



COLORADO
Department of Public
Health & Environment

Guidance Document for Complying
with the *Rules and Regulations*
Governing Schools in the State of
Colorado

Division of Environmental Health and Sustainability

2019

Contents

1.0 Introduction	3
2.0 Overview of the Colorado School Regulations	4
3.0 Assessing Compliance with the Colorado School Regulations	4
A. Drinking Water System	5
B. Non-Public Drinking Water Systems	5
C. Pest Control.....	6
D. Classroom Animals	6
E. Embryology Units	6
F. Live Poultry	8
G. Hygiene	9
H. Disease Prevention.....	10
I. Toileting Assistance and Bowel Hygiene	11
J. Buildings and Grounds	12
K. Equipment and Supplies	14
L. Health Services.....	16
M. Automated External Defibrillators (AEDs).....	18
N. Laboratories and Storerooms - General	19
O. Flammables and Corrosives	27
P. Chemical Hygiene Plan and Laboratory Procedures.....	27
Q. Ventilation and Fume Hood Use and Design	28
R. Safety Equipment.....	29

ATTACHMENT 1 *Rules and Regulations Governing Schools in the State of Colorado, 6 CCR 1010-6*



1.0 Introduction

Schools and health departments share a common goal – to provide a safe and healthy environment for students and teachers. Partnering with your health department to identify potential health and safety hazards in your school is critical to ensuring a safe and healthy environment for all students and staff.

A number of potential health and safety hazards may exist in a school, from unchecked chemical inventories and unsafe power tools to high radon levels and infectious disease transmission. Considerable concern exists with mismanaged chemicals in schools which have caused serious injuries to students and faculty in many states, including Colorado. The National Safety Council estimates that 5000 safety-related accidents occur in American schools each year, and at least 10% are related to science classrooms. Students are also at greater risk of developing health problems from exposure to harmful chemicals. Children's developing organ systems are highly sensitive. Children exposed to toxic substances in the environment are more susceptible than adults because their body systems are still developing, and they eat more, drink more, and breathe more in proportion to their body size than adults.

Infectious diseases caused by organisms such as bacteria, viruses and parasites are a common occurrence in schools. Schools and their surrounding communities may be confronted with

significant challenges when faced with an infectious disease outbreak due to high student absenteeism and parents seeking alternative child care for sick children during the work week. Additionally, children with weakened immune systems and children younger than five years of age are considered highly susceptible to infectious diseases. This means they are more likely to become ill and more likely to experience more severe symptoms and health problems when ill.

A school's awareness of potential health and safety hazards and access to resources to help control them is critical to ensuring a safe and healthy environment for all students and staff. There are many effective methods available to help control hazards from installing adequate ventilation in science laboratories to ensuring students are practicing good handwashing practices. This document is intended to be used by schools as a quick reference guide to provide information about the Colorado school regulations. It includes guidance on how to meet the minimum requirements and how to provide effective oversight to mitigate hazards.

This document contains information to help you learn more about:

1. The *Rules and Regulations Governing Schools in the State of Colorado*, 6 CCR 1010-6 (collectively known as the Colorado school regulations). Assessing your compliance with the regulations.
2. Important documents and forms required to be in compliance with the regulations.

2.0 Overview of the Colorado School Regulations

The Division of Environmental Health and Sustainability (DEHS) and our local health department partners performs oversight of 6 CCR 1010-6, *Rules and Regulations Governing Schools in the State of Colorado* (collectively known as the Colorado school regulations). The Colorado school regulations are included as **Attachment 1** of this document. **Please review the Colorado school regulations in their entirety.** The Colorado school regulations apply to all schools, public and private, kindergarten through grade twelve in Colorado and provide the minimum sanitation requirements for the operation and maintenance of schools as well as the minimum standards for exposure to toxic materials and environmental conditions in order to safeguard the health of school occupants and the general public. If your school has a preschool program or other licensed child care programs they are subject to 6 CCR 1010-7, *Rules and Regulations Governing the Health and Sanitation of Child Care Facilities in the State of Colorado*.

Schools in Colorado are inspected by DEHS and in some cases by our local public health partners. School self-certification forms assessing compliance with Colorado school regulations are also used on a limited basis. Disease outbreak investigations are conducted by DEHS and Local Public Health Agencies in order to help control and eliminate sources of communicable illness affecting school occupants.

3.0 Assessing Compliance with the Colorado School Regulations

This section can be used as a self-assessment and provides a series of questions to help you assess your school's level of compliance with the Colorado school regulations. Answering yes to a question indicates that you are in compliance with the regulations while answering no indicates that you are currently out of compliance. But don't worry, this document is designed to help you gain compliance

in all areas of the assessment. You'll find a description of the regulation section related to each question as well as information and available resources to achieve compliance after each question. Some questions may not apply to all schools.

The following compliance assessment questions are organized by individual areas of the school such as the medical office or science laboratories. Communication with different staff members will be necessary to ensure each question is answered accurately.

A. Drinking Water System

1. Before we start, let's determine the type of drinking water supplied to the school. 6 CCR 1010-6, section 6.7.1(A)

Verify if the school's drinking water comes from a public or non-public water system:

- A. Public water system: services at least 15 service connections or at least 25 individuals at least 60 days per year. If you are on a public water system, please skip to section 3.3, Pest Control.
- B. Non-public water system: any water system that does not meet the definition of a public water system. Schools that operate their own non-public water system must provide treatment on a continuous basis and routinely monitor water for disinfectant levels and bacteria. If you are on a non-public water system, please answer all questions in section 3.2, Non-Public Drinking Water Systems.

Please note: this question is designed to help you determine the type of drinking water supplied to your school. If the water for the building is supplied from a public water system, skip section C, Pest Control.

B. Non-Public Drinking Water Systems

1. Does your drinking water contain free chlorine ranging from a trace amount to 4mg/L at every fixture? 6 CCR 1010-6, section 6.7.1(A)(1)

Having a safe water supply is fundamental to public health. Adequate, uncontaminated, safe drinking water for the needs of the school shall be provided in the building housing the establishment and shall be from a source constructed, maintained, and operated according to the *Colorado Primary Drinking Water Regulations*, 5 CCR 1002-11.

Schools that are considered non-public water systems must treat their water on a continuous basis. These schools must have an N, N diethyl-p-phenylene diamine (DPD) colorimetric drinking water test kit capable of testing free chlorine at an accuracy of 0.1 milligrams per liter (mg/L). The test kit shall be used to verify a chlorine residual of a trace amount to 4 mg/L periodically. A minimum of .2 mg/L and no more than 1.2 mg/L is recommended.

2. Do you conduct quarterly bacteriological sampling? 6 CCR 1010-6, section 6.7.1(A)(1)(b), 6.7.1(A)(1)(e)

Schools that are not on a public water system must test their water for bacteria every quarter.

3. Do you retain your records of quarterly bacteriological samples for the previous 12 months? 6 CCR 1010-6, section 6.7.1(A)(1)(b), 6.7.1(A)(1)(e)

The previous 12 months of bacteriological sample records must be maintained on file at the school. Reports can be a paper or electronic copy as long as it is maintained onsite and available for review.

C. Pest Control

1. Do you use strategies, such as securing points of entry, removing harborage areas, securing food and waste, etc., for long term control of pests where pesticides are used as a last resort? 6 CCR 1010-6, section 6.7.4(A)

Schools must manage pests using the most cost-effective means with the least possible hazard to people, property, and the environment. It is recommended that schools use an integrated pest management program. The Environmental Protection Agency (EPA) provides resources and training on integrated pest management. <https://www.epa.gov/managing-pests-schools>

D. Classroom Animals

1. Are reptiles, amphibians, and live poultry excluded from kindergarten classrooms? 6 CCR 1010-6, section 6.7.4(C)

Live poultry, reptiles, and amphibians are carriers of salmonella and are prohibited as pets in classrooms with children kindergarten age or younger. Children five years old and younger are considered a highly susceptible population. This means that the consequences of illnesses, such as salmonella, tend to be much more severe than that of healthy older children and adults. The animals shed the salmonella bacteria and it can be found throughout the environment. Many outbreaks have occurred where people did not handle the animals. Because infections from these animals spread via fecal-oral transmission, use of these animals in other classrooms where children engage in frequent hand to mouth behaviors is discouraged. More information on salmonella and the risks associated with live poultry, reptiles, and amphibians can be found at <https://www.cdc.gov/healthypets/diseases/salmonella.html>.

E. Embryology Units

1. Please select an option below that best describes classroom participation in embryology units: 6 CCR 1010-6, section 6.7.4(C)(1)

Option A. Classroom(s) participate in embryology units where chicken eggs are hatched in the classroom. If there are classroom(s) that participate in embryology units where chicken eggs are hatched, please answer all questions in section 3.5, Embryology Units.

Option B. Classrooms do not participate in embryology units where chicken eggs are hatched in the classroom. If there are not classroom(s) that participate in embryology units where chicken eggs are hatched, please skip to section 3.6, Live Poultry.

Embryology units can be a great learning tool for children but can create a major health risk if not implemented with caution. Children in kindergarten may not handle eggs, live birds, or their enclosures.

Schools that participate in embryology units or that raise live poultry on-site must contact their local public department immediately if there are two or more gastrointestinal illnesses identified, within a similar timeframe, in children or staff who have contact with the eggs, incubators, brooding boxes, live poultry, or chicken coops.

Please note: this question is informational only and does not indicate compliance. Schools not participating in embryology units where chicken eggs are hatched in the classroom can skip to Section 3.6.

2. Are eggs and chicks contained in incubators and brooding boxes at all times?
6 CCR 1010-6, section 6.7.4(C)(1)(a)

Salmonella and other pathogenic bacteria can be found on the eggs and the chicks can shed the bacteria. Chicks under stress will shed higher numbers of bacteria. Because of this it is important to keep eggs in incubators and the chicks in the brooding boxes.

3. Are incubators and brooding boxes constructed of easily cleanable materials and placed in an area without carpet? 6 CCR 1010-6, section 6.7.4(C)(1)(b)

It is difficult to clean and disinfect carpet and other surfaces that are absorbent or not smooth. Having surfaces that are non-absorbent, smooth and in good repair will allow for easy cleaning and disinfecting.

4. Is the area disinfected daily with an approved disinfectant with a contact time of 5 minutes or less? 6 CCR 1010-6, section 6.7.4(C)(1)(c)

Because of salmonella and other pathogenic bacteria from chicks and eggs it is critical to disinfect the area of the incubator and brooding box at least daily. The disinfectant used shall be registered with the Environmental Protection Agency and designated to be used on surfaces contaminated with high hazard body fluids (blood, urine, feces etc.). The contact time of the disinfectant must be five minutes or less and the disinfectant must be used according to the instructions on the label.

5. Are only children first grade and older permitted to handle the eggs, live birds, or their enclosures? 6 CCR 1010-6, section 6.7.4(C)(1)(e)

Children younger than five years of age are considered highly susceptible to infectious diseases carried by animals such as chickens, reptiles, and amphibians. This means that they are more likely to get sick when exposed to bacteria and the consequences of illnesses, such as salmonella, tend to be much more severe than in healthy older children and adults. Young children also exhibit more hand to mouth behaviors and may not do as good of a job washing their hands. Therefore, it is critical to prevent these young children from handling these types of animals and birds, their eggs and enclosures that may be contaminated with harmful bacteria.

6. Are children and staff in classrooms with embryology units washing their hands with soap and water before meals and snacks? 6 CCR 1010-6, section 6.7.4(C)(1)(g)

All children are required to wash their hands prior to eating and it is especially important for children and staff in classrooms with embryology units. When harmful bacteria from chicks and eggs are ingested it can make people sick. The bacteria can be transmitted to hands through direct and indirect contact with eggs, animals, and their enclosures. Additional supervision should be given around embryology units to assure that proper handwashing occurs.

7. Are children and staff prohibited to eat in the classroom where embryology units occur even during times of inclement weather? 6 CCR 1010-6, section 6.7.4(C)(1)(i)

Children and staff should never eat in classrooms used for an embryology unit because harmful bacteria from birds, animals and their enclosures can be found on surfaces in the environment such as tables. When people ingest these bacteria they can become ill. Therefore, no one should eat in these classrooms. Meals and snacks should be eaten in the school cafeteria or another location where animals are not present.

F. Live Poultry

1. Please select an option below that best describes the presence of live chickens on the school premises: 6 CCR 1010-6, section 6.7.4(C)(2)

Option A. Live chickens are present on the school premises. If live chickens are present on the school premises, please answer all questions in section 3.6, Live Poultry.

Option B. Live chickens are not present on the school premises. If live chickens are not present on the school premises, please skip to section 3.7, Hygiene.

Chickens can be a great learning tool for children but because of the risk of illness it is important to use caution with these animals. Kindergarten age children and younger may not handle poultry, eggs, or have direct contact with chicken coops.

Schools that participate in embryology units or that raise live poultry on-site must contact their local public department immediately if there are two or more gastrointestinal illnesses identified, within a similar timeframe, in children or staff who have contact with the eggs, incubators, brooding boxes, live poultry, or chicken coops.

Please note: this question is informational only and does not indicate compliance. If live chickens are not raised on the school grounds skip to Section 3.7.

2. Are chickens contained in a coop? 6 CCR 1010-6, section 6.7.4(C)(2)(a)

Chickens must be contained in a coop for the protection of all children and adults that use the outdoor area.

3. Is handling of the eggs, live birds, or their enclosures restricted to children first grade and older? 6 CCR 1010-6, section 6.7.4(C)(2)(c)

Children younger than five years of age are considered highly susceptible to infectious diseases carried by animals such as chickens, reptiles and amphibians. This means that they are more likely to get sick when exposed to bacteria and the consequences of illnesses, such as salmonella, tend to be much more severe than in healthy older children and adults. Young children also exhibit more hand to mouth behaviors and may not do as good of a job washing their hands. Therefore, it is critical to prevent these young children from handling these type of animals and birds, their eggs and enclosures that may be contaminated with harmful bacteria.

4. Is an alcohol based hand sanitizer with at least 60% alcohol provided at the entrances and exits of the coop? 6 CCR 1010-6, section 6.7.4(C)(2)(d), 6.7.4(C)(2)(f)

Studies have shown that hand sanitizer with at least 60% alcohol is the most effective against harmful bacteria. More information on the use of hand sanitizer can be found at <https://www.cdc.gov/handwashing/show-me-the-science-hand-sanitizer.html>.

5. Are signs posted at the entrances and exits of the coop instructing children and staff to use the hand sanitizer and wash their hands after contact with the birds and their enclosures? 6 CCR 1010-6, section 6.7.4(C)(2)(d), 6.7.4(C)(2)(f)

Signage must be highly visible and clearly state that hand sanitizer must be used immediately following contact with the chickens or the coop and that hands must be washed immediately upon returning to the building.

6. Do adults and children use hand sanitizer after contact with the coop, chicken, or eggs and then immediately wash their hands with soap and water upon returning to the building? 6 CCR 1010-6, section 6.7.4(C)(2)(e)

While hand sanitizer is not an acceptable alternative to handwashing it is an effective tool that can be used temporarily until children and staff have access to running water and soap.

G. Hygiene

1. Do children wash their hands with soap and water prior to eating, after using the restroom, and at other times hands become contaminated? 6 CCR 1010-6, section 6.7.6(A)

Schools shall take active steps to ensure hands are washed before eating, after using the restrooms, and at any other time hands may become contaminated. Research has found that handwashing education and access to soap in schools can help improve attendance. More information on this can be found at <https://www.cdc.gov/handwashing/why-handwashing.html>.

2. Are all handwashing sinks supplied with hot and cold running water between 90°F to 120°F, soap, and paper towels? 6 CCR 1010-6, section 6.7.6(C)

Warm water, soap, and paper towels are essential parts of adequate handwashing. Water at handwashing sinks accessible to children must never exceed 120°F due to the risk of burns and scalds. Sinks should be regularly monitored for these three items and resupplied immediately when necessary. Information on the proper hand washing procedure can be found at <https://www.cdc.gov/handwashing/show-me-the-science-handwashing.html>

3. Is the use of hand sanitizer in place of handwashing limited to locations away from the building where there is no access to handwashing facilities? 6 CCR 1010-6, section 6.7.6(C)

While hand sanitizer cannot replace handwashing within a school building it or other approved methods to clean hands must be used away from the building when there is no access to handwashing facilities. The hand sanitizer used should contain at least 60% alcohol. More information on the use of hand sanitizer can be found at <https://www.cdc.gov/handwashing/show-me-the-science-hand-sanitizer.html>.

H. Disease Prevention

1. Do you have a surface sanitizer that is EPA registered and manufactured for the sanitization of commonly touched surfaces? 6 CCR 1010-6, section 6.7.6(E)

Only products that are EPA registered may be used for the sanitization of commonly touched surfaces. The EPA registration process is essential to assuring that products are properly labeled with directions for appropriate use. This also prevents chemical manufacturers from making false claims. It is the responsibility of anyone using a chemical to read the labeled instructions on the product. Products must always be used according to the labeled instructions. Look for the EPA registration number and the instructions for use on all products.

EPA Reg No. 84745-4-86366
EPA Est. 72027-IL-01 (AA),
37256-MS-01 (AB)
37256-CA-01 (AC)
ESL072415 REV072615

You may see several numbers on a label. You want to look for the EPA Reg. No. On this particular label the EPA Registration Number is first number listed and is 84745-4-86366.

Directions for Use: It is a violation of Federal Law to use this product in a manner inconsistent with its labeling. Not for cleaning or sanitizing skin. Do not use as a diaper wipe or personal cleansing. **To Disinfect:** Use to disinfect hard, nonporous surfaces. Wipe surfaces to be disinfected. Use enough wipes for treated surface to remain visibly wet for 4 minutes. To kill viruses let stand 15 seconds. Let surface dry. For highly soiled surfaces, clean excess dirt first. **To Clean and Remove Allergens:** Wipe surface clean with this product. Let air dry. **To Sanitize:** Use to sanitize/deodorize hard, nonporous non-food contact surfaces. Wipe surface. Use enough wipes for the treated surface to remain visibly wet for 10 seconds. Let surface dry. For highly soiled surfaces, clean excess dirt first. For surfaces that may come in contact with food, a potable water rinse is required. This product is not for use on dishes, glassware, or eating utensils. This product will not harm most surfaces, including acrylic, sealed fiberglass, sealed granite, finished hardwood and vinyl. Not recommended for use on unpainted wood and unfinished, unsealed unpainted waxed, oiled or worn surfaces. Test small area first.

You will likely see a lot of information on the directions for use. You want to refer to the directions "To Sanitize" when sanitizing commonly touched surfaces such as desks, light switches etc. The directions must be followed, including whether or not children should be allowed to apply the chemical.

If you do not find all of the information you are looking for on the label you can obtain the full EPA registration information at this site: <http://npirspublic.ceris.purdue.edu/state/default.aspx>. You can search by entering the EPA Registration Number, product name, manufacturer, or active ingredient. If you ever have questions about a specific product do not hesitate to contact CDPHE or your local health department.

2. Do you clean and sanitize commonly touched surfaces (desks, chairs, computer key boards etc.) a minimum of once per week? 6 CCR 1010-6, section 6.7.6(E)

Sanitize means the application of a process or bactericidal treatment, registered with the U.S.

Environmental Protection Agency, for a period of time sufficient to reduce the bacterial count, including pathogens, to a safe level. Sanitizing commonly touched surfaces is important to control the spread of illnesses. During times of increased illness, or at the discretion of school health personnel, a stronger treatment or disinfectant meeting the approval criteria in Section 6.7.6(F)(1) may be used on these surfaces in place of a sanitizer. If a disinfectant is used on a table or other surface that is used for meals and snacks it must be washed, rinsed, and sanitized after disinfection.

3. Are personal items such as protective eye wear or headphones cleaned and sanitized between users if children are not supplied with their own? 6 CCR 1010-6, section 6.7.6(E)

Shared personal items such as protective eye wear and headphones can spread germs between students if they are not properly sanitized between users. Sanitizing these items can be done with sanitizer solutions, wipes or UV light cabinets designed for sanitizing. Anytime these items are shared between users, they should be sanitized before use.

4. Do you have a disinfectant that is EPA registered and manufactured for the disinfection of surfaces contaminated with high hazard body fluids (vomit, feces, blood, other body fluids containing blood)? 6 CCR 1010-6, section 6.7.6(F)

Just as with sanitizers, disinfectants must be EPA registered and have instructions for use for disinfecting. While not required, it is strongly recommended that disinfecting products be effective against norovirus. Norovirus is a highly contagious virus and billions of viral particles are found in the vomitus and feces of an affected person. In fact, 86% of outbreaks in schools in Colorado between 2010 and 2017 were caused by norovirus. It only takes a small number of viral particles to make someone sick. When someone vomits or has a diarrheal accident, the virus particles can be found up to 25 feet from where the incident occurred, making it essential to disinfect a large area around the area immediately following an incident. A list of disinfectants effective against norovirus can be found at: https://www.epa.gov/sites/production/files/2018-04/documents/list_g_disinfectant_list_3_15_18.pdf.

5. Are surfaces contaminated with high hazard body fluids immediately cleaned and disinfected using an EPA registered disinfectant? 6 CCR 1010-6, section 6.7.6(F)

Each school should have written procedures addressing the clean-up and disinfection of high hazard body fluids (blood, urine, vomitus, feces, fluids containing blood).

Additionally, schools should have clean up kits in conveniently located in areas throughout the building. All staff should be trained on the appropriate protocol so they know their role even if it is to clear the area and call for assistance. Detailed clean up procedures can be found in the guidance [Infectious Diseases in Child Care and School Settings](#).

I. Toileting Assistance and Bowel Hygiene

1. Please select an option below that best describes student toileting assistance and/or bowel hygiene care needs at the school: 6 CCR 1010-6, section 6.7.7

Option A. There are students that require toileting assistance and/or bowel hygiene care. If there are students that require toileting assistance and/or bowel hygiene care, please answer all questions in section 3.9, Toileting and Bowel Hygiene.

