Hazard Awareness/Risks

It is important that prior to working with any chemical, the hazard(s) of the material is identified. If there are known hazards, it is critical to determine what to do in an emergency (spill/exposure) while working with the chemical. The best ways to become aware of the hazards of chemicals are to look at the specific chemicals SDS (Safety Data Sheet) as well as reading the hazard warnings affixed to the label. It may be necessary to check multiple sources which can include chemical dictionaries, the Merck index and or other online resources.

After the hazards of the material you are working with has been identified, it is important to complete a quick risk assessment. A risk assessment should consist of multiplying the degree of hazard by the amount of possible exposure to the material. Once the risk has been determined, the appropriate hierarchy of controls should be used to mitigate the risk/hazards starting with substitution/elimination, engineering controls (Fume hoods, BSCs), administrative controls (procedures when handling said material) and lastly the use of personal protective equipment. This process should be done before working with any chemicals or hazardous materials. If you would like help performing these protocols, please contact EHS to perform an inspection and help you lower your risk of exposure.

Common Chemical Material/Waste Hazards You May Encounter In the Lab Are:

Corrosive (Acids and Bases): Materials that corrode skin or metal. Examples: Hydrochloric Acid, Sodium Hydroxide

Flammable (and Combustible): Materials that readily ignite and burn vigorously in the presence of oxygen and an ignition source. Examples: Alcohols, Acetone, Ethers, Acetic Acid

Oxidizer (and Organic Peroxides): Materials that release oxygen readily to stimulate the combustion of organic matter. Examples: Hydrogen Peroxide, Potassium Permanganate, Bleach

Air or Water Reactive: Materials that react violently with air or water. Examples: Zinc Dust, Magnesium Metal

Toxic (Poisons, Carcinogens, Mutagens, Teratogens): Materials that contain a known carcinogen or known mutagen; exhibit oral toxicity; contain toxic metals or pesticides, or are toxic to aquatic species. Examples: Mercury, Ethyl Acetate, Formaldehyde, Ethidium Bromide

Chemical material/wastes that are not clearly in one of the first four categories and are known to not be non-hazardous should be considered toxic.

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