FACT SHEET

Laboratory Hazard Assessment

This list is designed to help you answer five critical questions prior to beginning work:

1. What are the hazards?
2. What is the worst thing that could happen?
3. What can be done to prevent this from happening?
4. What can be done to protect from these hazards?
5. What should be done if something goes wrong?

1) Pre-Operational Planning

☐ Toxicity	What is the level of toxicity? What are the routes of exposure (inhalation, skin absorption, ingestion, injection) and which of these are likely under the conditions of use? What are the signs and symptoms of overexposure?
☐ Flammability	Is the material flammable or explosive under the conditions of use?
☐ Warning Properties	Can odor or irritation adequately warn of over-exposure before it becomes dangerous?
☐ Laboratory Equipment	Is laboratory equipment in good condition? Are machine guards or interlocks in place and functioning?
☐ Storage Precautions In	Does the material need isolated storage, refrigeration or other special conditions for storage?
☐ Incompatible Materiails	Should certain materials be segregated (e.g., flammables and oxidizers)?
☐ Reagent Stability	Should materials be dated for disposal (e.g., ethers)? Should materials be kept refrigerated to prolong shelf life?
☐ Protective Clothing	Is a lab coat, apron, or clothing made of resistant material needed or is a standard lab coat adequate?
☐ Gloves	What glove material is needed? Is the right type, thickness, glove length and size available for the materials being handled?
☐ Eye Protection	What type of eye protection is needed (e.g., safety glasses for impact, chemical splash goggles for chemicals)? Is a face shield needed in combination with the goggles?
☐ Heat Sources	Is heating needed? Is there an alternative to open flames? Are heating mantles in good condition?
☐ Electrical Equipment	Is equipment it grounded and bonded properly? Are electrical cords insulated? Is ground fault circuit interruption (GFCI) needed?
☐ Vaccum/Pressure Systems	Have connections been leak tested, hydrostatically tested, properly vented, and traps installed when necessary?

2) Experimental Scale & Design

☐ Quantity	Are there ways to minimize the amount of materials used without affecting results (e.g. microscale)?
☐ Ambient Conditions	Are special conditions necessary to carry out the reaction (e.g., cold room or dry box)?
☐ Time Constraints	Can the experiment be completed while lab workers are present? If not, can the experiment be safely run unattended or overnight?

3) Spill/Emergency Planning

☐ Lab Personnel	Are others in the laboratory aware of what you are doing?
☐ Fire Extinguishers	Are special types required; are you aware of their location and proper use (e.g., Class D for metals)?
☐ Emergency Response	Do you have a response planned in the event of a spill; would evacuation be necessary?
☐ Spill Cleanup	Are materials on hand to absorb/neutralize; is the needed protective equipment on hand and have you been trained on its use?
☐ Safety Shower/Eyewash Fountain	Are you aware of the locations and methods of operation?

4) Waste Disposal

☐ Method	Is there an approved method for disposal of waste generated by the experiment or procedure?
☐ Labeling	Are waste containers clearly, indelibly and accurately labeled as to the contents?
☐ Segregation	Are incompatible wastes kept segregated?
☐ Containers	Are suitable containers with adequate closures available?
☐ Recycling	Is it feasible to safely recover/recycle used chemical?

ENVIRONMENTAL HEALTH AND SAFETY
THE UNIVERSITY OF UTAH

125 South Fort Douglas Blvd, Salt Lake City, UT 84113
801.581.6590 | ehs.utah.edu