Option B. There are not students that require toileting assistance and/or bowel hygiene care. If there are not students that require toileting assistance and/or bowel hygiene care, please skip to section 3.10, Building and Grounds.

It is not uncommon to have students with special needs or medical conditions that require toileting assistance and/or bowel hygiene care. Feces especially can contain harmful bacteria, viruses, and

parasites that can make someone very ill if appropriate procedures are not followed.

Please note: this question is informational only and does not indicate compliance. Schools that do not provide toileting assistance and bowel hygiene can skip to Section 3.10, Building and Grounds.

2. **Is there a designated changing area away from food preparation, near a hand washing sink, and adjacent to an easily cleanable lined trash receptacle to dispose of waste that is inaccessible to students?** 6 CCR 1010-6, sections 6.7.7(A)(1)(a-d)

The location of a changing area is critical to prevent the spread of illness. The changing area must be large enough to accommodate the size of the child. It should never be near where food is prepared or stored. A handwashing sink must be nearby. Ideally, the handwashing sink should be adjacent or within arm's reach of the changing area. A lined trash receptacle also needs to be stored near the area but inaccessible to children. Items unrelated to changing must never be stored in the changing area.

3. **Please review section 6.7.7 (A)(3)(a-f) of the Colorado School Regulations. Does your diapering procedure follow these steps?** 6 CCR 1010-6, section 6.7.7(A)(3)(a-f)

The following procedure must be followed each time bowel or bladder hygiene is provided:

1. Whenever bowel or bladder hygiene is conducted, individuals must wear a new pair of disposable gloves prior to beginning.
2. The student must be cleaned wherever necessary.
3. Soiled diapers/underwear and clothing must be replaced with clean diapers/underwear and clothing.
4. Soiled cloths must be placed in a plastic bag for parents or guardians to take home. Soiled diapers must be placed in a covered, impervious plastic lined receptacle.
5. The student's hands must be washed.
6. Any contaminated surface must be cleaned and disinfected.
7. The staff member must then thoroughly wash his/her hands.

It is strongly recommended that the people responsible for bowel/bladder hygiene do not handle food.

J. Buildings and Grounds

1. **Does the school have an asbestos management plan available for review or documentation that the school has been constructed with non asbestos-containing materials?** 6 CCR 1010-6, Section 6.8.1(E)(1)

Asbestos is the name given to a number of naturally occurring minerals that have been mined for their useful properties such as thermal insulation, chemical and thermal stability, and high tensile strength. Asbestos is made up of microscopic bundles of fibers that may become airborne when disturbed. If these fibers get into the air, they can be inhaled into the lungs where they may cause significant health problems such as asbestosis, mesothelioma, and lung cancer.

Asbestos-containing materials (ACM) in good condition should not pose a hazard to building occupants. If these materials can be maintained in good condition, it is recommended that they be left alone and periodic surveillance performed to monitor their condition. It is only

when ACM is disturbed or the materials become damaged that it becomes a hazard. When the materials become damaged, the fibers separate and may then become airborne.

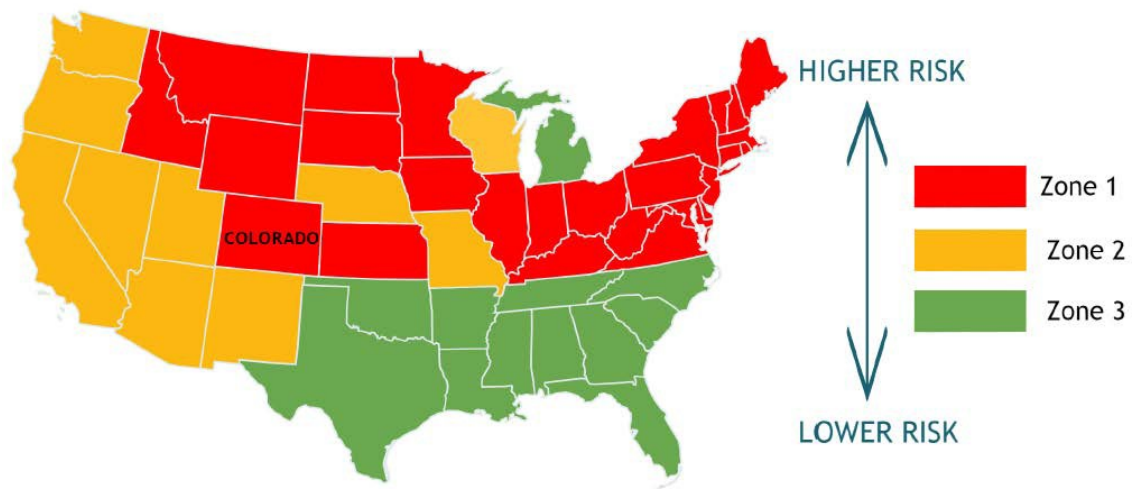
The asbestos management plan or documentation that the school has been constructed with non asbestos-containing materials must be available onsite at the school.

More information about asbestos can be found at:

<https://www.colorado.gov/pacific/cdphe/asbestos-general-information>

2. Have all frequently occupied spaces (classrooms, offices, gymnasiums, cafeterias etc.) in contact with the ground and 10% of spaces on the second level been tested for radon? 6 CCR 1010-6, Section 6.8.1(E)(2)

Radon is a radioactive gas which is formed by the breakdown of uranium in the soil. Radon enters buildings through small cracks in the foundation. Radon is the leading cause of lung cancer in non-smokers and accounts for 21,000 deaths annually. Colorado has higher levels of indoor radon than many other states.



Schools must test for radon within 19 months of occupancy. Testing must follow the American Association of Radon Scientists and Technologists (AARST) Protocol for Conducting Measurements of Radon and Radon Decay Products in Schools and Large Buildings, 2015. While the regulations only require testing one time, it is recommended that testing be conducted every five years due to shifting building foundations and general wear and tear.

All frequently occupied spaces in contact with the ground and 10% of rooms on upper levels, if applicable, are to be tested. Below you'll find the areas of the school that do need to be tested and those that do not.

Room/Area	Test	No Test
Auditorium	X	

Bathrooms/locker rooms		X
Boiler room(unless used as an office)		X
Break rooms/ teacher work rooms	X	
Cafeteria/Gymnasium	X	
Classrooms	X	
Cleaning supply closet (unless used as an office)		X
Conference rooms	X	
Hallways		X
Kitchen office	X	
Kitchens		X
Library/Media Center	X	
Music practice rooms	X	
Offices	X	
Pool areas		X
Security offices	X	
Storage only rooms		X
Temporary buildings	X	
Vocational classrooms	X	

Common mistakes that schools make when testing for radon:

1. Testing when the school is closed for a break. Radon testing should always be conducted during normal operating times between November and April.
2. Not following the required protocol. It is important to assure that all required spaces are tested. The protocol also requires the use of blanks and duplicates as well as conducting a percentage of tests on secondary levels.
3. Not taking note of where each individual test kit is placed so that results can be easily matched up to the appropriate location.
4. Having too much or too little communication. Having a communication plan when conducting radon testing is important to eliminate unnecessary fear from staff, children and parents.

More technical information on testing and communication can be found at:

<https://environmentalrecords.colorado.gov/HPRMWebDrawerHM/Recordview/403347>

K. Equipment and Supplies

1. Is instructional, athletic, recreational and other equipment used in or out of the classroom maintained clean and in good repair? 6 CCR 1010-6, Section 6.10(A)

Equipment must be maintained in good repair so it is easily cleanable and kept clean. Items that are not easily cleanable or regularly cleaned can harbor harmful viruses and bacteria that can cause illness.

2. Are body contact surfaces of gym equipment sanitized regularly and at least weekly? 6 CCR 1010-6, Section 6.10(C), 6.7.6(E)

Body contact equipment includes items such as mats and weight room equipment. Ideally these surfaces should be sanitized after each use but no less than one time per week. The sanitizing solution used must meet the requirements in Section 6.7.6(E). A disinfectant meeting requirements in Section 6.7.6(F) may be used at the discretion of school personnel given that the product is appropriate for use on surfaces that have contact with skin and all manufacturer instructions are followed.

3. Is equipment used in physical therapy and/or special education cleaned and sanitized between each use? 6 CCR 1010-6, Section 6.10(D)

The sanitizing solution used must meet the requirements in Section 6.7.6(E). A disinfectant meeting requirements in Section 6.7.6(F) may be used at the discretion of school personnel given that the product is appropriate for use on surfaces that have contact with skin and all manufacturer instructions are followed. If the surface is also used for eating or if the item might be placed in a child's mouth then disinfecting must be followed with a wash, rinse, and sanitize step.

4. Are clean clothing, athletic, instructional, and recreational equipment, clothing and supplies stored to promote easy cleaning and prevent health hazards? 6 CCR 1010-6, Section 6.10(E)

Clean clothing, athletic, instruction, and recreation equipment should never be stored in bathrooms or other areas where they may become contaminated.

5. Are cleaning chemicals, equipment, and tools stored in a designated well ventilated area inaccessible to children? 6 CCR 1010-6, Section 6.10(G)

Cleaning supplies and other hazardous items should always be stored inaccessible to children. Ventilation is important to avoid noxious odors. Ventilation is not required in areas where there are limited quantities of chemicals for daily use. In areas where 10 or more gallons of flammable substances are stored they must be stored in a flammable cabinet.

6. Are Safety Data Sheets (SDS) for cleaning and maintenance chemicals maintained in an area away from where the chemicals are stored? 6 CCR 1010-6, Section 6.10(F)

Current Safety Data Sheets (SDS) for pesticides, toxic or hazardous cleaning and maintenance chemicals and materials shall be maintained and organized in an easily

searchable format (e.g., alphabetically filed). The documents must be easy to locate in the event of a spill or accidental exposure. A copy of the SDS shall be kept on file in a location away from the areas where the aforementioned chemicals are stored. It is recommended that schools keep SDS in a binder in the main office. Digital or other electronic versions of SDS may be approved at the discretion of the local fire authority.

7. **Are sleeping facilities with easily cleanable cots or pads with washable or disposable covers provided where sleeping is permitted, such as the health office or kindergarten rooms? 6 CCR 1010-6, Section 6.10(H)**

All sleeping cots/mats/pads must be non-absorbent for easy cleaning and sanitizing or disinfecting. Covers may be washable or disposable and must be washed or changed between each child.

8. **If laundry is provided onsite, does either the wash water or dryer reach 140° F? 6 CCR 1010-6, Section 6.10(I)**

A temperature of at least 140°F must be reached in either the washing machine or dryer in order to properly sanitize laundry. To achieve this, the highest temperature setting should be selected for wash and dry cycles. If the washer and/or dryer has a sanitizing cycle this should be selected. The temperature should be verified periodically using a probe thermometer. For top loading machines, the water can be measured while the water is running with the washer door open. The dryer temperature can be verified by measuring the temperature of drying items with the same probe thermometer.

L. Health Services

1. **Are all children in the school either up-to-date on their immunizations, documented as In-process, or documented as exempt? 6 CCR 1010-6, section 6.13 (A)**

Schools are required to have an official Colorado Certificate of Immunization form, exemption form or written documentation of a student being In-Process on file for each enrolled student demonstrating that they are either up-to-date on their immunizations, In-process, or exempt. This requirement can be found in 6 CCR 1009-2, *Rules Pertaining to the Infant Immunization Program, the Vaccines for Children Program, and the Immunization of Students Attending School*: <https://www.sos.state.co.us/CCR/GenerateRulePdf.do?ruleVersionId=7698&fileName=6%20CCR%201009-2>

Official Colorado Certificates of Immunization and exemption forms may be maintained on file or accessed through the Colorado Immunization Information System (CIIS) <https://ciis.state.co.us/ciis/Login.aspx> . Immunization records on non-official forms are not acceptable and must be transferred on to the official form by the school or student's medical provider.

2. **Are basic first aid kits (containing unexpired gauze pads, rolled gauze, adhesive tape, cold pack, plastic bags, disposable gloves, band-aids, hand cleaner, small flashlight and extra batteries, scissors, and a blanket) kept conveniently located for emergency use? 6 CCR 1010-6, section 6.13 (B)**

This list of required first aid equipment items is the minimum standard for health care rooms. Items should be inspected routinely and expired items discarded and replaced as needed.

3. At all times during the school day and during school sponsored events, is there at least one person with a current certification in CPR and First Aid? 6 CCR 1010-6, section 6.13 (C)

At least one school staff member with a current certification in Standard First Aid and Cardio Pulmonary Resuscitation (CPR) from a nationally recognized course must be on- site during the school day and any school-sponsored trips and events, including, but not limited to, off-site field trips (both single day and overnight trips), athletic events and races, plays, fundraisers, and other school social events.

This requirement does not apply in situations specific to individual student activities such as, but not limited to, the following:

- Students being transported by district buses to and from school; or
- Students completing individual internships or other similar programs during school hours; or
- Students completing classes at a university during school hours; or
- Students volunteering and/or completing extra-credit outside of school hours, unless it is a school sponsored volunteer project involving more than one student; or
- Student clubs or organizations where meetings are held off-site after school hours and a school staff member is not present.

Nationally recognized training courses must meet current standards of the American Heart Association or American Red Cross. Training courses may be traditional classroom or blended online/classroom instruction and must include cognitive learning, hands-on practice and testing. Online-only courses do not meet the requirement. Students completing a blended instruction training course must complete the demonstration portion of the course with a certified instructor.

Current certificates of completion or alternative documentation certifying completion of an approved CPR and First Aid kit must be maintained on file.

4. Is there a separate space in the school to care for ill or injured students? 6 CCR 1010-6, section 6.13 (E)

A separate space or area of the school must be designated for use in providing care for persons who are ill, or suspected of having communicable diseases. This can include the health care room.

5. Is every health care room located within 50 feet of a bathroom and at least one cot provided for every 400 students? 6 CCR 1010-6, section 6.13 (F)

Health care rooms must have an easily accessible restroom within 50 feet for use by students receiving care. A handwashing sink with hot and cold running water must be located inside of the restroom. Health care rooms must also have at least one cot provided for every 400 students.

6. Are cots and pillows cleaned and sanitized after each use? 6 CCR 1010-6, section 6.13(F)

Cots and pillows used in the health care room shall have an easily cleanable, non- absorbent surface or cover and must be maintained in good repair. A sanitizer or disinfectant product approved in accordance with section 6.7.6 (E) and (F) must be applied in accordance with product labeling on the surfaces of the cot and pillow between uses.

7. Is a written all hazards plan for handling disasters, including large outbreaks, reviewed and tested periodically? 6 CCR 1010-6, section 6.13(L)

Standardized protocols for basic emergency actions and plans for handling large scale outbreaks must

be addressed in a formal written plan. These plans must be reviewed and tested on a routine basis.

The basic emergency actions should include procedures for:

1. Lockdown
2. Lockout (Secured Building)
3. Shelter-in-Place (Includes Weather Shelter)
4. Evacuation
5. Release and Reunification

Additional resources and templates for the development of emergency action plans are available here:

<https://www.colorado.gov/pacific/cssrc/cssrc-tools-and-templates>

Plans to handle large scale outbreaks should include protocols that cover all phases of an outbreak including: preparedness before an outbreak, response during an outbreak, and recovery following an outbreak. Additional resources for the development of large scale outbreaks are available here:

<https://www.cde.state.co.us/healthandwellness/coloradoemergencyguidelinesforschools-2016-pdf>

8. Are symptoms of communicable illnesses monitored for trends and suspected outbreaks reported to the health department? 6 CCR 1010-6, section 6.13(M)

Illness caused by infectious diseases are a common occurrence in school settings. Common symptoms that could be related to an infectious disease include but are not limited to diarrhea, fever, cough, jaundice, headache, rash, stomach ache, and vomiting.

Monitoring and understanding the baseline rate of illness within your school is important to determining what is normal. Elevated rates of illness may be the start of an outbreak. Contacting your local public health department for guidance immediately after noticing an unusual change in your baseline rate of illness is critical to help control and prevent the further spread of disease. It is important to also keep in mind that the start of some types of outbreaks can be even less noticeable initially, such as foodborne illness outbreaks which are defined as two or more persons ill with similar symptoms within a similar timeframe after ingesting the same food item.

Outbreaks resulting from any cause must be reported to your local public health department immediately.

Schools that participate in embryology units or that raise live poultry on-site must contact their local public department immediately if there are two or more gastrointestinal illnesses identified, within a similar timeframe, in children or staff who have contact with the eggs, incubators, brooding boxes, live poultry, or chicken coops.

For additional information, see the guidance document: Infectious Diseases in Childcare and School Settings Guidelines for Child Care Providers, School Nurses, and Other Personnel:

<https://drive.google.com/file/d/12NZoSBRjN5s4rFCNKAcu2RCzELeUT5nC/view>

M. Automated External Defibrillators (AEDs)

Please select an option below that best describes the availability of Automated External Defibrillators (AEDs) in the school:

Option A. There is at least one AED available in the school. If you have an AED in the school, please answer all questions in section 3.13, Automated External Defibrillators (AEDs).

Option B. There no AEDs available in the school. If you do not have an AED in the school, please skip

to section 3.14, Laboratories and Storerooms - General.

Please note: this question is informational only and does not indicate compliance. Schools without AED units are finished and can skip to section 3.14.

- 1. Are AEDs maintained and tested according to the manufacturer's operational guidelines and written records of maintenance maintained? 6 CCR 1010-6, section 6.13 (D)**

Regular testing and maintenance of AEDs in your school is critical to ensuring their proper operation if and when they are used. Refer to the specific guidance and testing frequency provided in the manufacturer's operational manual or product literature to determine the proper procedure and frequency of testing.

Document in writing all routine testing and maintenance performed on each device. Include the date, name and signature of the person who tested the device, and a description of the activity. Consider maintaining separate log sheets stored with or near each device and a central log sheet for all units. A digital copy can also be maintained but not in place of a written log.

- 2. Are the personnel that are authorized to use AEDs trained in CPR and AED through a course that meets nationally recognized standards? 6 CCR 1010-6, section 6.13 (D)**

Staff authorized to use AEDs must complete a certified training course in CPR and AED. Certified training courses must meet nationally recognized standards that conform to current American Heart Association or American Red Cross guidelines. Training courses may be traditional classroom or blended online/classroom instruction and must include cognitive learning, hands-on practice and testing. Online-only courses do not meet the requirement. Students completing a blended instruction training course must complete the demonstration portion of the course with a certified instructor.

- 3. Are written plans in place that are reviewed and approved by a licensed physician which cover the placement of AEDs, training of personnel, pre-planned coordination with the emergency medical services system, medical oversight, AED maintenance, identification of personnel authorized to use AEDs, and reporting of AED utilization? 6 CCR 1010-6, section 6.13 (D)**

AED location(s), maintenance procedures, staff training and authorization, coordination with medical services, and medical oversight must all be addressed in a written plan that is reviewed and approved by a licensed physician. The plan must be reviewed routinely and updated as needed. Regularly scheduled staff training on the use of the AED must also be conducted in accordance with the plan.

Additional information and available written AED plan templates are available here:
https://cpr.heart.org/AHA/ECC/CPRECC/Programs/CPRInSchools/UCM_477994_Card_iac-Emergency-Response-Plan.jsp

N. Laboratories and Storerooms - General

Please note: Section 3.14-3.18 apply only to schools with science laboratories using laboratory grade chemicals. Most elementary schools do not use laboratory grade chemicals in science laboratories and the following questions will likely not apply.

- 1. Have you conducted an inventory of chemicals in your science laboratories and storeroom in the last 12 months? 6 CCR 1010-6, section 6.12.3(F)**

Having an accurate and up-to-date chemical inventory is fundamental to properly manage chemicals and control hazards. All chemicals, solvents, and hazardous substances must be inventoried by the school a minimum of once a year. When inventorying chemicals, be sure to identify prohibited and restricted chemicals, assess which chemicals are not used and should be disposed of, and ensure that chemicals have not deteriorated. The inventory should include all chemicals, compounds, products and wastes that are used in science activities and stored in your storeroom.

Plan before you start. You should not work alone unless you are competent and your inventory is in good shape. Do not involve students unless they are fully supervised and their actions structured and controlled. Always wear appropriate personal protective equipment.

Old chemicals may be unstable. Some chemicals form explosive compounds as they age. If in doubt, call for help.

The inventory must include:

- name of the compound;
- amount of the chemical;
- identification of restricted or prohibited chemicals; and
- date the chemical entered the school.

Other recommended information includes:

- the materials CAS number;
- the manufacturer's name;
- the size and type of container;
- characterization of the contents (i.e., percent solid/liquid, presence of crystals);
- shelf life characterization;
- storage location;
- compatible family designations; and

2. Are hard copies of the inventory maintained with one copy in the storeroom and one copy at a location away from the storeroom (e.g. Front office)? 6 CCR 1010-6, section 6.12.3(F)

A copy of the inventory should be kept in the storeroom, available for reference. A copy must be kept on file in a location away from the areas where the materials are stored such as the front office. This remote copy allows emergency response team's access to the inventory in case of a fire, explosion, or release at the storeroom. A copy of the inventory shall be provided to the local fire department and local emergency planning committee upon request.

3. Have you labeled all your laboratory chemicals properly? 6 CCR 1010-6, section 6.12.3(B)

Whenever feasible, store chemicals in the containers in which they were received and retain the vendor's labels. Containers of chemicals, poisons, corrosive substances and flammable liquids must be clearly labeled with:

- chemical name;

- original quantity of the material;
- the date the material entered the school; and
- restricted chemicals should be labeled “restricted” or otherwise identified.

Other label information should include:

- necessary handling and hazard information; and
- shelf life (or expiration date).

Secondary containers and/or prepared solutions intended for storage must have labels that include:

- chemical name;
- concentration;
- if applicable, the formula (including solvent);
- date of preparation; and
- disposal date.

Other secondary container labeling information should include:

- necessary handling and hazard information;
- name of the person who prepared the solution;

When chemicals are spent, expired, or no longer used, they become waste. Colorado Hazardous Waste Regulations recommend that containers that contain hazardous waste be labeled with the words “hazardous waste”.

When hazardous wastes are offered for shipment through a registered hazardous waste transport company, Department of Transportation labeling requirements must also be followed. Your hazardous waste transport company usually handles these naming requirements for you.

