

The Dos and Don'ts of Chemical Labeling

Information on What's Required to Make Your Lab Safe

At a recent chemistry meeting, a question came up concerning the proper method of labeling a chemical container. Of the 24 chemistry teachers in attendance, not one of them was sure what kind of information was required on a chemical label.

In 1983, OSHA implemented the Hazard Communication Standard (Right-to-Know law). This standard gives teachers, students and parents the right to know about the hazards associated with the chemicals they are using in the classroom/laboratory. The standard requires chemical manufacturers to transmit this safety information to their customers by means of labels and Material Safety Data Sheets (MSDS).

At the time, the only guideline for labeling was that the label must list the "appropriate hazard warnings." In 1994, OSHA clarified this guidance and said that a label must include "the specific physical or health hazard(s) including target organs affected."

OSHA also realized that labels may not be large enough to list every possible warning so they said the label should provide a brief summary of the hazards in a high-lighted form. When a teacher or student needs in-depth information, they should refer to the Material Safety Data Sheet.

Based on what we now know, how should a chemical container or bottle be labeled? We suggest the best approach to proper chemical container labeling is to list these four items on the label.

- 1. Chemical Name**—Spell out the name correctly and completely. Avoid using abbreviations or chemical formulas.
- 2. Concentration**—If the chemical is in solution, indicate the solution's molarity or strength.
- 3. How can the chemical hurt you?**—List in clear terms how the chemical can hurt you and what target organs will be affected. This information can easily be found on your MSDS or in the *Flinn Scientific Catalog/ Reference Manual*. Avoid numerical or alphabetical codes. These codes are difficult to remember and could easily be misinterpreted. Use words that everyone will understand.
- 4. Date Prepared**—Knowing the date the chemical was prepared is very important, especially for those chemicals that have a limited shelf life or become more hazardous with age.

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The label format shows:

- Chemical Name
- Concentration
- Flinn Storage Code Number
- Hazard Warnings
- Date Prepared
- CAS Number
- NFPA Code

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For example, let's say you just prepared a 6 M hydrochloric acid solution. The label should say:

**Hydrochloric acid
6M solution
Corrosive to all body tissue,
especially skin and eyes.
Avoid all body contact.
2011**

Additional information may be required in your state. A few states require the National Fire Protection Association (NFPA) code on the label. Other states may require the Chemical Abstract Services (CAS) number to be on the label.

Finally, remember that this label may need to be on the chemical container for years to come. Avoid using grease pencils and writing directly on the bottle. Always use a permanent marker on label paper that has a good adhesive. Print clearly so everyone can read and understand the label you have prepared.

If you have questions regarding how to label chemical containers, please call us toll free at 1-800-452-1261. We'll gladly help in any way we can.

