Chem 130
Quiz 2 Study Guide

These are the topics you must master to complete this quiz.

Naming, structures and charges

Name	Formula	Charge	Name	Structure	Charge
Oxygen gas	O_2	0	Nitrogen gas	N_2	0
Chloride ion	Cl^-	-1	Bromide ion	Br^-	-1
Fluoride ion	F^-	-1	Nitrate ion	NO_3^-	-1
Sulfate ion	SO_4^{-2}	-2	Phosphate ion	PO_4^{-3}	-3
Sodium ion	Na^+	+1	Calcium ion	Ca^{+2}	+2
Magnesium ion	Mg^{+2}	+2	Hydrogen gas	H_2	0
Hydrogen ion	H^+	+1	Carbonate ion	CO_3^{-2}	-2
Ferric ion (aka Iron (III))	Fe^{+3}	+3	Ferrous ion (aka Iron (II))	Fe^{+2}	+2
Potassium ion	K^+	+1	Aluminum ion	Al^{+3}	+3
Sulfide ion	S^{-2}	-2	Helium gas	He	0
Ammonium ion	NH_4^+	+1	Hydroxide ion	OH^-	-1

Naming simple compounds

Build compounds by properly combining the ions in the above chart. Be sure the overall charge is zero (so a +2 will need two –1 ions or one –2 ion). Then be sure you can name the compound.

For example a compound formed from Mg^{+2} requires two negative charges to balance the +2 charge. So, if you use chloride ion (-1 charge) you need two of them. That would give you the compound $MgCl_2$ (magnesium chloride). If you balance it with a sulfate ion (-2 charge) you only need one of them. That would give you the compound $MgSO_4$, magnesium sulfate. See the course website, class notes and pages 46-52 in the textbook for further details.

Drawing Lewis Structures

Be sure you can draw the Lewis structure for every element in the first two rows of the periodic table. Be sure you can explain why each one has the number of electrons it does in the valence shell (hint: it's the same number as the column number for the A columns on the periodic table). There will be one question on the valence/Lewis structure of carbon on each quiz. There will also be other questions about Lewis structures. See the class notes and the handout on Lewis structures for further details.