4. Have you organized required Safety Data Sheets (SDSs) in an easy-to-use manner and in a location known to personnel? 6 CCR 1010-6, section 6.12.1(C)

SDSs contain information on a chemical’s physical data (melting point, boiling point, flash point, etc.), toxicity, health effects, first aid, reactivity, and compatibility. An SDS will also contain information of proper disposal, personal protective equipment (PPE), and spill-handling procedures.

Ensure that all required safety controls as outlined in the SDS such as using mechanical ventilation and PPE are available and implemented before using the chemical. Information regarding chemical safety measures can be found primarily in Section 8 of the SDS: “Exposure Controls, Personal Protection”. Do not use a hazardous chemical unless all safety measures as directed by the SDS can be followed.

A current SDS must be maintained and accessible onsite for all poisonous, toxic, and hazardous substances. SDSs are intended to provide school personnel and emergency personnel with procedures for handling and disposing of a substance in a safe manner.

The collection of SDSs for all chemicals used in the classroom should be provided in an organized

and easily searchable format (e.g., alphabetically filed). Using alphabetical index tabs is recommended as a convenient way to ensure that SDSs can be found quickly in the event of an emergency. They are only useful if they are up-to-date and readily available for those who use them.

Printed copies of SDSs should also be kept on file in a location away from chemical storage (the front office, for example). Digital or electronic versions of SDSs may be approved only at the discretion of the local fire authority. Documentation evidencing approval for electronic maintenance of SDSs must also be kept on file for review.

To obtain a copy of a SDS, contact the chemical manufacturer or visit their website. Many SDSs can also be found online at websites such as Siri MSDS Index. Links to online resources are included below:

- Siri MSDS Index (<http://hazard.com/msds/>)
5. **Have you ensured that chemicals in your laboratories are not stored with incompatible chemicals or in potentially incompatible configurations?** 6 CCR 1010-6, sections 6.12.1(D) and 6.12.3(A)

Some chemicals in a laboratory setting are incompatible with each other, and undergo potentially dangerous chemical reactions when mixed. Incompatible chemical reactions may cause an imminent threat to health and safety through an explosion, fire, or formation of toxic materials. Common incompatible storage scenarios include storing bases next to acids, or flammable materials next to oxidizers.

All chemicals and hazardous wastes in your laboratory and storeroom must be separated by reactive groups. Chemical storage shelves should be labeled with the name of the group. Information on reactivity and compatibility issues can be found on a chemical's SDS, and may also be labeled on the chemicals container.

6. **Have you specifically addressed all restricted chemicals in the school's Chemical Hygiene Plan and limited amounts to the allowed quantities where specified?** 6 CCR 1010-6, sections 6.12.3(D), 6.12.3(E), and 6.12.1(E)

Restricted chemicals are those chemicals in schools with a hazardous nature, but that may have potential educational utility. Restricted chemicals are restricted by use, and/or specific quantities. If a chemical is restricted by a specific quantity, the chemical name will be followed by the maximum allowed amount in parentheses. **The quantity of all restricted chemicals must be limited to an amount that can be used within one calendar year from the date of purchase unless otherwise approved through a variance.** Safer and less hazardous alternatives should be purchased and used in place of restricted chemicals whenever feasible.

Chemicals listed as "Demonstration use only" are a subclass in the restricted chemical list that are limited to instructor demonstration. Students may not participate in the handling or preparation of restricted chemicals as part of a demonstration.

Restricted chemicals are listed in the *Rules and Regulations Governing Schools in the State of*

Colorado and are also available here: <https://www.colorado.gov/pacific/cdphe/schools-variances>

The risk associated with the use of restricted chemicals in school laboratories is greatly reduced when effective restricted chemical management practices are implemented including plans for procurement, storage, handling, disposal, and spill response. These chemical management practices must be specifically addressed in the Chemical Hygiene Plan (CHP) for all restricted chemicals present in the school.

A chemical hygiene plan is a document that explains the policies and procedures that will promote the safe operation of the school laboratory. The plan provides specific laboratory practices designed to minimize the exposure of employees and students to hazardous substances.

To address the specific restricted chemical management practices described above, it is recommended that Standard Operating Procedures (SOPs) be prepared for restricted chemicals and included within the CHP. An individual SOP is not required for every restricted chemical used; SOPs can be written in a comprehensive manner that encompasses the same hazards. For example, if a procedure in the lab requires the use of acetone and ethyl acetate, both of which are restricted flammable liquids, one SOP on flammable liquids can be created rather than a separate SOP for both acetone and ethyl acetate.

7. Have you ensured that there are no chemicals in your laboratories on the prohibited chemicals list? 6 CCR 1010-6, sections 6.12.3(C) and 6.12.1(F)

Prohibited chemicals are those chemicals that pose an inherent, immediate and potentially life threatening risk to students and staff due to their toxicity or other chemical properties. **These chemicals are prohibited from use and/or storage** at the school and the school is prohibited from purchasing or accepting donations of such chemicals.

Prohibited chemicals are listed in the *Rules and Regulations Governing Schools in the State of Colorado* and are also available here: <https://www.colorado.gov/pacific/cdphe/colorado-health-safety-regulations-schools>

Prohibited chemicals stored onsite at a school are considered wastes because the school is prohibited from using and storing them. Schools must therefore make a hazardous waste determination on these chemicals to determine if they fall under the Colorado Hazardous Waste Regulations. Not all prohibited chemicals meet the criteria of hazardous wastes. In addition, many wastes not found on the prohibited list do meet hazardous waste criteria. It is your school's responsibility to identify what wastes are hazardous.

A waste can be considered hazardous waste if it meets certain physical characteristics such as ignitability or corrosivity, or if it is listed in hazardous waste regulations. For more information on how to identify hazardous waste, visit the hazardous waste division's website at: <https://www.colorado.gov/cdphe/hm>

The Colorado Hazardous Waste Regulations lay out the requirements for hazardous waste management and disposal in 6 CCR 1007-3, Parts 99, 100, and Parts 262 through 279. The specific requirements that pertain to a generator of hazardous waste are based on the amount of hazardous

waste generated monthly or stored onsite. Most, if not all, schools will fall under the status of conditionally exempt small quantity generator as long as they generate less than 100 kg of hazardous waste and less than 1 kg of acutely hazardous waste each month.

Per hazardous waste regulations, at a minimum, schools MUST:

- 1) make a hazardous waste determination on all wastes;
- 2) properly dispose of hazardous waste at a permitted facility (**no** on-site disposal of hazardous waste and **no** disposal of hazardous waste in the trash); and
- 3) maintain and operate laboratory and storerooms in a manner that minimizes the possibility of a release, fire, or explosion.

Best management practices for hazardous wastes in schools include:

- labeling containers with the words “hazardous waste”;
- keeping containers closed;
- maintain containers in good condition;
- separating incompatible wastes;
- following emergency preparedness precautions including naming an emergency coordinator;
- posting emergency contact information; and
- training staff that manage hazardous waste on their responsibilities.

Hazardous wastes can be picked up and transported to a hazardous waste landfill by a registered (“notified”) hazardous waste transporter. You may also check with your local household hazardous waste program to see if they are able to accept hazardous waste from schools.

Beyond the hazardous waste requirements for handling the waste onsite, additional requirements usually apply to hazardous waste transportation. These include the use of a hazardous waste manifest, and Department of Transportation container requirements and placarding. Your registered hazardous waste transporter is familiar with these requirements and should ensure the waste is shipped in accordance with the requirements.

As standard practice, the division will consider all prohibited chemicals stored onsite to be waste. An exception may be allowed if a school arranges for the prohibited chemical to be accepted by another facility for its intended purpose. The prohibited chemical will then be viewed as a product and not a waste. To meet this exclusion, the school must have an arrangement in place with the receiving facility for the timely removal of the chemical from the school. The school must demonstrate the arrangement through appropriate documentation.

- 8. If prohibited chemicals are present, are they labeled “Not for Use” or clearly marked to ensure they won’t be utilized prior to proper disposal? 6 CCR 1010-6, section 6.12.3(C)**

Prohibited chemicals should be labeled “Not for Use” or clearly marked to ensure they won’t be used. If these chemicals meet the criteria for a hazardous waste they should also be labeled “hazardous waste.”

9. Have you ensured that chemicals in your laboratories are not stored in inappropriate, damaged, leaking, cracked, or corroded containers? 6CCR 1010-6, section 6.12.3(A) and 6.12.3(H)

Chemicals must be stored in appropriate laboratory grade containers that are in good condition, not leaking, and that are compatible with the contents of the container. The use of household containers such as plastic milk and soda bottles to store chemicals is strictly prohibited. Chemicals stored inappropriately in damaged, leaking, or incompatible containers that are still in use at the school should be transferred immediately to structurally sound and compatible containers as outlined in the school's Chemical Hygiene Plan.

Chemicals stored in containers that are damaged, leaking, cracked, or corroded may be considered waste and potentially subject to the Colorado Hazardous Waste Regulations.

10. Have you ensured that none of the chemicals in your laboratories are past the useful shelf life or expiration date marked on the container label? 6CCR 1010-6, section 6.12.1(A)

Chemicals that are past the manufacturer's expiration date may become unstable, and are considered waste and subject to hazardous waste regulations.

If you identify a chemical stored past its expiration date, begin managing the material as a waste as outlined in the school's Chemical Hygiene Plan.

The chemical manufacturer or supplier should provide you with information on the product shelf life. Chemicals with a poor shelf life may degrade quickly and no longer be useful for their original purpose and should be properly disposed of within one year of purchase.

In general, schools should use the following guidelines for shelf life determination:

Shelf Life	Timeframe
Poor	Less than one
Fair	1 to 3 years
Good	3 to 5 years
Excellent	Greater than 5

By incorporating shelf-life characterization into the school chemical inventory, schools can better track chemicals with poor shelf life and dispose of them accordingly.

11. Have you ensured that chemicals in your laboratories are not partially or wholly crystallized, solidified, or otherwise changed physically or chemically? 6CCR 1010-6, section 6.12.1(F)

Certain lab chemicals that have crystallized, solidified, or otherwise changed physically or chemically can be unstable, and form explosive compounds. For example, certain prohibited chemicals including dioxane, ether, tetrahydrofuran, and vinyl chloride, among others, may form explosive peroxides as they age. Exposure to air is necessary to form peroxides, so head space within a container should be minimized.

Chemicals that have crystallized, solidified, or otherwise changed physically or chemically such that the chemicals can no longer be used for their original purpose are considered a waste. As such, schools should begin managing the material as a waste as outlined in the school's Chemical Hygiene Plan. Schools must determine whether or not the waste meets the criteria of a hazardous waste. If hazardous wastes are identified follow the requirements for your generator status found in the Colorado Hazardous Waste Regulations. Chemical disposal or removal may create an imminent danger and/or health hazard and should be done only by appropriately trained staff or professionals.

- 12. Have you ensured that no chemicals are present in your laboratories in amounts that cannot be used in a timely manner, or that are no longer needed, or no longer used? 6CCR 1010-6, section 6.12.1(A) and 6.12.1(F)**

All chemicals stored in amounts that cannot be used within their shelf life, or that are no longer used or needed are considered wastes. A hazardous waste determination must be and if hazardous, the chemical must be managed under the requirements found in the Colorado Hazardous Waste Regulations.

Conducting the required yearly chemical inventories, maintaining the school chemical hygiene plan, and avoiding bulk chemical purchases will help your school from having overstocked, unwanted, or unused chemical in your storerooms.

- 13. Have you ensured that no restricted chemicals in your laboratories are present in amounts that cannot be used within one calendar year from the date of purchase? 6CCR 1010-6, section 6.12.3(D)**

Restricted chemicals are those chemicals in schools with a hazardous nature, but that may have potential educational utility. Restricted chemicals are restricted by use, and/or specific quantities. If a chemical is restricted by a specific quantity, the chemical name will be followed by the maximum allowed amount in parentheses. **The quantity of all restricted chemicals must be limited to an amount that can be used within one calendar year from the date of purchase unless otherwise approved through a variance.** Safer and less hazardous alternatives should be purchased and used in place of restricted chemicals whenever feasible.

Chemicals listed as "Demonstration use only" are a subclass in the restricted chemical list that are limited to instructor demonstration. Students may not participate in the handling or preparation of restricted chemicals as part of a demonstration.

- 14. Have you ensured that there are no other chemicals stored or configured in any manner that may present a risk to human health or the environment? 6 CCR 1010-6, section 6.12.1(A), 6.12.1(D), and 6.12.3(A)**

All chemicals and materials associated with the laboratory program must be stored in a manner that minimizes the possibility of a fire, explosion, or any unplanned release that may present a risk to human health or the environment. In general, the following guidelines should be followed:

- Chemicals should be stored in a well ventilated room and out of direct sunlight.
- Storage shelves should be secured to the wall or permanent structure and not overcrowded.
- Care should be taken so that chemicals are stored off the floor but below eye level.
- If metal shelving clips and brackets are used, they should be inspected for signs of corrosion. Corrosion could be a sign of poor ventilation in the storage area. Even as little as one air change per hour can help reduce corrosion although it is recommended that ventilation in the chemical storage area provide a minimum of 4 air changes per hour.

Other chemicals or materials that present potential hazards include cleaning or solvent solutions; combustible gases such as methane; liquid propane or butane; and compressed gases such as oxygen. These materials must be stored in a safe manner in containers that are in good condition and compatible with the contents and away from other incompatible materials. Ensure that all gas cylinders are securely fastened and upright.

O. Flammables and Corrosives

1. Does each classroom, storeroom, and/or vocational area that stores 10 gallons or more of flammable chemicals have an appropriate flammables cabinet? 6 CCR 1010-6, section 6.12.1(D)

Flammable cabinets are required if the school has more than 10 gallons (38.75 L) of flammable or combustible materials within a given room or area. The flammables cabinet should have appropriate labeling indicating it meets NFPA Standard 30 and indicate the maximum amount of chemicals, in gallons, that can be stored in the cabinet.

2. Are acids and other corrosive chemicals stored in an appropriate corrosives cabinet? 6 CCR 1010-6, section 6.12.1(D) and 6.12.3(A)

Corrosive chemicals should be stored in a dedicated corrosive chemicals cabinet with an interior made of corrosion-resistant material. Containers of corrosive chemicals must be stored so that any spills or leaks will be contained and isolated from other chemicals. If a wood corrosives cabinet is used, the shelves must be lined with polypropylene. If metal corrosive cabinets are used, the cabinet should be in good condition and free from signs of rusting/oxidizing.

Storing acids and bases together in one corrosives cabinet is acceptable if they are physically separated on different shelves or isolated from one another. Bottles may become covered with ammonium chloride from hydrochloric acid and ammonia fumes.

Nitric acid should be stored separately from acetic acid. Acetic acid is both a corrosive and flammable liquid. Nitric acid is a corrosive and a strong oxidizer. When nitric acid and acetic acid are combined, a flash fire will sometimes erupt. Some cabinets have a separate plastic compartment to store nitric acid.

P. Chemical Hygiene Plan and Laboratory Procedures

1. Does the school have a written and complete chemical hygiene plan in place? 6 CCR 1010-6, section 6.12.1(E)

A chemical hygiene plan (CHP) is a written program that promotes the safe management of chemicals for students and staff and promotes a culture of safety within the school. The CHP describes all the following:

- Procedures for general laboratory safety
- Chemical management (including procurement, storage, handling, and disposal)
- Spill response, and
- Procedures for the operation and testing of laboratory chemical hoods and other emergency and safety equipment

A template and further guidance for the development of a chemical hygiene plan can be accessed here: <https://www.colorado.gov/cdphe/schools>

2. Is glassware designed for its intended use, in good condition and handled and stored in a safe manner? 6 CCR 1010-6, section 6.12.3(I)

All chemicals should be stored in appropriate laboratory grade containers. Transfer of chemicals to containers other than appropriately designed glassware is prohibited and can cause spills if chemicals erode the container. The use of household containers such as plastic milk and soda bottles to store chemicals is strictly prohibited. Periodically inspect glassware for cracks, chips and defects, replacing when necessary to avoid leaks and spills.

Q. Ventilation and Fume Hood Use and Design

1. Are the rooms where chemicals are stored actively ventilated? 6 CCR 1010-6, section 6.12.4(A)

All areas shall be adequately ventilated so that exposures to hazardous or toxic materials are maintained at a safe level. An open window or non-mechanical venting is considered passive ventilation, which is not acceptable.

Ensure that the ventilation system for the storeroom is not tied in with the rest of the school's ventilation system as this can result in chemical vapors being distributed into other areas of the school. Because most organic vapors are heavier than air, the air should be ventilated by drawing it from the floor level. A minimum of four air changes per hour is recommended.

2. Are fume hoods used for experiments, solution preparations and demonstrations that produce hazardous, toxic or noxious gases, mists vapors or dusts? 6 CCR 1010-6, section 6.12.4(C)

Sufficient fume hood capacity ventilation shall be provided and shall be used for any activity producing hazardous toxic or noxious gases, mists, vapors or dusts. The school chemical hygiene plan should describe when and for what purposes the fume hood should be used.

3. Are fume hoods tested for a minimum face velocity of 100 feet/minute, with test results documented appropriately on an annual basis using a recognized standard method? 6 CCR 1010-6, section 6.12.4(C)

Laboratory fume hoods are designed to protect laboratory personnel by preventing contaminants, such as chemical vapors, dusts, mists and fumes, from escaping into the laboratory environment. Face velocity is the rate of flow of air moving into the laboratory hood entrance, usually expressed in feet per minute (fpm). A minimum face velocity of 100 fpm and a maximum of 120 fpm for general laboratory hoods must be provided.

All hoods should have documentation of annual testing and a sticker designating the maximum safe sash height that achieves a face velocity of 100 fpm.

It is important to remember that face velocity is not the only factor contributing to hood performance. Work practices and make-up air also affect performance. The following are best work practices for safe fume hood use:

- Conduct all operations that generate irritating or hazardous air contaminants inside a fume hood. Substitute less hazardous materials when possible.
- Minimize sources of turbulence at the hood face (e.g. foot traffic, equipment, fans, moving arms in and out).
- Do not store chemicals or apparatus in the hood. Store hazardous chemicals in an approved safety cabinet.
- When working with open chemicals, reduce the sash as much as possible to maximize hood performance.
- Keep all apparatus and chemicals at least **6 inches back** from the front face of the hood.
- Do not use the hood as a waste disposal method (e.g. to volatilize chemicals).
- Keep the sash closed completely when the fume hood is not in use.

4. Do fume hoods exhaust directly to the outside and at least 10 feet away from air intakes or building openings? 6 CCR 1010-6, section 6.12.4(C)

Laboratory fume hoods serve to control exposure to toxic, offensive or flammable vapors, gases and aerosols. Sufficient fume hood capacity ventilation shall be provided and shall be used for any activity producing hazardous, toxic, or noxious gases, mists, vapors, or dusts. Hoods must exhaust directly to the outside and be located a minimum of 10 feet from any building air intakes or building openings.

R. Safety Equipment

1. If corrosive, toxic, or hazardous chemicals are in use, are appropriately designed and accessible eyewash and shower stations installed? 6 CCR 1010-6, sections 6.12.2(E) and 6.12.2(F)

An easily accessible operational eye wash fountain that meets the ANSI Z358.1-2009 Standard must be provided in each laboratory or other areas where corrosives or irritating chemicals are used. The

eye wash fountain shall be clean and provide a continual hands-free flow of water. **The use of portable eye wash bottles is not permitted.** A highly visible sign must mark the eye wash fountain location.

An easily accessible operational safety shower that meets the ANSI Z358.1-2009 Standard, capable of providing continuous flowing water, shall be provided for each laboratory or other areas where corrosive or irritating chemicals are used. The safety shower may be centrally located so as to serve more than one area if doors are not locked, and convenient prompt access is available. A highly visible sign must mark the safety shower location.

Safety showers and eyewash fountains must be easily accessible. Easily accessible means no more than 55 feet from storage or use of corrosive or irritating hazardous chemicals so that it can be reached with impaired vision within 10 seconds or less.



2. Are eyewash and shower stations tested annually with test results appropriately documented?
6 CCR 1010-6, sections 6.12.2(E), 6.12.2(F), and 6.12.2(J)

Eye wash fountains must be tested on an annual basis and documented with the date, initials of the staff member conducting the test and test results.

To test the eye station:

1. Visually inspect the unit, looking for damage and ensuring that the protective nozzle covers are still in place and functioning correctly. Covers protect the nozzles from dust and other contaminants but should be fitted in such a way as to not require a separate movement to remove them when the eye wash is activated.
2. Test the valve actuation: it should open in one second or less and stay on without being held.
3. Ensure that flushing to both eyes can be provided simultaneously.

4. Measure the flow with a flow meter or use a 1-gallon container. The eyewash should fill a 1 gallon container in 2.5 minutes or less. The flowmeter should show at least 0.4 gallons per minute (gpm).

It is also recommended that the eye wash is flushed until the water runs clean on a monthly basis to relieve the unit of any rust or pipe build-up.

Safety showers must be tested on an annual basis and documented with the date, initials of the staff member conducting the test and test results.

To test safety showers:

1. Visually inspect pipes for leaks and damage. Ensure that the unit is free of any obstructions.
 2. Open the valve fully and verify that it stays open without the use of hands.
 3. Measure the flow rate. Showers must deliver a minimum of 20 gpm flow. This can be accomplished by using a five-gallon container (with a mark at the three gallon level) and a curtain to channel the flow into the container. After activation, the level on the container should be reached within 9 seconds or less.
- 3. When open flames are used, are appropriate fire blankets provided and accessible? 6 CCR 1010-6, section 6.12.2(C)**

An easily accessible fire blanket must be provided in each laboratory or other area where an open flame is used. The fire blanket must be approved by NFPA 45 (Fire retardant treated 100% wool blanket). Any asbestos fire blankets need to be replaced.

