

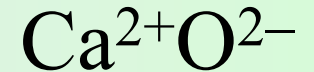
Formulas for Ionic Compounds

Examples of ionic binary compounds

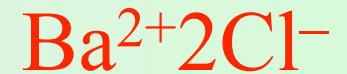
sodium bromide:



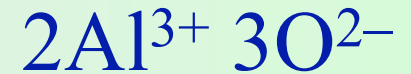
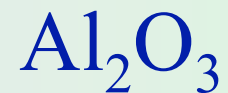
calcium oxide:



barium chloride:



aluminum oxide:




number of positive charges must equal number of negative charges

Representative oxidation states

1A							8A
H ⁺	2A	3A	4A	5A	6A	7A	
Li ⁺				N ³⁻	O ²⁻	F ⁻	
Na ⁺	Mg ²⁺	Al ³⁺		P ³⁻	S ²⁻	Cl ⁻	
K ⁺	Ca ²⁺				Se ²⁻	Br ⁻	
Rb ⁺	Sr ²⁺					I ⁻	

Group → ↓ Period	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
1	1 H																	2 He
2	3 Li	4 Be	Transition Metals (d-block)										5 B	6 C	7 N	8 O	9 F	10 Ne
3	11 Na	12 Mg											13 Al	14 Si	15 P	16 S	17 Cl	18 Ar
4	19 K	20 Ca	21 Sc	22 Ti	23 V	24 Cr	25 Mn	26 Fe	27 Co	28 Ni	29 Cu	30 Zn	31 Ga	32 Ge	33 As	34 Se	35 Br	36 Kr
5	37 Rb	38 Sr	39 Y	40 Zr	41 Nb	42 Mo	43 Tc	44 Ru	45 Rh	46 Pd	47 Ag	48 Cd	49 In	50 Sn	51 Sb	52 Te	53 I	54 Xe
6	55 Cs	56 Ba		72 Hf	73 Ta	74 W	75 Re	76 Os	77 Ir	78 Pt	79 Au	80 Hg	81 Tl	82 Pb	83 Bi	84 Po	85 At	86 Rn
7	87 Fr	88 Ra		104 Rf	105 Db	106 Sg	107 Bh	108 Hs	109 Mt	110 Ds	111 Rg	112 Cn	113 Uut	114 Uuq	115 Uup	116 Uuh	117 Uus	118 Uuo
Lanthanides			57 La	58 Ce	59 Pr	60 Nd	61 Pm	62 Sm	63 Eu	64 Gd	65 Tb	66 Dy	67 Ho	68 Er	69 Tm	70 Yb	71 Lu	
Actinides			89 Ac	90 Th	91 Pa	92 U	93 Np	94 Pu	95 Am	96 Cm	97 Bk	98 Cf	99 Es	100 Fm	101	102	103	

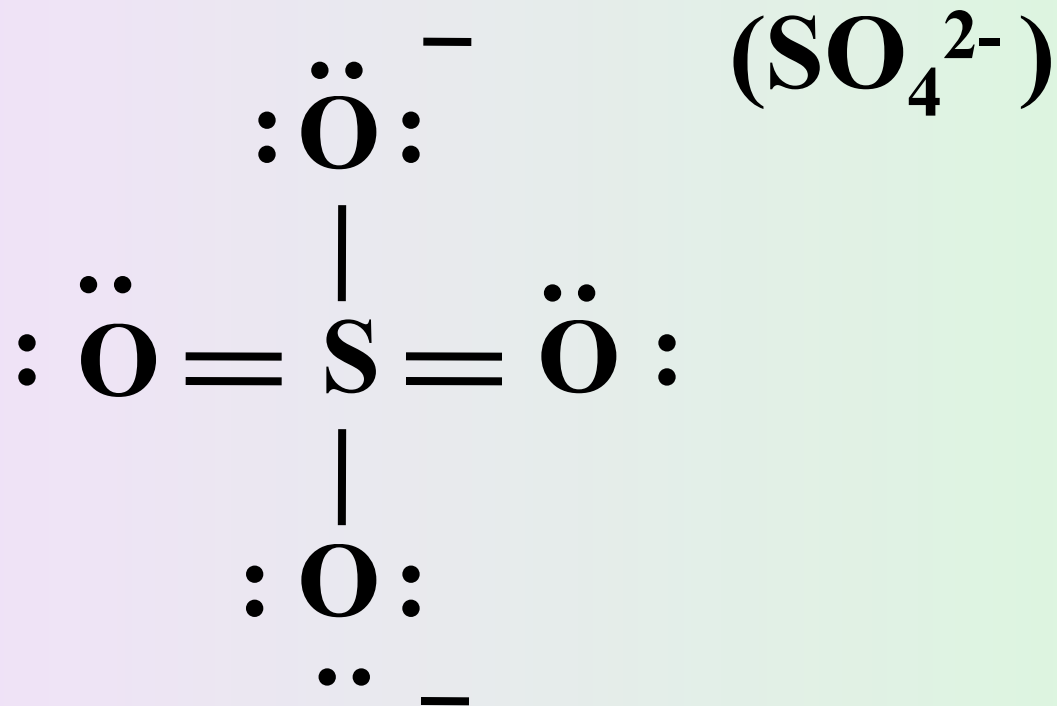
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Transition metal oxidation states

