"Nick The Camel" and beyond… Bauck's polyatomic ion summary

number of consonants = number of oxygen atoms in the ion *number of vowels = negative charge of the ion*

Nick	the	**C**amel	ATE	a	**Cl**am	for	**S**upper	in	**P**hoenix…
nitrate		carbonate			chlorate		sulfate		phosphate
$(NO_3)^{-1}$		$(CO_3)^{-2}$			$(ClO_3)^{-1}$		$(SO_4)^{-2}$		$(PO_4)^{-3}$

"-ATE ions ATE more." -ITE ions have one less oxygen than the –ATE form.

nitrite	carbonite	chlorite	sulfite	phosphite
$(NO_2)^{-1}$	$(CO_2)^{-2}$	$(ClO_2)^{-1}$	$(SO_3)^{-2}$	$(PO_3)^{-3}$

"hypo" = 1 less O *"per" = 1 more O*

hypochlorite	perchlorate	permanganate
$(ClO)^{-1}$	$(ClO_4)^{-1}$	$(MnO_4)^{-1}$

H has a +1 charge, so the charge of the original ion is reduced by 1.

hydrogen carbonate (bicarbonate)	hydrogen sulfate (bisulfate)
$(HCO_3)^{-1}$	$(HSO_4)^{-1}$

Br is next to Cl (see chlorate) *As is next to P (see phosphate)*

bromate	arsenate
$(BrO_3)^{-1}$	$(AsO_4)^{-3}$

MORE →

… and Nick ate Crabgrass for dessert.

dichromate = two Cr. Use the same consonant and vowel rules for Nick The Camel.

dichromate $(Cr_2O_7)^{-2}$

chromate $(CrO_4)^{-2}$ (similar setup to sulfate)

OTHER IONS…

Ammonium is the only positive polyatomic ion on the list given at the beginning of the school year. It has a similar formula to ammonia, which is NH_3. ammonium $(NH_4)^{+1}$

"Hydroxide is the one" hydroxide $(OH)^{-1}$

"CyaNide is the dangerous one" cyanide $(CN)^{-1}$

oxalate… ox makes me think of a cow. "COw goes moo, 2-4-2." oxalate $(C_2O_4)^{-2}$

Acetate has two arrangements, both with the same charge:

"CHO 2-3-2" acetate $(C_2H_3O_2)^{-1}$

"C-H-3 Coooooo" acetate $(CH_3COO)^{-1}$

Silicate *has two formulas:* $(SiO_3)^{-2}$*, which is used more in the Chem 1H book, and* $(SiO_4)^{-1}$*, which is used more in AP Chemistry.*

Two ions on our list begin with THIO- (indicating S is present) and end in –ATE:

There are similarities to cyanide and sulfate. thiocyanate $(SCN)^{-1}$ thiosulfate $(S_2O_3)^{-2}$