- 4. Are extinguishers appropriate for the types of chemicals used and located in each laboratory? 6 CCR 1010-6, section 6.12.2(I)**

Extinguishers are required in all laboratories per NFPA 45 Fire Protection for Laboratories Using Chemicals. Dry chemical Class ABC extinguishers are recommended for laboratory use. In addition, if combustible metals (Mg, Na, K) are present, laboratories must have a Class D extinguisher as well.

- 5. Are extinguishers inspected annually with results documented? 6 CCR 1010-6, section 6.12.2(J)**

On an annual basis, schools should inspect extinguishers to ensure:

- extinguishers are in their designated places;
- there are no obstructions to access or visibility;
- safety seals are not broken or missing;
- there is no evidence of physical damage, corrosion, leakage or clogged nozzle;
- pressure gauge readings are in the proper range or position;
- operating instructions are legible and facing outward;
- extinguisher appears full - confirmed by weighing or lifting; and

- required maintenance and recharging of extinguisher is completed on-time.

Inspection documentation should include

- name of person conducting the inspection;
- date; and
- result of inspection.

6. When corrosive, toxic or hazardous chemicals are in use, is appropriate protective eyewear used? 6 CCR 1010-6, section 6.12.2(B)

Eye protection that meets the American National Standards Institute's Practice for Occupational and Face Protection, ANSI Z87.1-2010 Standard must be worn by all students participating in, observing, or in close proximity to any experiment or activity which could result in eye injury

7. Is protective eyewear clean and sanitized if shared among multiple users? 6 CCR 1010-6, section 6.12.2(B)

Eye protection glasses, goggles, face shields, and similar eye protection devices shall be issued clean and properly sanitized and stored in a protected place.

If eyewear is shared and a UV light cabinet is used to sanitize eyewear, check to ensure that the bulbs function and that the cabinet is used in accordance with the instructions. UV lamps are designed to provide light energy of a certain wavelength. As they operate, they slowly lose their effectiveness. Therefore, schools should track the usage and replace the bulb once the lamp reaches the number of hours specified by the manufacturer.

Alcohol wipes or spray is also acceptable for sanitizing eyewear.

8. Are classrooms using Bunsen burners or other equipment supplied with gas, equipped with emergency shut-off switches that are readily available, accessible and labeled for high visibility? 6 CCR 1010-6, section 6.12.2(G)

A master gas control valve (MGCV), is required on gas supply lines to science laboratories. The MGCV shall stop the flow of gas to all appliances/ equipment located in the room and must function as a manually operated emergency gas shut-off. One MGCV shall be provided for each room and made easily accessible. Electric shut-off switches shall be provided in areas where power equipment is used. Master gas valves and electric shut-off switches shall be labeled for high visibility and tested annually with documentation available upon request.



9. Are emergency shut-off switches tested with results documented annually? 6 CCR 1010-6, sections 6.12.2(G) and 6.12.2(J)

Emergency shut off switches including master gas valves and electrical shut off switches must be tested on an annual basis and the test results documented. Documentation may consist of a tag connected to the shut off switch that shows the date the test was conducted, the name of the person conducting the test, and the test results. A passing result is defined as a valve or switch that, when activated, immediately ceases to supply power or gas to connected equipment.

Attachment 1 Colorado School Regulations

Unofficial DEHS Copy, created 01/23/2018

COLORADO DEPARTMENT OF PUBLIC HEALTH AND ENVIRONMENT

Division of Environmental Health and Sustainability

6 CCR 1010-6

**RULES AND REGULATIONS GOVERNING SCHOOLS
IN THE STATE OF COLORADO**

Adopted by the Board of Health on January 17, 2018; effective, March 17, 2018



COLORADO

**Department of Public
Health & Environment**

TABLE OF CONTENTS

6.1	Authority	1
6.2	Scope and Purpose.....	1
6.3	Applicability	1
6.4	Definitions	2
6.5	Incorporation by Reference.....	6
6.6	Compliance Procedures	7
6.6.1	Inspections.....	7
6.6.2	Self-Certification	7
6.6.3	Compliance Assurance.....	8
6.6.4	Variance Procedures	9
6.7	Sanitary Facilities and Controls	10
6.7.1	Water Supply	10
6.7.2	Sewage Disposal	11
6.7.3	Refuse Disposal	11
6.7.4	Insect, Rodent Control and Classroom Animals	12
6.7.5	Plumbing	14
6.7.6	Toilet, Lavatory and Bathing Facilities	14
6.7.7	Diapering and Toileting	16
6.8	Buildings and Grounds.....	17
6.8.1	Buildings	17
6.8.2	Grounds	18
6.9	Mechanical Requirements	19
6.9.1	Electrical.....	19
6.9.2	Lighting.....	19
6.9.3	Ventilation.....	19
6.9.4	Heating.....	20
6.10	Equipment and Supplies	20
6.11	Food Service.....	21

TABLE OF CONTENTS (CONTINUED)

6.12 Laboratory, Industrial, Art, and Vocational Hazards	22
6.12.1 Procedures.....	22
6.12.2 Safety Equipment	23
6.12.3 Storage Provisions	24
6.12.4 Ventilation.....	26
6.13 Health Service	26
APPENDICES.....	29
Appendix A - Prohibited Chemicals.....	30
Appendix B - Restricted Chemicals	47
Appendix B2 - Restricted Chemicals (Demonstration Use Only).....	66

COLORADO DEPARTMENT OF PUBLIC HEALTH AND ENVIRONMENT

Division of Environmental Health and Sustainability

6 CCR 1010-6

RULES AND REGULATIONS GOVERNING SCHOOLS IN THE STATE OF COLORADO

6.1 Authority

This regulation is adopted pursuant to the authority in Sections 25-1-108(1)(c)(I), 25-1.5-101(1)(a),(h), (k), and (l), and 25-1.5-102(1)(a) and (d), Colorado Revised Statute (C.R.S.), and is consistent with the requirements of the State Administrative Procedures Act, Section 24-4-101, et seq., C.R.S.

6.2 Scope and Purpose

A. This regulation establishes provisions governing:

1. Minimum sanitation requirements for the operation and maintenance of schools;
2. Minimum standards for exposure to toxic materials and environmental conditions in order to safeguard the health of the school occupants and the general public; and
3. Investigation, control, abatement and elimination of sources causing epidemic and communicable diseases affecting school occupants and public health.

B. This regulation does not apply to:

1. Structures or facilities used by a religious, fraternal, political or social organization exclusively for worship, religious instructional or entertainment purposes pertaining to that organization;
2. Health facilities licensed by the Colorado Department of Public Health and Environment under provisions of Section 25-3-101, C.R.S.; and
3. Child care facilities licensed by the Colorado Department of Human Services under provisions of Sections 26-6-102(1.5), (2.5)(a), (5), (5.1), (8), (9), (10)(a), C.R.S.

6.3 Applicability

A. The provisions of this section shall be applicable to all schools, kindergarten through grade twelve, in the State of Colorado.

1. Schools in operation prior to the effective date of these regulations, which

would require capital expenditures to fully meet all of the design, construction and equipment requirements of these regulations, may be deemed acceptable if in good repair and capable of being maintained in a sanitary condition and posing no hazard to the health of the school occupants.

2. Any school shall have a right to challenge any rule that they feel has been too rigidly applied. All challenges must be submitted to the Department in writing, stating the rule being challenged and the reason for the challenge. The Department shall hear the challenge and make determinations pursuant to the statute.
 3. These regulations shall not limit the powers and duties of local governments to issue such orders and adopt regulations as stringent as or more stringent than the provisions contained herein; as may be necessary for public health.
- B. Plans and specifications shall be submitted prior to construction or extensive remodel, when required by the Department for the installation of sanitary facilities in existing schools being remodeled to increase the occupant load. Submission to the Department does not remove the requirements of the Colorado Department of Public Safety, Division of Fire Safety or local building authorities regarding submissions of plans and specifications.
- C. Swimming pools shall be constructed, operated, and maintained in accordance with the Colorado Department of Public Health and Environment *Swimming Pool and Mineral Bath Regulations*, 5 CCR 1003-5, and Title 15, Chapter 106, United States Code (USC), Section 8001, et seq.

6.4 Definitions

- A. For the purpose of these rules and regulations:
1. American National Standards Institute (ANSI) means an accreditation agency that certifies adherence to particular standards.
 2. Approved means acceptable to the Colorado Department of Public Health and Environment or its authorized agents or employees.
 3. Bacteria means organisms with a cell wall that can survive inside and outside of the body.
 4. Campus means a fixed location that includes the grounds and the academic, administration, and support structures and facilities.
 5. Carbon Monoxide Detector means a device that detects carbon monoxide and that: (a) produces a distinct, audible alarm; (b) is listed by a nationally recognized, independent product-safety testing and certification laboratory to conform to the standards for carbon monoxide alarms issued by such laboratory or any successor standards; (c) plugs into a school's electrical outlet and has a battery backup, is wired into a school's electrical system and has a battery back-up, or is connected to an electrical system via an electrical panel; and (d)

may be combined with a smoke detecting device if the combined device complies with both Underwriters Laboratories, Inc. (UL) Standards 217 and 2034 regarding both smoke detecting devices and carbon monoxide alarms and that the combined unit produces an alarm, or an alarm and voice signal, in a manner that clearly differentiates between the two hazards.

6. Chemical Hygiene Plan means a written program that promotes the safe management of chemicals for students, faculty and staff and promotes a culture of safety within the school. The plan is comprised of procedures for general laboratory safety, chemical management (including procurement, storage, handling, and disposal), and spill response. The plan also includes procedures for the operation and testing of laboratory chemical hoods and other emergency and safety equipment.
7. Chemical Inventory means a listing of all hazardous chemicals, compounds, and substances present in a school and must include the name and the original amount of the chemical and the date the material entered the school. Prohibited and restricted chemicals should be designated as such in the inventory. The chemical inventory should include all hazardous chemicals, compounds, products and wastes that are used or generated in the school's maintenance, custodial, and lawn care facilities, science laboratories, vocational and industrial arts curriculum, classrooms and administrative office(s). Building materials are excluded from this requirement.
8. Chemical Waste means any chemical or laboratory waste discarded or intended to be discarded. When chemicals are spent, expired, no longer used or needed they become waste. This can also include those chemicals that are partially or wholly crystallized, solidified or otherwise changed chemically, or whose containers are damaged or leaking, and those chemicals listed as prohibited in Appendix A.
9. Classroom means any room used for instructional purposes by students and/or staff on a routine basis.
10. Clean means to be free of dust and debris or to remove dirt and debris by vacuuming or scrubbing and washing with soap and water.
11. Contamination means the presence of infectious microorganisms or chemicals at levels toxic to human health in or on the body, environmental surfaces including but not limited to table tops, chairs, desks, and laboratory working areas, articles of clothing, and/or in food or water.
12. Critical Violations means provisions of these rules and regulations that, if deemed in noncompliance, are more likely than other violations to contribute to illness or environmental hazards that may contribute to a disease outbreak. Critical violations include inappropriate clean up of high hazard bodily fluids, lack of handwashing, ineffective sanitization and disinfection, ill personnel preparing food, unsafe water supply or sewage disposal, pest infestation, food temperature abuse and mismanagement of toxic or hazardous materials.

13. Demonstration Use Only Chemicals means a subclass in the restricted chemical list that is limited to instructor demonstration. Students may not participate in the handling or preparation of restricted chemicals as part of a demonstration.
14. Department means the Colorado Department of Public Health and Environment and its authorized agents and employees.
15. Disinfect means to eliminate most or all pathogenic microorganisms, with the exception of bacterial spores by using effective bactericidal heat or concentration of chemicals which are registered with the U.S. Environmental Protection Agency.
16. Drinking Water means water that meets criteria as specified in Section 25-1.5-2, C.R.S., and *Colorado Primary Drinking Water Regulations*, 5 CCR 1002-11. Drinking water is traditionally known as “potable water”. Drinking water includes the term “water” except where the term used connotes that the water is not potable, such as “boiler water,” “mop water,” “rainwater,” “reclaimed water,” “wastewater,” and “nondrinking water”.
17. Easily Cleanable means materials or surfaces that are smooth, durable, and non-absorbent, such that the soil, filth, and/or unseen contamination can be effectively removed by normal cleaning methods.
18. Extensively Remodeled means any structural or other premise change that requires a building or construction permit issued by the Colorado Department of Public Safety, Division of Fire Safety or the local building authority. Routine maintenance, repairs, or cosmetic changes are not defined as extensive remodeling.
19. High Hazard Body Fluids include urine, feces, saliva, blood, nasal discharge, eye discharge and injury or tissue discharge.
20. Hazard/Hazardous means a situation or condition where there is a significant potential for injury, illness or death. (e.g., use or exposure to potentially hazardous chemicals, equipment, devices).
21. Imminent Health Hazard means a substantial danger to public health or safety, or a significant threat or danger to health that is considered to exist when there is evidence sufficient to show that a product, practice, circumstance, or event creates a situation that requires immediate correction or cessation of operation to prevent illness or injury based on the nature, severity, and duration of the anticipated illness or injury.
22. Immunization means the process by which a person becomes protected (immune) against a disease.
23. Infection means a condition caused by the multiplication of an infectious agent in the body.
24. Infectious means capable of causing an infection.

25. Infestation means the presence of unwanted pests such as insects, rodents, bats, birds, or parasites at levels considered to pose either an economic or health threat.
26. Inspection means an evaluation of the school to determine conformance with these rules and regulations.
- a. Routine Inspection means an on-site evaluation by the Department of the school during its normal hours of operation, with school staff in attendance, to determine conformance with these rules and regulations.
 - b. Self certification means a checklist of regulatory requirements completed by school personnel for the purpose of assessing compliance.
 - c. Audit means a verification of a self-certification checklist of regulatory requirements by the Department.
27. Prohibited Chemicals means those substances with greater hazardous nature than educational utility. Prohibited chemicals are those chemicals that pose an inherent, immediate and potentially life threatening risk, injury or impairment due to toxicity or other chemical properties to the students, staff, or other occupants of the school.
28. Refuse means any garbage, trash, or other forms of solid waste.
29. Restricted Chemicals means those substances with a hazardous nature, but may have potential educational utility. Restricted chemicals are listed in Appendix B to this regulation.
30. Safety Data Sheet (SDS) means written or printed material concerning a hazardous chemical that is provided by the chemical manufacturer and prepared in accordance with 29 CFR 1910.1200(g), revised July 1, 2013 and hereby incorporated by reference. Digital or other electronic versions of SDS may be approved at the discretion of the local fire authority.
31. Sanitary Facilities means toilets, urinals, lavatories, showers, drinking fountains, utility sinks, and the service rooms provided for the installation and use of these units.
32. Sanitization means effective bactericidal treatment by a process that provides enough accumulative heat or concentration of chemicals, registered with the U.S. Environmental Protection Agency, for sufficient time to reduce the bacterial count, including pathogens, to a safe level.
33. Sanitize means the application of a process or bactericidal treatment, registered with the U.S. Environmental Protection Agency, for a period of time sufficient to reduce the bacterial count, including pathogens, to a safe level. (One method of demonstrating effective bactericidal treatment is by an average plate count of not more than 100 colonies, or not more than 12 ½ colonies per square inch of surface area examined. This is not intended as a

routine field procedure.)

34. School - Any facility (public, proprietary, parochial, denominational, or eleemosynary) which is maintained for educational purposes for six or more persons except those facilities described in Section 6.2 (B).
35. Service Animal means any dog or miniature horse that is individually trained to do work or perform tasks for the benefit of an individual with a disability, including a physical, sensory, psychiatric, intellectual, or other mental disability. Other species of animals, whether wild or domestic, trained or untrained, are not service animals for the purposes of this definition. The work or tasks performed by a service animal must be directly related to the handler's disability. Examples of work or tasks include, but are not limited to, assisting individuals who are blind or have low vision with navigation and other tasks, alerting individuals who are deaf or hard of hearing to the presence of people or sounds, providing non-violent protection or rescue work, pulling a wheelchair, assisting an individual during a seizure, alerting individuals to the presence of allergens, retrieving items such as medicine or the telephone, providing physical support and assistance with balance and stability to individuals with mobility disabilities, and helping persons with psychiatric and neurological disabilities by preventing or interrupting impulsive or destructive behaviors. The crime deterrent effects of an animal's presence and the provision of emotional support, well-being, comfort, or companionship do not constitute work or tasks for the purposes of this definition.
36. Standards means requirements that are approved by the Department to provide for the protection of the school occupants and/or public health.
37. Toxic Materials means substances capable of causing injury, illness or death when ingested, inhaled or absorbed.
38. Virus means a microscopic organism smaller than a bacterium that may cause disease. Viruses can grow or reproduce only in living cells.

6.5 Incorporation by Reference

These regulations incorporate by reference (as indicated within) materials originally published elsewhere. Such incorporation does not include later amendments to or editions of the referenced material. Pursuant to Section 24-4-103 (12.5)(a), C.R.S., the Department maintains certified copies of the complete text of any material incorporated by reference for public inspection during regular business hours and shall provide certified copies of the incorporated material at cost upon request. Information regarding how to obtain or examine the incorporated material is available from the Division Director, Division of Environmental Health & Sustainability, Colorado Department of Public Health & Environment, 4300 Cherry Creek Drive South, Denver, CO 80246-1530.

6.6 Compliance Procedures

6.6.1 Inspections

- A. The Department shall conduct inspections to determine the condition of schools for the purpose of safeguarding the health of students, faculty and patrons of the school.
1. The Department shall be permitted to enter and inspect any school at any reasonable time to determine compliance with this regulation or to investigate unhealthy conditions or complaints.
 2. All schools with laboratories, and/or engaging in industrial arts or hazardous vocational activities should be inspected a minimum of once per year. All other schools should be inspected a minimum of once per three years.
 3. If a school is provided with water from a non-community water system, as defined in the *Colorado Primary Drinking Water Regulations*, 5 CCR 1002-11 the water supply system should be inspected at the frequency established by 5 CCR 1002-11.
 4. School food service inspections shall be conducted at the frequency established in the *Colorado Retail Food Establishment Rules and Regulations*, 6 CCR 1010-2.
 5. When an inspection of a school is conducted, it shall accurately reflect the sanitary conditions at the time of the inspection. Specific findings shall be recorded on an inspection report.
 6. Upon completion of the inspection by the Department, a copy of the completed inspection report identifying existing violations shall be furnished to, and signed by, the school contact.
 7. The completed and signed inspection report is a public document that shall be made available for public disclosure, according to law, to any person who requests it.
 8. If during an inspection, or at any other time, it is determined by the Department that an imminent health hazard exists, the school shall immediately cease operations unless dismissal of the students would be detrimental to their well being or unless an alternative plan for operation has been approved by the Department. Operations shall not be resumed until authorized by the Department.

6.6.2 Self-Certification

- A. The Department may require schools to complete and submit a Self-Certification Checklist.

1. A Self-Certification Checklist completed, certified, and signed by an authorized school representative shall be considered equivalent to an on-site inspection performed by the Department.
2. Any school that receives a Self-Certification Checklist from the Department shall complete and return the checklist within the time specified in the instructions provided by the Department.
3. A self-certification checklist is deemed returned on the date it is received by the Department. The Department may provide an extension of time to complete and return a checklist upon request.
4. The Self-Certification Checklist shall contain a certification in substantially the following form, which must be signed by an authorized representative of the school:
 - a. "I, the undersigned school representative, certify that:
 - (1) I have personally examined and am familiar with the information contained in this submittal;
 - (2) The information contained in this submittal is to the best of my knowledge, true, accurate, and complete in all respects;
 - (3) I am fully authorized to make this certification on behalf of this facility; and
 - (4) I am aware that there are significant penalties including, but not limited to, possible fines for willfully submitting false, inaccurate, or incomplete information."

6.6.3 Compliance Assurance

- A. Where a school has violated any provision of the *Rules and Regulations Governing Schools in the State of Colorado*, the Department may issue a compliance advisory requiring the school take actions to correct regulatory deficiencies. A compliance advisory may require the school to design, redesign, install, modify, construct or reconstruct facilities or to take other such corrective action to eliminate any public health hazard.
- B. All violations cited during an inspection shall be corrected as soon as possible, but in any event, by the date specified by the Department. Compliance advisories will be sent to the school contact, the Principal, and the District Superintendent.
- C. Any school in receipt of a compliance advisory shall prepare and submit to the Department a Plan of Action detailing the corrective measures and timeframe required to rectify critical violations or other significant deficiencies noted during an inspection. Prior to implementation, the Plan of Action must be approved by the Department.

- D. Unless provided with a written extension from the Department, a school's failure to complete and submit the Self-Certification Checklist to the Department may result in the issuance of a compliance advisory.
- E. A school's failure to respond to a compliance advisory issued by the Department or to rectify critical violations of the *Rules and Regulations Governing Schools in the State of Colorado* may result in enforcement action including, but not limited to, public notification of unresolved critical violations and noncompliance with these rules and regulations.
- F. Prior to the Department initiating enforcement action, an informal meeting may be scheduled by the Department with school officials and other interested persons. This meeting will be to discuss the violations and the reason(s) for noncompliance, and to agree on an appropriate and viable Plan of Action to achieve regulatory compliance.
- G. A school contesting an enforcement action may request a hearing. Requests for such a hearing shall be filed in writing with the Department within 30 days after service of the action. Such requests shall state the grounds upon which the action is contested and state the amount of time the school estimates will be required for the hearing. Hearings on the enforcement action shall be held in accordance with applicable provisions of Article 4 of Title 24, C.R.S.
- H. The Department shall have the power and duty to close a school and forbid the gathering of people therein to protect students, faculty, and patrons of the school from the cause of epidemic and communicable diseases or physical conditions, operations, or maintenance practices that pose an imminent health hazard.

6.6.4 Variance Procedures

Schools may apply for a variance to these rules and regulations where the regulation is too stringently applied, the intent can be met in another way, or compliance is cost prohibitive or restrictive to curriculum.

Variance requests will be considered for general provisions of the rules and regulations provided public health is protected. Such variance requests shall include the name of the school, the applicable section of the regulation and the reason for the request and supporting information.

