni 58.6934	29 Cu 63.546	30 Zn 65.39	31 Ga 69.723	32 Ge 72.61	33 AS 74.92160	34 Se 78.96	35 Br 79.904	36 Kr 83.80
	39 Y	Zr	41 Nb	Mo	43 Tc (98)	44 Ru 101.07	45 Rh 102,90550	46 Pd 106.42	47 Ag 107.8682	48 Cd 112.411	49 In 114.818	50 Sn 118.710	51 Sb 121.760	52 Te 127.60	53 I 126.9044	54 Xe 131.29
37 38 Rb Sr 85.4678 87.62 55 56	1 88.90585 57	91.224 72	92.90638 73	95.94 74	(58)	76	77	78	79	80	81	82	83	84	85	86

Group 18:

										_	se 1s!							
	1 H 1.00794																	He 4.002602
/	3 Li 6.941	4 Be 9.012182											5 B 10.811	C 12.0107	7 N 14.00674	8 O 15.9994	9 F 18.998403	10 Ne 20.1797
	11 Na 22.989770	12 Mg 24.3050											13 Al 26.981538	14 Si 28.0855	15 P 30.973761	16 S 32.066	17 Cl 35.4527	18 Ar 39.948
	19 K 39.0983	20 Ca 40.078	21 Sc 44.955910	22 Ti 47.867	23 V 50.9415	24 Cr 51.9961	25 Mn 54.938049	26 Fe 55.845	27 Co 58.933200	28 Ni 58.6934	29 Cu 63.546	30 Zn 65.39	31 Ga 69.723	32 Ge 72.61	33 As 74.92160	34 Se 78.96	35 Br 79.904	83.80
	37 Rb 85.4678	38 Sr 87.62	39 Y 88.90585	40 Zr 91.224	41 Nb 92.90638	42 Mo 95.94	43 Tc (98)	44 Ru 101.07	45 Rh 102.90550	46 Pd 106.42	47 Ag 197.8682	48 Cd 112.411	49 In 114.818	50 Sn 118.710	51 Sb 121.760	52 Te 127.60	53 I 126.9044	54 Xe 131.29
1	55 Cs 132.90545	56 Ba 137.327	57 La 138.9055	72 Hf 178.49	73 Ta 180.9479	74 W 183.84	75 Re 186.207	76 Os 190.23	77 Ir 192.217	78 Pt 195.078	79 Au 196.96655	80 Hg 200.59	81 Tl 204.3833	82 Pb 207.2	83 Bi 208.98038	84 Po (209)	85 At (210)	86 Rn (222)
	87 Fr (223)	88 Ra (226)	89 Ac (227)	104 Rf (261)	105 Db (262)	106 Sg (263)	107 Bh (262)	108 Hs (265)	109 Mt (266)	110 (269)	111 (272)	112 (277)		114 (289) (287)		116 (289)		

Groups 3 - 12:

