

Hazardous Waste Reduction Plan

An essential element of any successful hazardous waste management program is that of waste reduction or minimization. Limiting the quantities of hazardous wastes being generated benefits in a number of ways:

- Reduces risks associated with hazardous materials to students, faculty, and staff.
- Decreases the amounts of hazardous wastes which need to be safely handled, stored, and eventually moved from the various points of generation to waste storage.
- Reduces the costs of packaging, transportation, and disposal.

A number of management techniques can be used to minimize the amounts of hazardous wastes being generated.

- Substitute less or non-hazardous materials for hazardous ones when feasible.
- Stock quantities of reagents or chemical in amounts consistent with use.
- Identify chemicals that can be disposed of safely in normal trash or sewer systems.

1. Methods for Waste Minimization

- **Substitution**
 - The primary option for waste minimization is the replacement of a hazardous material with a less or non-hazardous material. A major consideration in successful substitution is whether the substituted material provides acceptable results. Optimally, the determination of whether substitution is possible should be made prior to obtaining the new material.
 - Initially, hazardous materials need to be identified. Reviewing product inventories and examining the uses of existing materials can detect materials that are potential candidates for substitution.
 - Once identified, the user of the material should investigate the substitution potential by requesting information from the manufacturer or supplier of alternative products.
 - Material Safety Data Sheet (MSDS) or product label should be obtained for the potential substitute to verify its "less or non-hazardous" status.
 - A pilot application of the material should be initiated to determine the effectiveness of the product during actual use. Replacement of


the hazardous material in question should proceed if financially feasible.

- Assistance in determining the hazardous/non-hazardous status of the product or material may be obtained through Safety Management Services (SMS)
- **Inventory Management**
 - Implementing an on-going unique chemical inventory (UCI) management system will serve to reduce the amounts of overstocked/outdated chemicals that would require additional management.
 - Conducting an annual review of the UCI should include analysis of use of such chemicals and their potential reduction.
- **Laboratory Practices**
 - If substitution cannot be accomplished, another option would be using micro-quantities of the material.
 - Reducing these amounts decreases the quantities of hazardous wastes that require formal handling and any hazards associated with them.
 - Initial expenditures may be necessary for equipment needed to implement the micro-quantity techniques, but on going cost savings can be realized.
 - Increase use of instrumentation in testing and use alternative teaching methods such as interactive video.
 - Design laboratory experiments to eliminate waste.
 - Eliminating the practice of disposing non-hazardous waste in hazardous waste containers.
- **Recycling**
 - Distillation and reuse of xylene, formalin, and alcohol.
- **Redistribution**
 - Relocating surplus or unwanted chemicals to laboratories that can use them.

References

[UMHHC Policy # 05-03-025 Hazardous Materials Management Policy](#)

[UMHHC Policy # 05-03-026 Hazardous Waste Management](#)

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