Variance requests will be considered to allow the use of prohibited chemicals and storage limitations on restricted chemicals provided the safety of students and faculty is assured. Such variance requests shall include the name of the school, chemical name (and associated SDS), and procedures for the management of the chemical, including procurement, storage, handling, disposal and spill response as well as the qualification of the person(s) responsible. Requests will be reviewed by representatives of the Department. Decisions are final and will expire upon a change of circumstances, including changes in responsible personnel or the alleviation of the initial hardship.

6.7 Sanitary Facilities and Controls

6.7.1 Water Supply

- A. Adequate, uncontaminated, safe drinking water for the needs of the school shall be provided in the building housing the establishment and shall be from a source constructed, maintained, and operated according to the *Colorado Primary Drinking Water Regulations*, 5 CCR 1002-11, and regulations adopted pursuant to Title 25-1.5-203, C.R.S., or
1. If the school does not meet the definition of a public water system pursuant to the *Colorado Primary Drinking Water Regulations*, 5 CCR 1002-11 promulgated pursuant to 25-1.5-101 and 25-1.5-203, C.R.S., the school shall provide:
 - a. Adequate treatment on a continuous basis; and
 - b. Bacteriological samples at a minimum of once per quarter or at a frequency determined by the Department; and
 - c. An N, N diethyl-p-phenylene diamine (DPD) colorimetric drinking water test kit capable of testing free chlorine at an accuracy of 0.1 milligrams per liter (mg/L); and
 - d. Free chlorine shall range from a trace amount to 4 mg/Liter (0.2 to 1.2 mg/L recommended) at any fixture; and
 - e. The previous twelve months of water sample reports shall be retained on file at the school and shall be available for review by the Department when request; and the school shall immediately report positive results to Department.
 2. Schools with water supplies determined to be surface water or under the direct influence of surface water shall be required to filter their water to one micron absolute using National Science Foundation (NSF) approved equipment and maintain a residual disinfectant concentration to ensure inactivation and/or removal of giardia and other parasitic cysts and viruses.
- B. The water supply system shall deliver water at normal operating pressures (20 pounds per square inch minimum) to all plumbing fixtures.
- C. When a total water service interruption exceeds a period of two hours, the school shall be closed, unless dismissal of the pupils would be detrimental to their physical well being, or unless accessible alternatives for providing drinking water are available and approved by the Department prior to use.
- D. Faucets on non-drinking water supply systems used for irrigation or similar purposes shall be physically separated from the drinking water supply system and the faucets on the non-drinking water system shall be clearly marked as unsafe for drinking.
- E. The water storage, distribution system, treatment facilities and other mechanical

equipment shall be protected from unauthorized access.

- F. Where water is supplied by the school's independent water supply system, plans for the water system shall be submitted to the Department for approval prior to construction.

6.7.2 Sewage Disposal

- A. Facilities, approved by the Department, shall be provided and maintained for the treatment and sanitary disposal of sewage.
- B. Where a public sewer system is available, all plumbing fixtures and all building sewer lines shall be connected thereto, pursuant to Section 32-1-1006(1)(a)(I) C.R.S.
- C. If a public sewer system is not available, a sewage disposal system meeting the requirements of the Department shall be provided, and all plumbing fixtures and building sewer lines shall be connected thereto, pursuant to Sections 25-8-702(1) and/or 25-10-105 C.R.S.
- D. Where a total sewer service interruption exceeds a period of two hours, the school shall be closed unless dismissal of the pupils would be detrimental to their physical well being or unless accessible alternatives for the sanitary disposal of sewage are available and approved by the Department prior to use.
- E. Where non-water carriage sanitary facilities, such as vaults or privies are permitted, they shall be provided and installed in accordance with requirements of the Department.
- F. In all new schools and schools modifying existing sewage disposal systems or expanding their usage beyond the design capacity of the sewage disposal system, plans shall be submitted to the Department for review and approval in accordance with provisions of Sections 25-8-702 and/or 25-10-105 C.R.S. prior to construction.

6.7.3 Refuse Disposal

- A. The storage, collection, transportation and disposal of refuse shall be conducted to control odors, insects, rodents, accidents, or other nuisance conditions.
- B. Durable non-absorbent, cleanable refuse, recycling and composting containers shall be provided, kept in a clean condition and placed in readily accessible locations.
- C. Exterior refuse, recycling and compost containers shall be easily cleanable, provided with covers, stored on a smooth surface of non-absorbent material, such as concrete or machine-laid asphalt, and kept in a clean, sanitary condition.
- D. Interior garbage containers shall be easily cleanable and shall be emptied whenever full. Refuse shall be removed from the building and premises on a regular basis, or at a minimum every seven days, and in a manner which would prevent creation of a nuisance condition.

- E. Disposal or removal of hazardous materials shall be conducted in a safe manner and in accordance with state, federal, and local provisions.

6.7.4 Insect, Rodent Control and Classroom Animals

- A. Insects, rodents, bats and other pests shall be managed, when they reach levels considered to pose economic or health threats, with integrated strategies for long-term pest suppression, using the most cost-effective means with the least possible hazard to people, property, and the environment.
- B. Animals used for instructional purposes shall be maintained in a sanitary condition and in a manner to prevent health hazards or nuisance conditions. Their enclosures or pens shall be provided with easily cleanable surfaces and maintained in good repair. Hygienic practices shall be supervised during and following contact with animals. Location and/or presence of animals shall be determined based on the protection of the health of students and staff with allergies and/or asthma.
- C. Live poultry (e.g., chicks and ducklings), reptiles, and amphibians shall be prohibited as pets in classrooms with children kindergarten age or younger. Because infections from these animals spread via fecal-oral transmission (hand to mouth behaviors), use of these animals in other classrooms where children engage in frequent hand to mouth behaviors is discouraged.
 - 1. Embryology units involving the incubation of poultry eggs are allowed under the following conditions:
 - a. Eggs and live birds must be enclosed in an incubator or brooding box at all times.
 - b. The incubators and brooding boxes shall be placed on a nonabsorbent, smooth, and easily cleanable surface. Flooring beneath shall be non-carpeted and easily cleanable.
 - c. The areas surrounding the incubators and brooding boxes shall be washed, rinsed, and disinfected at least daily with an approved disinfectant meeting the criteria listed in 6.7.6 (F)(1). The disinfectant used shall have a contact time of five minutes or less.
 - d. Once chicks hatch they must be contained in the brooding boxes at all times and removed from the building within two weeks.
 - e. Children in kindergarten may not handle the eggs, live birds, or their enclosures.
 - f. Staff and children in first grade and subsequent grades involved with the care of the eggs or live birds shall thoroughly wash their hands with soap and running water immediately after handling eggs, birds, or enclosures.
 - g. All staff and children who participate in the embryology unit must

thoroughly wash their hands prior to meals and snacks.

- h. Hand sanitizer shall not be used in place of handwashing in accordance with 6.7.6(D).
 - i. Children shall not eat in areas where incubators or brooding boxes are kept, even during inclement weather.
 - j. The school shall contact the Department if there are two or more gastrointestinal illnesses identified, within a similar timeframe, in children or staff in classrooms where the incubators or brooding boxes are located.
 - k. If preschool age children or younger are in the building the animals and their enclosures may not be in a communal area used by these younger children.
- 2. Live poultry coops are allowed under the following conditions:
 - a. Live poultry shall be enclosed in an outdoor coop.
 - b. If preschool age children or younger are at the school, the coop may not be located in a communal area used by these younger children.
 - c. Kindergarten age children or younger may not handle the poultry, eggs, or have direct contact with the coop.
 - d. An alcohol based hand sanitizer with at least 60% alcohol shall be provided at entrances and exits of the chicken coop and the area where chickens are allowed to roam.
 - e. All adults and children shall use hand sanitizer after any contact with the poultry, eggs, or the coop. Adults and children must then immediately wash their hands upon entering the building.
 - f. Signs instructing the use of hand sanitizer and handwashing shall be clearly posted near the coop. The signs shall clearly state that hand sanitizer must be used immediately following contact with the chickens or the coop and that hands must be washed immediately upon returning to the building.
 - g. The school shall contact the Department if there are two or more gastrointestinal illnesses identified, within a similar timeframe, in children or staff who have contact with the poultry, eggs, or the coop.
- D. Service animals shall be permitted to accompany their handlers throughout the school provided it is not in food preparation areas. Schools administrators shall make reasonable accommodations wherever possible to protect the health of students with allergies and asthma from contact with classroom and service animals.

- E. The use of toxic compounds to control rodents, insects, and other pests shall be implemented only after other means have been used for control, such as the elimination of harborages, cleaning food waste, and sealing of ports of entry. All pesticides shall be used in accordance with U.S Environmental Protection Agency (EPA) registered label directions and stored in a safe manner in an area accessible only to authorized personnel. Application of EPA "restricted use pesticides" shall be performed only by a certified pesticide applicator.

6.7.5 Plumbing

- A. In the absence of more stringent plumbing codes, all plumbing fixtures shall be installed and maintained in accordance with the *2009 International Plumbing Code*, hereby incorporated by reference.
- B. Plumbing fixtures shall be maintained in working order and in a clean sanitary condition. All plumbing fixtures shall be designed and maintained to be accessible by the age group being served.
- C. The drinking water supply shall be installed and maintained to preclude the possibility of backflow or backsiphonage of non-potable, used, unclean, polluted and contaminated water, or other substances, into any part of the drinking water system.
- D. A properly installed approved backflow prevention device shall be provided for all drinking water supply outlets which are capable of receiving a hose connection.
- E. Where chemical dispensing towers are installed without an integral air gap or break to prevent backsiphonage, an approved backflow prevention device shall be installed between the chemical tower and the water supply line.
- F. Backsiphonage and backflow prevention devices shall meet American Society of Sanitary Engineering (A.S.S.E.) standards for construction, installation, maintenance, inspection and testing for that specific application and type of device.

6.7.6 Toilet, Lavatory and Bathing Facilities

- A. Schools shall take active steps to ensure hand washing before eating, after restroom use, and any other time hands may be contaminated.
- B. Toilet, lavatory, bathing facilities and drinking fountains shall be provided and installed in accordance 28 CFR, Part 36, *Nondiscrimination On The Basis Of Disability By Public Accommodations And In Commercial Facilities*, revised July 1, 2014 and hereby incorporated by reference.
- C. Each hand washing and classroom sink shall be provided with hot and cold water through a mixing valve or combination faucet. Hot water at sinks accessible to children shall be at least 90°F and shall not exceed a temperature of 120°F.
- D. Hand sanitizers may be used in addition to, but not in place of, hand washing within the facility. Hand sanitizers or approved alternate hand washing methods shall be used for staff and children at times and in areas where hand washing facilities are not

available, such as while out of doors in remote locations. Hand sanitizers shall be stored in an area where use can be monitored.

- E. Sanitizers are to be used on commonly touched surfaces such as, but not limited to, chairs, desks, tables, keyboards, and computer mice. These surfaces shall be cleaned and sanitized at least once a week or whenever visibly soiled.
 - 1. Acceptance of sanitizers shall be determined by the following requirements:
 - a. The chemical is registered with the U.S. Environmental Protection Agency and the use of the chemical is in accordance with labeled instructions, including:
 - (1) Concentration;
 - (2) Contact time;
 - (3) Method; and,
 - (4) Surfaces.
 - b. During times of increased illness, or at the discretion of the school health personnel, a disinfectant meeting the approval criteria in section 6.7.6(F)(1) may be used on these surfaces. If surfaces are also used for meals and snacks they shall be washed, rinsed, and sanitized after disinfection.
- F. Disinfectants are to be used on surfaces that are commonly contaminated with high hazard body fluids, such as but not limited to restroom surfaces, toilets, diaper changing areas and surfaces that have been in contact with high hazard body fluids.
 - 1. Acceptance of disinfectants shall be determined by the following requirements:
 - a. The chemical is registered with the U.S. Environmental Protection Agency and the use of the chemical is in accordance with labeled instructions, including:
 - (1) Concentration;
 - (2) Contact time;
 - (3) Method; and,
 - (4) Surfaces.
- G. Drinking fountains shall be conveniently located on each floor and easily accessible to all school program activities. Drinking fountains shall not be located in toilet rooms or other areas with increased potential for contamination (e.g., science, vocational, industrial, photography or art education areas).
- H. Drinking fountains shall be equipped with angled jets and orifice guards located above the rim of the fountain. The pressure shall be regulated so that the water stream does not come in contact with, and passes, the orifice guard or splash onto the floor. Separate angle jet drinking fountains, when installed, shall be at an appropriate height.
- I. Use of common drinking cups or vessels is prohibited.

- J. Toilet rooms shall be conveniently located at a travel distance of not more than 200 feet from any room to be served and in accordance with Section 6.13(F) for health care areas. All toilet rooms shall be provided with adequate lavatory facilities.
- K. Detached structures and modular classrooms not provided with plumbing shall be no more than 500 feet from restrooms and drinking water fountains, accessible through an unlocked door or key access during all hours of operation, and shall be adequately ventilated.
- L. Soap and single service towels shall be available for all lavatory facilities, except that mechanical warm air dryers may be used in lieu of towels.
- M. Hot and cold water or tempered water under operating pressures (20 PSI minimum) shall be available for bathing and washing. Hot water delivered to showers and lavatories shall be at least 90 degrees Fahrenheit (90°F) and shall not exceed 120°F. The temperature of hot water at other fixtures shall not exceed 140°F, except where necessary for sanitizing purposes.
- N. Toilets shall be equipped with non-absorbent, easily cleanable toilet seats. Toilet paper shall be available at each toilet mounted in an appropriate dispenser.
- O. Floors, walls, and ceilings of all toilet and locker rooms shall be smooth, easily cleanable, non-absorbent and shall be maintained in good repair and in a clean, sanitary condition.
- P. A floor drain and a keyed hose bib with a vacuum breaker shall be available for all toilet rooms having a total combination of two or more water closets or urinals. The floors in these rooms shall slope to the floor drains.
- Q. Showers shall be installed in accordance with the *2009 International Plumbing Code*, hereby incorporated by reference, or as approved by the Department. Showers shall be constructed to prevent water flow into the drying or dressing room space and shall slope to the floor drains. Shower floors, ceilings, and walls shall be easily cleanable and shower floors shall have a non-skid surface.
- R. Functional hose bibs shall be available, where necessary, at designated refuse, compost and recycling storage areas and at high density student common use areas within 50 feet of the building where heavy accumulations of refuse are generated to minimize hazards and to maintain such areas in a clean, safe condition.

6.7.7 Diapering and Toileting

- A. Where diapering or bowel/bladder hygiene care is necessary, a separate changing area with privacy shall be available with a cleanable impervious surface large enough to accommodate the individual in care.
 - 1. This changing area shall be located:
 - a. Away from any food preparation, storage and servicing areas.

- b. Nearby a handwashing sink with soap and hot and cold running water.
 - c. Adjacent to a washable, covered container lined with a plastic bag, inaccessible to children, and used for disposal of soiled diapers, wipes and gloves.
 - d. Items unrelated to diaper changing shall not be placed on the changing tables or wall-hung changing stations.
2. If a changing mat is used it shall be kept clean and in good repair and shall be cleaned and disinfected after each use.
3. The following procedure shall be conducted each time bowel or bladder hygiene is provided:
- a. Whenever bowel or bladder hygiene is conducted, individuals shall wear a new pair of disposable gloves prior to beginning.
 - b. The student shall be cleaned wherever necessary.
 - c. Soiled diapers/underwear and clothing shall be replaced with clean diapers/underwear and clothing.
 - d. Soiled clothes shall be placed in a plastic bag for parents or guardians to take home. Soiled diapers shall be placed in a covered, impervious plastic lined receptacle.
 - e. The student's hands shall be washed.
 - (1) Any contaminated surfaces should be cleaned and disinfected.
 - f. The staff member shall then thoroughly wash his/her hands.

6.8 Buildings and Grounds

6.8.1 Buildings

- A. The school campus and accessory buildings shall be maintained in a clean and sanitary condition and in a manner that minimizes health and safety hazards to building occupants.
- B. Adequate space shall be provided for each person in classrooms, libraries, shops, laboratories, vocational training rooms, dining rooms, and other related activity rooms or areas to lessen the possibility of health hazards, and disease transmission. Adequate space is required in accordance with the *2006 International Building Code*, hereby incorporated by reference.
- C. Where necessary, classroom and health room windows shall be equipped with blinds, shades, or other effective means to prevent glare, to control natural light, and provide appropriate privacy.

- D. Windows, when opened, shall not create a hazard such as noise, dust, fumes or extreme temperatures or hazard that may result in physical injury.
- E. Exposure to noise, dusts, toxic chemicals, or other hazards shall be controlled at all times including when the building or portion thereof is occupied during construction or remodeling.
 - 1. An asbestos management plan complying with the provisions of the Colorado Air Quality Control Commission, 5 CCR 1001-10, Regulation No. 8 shall be developed and maintained on file at each school and available for review. Prior to remodeling any portion of the school building, the asbestos management plan must be reviewed and any necessary construction-specific inspections for the identification of asbestos containing materials must be conducted in accordance with Colorado Air Quality Control Commission, 5 CCR 1001-10, Regulation No. 8.
 - 2. Radon testing shall be completed by each school and conducted pursuant to the procedures described in the American Association of Radon Scientists and Technologists (AARST) *Protocol for Conducting Measurements of Radon and Radon Decay Products In Schools and Large Buildings*, 2015, hereby incorporated by reference. The results of these tests shall be on file at each school and available for review. Schools constructed after the effective date of these rules and regulations shall complete radon tests within 19 months of the date of occupancy. Schools remodeled after the effective date of these rules and regulations shall notify the Department of such remodeling in order that the Department may assess the need for any additional radon testing.
- F. When there is a change in classroom use, the design and construction of the classroom facilities shall be appropriate for the new use, including safety provisions required by Section 6.12 of this regulation, where applicable.
- G. The school campus shall be maintained in a manner that prevents fire hazards. Fire control methods shall conform to state and local fire prevention regulations.
- H. School buses shall be operated and maintained to avoid health and safety hazards.

6.8.2 Grounds

- A. The ground shall be self draining and free from depressions in which water may stand and be allowed to stagnate. The grounds shall be kept free from refuse, unused equipment, weed overgrowth, and other hazards. All outdoor areas shall be maintained in a sanitary condition and be free of insect and rodent harborages, open or accessible wells, grease traps, cisterns, cesspools, septic tanks, and/or utility equipment.
- B. Raw agricultural products grown on-site shall be permitted in school cafeterias provided school gardens and greenhouses conform to U.S. Department of Agriculture Good Agricultural Practices.

- C. Livestock or poultry shall be located more than 50 feet from food service areas, offices, or classrooms except those offices and classrooms associated with animal husbandry activities.

6.9 Mechanical Requirements

6.9.1 Electrical

- A. Schools shall be provided with operational electrical service and artificial lighting at all times when occupied.
- B. The electrical system shall be maintained in good repair and shall not present a hazard to health and safety. In the absence of more stringent electrical codes, installation, maintenance and use of the electrical system shall adhere to the *2014 National Electrical Code*, hereby incorporated by reference.
- C. When an electrical service interruption exceeds a period of two hours, the school shall be closed, unless dismissal of the pupils would be detrimental to their physical well being, or unless accessible approved alternatives for providing lighting, temperature control, and hot water are available that meet the requirements of the Department.

6.9.2 Lighting

- A. The electrical lighting system shall provide the following average light level intensities: 35 foot candles for classrooms, libraries, offices, laboratories and shops; 20 foot candles for reception rooms, restrooms, gymnasiums, service rooms, swimming areas and dining areas; 10 foot candles for auditoriums, locker rooms and stairways; and 5 foot candles for corridors, hallways, storage and utility areas. Light level intensities shall be measured at the work surface or 30 inches from the floor.
- B. Extreme brightness ratios (glare and shadow) shall be minimized by avoiding glossy surfaces, by use of diffused lighting, by use of easily cleanable high light reflectance paints or other finishes for ceilings, walls, and floors, by use of window shades, routine cleaning and maintenance of electrical fixtures, and/or other measures necessary to prevent undue glare and maintain a high level of light effectiveness.
- C. Appropriate measures shall be taken to assure that persons are not exposed to harsh lighting, which may be harmful to the eyes, such as ultra-violet light.

6.9.3 Ventilation

- A. Ventilation, mechanical or natural, shall be installed and maintained in accordance with the 2013 American Society of Heating, Refrigeration and Air Conditioning Engineers Standard 62.1-2013, *Ventilation for Acceptable Indoor Air Quality*, hereby incorporated by reference, and to minimize health hazards including excessive drafts, extreme temperatures, humidity, and temperature fluctuations.
- B. Ventilation system filters shall be cleaned or replaced regularly or according to manufacturer's recommendations to prevent excessive accumulation of dust or debris.

- C. Restrooms shall be equipped with mechanical exhaust to remove bio-aerosols and noxious odors.
- D. Each room provided with an exhaust system shall have air supplied to the room equal to the amount to be exhausted. Windows shall not be used for the purpose of providing makeup air.
- E. Unvented combustion heaters, kitchen stoves, or hot plates shall be prohibited for space heating purposes. Portable electric heaters with exposed elements shall not be used in any student activity area.
- F. Hot plates, skillets, or similar type cooking appliances shall be used for food preparation only in kitchen, home economics room, or in rooms specifically designated and equipped for such use.
- G. Operational carbon monoxide alarms shall be installed in areas where fossil fuel-fired heaters and appliances are used such as in boiler rooms and kitchens. Maintenance and installation of carbon monoxide detectors shall comply with manufacturer's instructions. Carbon monoxide alarms must be tested at least annually with documentation available upon request. Carbon monoxide detectors that are only battery-powered shall be tested monthly and the batteries shall be replaced at least annually.

6.9.4 Heating

The heating system provided shall be properly maintained and provide, in all occupied rooms, minimum room temperatures of 60° F at sixty 60 inches above the floor in shops and gymnasiums and 65° F at thirty 30 inches above the floor in elementary, secondary, and higher educational school classrooms, and at floor level in kindergarten. A plan that addresses operating during periods of extreme temperature, as it relates to indoor air, shall be developed. A current boiler inspection certificate shall be posted and available upon request.