 $Iron(II) = Fe^{2+}$

 $Iron(III) = Fe^{3+}$

Many transition elements have more than one possible oxidation state. н́е

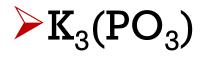
1	1.00794																	4.002602
Γ	Li	Be											B	ć	Ň	0 N mon	° F	Ne
	6.941 11 Na 2.989770	9.012182 12 Mg 24.3050					I	\frown					10.811 13 Al 26.981538	12.0107 14 Si 28.0855	14.00674 15 P 30.973761	15.9994 16 S 32.866	18.9984032 17 Cl 35.4527	20.1797 18 Ar 39.948
Γ	19 K 19.0983	20 Ca 40.078	21 Sc 4.955910	22 Ti 47.867	23 V 50.9415	24 Cr 51.9961	25 Mil 54.9380 9	26 Fe 55.845	27 Co 8.933200	28 Ni 58.6934	29 Cu 63.546	30 Zn 65.39	31 Ga 69.723	32 Ge 72.61	33 AS 74.92160	34 Se 78.96	35 Br 79.904	36 Kr 83.80
	37 Rb 85.4678	38 Sr 87.62	39 Y 88.90585	40 Zr 91.224	41 Nb 92.90638	42 Mo 95.94	43 Tc (98)	Ru 101.07	45 Rh 102.90550	46 Pd 106.42	47 Ag 187.8682	48 Cd 112.411	49 In 114.818	50 Sn 118.710	51 Sb 121.760	52 Te 127.60	53 I 126.90447	54 Xe 131.29
	55 Cs 32.90545	56 Ba 137.327	57 La 138.9055	72 Hf 178.49	73 Ta 180.9479	74 W 183.84	75 Re 186.207	76 Os 190.23	77 Ir 192.217	78 Pt 195.078	79 Au 196.96655	80 Hg 200.59	81 Tl 204.3833	82 Pb 207.2	83 Bi 208.98038	84 Po (209)	85 At (210)	86 Rn (222)
	87 Fr (223)	88 Ra (226)	89 Ac (227)	104 Rf (261)	105 Db (262)	106 Sg (263)	107 Bh (262)	108 Hs (265)	109 Mt (266)	110 (269)	111 (272)	112 (277)		114 (289) (287)		116 (289)		

<u>C</u>	1 H 1.00794		<u>ps</u>	2	lin	c =	: Z i			Cd ²	e	ele one	e p	ent oss	s h sib	iav le	ve o	2 He 4.002602	7
 	3 Li 6.941 11 Na 22.989770	4 Be 9.012182 12 Mg 24.3050											5 B 10.811 13 Al 26.981538	6 C 12.0107 14 Si	7 N 14.00674 15 P 30.973761	8 O 15.9994 I6 S	9 F 18.9984033 17 Cl 35.4527	¹⁰ Ne 20.1797 ¹⁸ Ar 39.948	
	19 K 39.0983	20 Ca 40.078	21 Sc 4.955910	22 Ti 47.867	23 V 50.9415	24 Cr 51.9961	25 Mn 54.938049	26 Fe 55.845	27 Co 58.933200	28 Ni 58.6934	Cu	Zn	31 Ga 9.723	32 Ge 72.61	33 As 74.92160	34 Se 78.96	35 Br 79.904	36 Kr 83.80	
	37 Rb 85.4678	38 Sr 87.62	39 Y 88.90585	40 Zr 91.224	41 Nb 92.90638	42 Mo 95.94	43 Tc (98)	44 Ru 101.07	45 Rh 102.90550	46 Pd 106.43	47 Aş 107.8682	48 Cd 12.411	49 In 14.818	50 Sn 118.710	51 Sb 121.760	52 Te 127.60	53 I 126.90447	54 Xe 131.29	
	55 Cs 132.90545	56 Ba 137.327	57 La 138.9055	72 Hf 178.49	73 Ta 180.9479	74 W 183.84	75 Re 186.207	76 Os 190.23	77 Ir 192.217	78 Pt 195.078	79 Au 196.96655	80 Hg 200.59	81 Tl 204.3833	82 Pb 207.2	83 Bi 208.98038	84 Po (209)	85 At (210)	86 Rn (222)	
	87 Fr (223)	88 Ra (226)	89 Ac (227)	104 Rf (261)	105 Db (262)	106 Sg (263)	107 Bh (262)	108 Hs (265)	109 Mt (266)	110 (269)	111 (272)	112 (277)		114 (289) (287)		116 (289)			

- Cation first, then anion
- Monatomic cation = name of the element $Ca^{2+} = calcium$ ion
- Monatomic anion = root + -ide Cl^- = chlor<u>ide</u>
 CaCl₂ = calcium chloride

With Polyatomic Ions

Poly atomic ions always keep their special names, don't change them!



