

School Frequently Asked Questions

1. Does the Colorado Department of Public Health and Environment regulate schools?

Yes, the [Rules and Regulations Governing Schools in the State of Colorado](#) are applicable to all K-12 schools in the state, public or private.

2. Where can I get Material Safety Data Sheets and/or safety information for the toxics that I have?

Material Safety Data Sheets (MSDS) can be obtained from the supplier or manufacturer of the product. A current MSDS shall be provided for all poisonous, toxic or hazardous substances and shall be available for review upon request. There are also free MSDS and/or chemical safety information websites including but not limited to:

- http://www.flinnsci.com/search_MSDS.asp - Flinn Scientific
- <http://hazard.com/msds/>
- <http://chemfinder.cambridgesoft.com/>
- <http://www.atsdr.cdc.gov/toxfaq.html> –Agency for toxic substances and disease registry
- <http://www.epa.gov/enviro/html/emci/chemref/index.html> – Environmental Protection Agency’s Chemical references page
- <http://www.msds.com/>
- <http://www.cdc.gov/niosh/npg/> - Pocket Guide to Chemical Hazards

3. How do I know which classrooms need eye wash fountains and safety showers?

An easily accessible operational eye wash fountain must be provided in each laboratory or other area where corrosives or irritating chemicals are used. The eye wash fountain shall be clean and must be tested annually. The use of portable eye wash bottles as substitutes is not permitted. Classrooms which may need eye wash fountains include chemistry, biology, art, photography, wood shop, automotive, welding/soldering, etc. Keep in mind that annual testing of safety showers and eye wash stations must be documented. These records must be available for review. The following are examples of websites that provide additional resource information:

- <http://www.flinnsci.com/index.asp> - Flinn Scientific
- <http://www.cdc.gov/niosh/ncpc/ncpc1.html> - Protective Equipment
- <http://www.labsafety.com/refinfo/ezfacts/ezf129.htm> - Testing safety equipment

4. How do I dispose of laboratory chemicals?

The disposal of each chemical is specific to the chemical itself, based on its characteristics and hazards. Some chemicals may be handled onsite while others will require outside assistance. Chemical disposal can be costly. It is recommended that teachers/schools refer to their school districts and/or school boards regarding their policies and procedures for disposal. Procurement controls can also keep costs of disposal and overall costs down. The table below demonstrates the cost difference when more chemical than is needed is purchased at bulk rate prices.

If 1000ml are used...	Amount Purchased	Amount Purchased
	2-500ml packages	1-2500ml bulk package
Unit Cost	6.2/ml	4.2/ml
Purchase Cost	\$62.00	\$104.00
Disposal Cost	\$0.00	\$45.34
Total Cost	\$62.00	\$149.34
Actual Unit Cost	\$6.2/ml	\$15/ml

Another option is for schools to use and dispose of unwanted chemicals cooperatively to minimize the financial costs. The following are examples of websites providing additional resource information:

<http://www.epa.gov/epaoswer/osw/conserveschools/index.htm> - School chemical disposal information

<http://www.flinnsci.com/Sections/FAQ/answers.asp?questID=1&subCatID=1&catID=2> - Flinn Scientific disposal information

<http://www.flinnsci.com/Sections/Safety/chemicalSafety/sevenStepPlan.asp> - Flinn Scientific lab cleanup information

<http://www.cheminfonet.org/> - A Chemical Health and Safety Resource for Schools

<http://cfpub.epa.gov/schools/index.cfm> - Environmental Protection Agency Healthy School Environment

http://www.flinnsci.com/resources_display.asp?catID=8 - Science teacher resources

5. How are different types of chemicals supposed to be stored?

Toxic or hazardous materials shall be stored in approved laboratory containers, separated by reactive group, and stored in a ventilated, locked, area.