Sc 3	Ti 3,4	V 2, 3, 4, 5	Cr 2, 3, 4, 6	Mn 2, 3, 4, 6, 7	Fe 2, 3	Co 2, 3	Ni 2	Cu 1, 2	Zn 2
Y 3	Zr 4	Nb 3,4, 5	Mo 2,3,4, 5, 6	Tc 2,3,4, 5,6,7	Ru 2,3,4, 5,6,7, 8	Rh 1, 3	Pd 2, 4	Ag 1	Cd 2
La 3	Hf 4	Ta 3, 4, 5	W 2,3,4, 5, 6	Re 2,3,4, 5,6,7	Os 3,4,5, 6,7,8	Ir 1, 3	Pt 2, 4	Au 1, 3	Hg 1, 2


Polyatomic Ions

molecules with a charge



Common Polyatomic Ions

$C_2H_3O_2^-$	acetate	OH^-	hydroxide
NH_4^+	ammonium	ClO^-	hypochlorite
CO_3^{2-}	carbonate	NO_3^-	nitrate
ClO_3^-	chlorate	NO_2^-	nitrite
ClO_2^-	chlorite	$C_2O_4^{2-}$	oxalate
CrO_4^{2-}	chromate	ClO_4^-	perchlorate
CN^-	cyanide	MnO_4^-	permanganate
$Cr_2O_7^{2-}$	dichromate	PO_4^{3-}	phosphate
HCO_3^-	bicarbonate	SO_4^{2-}	sulfate
HSO_4^-	bisulfate	SO_3^{2-}	sulfite
HSO_3^-	bisulfite		

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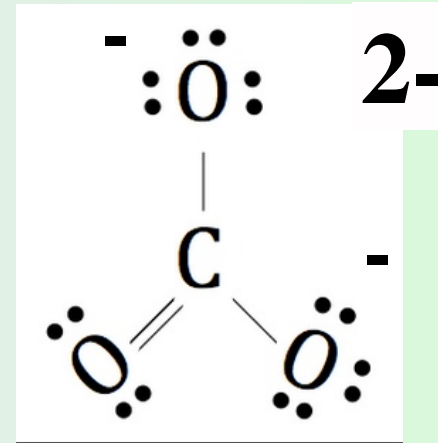
naming ionic compounds LAB reaction a.



+



naming ionic compounds LAB reaction a.



formula: Ag_2CO_3

name: silver carbonate

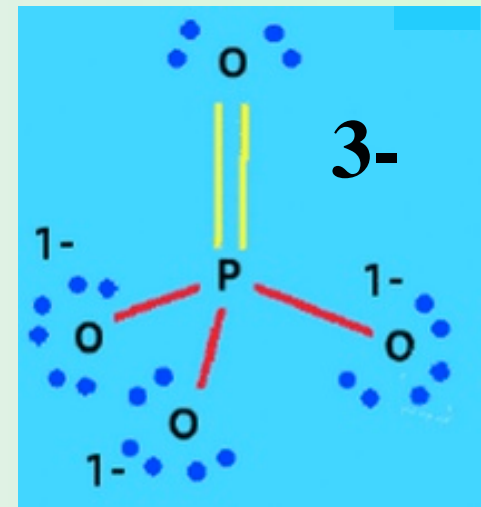
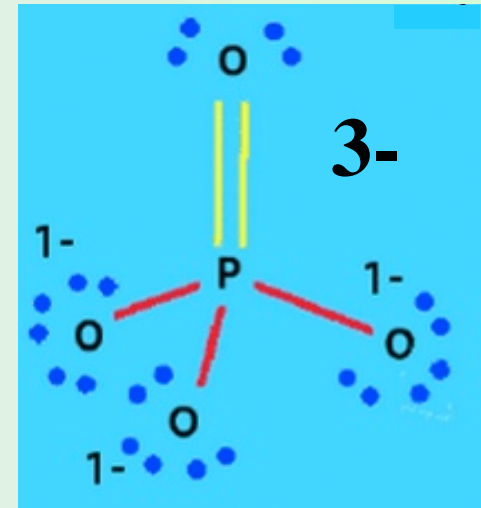
or: silver (I) carbonate

naming ionic compounds LAB reaction f.