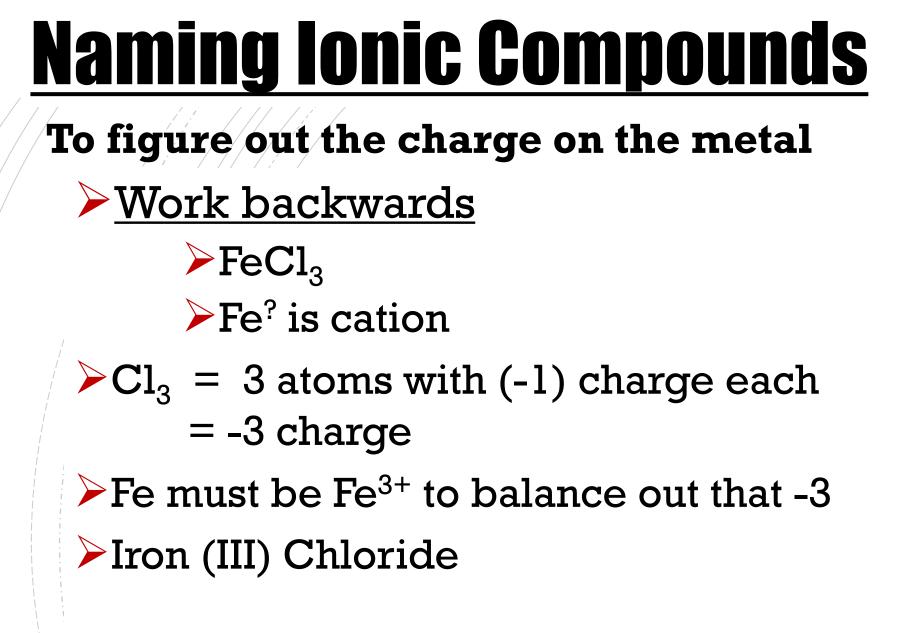
Potassium phosphite

Metals with variable charges

>Some metal forms more than one cation

≻Use Roman numeral in name

- •PbCl₂
 - •Pb²⁺ is cation
 - • $PbCl_2 = lead(II)$ chloride
- •FeO
 - •Fe²⁺ is cation
 - •FeO = Iron(II) oxide



- To figure out the charge on the metal
 - <u>Work backwards</u>

Ni₃N₂
 Ni[?] is cation

 $>N_2 = 2$ atoms with (-3) charge each = -6 charge

3 Ni atoms must balance out the -6 charge, so each Ni must be >+2

Nickel (II) Nitride

Naming Covalent Molecules

Two (or more) nonmetals All elements keep their normal names EXCEPT the last element changes its ending to -ide Use prefixes **NEVER** use "mono" for the first element!

number of atoms	prefix
1	mono
2	di
3	tri
4	tetra
5	penta
6	hexa
7	hepta
8	octa
9	nona
10	deca

Naming Covalent Molecules

Double vowels – when using prefixes we don't

- like some double vowel combos drop the last
- vowel from the <u>prefix</u> portion of the name
 - >Any double vowel with an I is ok!
 - \geq Diiodide = ok
 - Pentaiodide = ok
 - Monoiodide = ok
 - > Monooxide = no! \rightarrow monoxide

Naming Covalent Molecules

- $P_2O_5 = diphosphorus pentoxide$
 - CO_2 = carbon dioxide
 - **CO = carbon monoxide**
 - $N_2O = dinitrogen monoxide$

number of atoms	prefix
1	mono
2	di
3	tri
4	tetra
5	penta
6	hexa
7	hepta
8	octa
9	nona
10	deca

Naming Metallic Substances

SUPER EASY....

>Name the metal. The end.





Odds and Ends

Are the exceptions? Weird rules? YES. ALWAYS.
Diatomic elements

come as a pair and not by themselves

 $H_2, N_2, O_2,$ F_2, Cl_2, Br_2, I_2



Odds and Ends

Are the exceptions? Weird rules? YES. ALWAYS.

Probably lots I can't think of right now!

That is why we need to practice a lot of actual examples!

Odds and Ends

Properties change when bonds form!

Electrons are in different arrangements, and properties relate to the electrons!



Sodium (Na)

 Highly reactive explodes in contact with water.

Chlorine (CI)

poisonous/deadly gas.

Sodium chloride (NaCl)

 Food preservative and Flavoring agent.

YouTube Link to Presentation

<u>https://youtu.be/ktPW9-jld0s</u>

