

5. Procedures

The following controls are required for working with particularly hazardous substances:

A. Health and Safety Review

A hazard assessment must be conducted for any work activity involving use of particularly hazardous substances to ensure that proper controls are in place.

The hazard assessment may determine that area monitoring and/or medical surveillance is necessary for ensuring the safety of the employees. Such a determination is likely to be made only when there is reason to believe that exposure levels for the substances planned to be used in an experiment could exceed OSHA established regulatory action levels or similar guidelines established by other authoritative organizations.

B. Planning

Careful planning needs to precede any work involving use of particularly hazardous substances. This includes whenever the substance is to be used for the first time or whenever an experienced user carries out a new protocol that

- x Equipment (including reusable personal protective equipment such as face shields or goggles) that might be contaminated must never be removed from the environment reserved for handling PHS materials without complete decontamination
- x Wash hands before leaving the work area and prior to consuming food/beverages.
- x Avoid working alone in laboratories.
- x When highly toxic materials such as hydrogen fluoride (HF) or DMSA are being handled, it is essential that more than one person is present and that all people working in the area are familiar with the hazards of the experiments being conducted and with the appropriate emergency response procedures.
- x Activities conducted with highly toxic chemicals should be carried out in work areas designed to contain accidental releases. Hood trays and other types of secondary containers should be used to contain inadvertent spills. Careful techniques must be employed to minimize the potential for inadvertent spills and releases.

B. Personal Protective Equipment

Working with PHS may require more stringent use of PPE. Check the SDS or consult EHS information on proper gloves, lab clothing and respiratory protection.

At a minimum, safety

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If experimental setup involving the hazardous substance is ongoing over a significant period of time, the hood should be rechecked at least quarterly to ensure adequate face velocity

Highly toxic gases must be used and stored in a vented gas cabinets that are connected to a laboratory exhaust system.

D. Process and Laboratory Equipment

Equipment used for the handling of PHS should be separated and clearly identifiable from general laboratory environment.

Laboratory vacuum pumps used with these substances should be protected by high efficiency scrubbers or HEPA filters and vented into an exhaust hood.

Motor-driven vacuum pumps are recommended because they are easy to decontaminate.

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H. Waste Management