

**Organic Chemistry: Toxicity, Health & Safety**



Working with organic chemicals can pose certain risks that you have not encountered in your previous laboratory experiences. Although basic safety lessons that you have learned in your earlier courses are still very important and must be practiced, there are certain additional concerns to be aware of and sensitive to in the organic laboratory particularly chemical hygiene. Refer to pp. 1-4 in the Lab Text/Guide and review general lab safety guidelines.

Many organic compounds are flammable. Many produce physiological effects. Sometimes these effects are not always known, nor immediately obvious. Therefore, all chemicals should be treated as being potentially hazardous. However, governments throughout the world require that known hazard and safety information be published for public inspection and comment. In the U.S. and Europe, manufacturers are required by law to provide this information in a document called an **MSDS**, a Material Safety Data Sheet, which provides a compound's physical properties, toxicity, health risks, chemical reactivity, flammability, and procedures for storage, handling, and disposal.

In Chem 226, before undertaking any lab experimentation, you will become familiar with the MSDS, and the terms used to describe Health & Safety information for organic molecules. This assignment has 2 parts: **Part I** is an individual assignment. Turn in this page. (If not enough room, attach a second page.) Provide definitions for the following terms. Rather than using hard copy references or Google, you are highly encouraged to find the necessary information from the various Web links that are included in the Chem 226 Web Resources collection at:

<http://chemconnections.org/organic/chem226/226web-08.html>

**Part I: Definitions**

1) Acute vs. Chronic Toxicity
2) LD <sub>50</sub> / LC <sub>50</sub>
3) Exposure (human) and the 3 main types of Exposure
4) PEL and TLV
5) TWA
6) Mutagenicity
7) Teratogenicity
8) OSHA
9) Active Ingredient (a.i.)
10) ADI