

Waste Minimization and Pollution Prevention Program

November 11, 2015

1. INTRODUCTION

1.1 Purpose

Indiana University Environmental Health and Safety (IUEHS) has developed this program to establish standard procedures to reduce the volume and toxicity of the waste generated to the fullest extent economically practicable in accordance with The [Pollution Prevention Act of 1990](#) and the Hazardous and Solid Waste Amendments of 1984 as codified in [40 CFR 262.27 \(a\)](#).

1.2 Scope

This program applies to all Indiana University faculty and staff who generate waste including hazardous/chemical wastes.

2. AUTHORITY AND RESPONSIBILITY

2.1 Indiana University Environmental Health and Safety is responsible for:

- Developing and maintaining the Waste Minimization and Pollution Prevention Program.
- Serving as a technical resource for the implementation of the Program.

2.2 Departments are responsible for:

- Evaluating waste minimization and pollution prevention opportunities in their work area on a regular basis and implementing those opportunities as appropriate.
- Ensuring that reusable materials are used within the department or within the scope of the surplus property program for that campus. Materials that are recyclable are to be recycled within the scope of the current campus recycling program.
- Ensuring that all wastes generated that cannot be reused or recycled are discarded in compliance with the provisions of the current edition of the [Indiana University Waste Management Guide](#).

3. ELEMENTS OF THE PROGRAM

3.1 Waste is to be managed in the following manner (in descending order of preference) in an effort to prevent pollution to the environment:

- Prevention through source elimination or reduction,
- Product reuse,
- Environmentally-sound recycling,
- Environmentally-sound treatment, or
- Environmentally-sound disposal.

3.2 All University personnel are to evaluate waste minimization and pollution prevention opportunities in their work area on a regular basis and implement those

opportunities as appropriate. The waste minimization techniques specified below are to be considered, at a minimum, when evaluating opportunities:

- **PURCHASING CONTROLS**

- Order only the volumes of materials necessary to complete the desired activity or project.
- Purchase smaller lots of materials on a more frequent basis. Purchase only volumes that can be utilized during a defined period of time (e.g. every 3 or 6 months). Utilize suppliers that can offer quick delivery of needed materials.
- Only purchase products/chemicals in bulk when it is known for certain that bulk volumes can be used expeditiously.
- Be aware of any physical property of the material or chemical that may preclude long-term storage of the material. (e.g. peroxide formation).
- Establish a centralized purchasing system within the department or area to monitor purchases in an effort to avoid duplicate orders.
- Establish a standing date (e.g. once per month) for inventorying and ordering office/laboratory/classroom supplies.

- **INVENTORY CONTROLS**

- Attempt to redistribute unused materials and chemicals to other campus users. Objectively evaluate the potential use of chemicals offered for redistribution by other campus users.
- Attempt to return unused, unopened materials to vendor for credit.
- Ensure all chemical containers, whether virgin or waste, whether in the original or secondary container, are labeled at all times.

- **OPERATIONAL CONTROLS**

- Evaluate less hazardous substitutes for products containing hazardous materials whenever feasible.

- **LABORATORY OPERATIONS**

- Periodically review each experimental or research protocol to assure that chemical usage is minimized.
- Reclaim and reuse materials when feasible (e.g., utilizing spent solvent for initial gross cleaning step and utilizing fresh solvent only for the final rinse).
- Reduce chemical usage in experimentation through the use of microscale techniques whenever practical.
- Utilize less toxic alternatives to ethidium bromide such as SyberGreen™, SybrSafe™, or other similar products.
- Utilize water-soluble, biodegradable scintillation fluids in place of solvent-based products.
- Utilize specialty, biodegradable glass cleaning detergents in place of sulfuric acid/chromic acid cleaners.

- Utilize specimens preserved in less toxic preservatives in place of those preserved in formaldehyde-based preservatives where feasible.
- Avoid wet chemistry techniques when practical.
- Neutralize corrosive wastes as a final step of an experiment or procedure.
- Avoid mixing hazardous and non-hazardous wastes.

- **MAINTENANCE OPERATIONS**

- Utilize a heat gun in place of chemical-based paint strippers.
- Utilize water-based degreasers in place of chlorinated solvent or petroleum-based degreasers where feasible.
- Reclaim and reuse materials when feasible (e.g. having a naphtha-based parts washer serviced by a reputable service company that reclaims the spent degreaser when a solvent-based degreaser is required).
- Fully participate in scrap metal recycling program if available for the respective campus.

- **RECYCLING**

- Participate to the fullest extent possible in University-sponsored recycling programs.
- Ensuring that reusable materials are used within the department or managed through the surplus property program for that campus.
- Additional information on campus recycling programs can be found at:
IUB: <http://facilityoperations.indiana.edu/operations/building-services/recycling/index.shtml>
IUPUI: <http://sustainability.iupui.edu/topics/recycling.asp>
- Additional information on Surplus Property programs can be found at:
IUB: <http://surplus.indiana.edu/copy/Surplus.asp>
IUPUI: <http://www.surplus.iupui.edu/>

3.3 Additional guidance and assistance in waste minimization is available directly from the respective IUEHS office for each campus.

3.4 **Chemical Inventory Review:** IUB offers an online resource to request an IUEHS review of your hazardous material inventory to identify minimization opportunities:

<https://www.indiana.edu/~forms/iucomm/machform/view.php?id=110330>

3.5 **Product Substitution Review:** IUB offers an online resource to request an IUEHS evaluation of green products or services that you may be considering using or substituting in your operations:

<https://www.indiana.edu/~forms/iucomm/machform/view.php?id=105095>

3.6 In addition to EHS, additional resources may be obtained through the respective Office of Sustainability:

IUB: <http://sustain.indiana.edu/index.php>

IUPUI: <http://sustainability.iupui.edu/>

4. REFERENCES

[Indiana Department of Environmental Management](#)

[Pollution Prevention Act of 1990](#)

[US Environmental Protection Agency](#)

[40CFR262.27](#)

5. REVISIONS

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