Pb²⁺

Pb²⁺

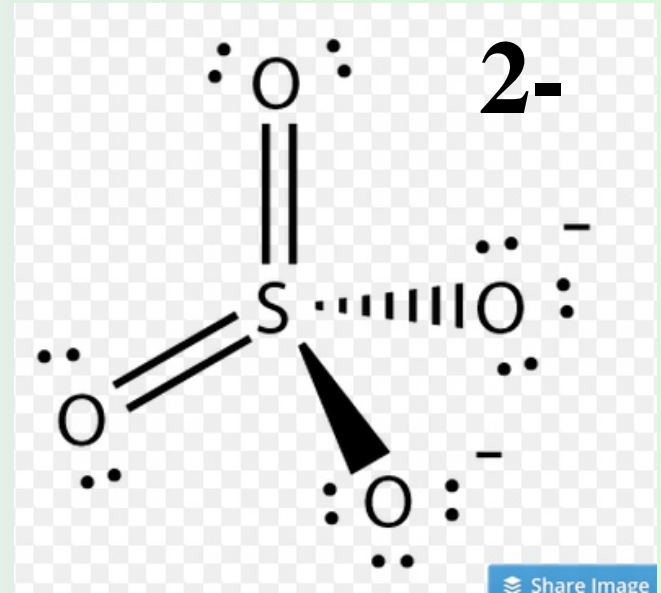
Pb²⁺



formula: Pb₃(PO₄)₂

name: lead (II) Phosphate

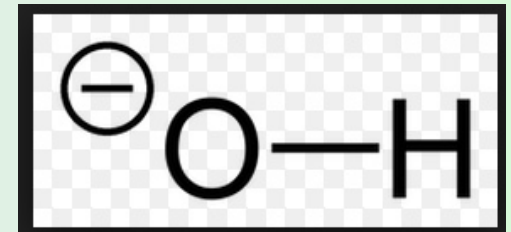
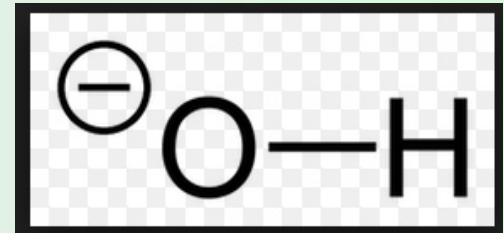
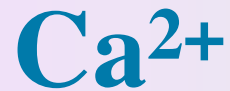
naming ionic compounds LAB reaction h.



formula: PbSO₄

name: lead (II) Sulfate

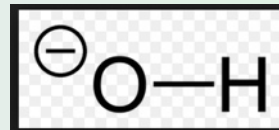
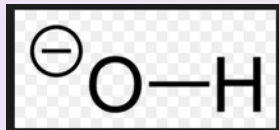
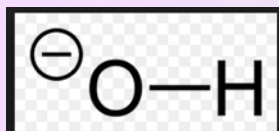
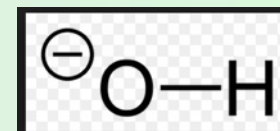
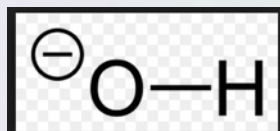
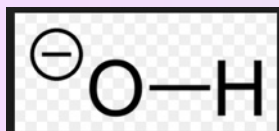
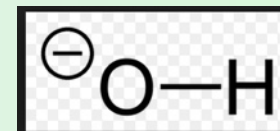
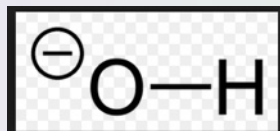
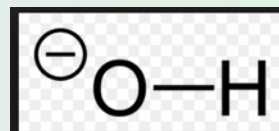
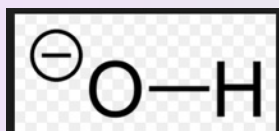
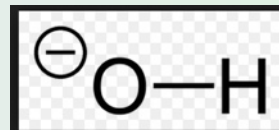
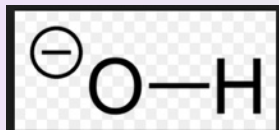
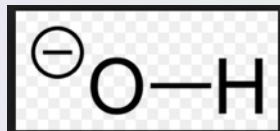
naming ionic compounds LAB reaction k.