6.10 Equipment and Supplies

- A. Instructional, athletic, recreational or other equipment used in or out of the classroom shall be maintained in a clean, safe condition.
- B. Toys and equipment shall meet the current requirements of the Colorado Hazardous Substance Act, Section 25-5-501 and Section 25-5-508, et. seq., C.R.S.
- C. Gym equipment shall be kept clean and in good repair. Body contact equipment surfaces shall be routinely cleaned and sanitized.
- D. Equipment used in physical therapy and special education shall be cleaned and sanitized after each use.
- E. Facilities shall be available for the proper storage of clean clothing, and of athletic, instructional, and recreational equipment and supplies to minimize health hazards and to facilitate cleaning.

- F. Cleaning materials, tools, and maintenance equipment shall be provided and shall be safely stored and secured in a locked area. Safety Data Sheets (SDS) for pesticides, toxic or hazardous cleaning and maintenance chemicals and materials shall be maintained and organized to be easy to locate in the event of a spill or accidental exposure.
- G. Pesticides, toxic or hazardous cleaning and maintenance chemicals and materials shall be stored separately in a ventilated and locked cabinet or area accessible only to authorized personnel. The ventilation requirement of this section may not be required in areas where minimum quantities of the above mentioned materials are stored for daily use. In the absence of more stringent requirements flammable or combustible materials shall be stored in accordance with the 2015 National Fire Protection Association Code 30 *Flammable and Combustible Liquids Code*, hereby incorporated by reference.
- H. Kindergartens, health service rooms, or other areas, where sleeping is permitted shall be provided with sleeping facilities including cots or pads, with washable or disposable covers. These sleeping facilities shall be maintained in good repair and provided in a clean condition for each new user.
- I. Towels and wash cloths, and other linens, where provided, shall be laundered in water at least 140°F or shall reach at least 140°F in a heat drying cycle. Such linens, towels, and wash cloths shall be issued clean, used by only one person and shall be laundered after each use.

6.11 Food Service

- A. Food service activities shall be conducted in accordance with the requirements of the *Colorado Retail Food Establishment Rules and Regulations*, 6 CCR 1010-2.
 - 1. Schools preparing or serving food other than pre-packaged, non-potentially hazardous food or raw, unprocessed produce shall obtain a Retail Food Establishment License or Certificate of License as required by the *Colorado Retail Food Establishment Rules and Regulations*, 6 CCR 1010-2, Sections 11-102 and 11-103.
- B. Establishments serving food at the school but not prepared by school staff shall be licensed, inspected and approved by the Department. The food shall be transported, stored and served in a manner to prevent contamination, time and temperature abuse or adulteration.
- C. Dining activities shall be confined to rooms or areas designated by the school administrator. The dining area shall be maintained clean, and in a sanitary condition.
- D. Plans and specifications for construction or alteration of food service facilities shall be submitted in accordance with the requirements of the *Colorado Retail Food Establishment Rules and Regulations*, 6 CCR 1010-2, Section 11-4.

6.12 Laboratory, Industrial, Art, and Vocational Hazards

6.12.1 Procedures

- A. Provisions shall be made for the protection of students and staff engaging in arts, crafts, industrial arts, physical and biological sciences, vocational, educational or any activities where potentially hazardous chemicals, hazardous devices or hazardous equipment are used. These provisions include the development and posting of operating instructions, regulations, procedures, and a chemical hygiene plan. All potentially hazardous chemicals, hazardous devices or hazardous equipment including those used in art, industrial art and vocational art areas shall be used only in accordance with the product labeling. If available, specific manufacturer's instructions and warnings for safe use of the product or equipment shall be followed. When available, products with the safest materials shall be used (e.g., those with few or no cautionary/warning labels). Additional guidance regarding potential hazards and health and safety provisions associated with industrial and vocational arts and crafts is provided in the U.S. Consumer Product Safety Commission's Publication No. 5015, Art and Craft Safety Guide. Schools may rely on this guidance.
- B. Exposure to noise, or toxic liquids, dusts, gases, mists, fumes or vapors or other hazards shall be controlled to avoid health hazards.
- C. A current SDS shall be provided in an organized and easily searchable format (e.g., alphabetically filed) for all toxic or hazardous substances and shall be available for review upon request. A copy of the SDS shall be kept on file in a location away from the areas where the aforementioned chemicals are stored. Digital or other electronic versions of SDS may be approved at the discretion of the local fire authority.
- D. In the absence of more stringent standards the *2015 National Fire Protection Association Code 30 Flammable and Combustible Liquids Code* and *2015 National Fire Protection Association Code 45 Fire Protection for Laboratories Using Chemicals* are hereby incorporated by reference and shall be used as standards for the proper storage, handling and use of chemicals in the school.
- E. A chemical hygiene plan which addresses all areas of the school where toxic or hazardous substances are used or stored shall be provided. All restricted chemicals present in the school, including those stored in laboratory, vocational, arts, and custodial areas, shall be individually addressed in the plan. A copy of the plan shall be kept on file in a location away from the areas where chemicals are stored. The chemical hygiene plan shall be reviewed and updated, as necessary, at least once annually. All schools must develop a Chemical Hygiene Plan by January 1, 2016. A copy of the Chemical Hygiene Plan shall be provided to the local fire department and local emergency planning committee upon request.
- F. Procedures shall be established for the management of chemical waste and shall be addressed in the chemical hygiene plan. All containers of chemical waste shall be labeled to their contents and with the words "not for use" or "waste", maintained in good condition and separated by reactive group. Chemical waste shall be stored in a designated area away from normal classroom operations and away from sinks and floor drains. Chemical waste shall be handled and stored in a manner that minimizes the

possibility of a fire, explosion, or release. A hazardous waste determination shall be made for all waste chemicals in accordance with 6 CCR 1007-3 Section 262 of the Colorado Hazardous Waste Regulations. Hazardous waste chemicals must be properly disposed of at a permitted facility and shall not be disposed of on-site. All other chemical waste shall be disposed of using an appropriate method as provided on the chemical SDS, or as indicated by the manufacturer.

- G. A current list of emergency services with telephone numbers, including the name, address and telephone number of the school, shall be posted in one or more prominent place(s) in each school.
- H. Aspirators or suction bulbs shall be used for drawing liquids into pipettes. The mouth must not be used directly on the pipettes.

6.12.2 Safety Equipment

- A. Protective clothing, that meets the ANSI Z49.1-2014 Standard- *Safety in Welding, Cutting, and Allied Processes*, hereby incorporated by reference, shall be worn by all students participating in, observing, or in close proximity to welding or other such activities that could result in sparks contacting clothing. Welding helmets, that meet the requirements of ANSI Z49.1-2014 Standard- *Safety in Welding, Cutting, and Allied Processes*, hereby incorporated by reference, shall be worn by all students participating in, observing, or in close proximity to welding. Protective clothing shall be maintained clean and in good repair.
- B. Eye protection, that meets the ANSI Z87.1-2010 Standard for Occupational and Educational Personal Eye and Face Protection Devices, hereby incorporated by reference, must be worn by all students participating in, observing, or in close proximity to any experiment or activity which could result in eye injury. Eye protection glasses, goggles, face shields, and similar eye protection devices shall be issued clean, in good repair and properly sanitized between students and stored in a protected place. Sanitization of eye protection can be accomplished using an ultraviolet light case, a chemical sanitizer in accordance with Section 6.7.6, or other effective means approved by the Department.
- C. An easily accessible fire blanket must be provided in all areas where an open flame is used.
- D. Where there is potential for exposure to skin with toxic, infectious or irritating materials, a hand washing facility shall be available.
- E. An easily accessible operational eye wash fountain that meets the ANSI Z358.1-2009 Standard, hereby incorporated by reference, must be provided in each laboratory or other areas where corrosives or irritating materials are used. The eye wash fountain shall be maintained clean, permanently plumbed, and provide a hands-free continuous flow of water capable of flushing both eyes simultaneously. The use of portable eye wash bottles as substitutes is not permitted. Easily accessible means no more than 55 feet from the storage or use of corrosive or irritating materials so that it can be reached with impaired vision within 10 seconds or less. Eye wash fountains shall be tested annually with documentation available upon request.

- F. An easily accessible operational safety shower that meets the ANSI Z358.1-2009 Standard, hereby incorporated by reference, capable of providing continuous flowing water, shall be provided for each laboratory or other areas where corrosive or irritating chemicals are used. The safety shower can be centrally located so as to serve more than one area provided that it is within 55 feet from the storage or use of corrosive or irritating materials and can be reached with impaired vision within 10 seconds or less. The safety shower shall be tested annually with documentation available upon request.
- G. A master gas control valve (MGCV), is required on gas supply lines to vocational areas and science laboratories. The MGCV shall stop the flow of gas to all appliances/ equipment located in the room and must function as a manually operated emergency gas shut-off. One MGCV shall be provided for each room and made easily accessible. Electric shut-off switches shall be provided in areas where power equipment is used. Master gas valves and electric shut-off switches shall be labeled for high visibility and tested annually with documentation available upon request.
- H. Adequately stocked first aids kits shall be stored in all laboratories, vocational education, industrial arts, set design, and art classrooms.
- I. Fire extinguishers are required in accordance with the 2015 National Fire Protection Association Code 45 *Standard on Fire Protection for Laboratories Using Chemicals*, hereby incorporated by reference. Dry chemical Class ABC extinguishers are recommended for laboratory use. If combustible metals (e.g., Mg, Na, K) are present, laboratories must have a class D extinguisher or those agents shown to be effective in controlling combustible metal fires as well.
- J. All emergency and safety equipment shall be tested annually with documentation available upon request and labeled for high visibility.
- K. Radioactive materials and equipment shall conform to the Colorado Department of Public Health and Environment *Rules and Regulations Pertaining to Radiation Control*, 6 CCR 1007-1.

6.12.3 Storage Provisions

- A. Toxic or hazardous materials shall be stored in safe and appropriate containers, separated by reactive group and stored in a ventilated, locked area or appropriate cabinet. The ventilation requirement of this section may not be required where minimum quantities of such materials are stored for daily use. Toxic or hazardous materials must be stored according to the chemical manufacturer's storage temperature requirements at all times including during school holidays and breaks.
- B. All containers of chemicals shall be clearly labeled with the name, original quantity of the material, and the date the material entered the school. Secondary containers and/or prepared solutions intended for storage shall be labeled with chemical name and, if applicable, the formula (including solvent), date of preparation, disposal date, and concentration.

- C. Schools shall not purchase or accept donations of prohibited chemicals. These chemicals are prohibited from use and/or storage at the school unless a variance from this regulation is requested in writing by the school and approved by Department. If prohibited chemicals are found in the school, they shall be identified on the container label as “not for use” or “waste” and segregated from the chemical inventory. Unless a variance has been granted by the Department, all schools must dispose of prohibited chemicals. Prohibited chemicals are listed in Appendix A to this regulation.
- D. Restricted chemicals shall be removed from the schools if alternatives can be used. If restricted chemicals are present at the school, each chemical shall be identified in the school’s chemical inventory and addressed in the chemical hygiene plan as required in Sections 6.12.1(E) and (F) of these regulations. Containers of restricted chemicals shall be labeled as such. Restricted chemicals with an indefinite shelf life, as indicated in Appendix B and B2, shall be obtained in amounts that can be expended in five years or less. Restricted chemicals with a good, fair, poor or limited shelf life, as indicated in Appendix B and B2, shall be obtained in amounts that can be expended in one school year, or less than one year if the manufacturer indicates a lesser period of time in which the chemical shall be used.
- E. Restricted chemicals (demonstration use only) are a subclass in the restricted chemical lists that are limited to instructor demonstration. Students may not participate in the handling or preparation of restricted chemicals as part of a demonstration. If restricted chemicals (demonstration use only) are present at the school, each chemical shall be addressed in the school’s written emergency plan as addressed in sections 6.13(K) and (L) of these regulations. Demonstration only chemicals are listed in Appendix B2 to this regulation.
- F. All chemicals, compounds, and hazardous substances shall be inventoried by the school a minimum of once a year. The inventory shall include the name of the compound, the amount, and the year it entered the school. If restricted or prohibited chemicals are present in the school, they shall be designated as such in the chemical inventory. A copy of the inventory shall be kept in the area of use and on file in a location away from the areas where chemicals are stored. The updated inventory shall be provided to the local fire Department and local emergency planning committee upon request.
- G. Refrigerators used for flammable compounds shall be prominently marked to indicate they meet the appropriate design requirements for safe storage of flammable liquids. Food for consumption shall not be stored in refrigerators used for flammable or any other laboratory related materials. Food and food containers for experimentation shall be labeled as “not for consumption” and segregated from foods intended for consumption.
- H. The storage, preparation, and consumption of food and drink are prohibited in any area where there are toxic or hazardous substances. A personal water bottle is allowed when there are no toxic or hazardous substances in use. When a student’s individual health care needs (e.g., health care plan, 504 Plan) require food to be readily available, it shall be allowed in these areas as long as it is protected from contamination and not available for general consumption.
- I. Glassware shall be properly constructed and designed for its intended use and shall be

handled and stored in a safe manner.

6.12.4 Ventilation

- A. All areas shall be adequately ventilated through mechanical means so that exposures to hazardous or toxic materials are maintained to a safe level. Additional guidance in determining safe levels is provided in the American Conference of Governmental Industrial Hygienists, *Threshold Limit Values and Biological Exposures Indices*. Schools may rely on this guidance.
- B. Local exhaust ventilation shall be provided so that contaminants are exhausted away from the student and not through the breathing zone.
 - 1. Air flow of local exhaust ventilation must be tested annually with documentation available upon request.
- C. Sufficient fume hood capacity ventilation shall be provided and shall be used for any activity producing hazardous toxic or noxious gases, mists, vapors, or dusts.
 - 1. Hoods must exhaust directly to the outside and shall be located a minimum of 10 feet from any building air-intakes or building openings.
 - 2. Discharges of any reportable air pollutant from any exhaust hood must meet applicable Colorado Air Pollution Standards.
 - 3. In the absence of other applicable standards, a minimum face velocity of 100 feet per minute (fpm) and a maximum of 120 fpm for general laboratory hoods must be provided.
 - 4. Air flow of fume hoods must be tested annually with documentation available upon request.
- D. Spray booths and finishing rooms where flammable or combustible materials are used shall be constructed in accordance with 29 CFR 1910.107, revised July 1, 2011 and hereby incorporated by reference.

6.13 Health Service

- A. Children in care shall be immunized as required by 6 CCR 1009-2, *Rules Pertaining to the Infant Immunization Program, the Vaccines for Children Program, and the Immunization of Students Attending School*. The official Certificate of Immunization, official Exemption form or written documentation of the student being In-Process shall be on file for each enrolled student. Upon request of state or local health agencies, schools are responsible for providing records with identifiers removed if the school is subject to the Family Educational Rights and Privacy Act (FERPA).
- B. Basic first aid equipment and medical supplies including: gauze pads and roller gauze, adhesive tape, cold pack, plastic bags, disposable gloves, band-aids, hand cleaner, small flashlight and extra batteries, scissors, and blanket shall be provided and kept conveniently available for emergency use.

1. First aid supplies and equipment with an expiration date shall be discarded and replaced once that date has passed.
- C. At all times during the school day and during school sponsored events, including those off-site, at least one staff member shall be on duty in each school who has a current certification from a nationally recognized course in Standard First Aid and Cardio Pulmonary Resuscitation (CPR) certification course. A list of persons currently certified, as described above, shall be maintained in each school office.
 - D. Schools that acquire Automated External Defibrillators (AEDs) shall ensure public health and safety in accordance with C.R.S. 13-21-108.1.
 - E. Separate rooms or areas shall be available in every school for emergency use in providing care for persons who are ill, or suspected of having communicable diseases.
 - F. Every health care room or area must have an easily accessible restroom within 50 feet and shall be provided with at least one cot for each 400 students or part thereof. Each cot and pillow shall have an easily cleanable, non-absorbent surface or cover which is sanitized after each use. A sink with hot and cold running water shall be located in the health care room or area. Unless prohibited by local code, in new and extensively remodeled schools, a restroom directly adjoining the health office is required. This restroom is for the exclusive use of health services.
 - G. In accordance with the Nurse Practice Act, C.R.S. 12-38-132, medication administered by trained school personnel with oversight by a registered nurse shall be inaccessible to children and shall be stored in the original container in a controlled area separated from food, cleaning compounds and other toxic substances. Emergency medications such as epinephrine shall be inaccessible to students, immediately available to trained school personnel and in an unlocked location (e.g., emergency kit or bag, cabinet). If refrigeration is required, the medication shall be stored:
 1. In a separate refrigerator maintained for that purpose only, or
 2. In an impervious secondary container in a designated area of a food storage refrigerator, separated from food and inaccessible to children.
 - H. Medications acquired by the school or abandoned by parents shall be disposed of in accordance with 6 CCR 1007-2, Part 1, *Regulations Pertaining to Solid Waste Sites and Facilities* and 6 CCR 1007-3, Parts 260-268, and Parts 99 and 100.
 - I. Medical oxygen shall not be used by students or staff in areas with open flames. Signage shall be posted in the school that oxygen is in use.
 - J. Telephone or radio communications shall be provided and kept available in each school for emergency purposes.
 - K. A written plan with common procedures for handling medical emergencies shall be kept and made available for review. A current list of emergency services with telephone numbers, including the address and telephone number of the school, shall

be posted in one or more prominent place(s) in each school.

- L. A written all hazards plan for handling disasters, including large outbreaks, shall be available at each school. Disaster training and review will be conducted each year at each school. Principals, school personnel and students will periodically review and test each disaster plan.
- M. Schools should follow the Department's Infectious Disease Guidelines for Schools and Child Care, including reporting requirements to LPHA and the Department.

APPENDICES

Appendix A - Prohibited Chemicals			
Name	Formula	CAS #	Hazard*
2-Butanol (sec-Butyl Alcohol)	$C_2H_5CH(OH)CH_3$	78-92-2	may form explosive peroxides upon concentration
Acetal (1,1-Diethoxyethane)	$C_6H_{14}O_2$	105-57-7	may form explosive peroxides upon concentration; toxic
Acetaldehyde (Ethanal)	CH_3CHO	75-07-0	may form explosive peroxides upon concentration; possibly carcinogenic to humans; highly flammable
Acetyl Halides (e.g., Acetyl Fluoride, Acetyl Chloride, Acetyl Bromide, Acetyl Iodide)			respiratory irritant, toxic; violent reaction with water; dangerous fire risk
Acetyl Nitrate	CH_3CONO_2	591-09-3	shock sensitive
Acrolein	CH_2CHCHO	107-02-8	flammable and reactive; may be fatal if ingested, inhaled, or absorbed through the skin
Acrylic Acid (Propenoic Acid)	H_2CCHCO_2H	79-10-7	may form explosive peroxides; reactive; corrosive
Acrylonitrile	CH_2CHCN	107-13-1	may form explosive peroxides; possibly carcinogenic to humans; flammable; reactive

Appendix A - Prohibited Chemicals			
Name	Formula	CAS #	Hazard*
Alcohols (Allylic, Benzylic) Note: Alcohols are referred to as allylic or benzylic if the hydroxyl group is bonded to an allylic carbon atom (adjacent to a C=C double bond) or a benzylic carbon atom (next to a benzene ring), respectively. (e.g., 3-penten-2-ol; 2-propen-1-ol (allyl alcohol), 1-phenylethanol, phenylmethanol (benzyl alcohol), diphenylmethanol (diphenylcarbinol), triphenylmethanol (triphenylcarbinol)).			may form explosive peroxides upon concentration
Alkyl-Substituted Cycloaliphatics Note: Methyl-, ethyl-, propyl-, butyl- are common alkyl substituents. A cycloaliphatic is a cyclic hydrocarbon such as cyclopropane, cyclobutane, or cyclohexane (e.g., tert-butylcycloheptane or 1-cyclobutyl-4-methylpentane).			may form explosive peroxides upon concentration
Aluminum Phosphide	AlP	20859-73-8	water-reactive; generates poisonous and explosive gas when in contact with air or moisture
Amatol (TNT and Ammonium Nitrate mixture)			explosive
Ammonal (TNT, Ammonium Nitrate, and Aluminum Powder Mixture)			explosive
Ammonium Bromate	NH_4BrO_3	13843-59-9	shock sensitive
Ammonium Chlorate	NH_4ClO_3	10192-29-7	strong oxidizer; explosive
Ammonium Hexanitrocobaltate	$\text{NH}_3\text{Co}(\text{NO}_2)_6$	13600-98-1	explosive

Appendix A - Prohibited Chemicals			
Name	Formula	CAS #	Hazard*
Ammonium Nitrite	NH_4NO_2	13446-48-5	explosive
Ammonium Perchlorate	NH_4ClO_4	7790-98-9	strong oxidizer; explosive; irritant
Ammonium Periodate	NH_4IO_4	13446-11-2	strong oxidizer; explosive; irritant; inhalation hazard
Ammonium Permanganate	NH_4MnO_4	13446-10-1	explosive
Ammonium Tetraperoxychromate	$(\text{NH}_4)_3\text{CrO}_8$		explosive
Antimony Compounds (e.g., triethyl stibine, tripropyl stibine, trivinyl stibine, antimony trichloride, antimony pentachloride, nickel antimonide)			dust fire and explosion hazard; poison; corrosive; reactive; some antimony compounds are possibly carcinogenic to humans
Arsenic and Arsenic Compounds (e.g., lead arsenate, sodium arsenate, sodium arsenite, Trisilyl Arsine, arsine, arsenic trioxide)			carcinogenic to humans; poison
Azide Compounds (e.g., hydrogen azide, sodium azide, copper azide, lead (dinitride) azide)			acutely toxic; shock sensitive; explosive
Azidocarbonyl Guanidine	$\text{C}_2\text{H}_4\text{N}_6\text{O}$	54567-24-7	shock sensitive, explosive
Barium	Ba	7440-39-3	water-reactive; may ignite on contact with water or moist air; acutely toxic
Barium Chlorate	$\text{Ba}(\text{ClO}_3)_2 \cdot \text{H}_2\text{O}$	13477-00-4	explosive; strong oxidizer; toxic
Barium Oxide (Anhydrous)	BaO	1304-28-5	poison; water-reactive
Barium Peroxide	BaO_2	1304-29-6	poison; water-reactive; oxidizer

