

Managing Your Chemical Inventory – Part 2

A White Paper by the NSTA Safety Advisory Board

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Developing a Chemical Purchasing Plan

The Three R's of Chemical Management

Besides creating an accurate inventory of the chemicals that will remain in your inventory and identifying the chemicals in your inventory that need to be disposed, you need to consider the three R's of chemical management: *reduce, reduce, reduce*.

Maintaining small and limited quantities of chemicals will promote the prudent and effective management of your inventory.

How do I develop a plan to maintain small and limited quantities of chemicals?

Purchasing Chemicals: Your district needs to consider a Purchasing Plan. The plan needs to include two essential components. The first component is to only purchase chemicals in quantities that will be consumed during the current school year with any remaining quantities (hopefully a minimal amount) to be consumed the following year.

The second component is the method to accomplish this: "Just in Time Purchasing." Chemicals are purchased at a variety of times during the year when needed and in quantities needed for the particular activities. This method limits the quantities in storage, eliminates excessive quantities of chemicals, and reduces future disposal costs. Remember to purchase what you actually will need and what you actually will use in your activities.

Plan for chemical procurement:

Determining Chemicals Needed By Program

1. From your program, review the list of student activities.
2. What activities will require the use of chemicals?
3. What chemicals will be required for the activities?
4. Is the chemical appropriate for the students, the teachers, and the facilities?
(assess the hazards)

Determining the Quantities Needed

1. By discipline (chemistry, biology, physical science, technology, etc.) and grade level, review the quantity of the required chemicals that are currently in the inventory.
2. By discipline (chemistry, biology, physical science, technology, etc.) and grade level, determine the chemicals needed for the school year based on the quantities required and the quantities available in the current inventory.
3. Make sure established maximum quantities are not exceeded prior to purchasing additional amounts of a specific chemical. See better professional practices noted in Rehab the Lab -
<http://www.lni.wa.gov/safety/rules/chapter/828/WAC296-828.PDF>
4. Chemicals should be purchased by “Just in Time” procedures. At times, based on a particular need, some chemicals may be purchased quarterly.
5. Generally, attempt to restrict the quantity (solids) to a container of 500 g. If larger quantity containers are requested, a reason should be provided.
6. Restrict the quantity of a solution to a 500 mL container or a 1 L container.
7. All concentrated acids should not exceed 1 L size containers. All acids should be purchased “Just in Time” as needed throughout the year.
8. Concentrated ammonium hydroxide should not exceed a 500 mL container.
9. Flammables should be purchased “Just in Time” throughout the year.

Processing Chemical Requests

1. Chemicals on the “Acceptable Chemical List” are the only chemicals that can be purchased. (All school districts should develop an “Acceptable Chemical List”). See better professional practices noted in Rehab the Lab -
<http://www.lni.wa.gov/safety/rules/chapter/828/WAC296-828.PDF>
2. Provide the catalog number, quantity, and cost for each chemical requested.
3. All chemicals need to be assessed for hazards. (TLV [PEL], LD 50, health hazards, physical/chemical hazards, environmental hazards, National Toxicology Program [carcinogens], disposal)
4. For all chemicals purchased:

- A) An appropriate storage facility shall be available.
- B) Appropriate engineering controls shall be available.
- C) Personal protective equipment shall be available.

5. All chemicals are to be approved by the Chemical Hygiene Officer or safety officer prior to issuing purchase orders.