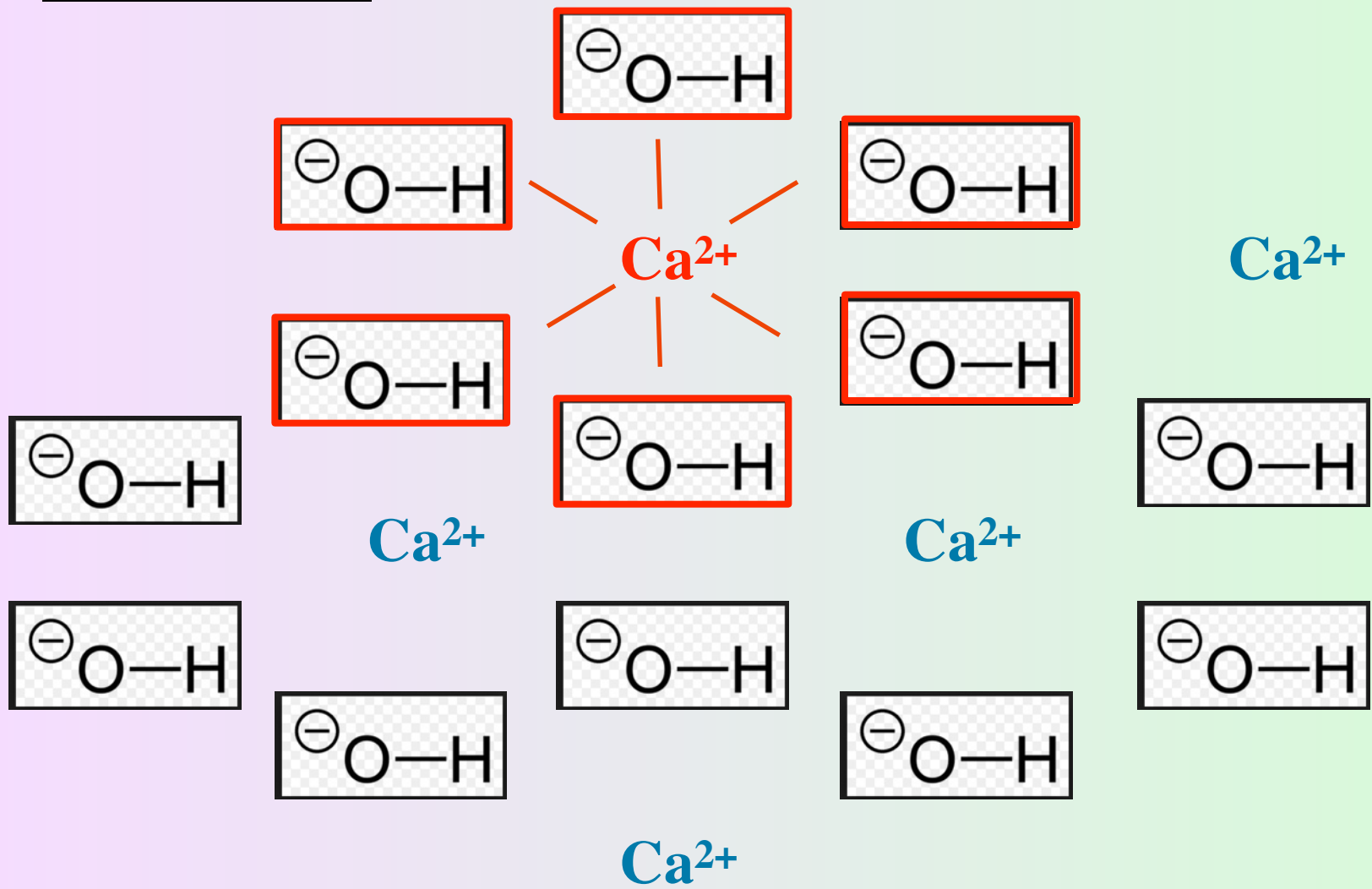
formula: $\text{Ca}(\text{OH})_2$

name: Calcium Hydroxide

Ca(OH)₂



Ca(OH)₂



Ca(OH)₂