Appendix A - Prohibited Chemicals			
Name	Formula	CAS #	Hazard*
Benzene	C_6H_6	71-43-2	carcinogenic to humans; flammable
Benzene Diazonium Chloride	$C_6H_5ClN_2$	100-34-5	explosive
Benzotriazole	$C_6H_5N_3$	95-14-7	explosive
Benzoyl Peroxide	$(C_6H_5CO)_2O_2$	94-36-0	flammable; explosive; oxidizer; sensitizer; allergen; reacts violently with bases
Benzyl Alcohol	$C_6H_5CH_2OH$	100-51-6	reacts violently with oxidants; may form explosive peroxides upon concentration
Bismuth Nitrate	$Bi(NO_3)_3 \cdot 5H_2O$	10035-06-0	strong oxidizer; contact with other material may cause fire; toxic
Boranes and Diboranes (e.g., borane, tribromoborane, trifluoroborane, diborane, pentaborane, methyldiborane)			poison; flammable; water-reactive
Bromine Pentafluoride	BrF_5	7789-30-2	oxidizer; poison; inhalation hazard; corrosive; reacts with water with explosive force
Bromine Trifluoride	BrF_3	7787-71-5	oxidizer; poison; inhalation hazard; corrosive; reacts with water with explosive force
Butadiene	C_4H_6	106-99-0	may form explosive peroxides; carcinogenic to humans
Butanetriol Trinitrate (BTTN)	$C_4H_7N_3O_9$	6659-60-5	explosive

Appendix A - Prohibited Chemicals			
Name	Formula	CAS #	Hazard*
Cadmium and Cadmium Compounds (e.g., cadmium hydroxide, cadmium oxide, cadmium sulfide)			carcinogenic to humans; highly toxic
Calcium Nitrate, Anhydrous	$\text{Ca}(\text{NO}_3)_2$	10124-37-5	strong oxidizer; may explode if shocked or heated
Calcium Permanganate	$\text{Ca}(\text{MnO}_4)_2$	10118-76-0	strong oxidizer
Carbon Tetrachloride	CCl_4	56-23-5	possibly carcinogenic to humans; acutely toxic
Chloral Hydrate	$\text{CCl}_3\text{CH}(\text{OH})_2$	302-17-0	controlled barbiturate; probably carcinogenic to humans
Chlorine	Cl_2	7782-50-5	oxidizer, corrosive, may be fatal if inhaled
Chlorine Dioxide	ClO_2	10049-04-4	oxidizer; flammable and reactive; shock sensitive; explosive
Chlorine Trifluoride	ClF_3	7790-91-2	powerful oxidizer; explosive reaction with water and acids; poisonous if inhaled
Chlorine Trioxide	ClO_3	13932-10-0	shock sensitive; explosive
Chloroacetylene	C_2HCl	593-63-5	shock sensitive; air reactive
Chloroform	CHCl_3	67-66-3	poison; possibly carcinogenic to humans
Chloropicrin	CCl_3NO_2	76-06-2	shock sensitive; explosive; poison; inhalation hazard

Appendix A - Prohibited Chemicals			
Name	Formula	CAS #	Hazard*
Chloroprene	C_4H_5Cl	126-99-8	may form explosive peroxides; possibly carcinogenic to humans
Chlorotrifluoroethylene	C_2F_3Cl	79-38-9	may form explosive peroxides
Chromic Chloride (Chromium (III) Chloride)	$CrCl_3 \cdot 6H_2O$	10060-12-5	acutely toxic; fatal if inhaled
Chromium (Powder)	Cr	7440-47-3	flammable; toxic
Chromyl Chloride	CrO_2Cl_2	14977-61-8	water-reactive; chromium (VI) compounds are carcinogenic to humans
Cobalt (Powder)	Co	7440-48-4	possibly carcinogenic to humans
Colchicine	$C_{22}H_{25}NO_6$	64-86-8	acutely toxic
Copper Acetylide	Cu_2C_2	1117-94-8	explosive
Cumene (Isopropylbenzene)	$C_6H_5CH(CH_3)_2$	98-82-8	may form explosive peroxides upon concentration; possibly carcinogenic to humans
Cycloheptanone	$C_7H_{12}O$	502-42-1	may form explosive peroxides; flammable; corrosive; toxic
Cyclohexanol	$C_6H_{11}OH$	108-93-0	may form explosive peroxides upon concentration
Cyclopentene	C_5H_8	142-29-0	may form explosive peroxides upon concentration
Diacetylene (Butadiyne)	C_4H_2	460-12-8	may form explosive peroxides upon concentration; highly flammable; explosive

Appendix A - Prohibited Chemicals			
Name	Formula	CAS #	Hazard*
Diazidoethane	$C_2H_4N_6$	629-13-0	explosive
Diazodinitrophenol (DDNP)	$C_6H_2N_4O_5$	4682-03-5	explosive
Diazomethane	CH_2N_2	334-88-3	poisonous and flammable gas
Dicyclopentadiene	$C_{10}H_{12}$	77-73-6	may form explosive peroxides upon concentration; acutely toxic; fatal if inhaled; flammable
Diisopropyl Ether	$C_6H_{14}O$	108-20-3	may form explosive peroxides
Dinitrophenol	$C_6H_3OH(NO_2)_2$	51-28-5	explosive
Dioxane	$C_4H_8O_2$	123-91-1	may form explosive peroxides upon concentration; possibly carcinogenic to humans
Dipentaerythritol Hexanitrate (DPEHN)	$C_{10}H_{16}N_6O_{19}$	13184-80-0	explosive
Disulfur Dinitride	S_2N_2	25474-92-4	explosive
Divinyl Acetylene	C_6H_6	821-08-9	may form explosive peroxides; acutely toxic; highly flammable
Divinyl Ether	$C_4H_6O_2$	109-93-3	may form explosive peroxides; highly flammable
Ethyl Ether (diethyl ether)	$(C_2H_5)_2O$	60-29-7	may form explosive peroxides upon concentration
Ethyl Nitrite	$C_2H_5NO_2$	109-95-5	explosive
Ethylene Glycol Dimethyl Ether (Glyme or 1,2-Dimethoxyethane)	$C_4H_{10}O_2$	28923-39-9	may form explosive peroxides upon concentration

Appendix A - Prohibited Chemicals			
Name	Formula	CAS #	Hazard*
Ethylene Glycol Dinitrate (EGDN or 1,2-Dinitroxyethane)	$C_2H_4N_2O_6$	628-96-6	explosive
Ethylene Oxide	C_2H_4O	75-21-8	carcinogenic to humans; flammable; explosive; may be fatal if inhaled or absorbed through the skin
Formaldehyde	CH_2O	50-00-0	carcinogenic to humans; poison; may cause allergic reaction
Furan	C_4H_4O	110-00-9	possibly carcinogenic to humans; may form explosive peroxides upon concentration
Glycerol Monolactate Trinitrate (GLTN)	$C_6H_9N_3O_{11}$		explosive
Grignard Reagents and their solvents Note: a Grignard Reagent has a formula $RMgX$ where X is a halogen and R is an alkyl or aryl (based on a benzene ring) group. An example is CH_3CH_2MgBr (ethylmagnesium bromide). They are typically found in solution with tetrahydrofuran or ether as the solvent.			Both the Grignard Reagent and the solvents are hazardous. The Grignard Reagents can be highly reactive, corrosive, pyrophoric, and toxic. The solvents are highly flammable and may form explosive peroxides.
Guanyl Nitrosamino Guanylidene Hydrazine			explosive; strong oxidizer
Hexyl Alcohol	$CH_3(CH_2)_4CH_2OH$	111-27-3	highly flammable; poison
HMX	$C_4H_8N_8O_8$	2691-41-0	explosive

Appendix A - Prohibited Chemicals			
Name	Formula	CAS #	Hazard*
Hydrofluoric Acid	HF	7664-39-3	corrosive; may be fatal if inhaled or ingested; liquid and vapor can cause severe burns not always immediately painful or visible, but possibly fatal
Hydrogen Peroxide (>30%)	H ₂ O ₂	7722-84-1	fire and explosion risk, severely corrosive; strong oxidizer
Hydrogen Sulfide	H ₂ S	7783-06-4	highly flammable; exposure to very high concentrations causes immediate death; death or permanent injury may occur after very short exposure to small quantities
Isopropyl Ether (Diisopropyl Ether)	C ₆ H ₁₄ O	108-20-3	highly flammable; may form explosive peroxides
Lead Dinitroresorcinate (LDNR)	PbC ₆ H ₂ (NO ₂) ₂ (OH) ₂		explosive; probably carcinogenic to humans
Lead Dioxide (Lead (IV) Oxide or Lead Brown)	PbO ₂	1309-60-0	toxic; probably carcinogenic to humans; will accelerate burning in fire; may explode from heat or contamination
Lead Mononitroresorcinate (LMNR)	PbC ₆ H ₃ NO ₂ (OH) ₂	51317-24-9	explosive; shock sensitive; probably carcinogenic to humans
Lead Trinitroresorcinate (Lead Styphnate)	PbC ₆ H(NO ₂) ₃ (OH) ₂	15245-44-0	explosive; probably carcinogenic to humans

Appendix A - Prohibited Chemicals			
Name	Formula	CAS #	Hazard*
Lithium Nitrate	LiNO_3	7790-69-4	oxidizer; shock sensitive
Lithium Nitride	Li_3N	26134-62-3	highly flammable; powder is easily ignited and burns with intense heat; may ignite spontaneously in moist air
Lithium Peroxide	Li_2O_2	12031-80-0	oxidizer; toxic; explosive
Magnesium (except Mg ribbon & turnings)	Mg	7439-95-4	reacts with water to liberate hydrogen gas; flammable solid; easily ignited
Magnesium Peroxide	MgO_2	14452-57-4	strong oxidizer
Mannitol Hexanitrate	$\text{C}_6\text{H}_8\text{N}_6\text{O}_{18}$	15825-70-4	explosive; strong oxidizer
Mercury (except in sealed devices)	Hg	7439-97-6	corrosive; poison; severely and subtly toxic
Mercury Compounds (e.g., Nessler's Reagent, mercuric chloride, mercuric potassium iodide, mercuric fluoride)			poison; severely and subtly toxic
Methyl Acetylene	C_3H_4	74-99-7	highly flammable; may form explosive peroxides upon concentration
Methyl Cyclopentane	C_6H_{12}	96-37-7	highly flammable
Methyl Isocyanate	CH_3NCO	624-83-9	water-reactive; highly flammable; polymerizable
Methyl Methacrylate Monomer	$\text{C}_5\text{H}_8\text{O}_2$	80-62-6	may form explosive peroxides; flammable; explosive (vapor)

Appendix A - Prohibited Chemicals			
Name	Formula	CAS #	Hazard*
meta-Trinitroresol (3-Methyl-2,4,6-trinitrophenol)	$C_7H_5N_3O_7$	602-99-3	explosive; strong oxidizer
Nessler's Reagent (Mercuric Potassium Iodide and Sodium Hydroxide)	$Hg+KI+NaOH$	7783-33-7	
Nicotine	$C_{10}H_{14}N_2$	54-11-5	poison; acutely toxic
Nitroglycerin	$C_3H_5N_3O_9$	55-63-0	explosive; strong oxidizer
Nitrosoguanidine	$C_2H_5N_5O_3$	70-25-7	explosive; highly flammable; water-reactive; decomposes at elevated temperatures
Osmic Acid (Osmium Tetroxide)	OsO_4	20816-12-0	acutely toxic; may be fatal if inhaled or ingested
ortho-Toluidine (e.g., Toluidine Blue)	C_7H_9N	95-53-4	carcinogenic to humans; poison
Pentaerythrite Tetranitrate (PETN)	$C_5H_8N_4O_{12}$	78-11-5	explosive; strong oxidizer
Perchloric Acid	$HClO_4$	7601-90-3	strong oxidizing agent; corrosive; contact with organics may result in explosion; can cause serious or permanent injury
Phenol	C_6H_6O	108-95-2	combustible; corrosive; may be fatal if inhaled, ingested, or absorbed through skin
Phenyl Thiourea	$C_7H_8N_2S$	103-85-5	extremely toxic; poison; emits toxic fumes when heated

Appendix A - Prohibited Chemicals			
Name	Formula	CAS #	Hazard*
Phosphorus (yellow or white)	P	7723-14-0	flammable solid; self-ignition possible; evolves dangerous gas if burned
Phosphorus Halides and Oxides (e.g., phosphorus trichloride, phosphorus trioxide, phosphorus, pentabromide)			water-reactive; corrosive; toxic
Phosphides (e.g., magnesium aluminum phosphide, potassium phosphide, sodium phosphide)			poison; water-reactive
Phthalic Anhydride	C ₈ H ₄ O ₃	85-44-9	explosive; water-reactive
Picramide	C ₆ H ₄ N ₄ O ₆	489-98-5	explosive; strong oxidizing agent
Picrates and Picryl Compounds (e.g., ammonium picrate, lead picrate, potassium picrate, picryl sulfonic acid, picryl chloride)			explosive
Picric Acid (2,4,6-Trinitrophenol)	C ₆ H ₃ N ₃ O ₇	88-89-1	extremely reactive; explosive when dry
para-Nitrophenol (4-Nitrophenol)	NO ₂ C ₆ H ₄ OH	100-02-7	poison; forms explosive mixtures
Polyvinyl Nitrate (PVN or polyethenyl nitrate)	(C ₂ H ₃ NO ₃) _n		explosive; shock sensitive
Potassium Amide	KNH ₂	17242-52-3	may form explosive peroxides
Potassium Cyanide	KCN	151-50-8	acutely toxic
Potassium Dinitrobenzofuroxan (KDNBF)	KC ₆ H ₂ N ₄ O ₆	29267-75-2	explosive
Potassium Nitrite	KNO ₂	7758-09-0	strong oxidizer
Potassium Perchlorate	KClO ₄	7778-74-7	explosive
Potassium Periodate	KIO ₄	7790-21-8	strong oxidizer

Appendix A - Prohibited Chemicals			
Name	Formula	CAS #	Hazard*
Potassium Peroxide	K_2O_2	17014-71-0	water-reactive; strong oxidizer
Potassium Superoxide	KO_2	12030-88-5	water-reactive; strong oxidizer
RDX	$C_3H_6N_6O_6$	121-82-4	explosive
Silanes and Chlorosilanes (e.g., silane; dichlorosilane; tetramethylsilane; trichlorosilane)			flammable; reactive; highly toxic
Silicon Tetrachloride	$SiCl_4$	10026-04-7	air- and water-reactive; corrosive
Silver Acetylide	Ag_2C_2	13092-75-6	explosive; shock sensitive
Silver Cyanide	$AgCN$	506-64-9	acutely toxic; may be fatal if inhaled, ingested, or absorbed through skin
Silver Dinitroresorcinate (Silver Styphnate)	$Ag_2C_6H(NO_3)_2(OH)_2$		reactive; ignitable; shock sensitive
Silver Fulminate	$AgCNO$	5610-59-3	explosive
Silver Cyanate	$AgOCN$	3315-16-0	toxic
Silver Nitride	Ag_3N	20737-02-4	shock sensitive; explosive
Silver Oxalate	$Ag_2C_2O_4$	533-51-7	shock sensitive
Silver Tetrazene			shock sensitive
Sodium Amide	$NaNH_2$	7782-92-5	may form explosive peroxides; water-reactive; highly flammable
Sodium Chlorate	$NaClO_3$	7775-09-9	oxidizer; explosive
Sodium Chlorite	$NaClO_2$	7758-19-2	oxidizer; explosive
Sodium Cyanide	$NaCN$	143-33-9	acutely toxic

Appendix A - Prohibited Chemicals			
Name	Formula	CAS #	Hazard*
Sodium Dithionite (Sodium Hydrosulfite)	$\text{Na}_2\text{S}_2\text{O}_4$	7775-14-6	spontaneously combustible; water-reactive; pyrophoric
Sodium Methylate	NaCH_3O	124-41-4	spontaneously combustible; water-reactive; pyrophoric
Sodium Perborate	NaBO_3	7632-04-4	air- and water-reactive; explosive
Sodium Perchlorate	NaClO_4	7601-89-0	oxidizer; water-reactive; explosive
Sodium Permanganate	NaMnO_4	10101-50-5	oxidizer; explosive
Sodium Peroxide	Na_2O_2	1313-60-6	oxidizer; water-reactive; toxic; explosion and fire risk in combination with powdered metals and organics
Strontium Perchlorate	SrCl_2O_8	13450-97-0	shock sensitive
Styrene Monomer	C_8H_8	100-42-5	highly flammable; may form explosive peroxides; polymerizable
Sulfur Trioxide	SO_3	7446-11-9	air- and water-reactive; corrosive; poison; inhalation hazard
Sulfuryl Chloride (Sulfonyl Chloride)	$\text{Cl}_2\text{O}_2\text{S}$	7791-25-5	air- and water-reactive; corrosive; poison; inhalation hazard
Sulfuryl Chloride Fluoride	ClFO_2S	13637-84-8	poison; water-reactive; corrosive
tert-butyl Hypochlorite	$\text{C}_4\text{H}_9\text{ClO}$	507-40-4	spontaneously combustible; pyrophoric; fire will produce irritating, corrosive, and/or toxic gases

Appendix A - Prohibited Chemicals			
Name	Formula	CAS #	Hazard*
Tetrafluoroethylene	C_2F_4	116-14-3	may form explosive peroxides; highly flammable; probably carcinogenic to humans
Tetrahydrofuran	C_4H_8O	109-99-9	highly flammable; oxidizes in air to form explosive peroxides
Tetrahydronaphthalene	$C_{10}H_{12}$	119-64-2	highly flammable; vapors may form explosive mixtures with air; may form explosive peroxides upon concentration
Tetranitromethane	CN_4O_8	509-14-8	oxidizer; poison; possibly carcinogenic to humans; inhalation hazard; explosive
Tetraselenium Tetranitride	Se_4N_4	12033-88-4	shock sensitive
Tetrazene (tetrazolyl guanyltetrazene hydrate)	$C_2H_6N_{10} \cdot H_2O$	31330-63-9	shock sensitive; explosive
Tetryl (2,4,6-trinitrophenylmethylnitroamine)	$C_7H_5N_5O_8$	479-45-8	oxidizer; explosive
Thallium Nitride	Tl_3N	12033-67-9	shock sensitive
Thermit (example: could be a mixture of aluminum powder, iron oxide, ferro managanese, and ferro vanadium)			flammable solid; dangerous fire risk; once started, reaction is very difficult to stop
Thermite Igniting Mixture (example: could be a mixture of aluminum, barium nitrate, iron oxide and a binder such as dextrin on a copper stick)			becomes a fire hazard if exposed to a flame or high temperatures
Thiocarbonyl Tetrachloride (Perchloromethyl Mercaptan)	CCL_4S	594-42-3	poison; inhalation hazard

Appendix A - Prohibited Chemicals			
Name	Formula	CAS #	Hazard*
Thionyl Chloride	SOCl ₂	7719-09-7	violently water-reactive; lachrymator; highly corrosive; toxic
Titanium (Powder)	Ti	7440-32-6	spontaneously combustible; may ignite on contact with moist air or moisture
Titanium Tetrachloride	TiCl ₄	7550-45-0	water-reactive; corrosive; acutely toxic; may be fatal if inhaled
Triethyl Aluminum	(C ₂ H ₅) ₃ Al	97-93-8	spontaneously combustible; flammable gas is produced on contact with water
Triisobutyl Aluminum	(C ₄ H ₉) ₃ Al	100-99-2	spontaneously combustible; reacts violently with water producing flammable gas
Trimethyl Aluminum	(CH ₃) ₃ Al	75-24-1	spontaneously combustible; flammable gas is produced on contact with water
Trinitroanisole	C ₇ H ₅ N ₃ O ₇	606-35-9	explosive; strong oxidizer
Trinitrobenzene	C ₆ H ₃ N ₃ O ₆	99-35-4	explosive; flammable solid; strong oxidizer
Trinitrobenzoic Acid	C ₇ H ₃ N ₃ O ₈	129-66-8 or 35860-50-5	explosive; highly flammable; strong oxidizer
Trinitronaphthalene (1,3,5-Trinitronaphthalene)	C ₁₀ H ₅ N ₃ O ₆	2243-94-9	explosive; strong oxidizer
Trinitroresorcinol	C ₆ H ₃ N ₃ O ₈	82-71-3	explosive; strong oxidizer

Appendix A - Prohibited Chemicals			
Name	Formula	CAS #	Hazard*
Trinitrotoluene (TNT or 2,4,6-Trinitrotoluene)	$C_7H_5N_3O_6$	118-96-7	explosive; strong oxidizer
Uranium and Uranium Compounds (e.g., uranium oxide, Uranyl Acetate, Uranyl Nitrate, uranium hexafluoride, uranium tetrafluoride)			toxic by inhalation or ingestion
Urea Nitrate	$CH_4N_2O \cdot HNO_3$	124-47-0	explosive; strong oxidizer
Vinyl Acetate	$C_4H_6O_2$	108-05-4	may form explosive peroxides; possibly carcinogenic to humans; reactive
Vinyl Acetylene	C_4H_4	689-97-4	may form explosive peroxides; reactive
Vinyl Chloride	C_2H_3Cl	75-01-4	carcinogenic to humans; may form explosive peroxides; reactive
Vinyl Ethers (e.g., divinyl ether; 2-chloroethylvinyl ether; butyl vinyl ether)			may form explosive peroxides upon concentration
Vinylidene Chloride (1,1-Dichloroethene or 1,1-DCE)	$C_2H_2Cl_2$	75-35-4	may form explosive peroxides
Zinc Peroxide	ZnO_2	1314-22-3	oxidizer; used as an oxidant in explosives; toxic

* The hazard information provided for the listed chemicals is not intended to address all safety concerns. Before attempting to work with any chemical, review and comply with information provided on the SDS.

