**Poisons and Toxins (General)**

1. **Process**
   1. Handling poisonous and toxic chemicals of synthetic and biological origin for research purposes.
2. **Describe process, hazardous chemical, or hazard class**
   1. Poisons: Heavy metal compounds, cyanides, organic mercury compounds, organofluorophosphates, and other highly toxic synthetic/natural chemicals.
   2. Toxins: Chemicals of biological origin such as lipopolysaccharide.
3. **Potential Hazards**
   1. Poisons and toxins can be the cause of both acute and chronic illness. Considerations should be made to prevent both of these results.
   2. Be well aware of the routes of entry for the chemical in question prior to use.
   3. The routes of entry could include any combination of the following:
      1. Absorption through skin, eyes, or mucous membranes
      2. Ingestion (most likely to occur from secondary contamination of personal items such as a cell phone)
      3. Inhalation
      4. Injection (through accidental contact with contaminated needles or broken glass).
4. **Personal Protective Equipment**
   1. Consult SDS and/or Environmental Health & Safety (EH&S). Wear gloves that are known to be compatible with the material. Research glove compatibility carefully prior to working with poisons and toxins.
   2. Protect eyes from potential splash hazards and eye damage as well as systemic poisoning through eye absorption.
   3. Protection of feet is very important. Closed-toed shoes are always required in the laboratory but are of utmost importance in the case of working with toxic substances. The bottoms of your feet are the most absorbent skin region in the body and should be protected from chemical contact.
5. **Engineering Controls**
   1. Use solid, liquid, and gaseous poisons and toxins in a certified functioning fume hood only. These types of materials should not be used outside of a hood. A safety shower and eyewash must be available and accessible when working with corrosive liquids.
6. **Special Handling Procedures and Storage Requirements**
   1. Absolute care should be taken in chemical hygiene practices. Contaminated gloves should be removed prior to touching any personal items (glasses, cell phones, keys, etc.) to prevent secondary exposure to toxic chemicals.
   2. Poisons and toxins should be stored in secure locations that are well labeled and are protected from accidental contact or intentional tampering. All special regulations relating to storage requirements from local, state, and federal agencies shall be followed in storage and securing of poisonous and toxic materials (e.g. DEA, DHS, CDC, etc.)
7. **Spill and Accident Procedures**
   1. Skin and/or eye exposure, inhalation or ingestion: Consult SDS/call Poison Control, inform supervisor immediately, get immediate medical attention. Dial 911 for medical transport.
   2. Spills:
      1. Incidental spills: clean up using knowledge from SDS.
      2. Small spills: Do not attempt cleanup if you feel unsure of your ability to do so or if you perceive the risk to be greater than normal laboratory operations. Call 911 for spill response.
      3. Large Spills: Notify others in area of spill. Turn off ignition sources in area. Evacuate area and post “DO NOT ENTER” signs on entrance ways to spill area. Call NAU Police at 911 for spill response. Restrict personnel from area of spill or leak until cleanup is complete. Remain in area in safe location to assist first responders. Depending upon the toxicity of material, pull the fire alarm to evacuate the building.
8. **Decontamination Procedures**
   1. These will be specific to the poison or toxin in question. Carefully read the Safety Data Sheet for the chemical prior to working with it to be aware of the appropriate decontamination protocol.
9. **Waste Disposal Procedures**
   1. Contact EH&S for waste disposal.
10. **Safety Data Sheet Location**
    1. Safety Data Sheets must be available