

"Memorizing" -ate polyatomic ions:

Nonmetal

2 suffixes:

- **-ate**: the most number of oxygens (3 or 4)
- **-ite**: one less oxygen than -ate

2 prefixes:

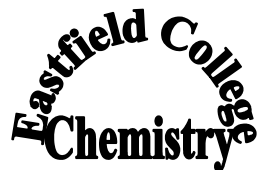
- **per-**: one more oxygen than -ate
- **hypo-**: the least number of oxygens

NOTE:

- # OF OXYGENS WILL CHANGE,
but the charge on the polyatomic ions will NOT
change in relationship to the prefixes & suffixes.

1A	2A	3A	4A	5A	6A	7A	8A										
1 1.00797 H	2 4.0026 He	3 6.939 Li	4 9.0122 Be	5 10.811 BO₃³⁻	6 12.01115 CO₃²⁻	7 14.0067 NO₃¹⁻	8 15.9994 O <small>STOP, Start Over</small>	9 18.9984 FO₃¹⁻	10 20.183 Ne								
11 22.9898 Na	12 24.312 Mg	13 26.9815 Al	14 28.086 SiO₄⁴⁻	15 30.9738 PO₄³⁻	16 32.064 SO₄²⁻	17 35.453 ClO₃¹⁻	18 39.948 Ar										
19 39.102 K	20 40.08 Ca	21 44.958 Sc	22 47.90 Ti	23 50.942 V	24 51.996 Cr	25 54.938 Mn	26 55.847 Fe	27 58.933 Co	28 58.71 Ni	29 63.54 Cu	30 65.37 Zn	31 69.72 Ga	32 72.59 Ge	33 74.922 AsO₄³⁻	34 78.96 SeO₄²⁻	35 79.909 BrO₃¹⁻	36 83.80 Kr
37 85.47 Rb	38 87.62 Sr	39 88.905 Y	40 91.22 Zr	41 92.906 Nb	42 95.94 Mo	43 [98] Tc	44 101.07 Ru	45 102.905 Rh	46 106.4 Pd	47 107.87 Ag	48 112.40 Cd	49 114.82 In	50 118.69 Sn	51 121.75 Sb	52 127.60 TeO₄²⁻	53 126.904 IO₃¹⁻	54 131.30 Xe
55 132.905 Cs	56 137.34 Ba	57-71 [89-103]	72 178.49 Hf	73 180.948 Ta	74 183.85 W	75 186.2 Re	76 190.2 Os	77 192.2 Ir	78 195.09 Pt	79 196.967 Au	80 200.59 Hg	81 204.37 Tl	82 207.19 Pb	83 208.98 Bi	84 [210] Po	85 [210] At	86 [222] Rn
87 [223] Fr	88 [226] Ra	104 [261] Rf	105 [262] Db	106 [263] Sg	107 [262] Bh	108 [265] Hs	109 [266] Mt	110 [269] Uun	111 [272] Uuu	112 [277] Uub	113 [285] Uuq	114 [285] Uur	115 [289] Uus	116 [289] Uut	117 [289] Uuq	118 [289] Uut	

-ate: the most number of oxygens (3 or 4)
- If it's in the *seven*, then it has O₃
ClO₃¹⁻ NO₃¹⁻
- If it's in the *middle*, it has *more* O₄
PO₄³⁻ SO₄²⁻



57 138.91 La	58 140.12 Ce	59 140.907 Pr	60 144.24 Nd	61 [147] Pm	62 150.35 Sm	63 151.96 Eu	64 157.25 Gd	65 158.924 Tb	66 162.50 Dy	67 164.930 Ho	68 167.26 Er	69 168.934 Tm	70 173.04 Yb	71 174.97 Lu
89 [227] Ac	90 232.038 Th	91 [231] Pa	92 238.03 U	93 [237] Np	94 [242] Pu	95 [243] Am	96 [247] Cm	97 [247] Bk	98 [249] Cf	99 [254] Es	100 [253] Fm	101 [256] Md	102 [254] No	103 [257] Lr