Containers of chemicals shall be clearly labeled with the name of the material and the date the material entered the school. All chemicals, solvents, and hazardous substances shall be inventoried by the school a minimum of once a year. The following are examples of websites provide additional resource information:

<http://safety.science.tamu.edu/flammables.html> - Flammable information

<http://safety.science.tamu.edu/toxics.html> - Toxics information

<http://safety.science.tamu.edu/definexplosive.html> - Reactives information

<http://safety.science.tamu.edu/oxidizers.html> - Oxidizers information

6. I found that metal surfaces in my chemical storage area are rusting and/or corroding. What is causing this?

Chemical vapors are attacking the metal. Your chemical storage area is in need of ventilation. Good ventilation, even as little as one air change per hour, would dramatically reduce your corrosion problem.

For metal shelf clips the problem is probably very close by. Look for iodine, iodine solutions or concentrated acids. These are usually the culprits.

To help reduce corrosion of metal shelf clips, spray them with Krylon[®] spray once a year. This liquid plastic will greatly reduce the amount of corrosion.

7. What type of ventilation should I have in my chemical storage area?

The recommended design is to have a fan that does not create an explosion hazard mounted on an exterior wall of your chemical storeroom. Have sheet metal ductwork extend down from the fan to within 12" from the floor. The ductwork should be a minimum of 12" wide and 8" deep. The purpose for this design is to have ceiling to floor ventilation. Most organic vapors are heavier than air and sit at floor level. It follows that air should be ventilated by drawing it from floor level.

It is recommended that the ventilation provide a minimum of 4 air changes per hour. Passive ventilation (e.g. windows) is not acceptable. Avoid having a ventilation system that is either tied in with the rest of the school's ventilation or vents to the open air space of the ceiling as this can result in chemical vapors being distributed into other areas of the school.

8. Are formaldehyde and formalin the same substance?

Formaldehyde, in its basic form, is a gas. Many people think of formaldehyde as a liquid. The liquid is actually a mixture of formaldehyde gas and water. The most common concentration used in school science departments (particularly biology) is a 37% solution. The solution consists of 37 grams of formaldehyde gas to 100 mL of water. To prevent polymerization of formaldehyde solution about 10–15% of methyl alcohol is added. It is the addition of the methyl alcohol that causes the substance to be called formalin as opposed to formaldehyde. It is correct to use the terms formalin and formaldehyde solution interchangeably. When diluting full-strength (37%)

formaldehyde solution, assume it to be 100%. A fixative-strength (10%) solution is therefore a 3.7% solution of formaldehyde gas in water.

9. How do I create a chemical inventory?

[Recommended Procedure for Conducting an inventory](#)

10. How do I create a chemical hygiene plan?

[Chemical Hygiene Plan Development Guidance Document](#)

11. Where can I find a list of chemicals that are restricted and prohibited?

Restricted and prohibited chemicals are listed in the appendix of the [Rules and Regulations Governing Schools in the State of Colorado](#).

12. What is the difference between restricted and prohibited chemicals?

Prohibited chemicals are not allowed in Colorado schools. If you discover chemicals in your inventory that are on the prohibited list, first ensure there are no signs the chemicals are degraded, (i.e., discolored, coagulated, congealed, crystallized). Non-degraded prohibited chemicals should be clearly labeled “not for use” and plans for safe disposal should be made. Prohibited chemicals with signs of degradation should be handled and disposed of by professionals. Ensure the area of storage is secure and contact a disposal company.

Restricted chemicals are chemicals that are for demonstration purposes only or should only be purchased in amounts that can reasonably be used in one year or less. All restricted chemicals must be addressed in a chemical hygiene plan.

[Chemical Hygiene Plan Development Guidance Document](#)

13. Does a kiln need ventilation?

Yes, the heat produced by kilns must be actively removed from the building through a canopy hood or direct ductwork. The kiln’s manufacturer may have recommendations for appropriate hood type and size for your particular piece of equipment.

14. What areas must be equipped with emergency shut off switches?

Emergency gas shut off switches are to be located in each classroom utilizing open flames/Bunsen burners supplied with gas. Emergency power shut offs are to be located in classrooms with power equipment.

Both types of emergency shut offs should be readily accessible and clearly labeled.