

CHEMISTRY 1A NOMENCLATURE WORKSHEET Fall 2008

Nomenclature Workshop

Instructions:

You are required to download and print and bring this worksheet to the 2nd (Wed./Thurs.) lab period of the second week of classes.

Introduction:

Every discipline or field of study has its own terminology. The vocabulary of chemistry uses words that you may or may not have heard before such as *electrolysis*, *effusion*, *hybridization*, *resonance*, and *stoichiometry*. Chemists also use words that have a different meaning than the common definition such as the words *mole* or *degenerate*. As you study your text in preparation for lecture, it is important that you take the time to learn the new words and terms you encounter. You will find that each chapter of your text summarizes the “*Key Terms*” introduced in a section prior to the exercises and problems. Your text also contains a glossary located in appendix G at its end. As a student in Chem. 1A, you must learn chemical nomenclature in order to understand your texts and lectures. Learning the vocabulary of chemistry prior to lecture allows you to better comprehend the material covered. This means you’ll get more out of your lectures and lab discussions, which in turn will likely increase your performance on exams and quizzes. Performance on quizzes and exams require that you communicate using proper terms and symbols that are specific to chemistry. One most certainly would not attempt a course like German or French with out learning the language and so it is the case with chemistry. It is imperative that you have solid grasp of the language of chemistry, as it is critical to your success in this course. Mastery of the vocabulary of chemistry can’t be put off. The more you procrastinate, the further you’ll get behind and the lower your grade will become.

The communication of the “make-up” of matter in chemistry follows a set of conventions or rules that we call “*Nomenclature*”. Through nomenclature, one can define the elemental composition and relative proportions of elements in a substance. This has grave importance, as there are multitudes of chemical combinations.

How do you learn chemical nomenclature? You practice and practice and practice. Some of you may find that flash cards will help. Others may feel that exercises like this are sufficient. Regardless of your preference of learning nomenclature, you must work hard to incorporate it into your working knowledge.

The following pages contain notes that have been prepared as an aid in your preparation for the nomenclature workshop in lab. Please read these over carefully prior to the laboratory. You will also need to consult your text (section 3.3-3.4) for additional help and reference. You may also consult the CD that accompanies you text. Don’t forget the library is full of general chemistry texts and study guides.

FAILURE TO LEARN CHEMICAL NOMENCLATURE WILL GRAVELY IMPACT YOUR PERFORMANCE IN THIS COURSE.

I. IONIC COMPOUNDS

Main-Group Metals (Groups IA, IIA, and IIIA) These metals tend to form *cations* by losing all of their outermost (valence) electrons. *The charge on the cation is the same as the group number.* The cation is given the same name as the neutral metal atom.

<u>Group</u>	<u>Element</u>	<u>Cation</u>	<u>Ion name</u>	<u>Group</u>	<u>Element</u>	<u>Cation</u>	<u>Ion name</u>
IA	H	H ⁺	hydrogen ion	IIA	Mg	Mg ²⁺	magnesium ion
	Li	Li ⁺	lithium ion		Ca	Ca ²⁺	calcium ion
	Na	Na ⁺	sodium ion		Sr	Sr ²⁺	strontium ion
	K	K ⁺	potassium ion		Ba	Ba ²⁺	barium ion
	Cs	Cs ⁺	cesium ion	IIIA	Al	Al ³⁺	aluminum ion