

SOP 1 - Avoidance of Routine Exposure

- A. Routes of entry for chemicals into the human system:
 - 1. Inhalation
 - 2. Ingestion
 - 3. Absorption
 - 4. Injection

- B. Methods for interrupting the routes of entry of hazardous chemicals
 - 1. Engineer the hazard out of an operation by designing the process to use nontoxic chemicals.
 - 2. Substitute a less toxic or nontoxic chemical for the more toxic chemicals used in experiments.
 - 3. Design experiments and processes to limit the time employees are exposed to potentially hazardous chemicals and to limit the quantities of chemicals to which employees are exposed.
 - 4. Design experiments and processes to limit the quantities of chemicals to which employees are exposed.
 - 5. Isolate potentially hazardous operations from humans:
 - a. Isolate the operation from the human by performing it in a remote or protected environment (e.g., performing the operation inside hoods or glove boxes, using robots to perform high hazard jobs, etc.).
 - b. Isolate the human from the operation by placing the human in a control room or by using appropriate personal protective equipment.
 - 6. Utilize general and local exhaust ventilation for contaminant control.
 - 7. Maintain good personal hygiene:
 - a. Provide cleansers and water for washing exposed skin.
 - b. Verify that emergency showers and eyewash fountains are available and in proper operating condition.

- c. Prohibit eating, drinking, or smoking in areas where toxic materials are being used.
 - 8. Maintain proper housekeeping, equipment upkeep, and waste disposal.
- C. Perform operations in accordance with the Chemical Hygiene Program, Hazard Communication Program, and other chemical safety programs instituted at the Location.
- D. Insure that employees are trained in the hazards of their jobs:
 - 1. The chemical hazards involved in the processes.
 - 2. The control of chemical contamination via personal protective equipment, operations design, special equipment, etc.
 - 3. The signs of chemical overexposure.
 - 4. Emergency and decontamination procedures.