

## **GENERAL WRITTEN SOP -- Working with Chemicals of High Chronic Toxicity**

*The OSHA Laboratory Standard explicitly requires "standard operating procedures relevant to safety and health considerations to be followed when laboratory work involves the use of hazardous chemicals." If the general SOP in this section do not fulfill this requirement, you must amend and append in some manner so as to comply.*

**Special Precautions for Working with Chemicals of High Chronic Toxicity:** See Appendix D of this manual for definition and discussion of the meanings of chronic and acute toxicity. Examples of chemicals exhibiting high chronic toxicity include dimethylmercury, nickel carbonyl, benzo-a-pyrene, N-nitrosodiethylamine, and other human carcinogens or substances with high carcinogenic potency in animals.

1. Conduct all transfers and work in designated (restricted access) areas: a restricted access hood, glove box, or portion of a lab, designated for use of highly toxic substances, for which all persons with access are aware of the substances being used and necessary precautions.
2. Protect vacuum pumps against contamination by using scrubbers or HEPA filters and vent effluent into the CFH.
3. Decontaminate vacuum pumps or other contaminated equipment, including glassware, before removing them from the designated area. Decontaminate the designated area before normal work is resumed there.
4. On leaving the area, remove protective apparel (placing it in an appropriate, labeled container) and thoroughly wash hands, forearms, face, and neck.
5. Use a wet mop or a vacuum cleaner equipped with a HEPA filter to decontaminate surfaces. DO NOT DRY SWEEP SPILLED POWDERS.
6. If using toxicologically significant quantities of a substance on a regular basis (in quantities above a few milligrams to a few grams, depending on the substance, 3 or more times per week), notify the Laboratory Safety Manager and contact EHS (953-4816). EHS will arrange for a medical consultation, if appropriate.
7. Keep accurate records of the amounts of these substances stored and used, the dates of use, and names of users.
8. The designated area must be conspicuously marked with warning and restricted access signs and all containers should be appropriately labeled with identity and warning labels (e.g., CANCER-SUSPECT AGENT).
9. Ensure that contingency plans, equipment, and materials to minimize exposures of people and property in case of accident are available.
10. For a negative pressure glove box, ventilation rate must be at least 2 volume changes/hour and at a pressure of at least 0.5 inches of water gauge. For a positive pressure glove box, thoroughly test for leaks before each use. In either case, trap the exit gases or filter them through a HEPA filter and then release them into a CFH.

Use chemical decontamination whenever possible; ensure that containers of contaminated wastes are transferred from the designated area under the supervision of authorized personnel.