Appendix B - Restricted Chemicals				
Name	Formula	CAS #	Hazard*	Shelf Life ¹
2-Butanone (Methyl Ethyl Ketone or MEK)	$\text{CH}_3\text{COC}_2\text{H}_5$	78-93-3	highly flammable; may form explosive peroxides	Good
Acetamide	CH_3CONH_2	60-35-5	possibly carcinogenic to humans	Poor; deliquescent
Acetanilide (n-Phenylacetamide or Acetamidobenzene)	$\text{CH}_3\text{CONHC}_6\text{H}_5$	103-84-4	combustible; irritant	Indefinite
Acetic Acid	CH_3COOH	64-19-7	flammable; corrosive	Good
Acetic Anhydride	$(\text{CH}_3\text{CO})_2\text{O}$	108-24-7	water-reactive; corrosive; flammable	Good
Acetone	CH_3COCH_3	67-64-1	highly flammable; inhalation hazard	Good
Acetylcholine Bromide	$\text{C}_7\text{H}_{16}\text{BrNO}_2$	66-23-9	toxic; irritant	Good
Acridine Orange	$\text{C}_{17}\text{H}_{19}\text{N}_3$	10127-02-3	irritant	Fair
Adipoyl Chloride	$\text{CLOC}(\text{CH}_2)_4\text{COCl}$	111-50-2	corrosive	Poor
Alizarin Red	$\text{C}_{14}\text{H}_7\text{NaO}_7\text{S}$	130-22-3	toxic	Indefinite
Alkyl Aluminum Chloride	Unavailable	Unavailable	water reactive	Poor; deliquescent
Aluminum (Powder)	Al	7429-90-5	water-reactive; strong reducing agent; pyrophoric	Indefinite
Aluminum Acetate	$\text{Al}(\text{C}_2\text{H}_3\text{O}_2)_2\text{OH}$	142-03-0	toxic	Good
Aluminum Bromide	AlBr_3	7727-15-3	air- and water- reactive; corrosive	Fair
Aluminum Chloride Hexahydrate	$\text{AlCl}_3 \cdot 6\text{H}_2\text{O}$	7784-13-6	water-reactive; corrosive	Poor; deliquescent
Aluminum Fluoride	AlF_3	7784-18-1	water-reactive; corrosive; inhalation hazard	Fair

Appendix B - Restricted Chemicals				
Name	Formula	CAS #	Hazard*	Shelf Life ¹
Aluminum Hydroxide	Al(OH) ₃	21645-51-2	possibly toxic	Indefinite
Aluminum Nitrate	Al(NO ₃) ₃ ·9H ₂ O	7784-27-2	strong oxidizer	Indefinite
Aluminum Tetrahydroborate (Aluminum Borohydride)	Al(BH ₄) ₃	16962-07-5	poison; air- and water-reactive; pyrophoric; strong reducing agent	Fair
Ammonia, Anhydrous	NH ₃	7664-41-7	poison; water-reactive; inhalation hazard; corrosive	Indefinite
Ammonia Solutions in Water	NH ₃	7664-41-7	corrosive; reactive; toxic	Indefinite
Ammonium Acetate	NH ₄ C ₂ H ₃ O ₂	631-61-8	inhalation hazard; irritant	Poor; deliquescent
Ammonium Bicarbonate	NH ₄ HCO ₃	1066-33-7	inhalation hazard; irritant	Good
Ammonium Dichromate	(NH ₄) ₂ Cr ₂ O ₇	7789-09-5	chromium (VI) compounds are carcinogenic to humans; strong oxidizer; poison	Fair
Ammonium Bromide	NH ₄ Br	12124-97-9	inhalation hazard; irritant	Fair to poor; hygroscopic
Ammonium Carbonate	NH ₄ CO ₃	10361-29-2	inhalation hazard; irritant	Indefinite
Ammonium Chloride	NH ₄ Cl	12125-02-9	toxic; inhalation hazard; irritant	Fair to poor; hygroscopic
Ammonium Chromate	(NH ₄) ₂ CrO ₄	7788-98-9	chromium (VI) compounds are carcinogenic to humans; strong oxidizer; poison	Indefinite
Ammonium Fluoride	NH ₄ F	12125-01-8	corrosive; toxic	Fair to poor; substance is deliquescent

Appendix B - Restricted Chemicals				
Name	Formula	CAS #	Hazard*	Shelf Life ¹
Ammonium Hydroxide	NH ₄ OH	1336-21-6	inhalation hazard; severely corrosive	Indefinite
Ammonium Iodide	NH ₄ I	12027-06-4	inhalation hazard	Poor; very hygroscopic
Ammonium Molybdate Tetrahydrate	(NH ₄) ₆ Mo ₇ O ₂₄ ·4H ₂ O	12054-85-2	toxic	Indefinite
Ammonium Nitrate (500 g limit)	NH ₄ NO ₃	6484-52-2	shock sensitive; oxidizer	Poor
Ammonium Oxalate Monohydrate	(NH ₄) ₂ C ₂ O ₄ ·H ₂ O	6009-70-7	corrosive; toxic	Indefinite
Ammonium Phosphate, Dibasic (Diammonium Hydrogen Phosphate)	(NH ₄) ₂ HPO ₄	7783-28-0	respiratory hazard; potential for skin and eye damage	Indefinite
Ammonium Phosphate, Monobasic (Ammonium Dihydrogen Phosphate)	NH ₄ H ₂ PO ₄	7722-76-1	respiratory hazard; potential for skin and eye damage	Indefinite
Ammonium Sulfate	(NH ₄) ₂ SO ₄	7783-20-2	respiratory hazard	Indefinite
Ammonium Sulfide	(NH ₄) ₂ S	12135-76-1	respiratory hazard; corrosive; poison; flammable	Good
Ammonium Tartrate	(NH ₄) ₂ C ₄ H ₄ O ₆	3164-29-2	irritant	Fair
Ammonium Thiocyanate	NH ₄ SCN	1762-95-4	inhalation hazard; strong reducing agent	Poor; deliquescent
Amyl Acetate	CH ₃ COOC ₅ H ₁₁	628-63-7	flammable; toxic	Good
Aniline	C ₆ H ₅ NH ₂	62-53-3	acutely toxic	Poor
Aniline Hydrochloride	C ₆ H ₅ NH ₂ ·HCl	142-04-1	corrosive; acutely toxic	Poor
Anisoyl Chloride (Methoxybenzoyl Chloride)	C ₈ H ₇ ClO ₂	100-07-2	air- and water- reactive; corrosive;	Fair
Barium Acetate	Ba(C ₂ H ₃ O ₂) ₂	543-80-6	acutely toxic	Indefinite

Appendix B - Restricted Chemicals				
Name	Formula	CAS #	Hazard*	Shelf Life ¹
Barium Carbide	BaC ₂	50813-65-5	water-reactive; toxic	Fair
Barium Chloride, Dihydrate	BaCl ₂ ·2H ₂ O	10326-27-9	poison; acutely toxic	Indefinite
Barium Nitrate	Ba(NO ₃) ₂	10022-31-8	oxidizer; toxic	Indefinite
Benzaldehyde	C ₆ H ₅ CHO	100-52-7	combustible	Fair
Benzene Phosphorus Dichloride	C ₆ H ₅ PCl ₂	644-97-3	air-and water- reactive; fumes in air; corrosive	Fair
Benzoic Acid	C ₆ H ₅ COOH	65-85-0	concentrated dust may form explosive mixture	Indefinite
Benzyl Chloride	C ₆ H ₅ CH ₂ Cl	100-44-7	probably carcinogenic to humans; poison; corrosive; toxic; lachrymator; releases toxic fumes when heated	Fair
Benzylsodium	C ₇ H ₇ Na	1121-53-5	water reactive; ignites spontaneously in air;	Fair
Benzylamine (Benzenemethanamine)	C ₆ H ₅ CH ₂ NH ₂	100-46-9	corrosive; poison; combustible	Fair
Beryllium Tetrahydroborate	Be(BH ₄) ₂	17440-85-6	violently air- and water-reactive; beryllium compounds are carcinogenic to humans	Fair
Biphenyl (Diphenyl)	C ₆ H ₅ C ₆ H ₅	92-52-4	irritant; combustible	Limited; refer to expiration date on label

Appendix B - Restricted Chemicals				
Name	Formula	CAS #	Hazard*	Shelf Life ¹
Bismuth Pentafluoride	BiF ₅	7787-62-4	water-reactive; toxic	Fair
Boric Acid	H ₃ BO ₃	10043-35-3	harmful if swallowed	Indefinite
Boron Bromide Diiodide	BBrI ₂	14355-21-6	violently water- reactive	Fair
Boron Dibromiodide	BBr ₂ I	unavailable	violently water- reactive	Fair
Boron Phosphide	BP	20205-91-8	water-reactive	Fair
Boron Trichloride	BCl ₃	13517-10-7	water-reactive; toxic	Fair
Bromine Fluoride	BrF	13863-59-7	water-reactive	Fair
Bromine Water	Br ₂ + H ₂ O	7726-95-6	corrosive; irritating fumes; toxic	Indefinite
Bromobenzene	C ₆ H ₅ Br	108-86-1	highly flammable; toxic	Indefinite
Bromodiethylaluminum	C ₄ H ₁₀ AlBr	760-19-0	water-reactive	Fair
Bromoform	CHBr ₃	75-25-2	poison; lachrymator	Good
Butanol (n-Butyl Alcohol)	CH ₃ (CH ₂) ₃ OH	71-36-3	highly flammable; toxic	Fair
Butyric Acid	CH ₃ CH ₂ CH ₂ COOH	107-92-6	corrosive; combustible; stench agent; lachrymator	Indefinite
Calcium (100 g limit)	Ca	7440-70-2	water-reactive; flammable solid	Good
Calcium Bromide	CaBr ₂	7789-41-5	toxic	Good
Calcium Hypochlorite	Ca(ClO) ₂	7778-54-3	strong oxidizer; reactive; toxic	Fair to poor
Calcium Nitrate Tetrahydrate	Ca(NO ₃) ₂ ·4H ₂ O	13477-34-4	strong oxidizer; shock sensitive	Fair to poor; deliquescent

Appendix B - Restricted Chemicals				
Name	Formula	CAS #	Hazard*	Shelf Life ¹
Calcium Phosphide (CP)	Ca_3P_2	1305-99-3	violently air- and water- reactive; strong reducing agent; poison	Fair
Camphor	$\text{C}_{10}\text{H}_{16}\text{O}$	76-22-2	toxic; flammable solid; combustible	Indefinite
Carbon Disulfide (Carbon Bisulfide)	CS_2	75-15-0	highly flammable; poison; severe fire risk	Indefinite
Cerium (IV) Sulfate (Ceric Sulfate)	$\text{Ce}(\text{SO}_4)_2$	13590-82-4	strong oxidizer; corrosive; irritant	Limited; refer to expiration date on label
Cesium Amide	CsH_2N	22205-57-8	water-reactive	Fair
Cesium Phosphide	Cs_3P	113737-02-3	water-reactive	Fair
Chlorine Fluoride	ClF	7790-89-8	strong oxidizer; water-reactive	Fair
Chlorine Pentafluoride	ClF_5	13637-63-3	water-reactive	Fair
Chloroacetic Acid	$\text{C}_2\text{H}_3\text{ClO}_2$	79-11-8	acutely toxic; corrosive	Indefinite
Chloroacetyl Chloride	$\text{C}_2\text{H}_2\text{Cl}_2\text{O}$	79-04-9	air- and water-reactive; corrosive; poison; inhalation hazard	Good
Chlorobenzene	$\text{C}_6\text{H}_5\text{Cl}$	108-90-7	highly flammable; inhalation hazard	Limited; refer to expiration date on label
Chlorodiisobutyl Aluminum (Diisobutylaluminum Chloride)	$\text{C}_8\text{H}_{18}\text{AlCl}$	1779-25-5	water-reactive; highly flammable	Fair

Appendix B - Restricted Chemicals				
Name	Formula	CAS #	Hazard*	Shelf Life ¹
2-Chlorophenyl Isocyanate	C ₇ H ₄ ClNO	3320-83-0	poison; highly flammable	Fair
Chromic Acid	CrO ₃	1333-82-0	chromium (VI) compounds are carcinogenic to humans; strong oxidizer; poison	Poor
Chromium (III) Nitrate Nonahydrate (Chromium Trinitrate)	Cr(NO ₃) ₃ ·9H ₂ O	7789-02-8	oxidizer; toxic	Good
Chromium (III) Sulfate (Chromic Sulfate)	Cr ₂ (SO ₄) ₃ ·nH ₂ O	10101-53-8	corrosive; toxic	Indefinite
Chromium Trioxide	CrO ₃	1333-82-0	chromium (VI) compounds are carcinogenic to humans; strong oxidizer; poison	Poor
Cobalt (II) Nitrate Hexahydrate (Cobaltous Nitrate)	Co(NO ₃) ₂ ·6H ₂ O	10026-22-9	cobalt and cobalt compounds are possibly carcinogenic to humans; acutely toxic	Poor; deliquescent
Copper (II) Bromide (Cupric Bromide, Anhydrous)	CuBr ₂	7789-45-9	toxic; irritant	Poor; deliquescent
Cyclohexane	CH ₂ (CH ₂) ₄ CH ₂	110-82-7	highly flammable; poison	Indefinite
Dichloromethane (Methylene Dichloride)	CH ₂ Cl ₂	75-09-2	probably carcinogenic to humans; poison	Good
Diethyl Aluminum Chloride	C ₄ H ₁₀ AlCl	96-10-6	water-reactive; highly flammable; inhalation hazard	Fair
Diethyl Zinc (DEZ)	C ₄ H ₁₀ Zn	557-20-0	air- and water-reactive; highly flammable	Fair
Diisopropyl Beryllium	C ₆ H ₁₄ Be	15721-33-2	water-reactive; beryllium	Fair

Appendix B - Restricted Chemicals				
Name	Formula	CAS #	Hazard*	Shelf Life ¹
			compounds are carcinogenic to humans	
Dimethyl Magnesium	C_2H_6Mg	2999-74-8	air- and water-reactive; spontaneously flammable in air	Fair
Diphenylmethane-4,4-Diisocyanate	$C_{15}H_{10}N_2O_2$	101-68-8	Poison	Poor
Diphenylamine	$(C_6H_5)_2NH$	122-39-4	Poison	Indefinite
Ethanol (Ethyl Alcohol)	C_2H_5OH	64-17-5	highly flammable	Indefinite
Ethyl Acetate	$CH_3COOC_2H_5$	141-78-6	highly flammable; toxic; may form explosive peroxides	Good
Ethyl Methacrylate	$CH_2CCH_3COOC_2$	97-63-2	highly flammable; polymerizable	Poor
Ethylene Dichloride (1,2-Dichloroethane)	$C_2H_4Cl_2$	107-06-2	highly flammable; possibly carcinogenic to humans; poison; emits toxic gases if heated or burned	Poor
Ethylenediamine	$NH_2CH_2CH_2NH_2$	107-15-3	highly flammable; air-reactive; corrosive	Poor
FAA Solution (Formalin-Aceto-Alcohol Solution)			flammable; acutely toxic; carcinogenic to humans	Good
Fehlings Solution A (Copper (II) Sulfate and Water)			acutely toxic	Fair
Fehlings Solution B (Sodium Hydroxide; Potassium Sodium Tartrate; and Water)			caustic; toxic	Fair

Appendix B - Restricted Chemicals				
Name	Formula	CAS #	Hazard*	Shelf Life ¹
Ferric Chloride, Anhydrous (Iron (III) Chloride)	FeCl ₃	7705-08-0	corrosive; inhalation hazard	Poor
Ferric Nitrate Nonahydrate (Iron (III) Nitrate Nonahydrate)	Fe(NO ₃) ₃ ·9H ₂ O	7782-61-8	strong oxidizer; irritant; explosion hazard with heat	Good
Fluorine Monoxide (Oxygen Difluoride)	F ₂ O	7783-41-7	strong oxidizer; air- and water-reactive; poison; corrosive	Fair
Fluorosulfonic Acid	HSO ₃ F	7789-21-1	corrosive; air- and water-reactive	Fair
Formalin	CH ₂ O	50-00-0	toxic; corrosive; carcinogenic to humans	Indefinite
Formic Acid	HCOOH	64-18-6	flammable; corrosive	Poor
Gasoline	UNDEFINED	8006-61-9 or 86290-81-5	highly flammable; possibly carcinogenic to humans	Poor
Glutaraldehyde	OCH(CH ₂) ₃ CHO	111-30-8	water-reactive; toxic	Indefinite
Gold Acetylide	C ₂ Au ₂	70950-00-4	explosive; shock sensitive; water reactive	Fair
Hematoxylin	C ₁₆ H ₁₄ O ₆	517-28-2	toxic	Fair
n-Heptane	CH ₃ (CH ₂) ₅ CH ₃	142-82-5	highly flammable; toxic	Good
Hexamethylene Diisocyanate (HDI)	C ₈ H ₁₂ N ₂ O ₂	822-06-0	water-reactive; toxic	Fair
Hexamethylenediamine (1, 6-Diaminohexane)	H ₂ N(CH ₂) ₆ NH ₂	124-09-4	corrosive; toxic	Indefinite
n-Hexane	CH ₃ (CH ₂) ₄ CH ₃	110-54-3	highly flammable; toxic	Good

Appendix B - Restricted Chemicals				
Name	Formula	CAS #	Hazard*	Shelf Life ¹
Hydriodic Acid	HI	10034-85-2	acutely toxic; corrosive	Fair
Hydrobromic Acid	HBr	10035-10-6	acutely toxic; water-reactive; corrosive	Fair
Hydrochloric Acid (Muriatic Acid)	HCl	7647-01-0	toxic; severely corrosive	Good
Hydrogen Peroxide (30% or less)	H ₂ O ₂	7722-84-1	readily decomposes with almost anything; strong oxidizer; explosion hazard; corrosive	Fair
Hydroquinone (Benzene-1, 4-diol)	C ₆ H ₄ (OH) ₂	123-31-9	toxic	Poor
Hydroxylamine Hydrochloride	NH ₂ OH·HCl	5470-11-1	toxic; strong reducing agent	Poor
Iodine	I ₂	7553-56-2	poison; strong oxidizing agent	Fair
Iodine Monochloride (Chlorine Iodide)	ICl	7790-99-0	toxic; water-and air-reactive; strong oxidizing agent; corrosive	Poor
Iron (powder)	Fe	7439-89-6	metal dust may present a fire hazard and a health hazard	Good
Isoamyl Alcohol (3- Methyl-1-butanol or Isopentyl Alcohol)	(CH ₃) ₂ CHCH ₂ CHOH	123-51-3	highly flammable; toxic	Fair
Isobutyl Alcohol	(CH ₃) ₂ CHCH ₂ OH	78-83-1	highly flammable; toxic	Indefinite
Isopropyl Alcohol	(CH ₃) ₂ CHOH	67-63-0	highly flammable; toxic; may form explosive peroxides	Fair
Kerosene	UNDEFINED	8008-20-6	highly flammable; toxic	Indefinite

Appendix B - Restricted Chemicals				
Name	Formula	CAS #	Hazard*	Shelf Life ¹
Lead Nitrate	$\text{Pb}(\text{NO}_3)_2$	10099-74-8	oxidizer; toxic; probably carcinogenic to humans	Indefinite
Lead Tetraoxide, (Red Lead Oxide)	Pb_3O_4	1314-41-6	oxidizer; acutely toxic; probably carcinogenic to humans	Indefinite
Lithium Amide	LiNH_2	7782-89-0	water-reactive; toxic; flammable; dangerous fire and explosion hazard	Fair
Lithium Bromide	LiBr	7550-35-8	acutely toxic	Good
Lithium Ferrosilicon	Fe-Si-Li	70399-13-2	water-reactive; acutely toxic; highly flammable	Fair
Lithium Silicon	Li-Si	68848-64-6	water-and air-reactive; acutely toxic; strong reducing agent	Fair
Lithium Sulfate	$\text{Li}_2\text{SO}_4 \cdot \text{H}_2\text{O}$	10102-25-7	toxic	Indefinite
Magnesium (ribbon)	Mg	7439-95-4	flammable solid; water-reactive	Indefinite
Magnesium Nitrate Hexahydrate	$\text{Mg}(\text{NO}_3)_2 \cdot 6\text{H}_2\text{O}$	13446-18-9	oxidizer; toxic	Good
Manganese Carbonate	MnCO_3	598-62-9	toxic	Good
Manganese Dioxide (Manganese Black; Manganese Oxide; Manganese Peroxide; Manganese Superoxide)	MnO_2	1313-13-9	toxic	Indefinite
Manganese (II) Nitrate Hexahydrate (Manganous Nitrate Hexahydrate)	$\text{Mn}(\text{NO}_3)_2 \cdot 6\text{H}_2\text{O}$	10377-66-9	strong oxidizer; toxic	Indefinite
Methyl Alcohol (Methanol)	CH_3OH	67-56-1	highly flammable; toxic	Good

Appendix B - Restricted Chemicals				
Name	Formula	CAS #	Hazard*	Shelf Life ¹
Methyl Aluminum Sesquibromide	$C_3H_9Al_2Br_3$	12263-85-3	water-and air-reactive; toxic; dangerous fire and explosion hazard	Fair
Methyl Aluminum Sesquichloride	$C_3H_9Al_2Cl_3$	12542-85-7	water-and air-reactive; toxic; dangerous fire and explosion hazard	Fair
Methyl Chloride (Chloromethane)	CH_3Cl	74-87-3	highly flammable; toxic	Indefinite
Naphthalene (Moth Balls, Moth Flakes)	$C_{10}H_8$	91-20-3	possibly carcinogenic to humans; highly flammable	Poor
1-Naphthol (alpha-Naphthol)	$C_{10}H_7OH$	90-15-3	toxic	Indefinite
n-Butyllithium	C_4H_9Li	109-72-8	spontaneously flammable in air; toxic	Limited; refer to expiration date on label
Nickel (II) Nitrate Hexahydrate	$Ni(NO_3)_2 \cdot 6H_2O$	13478-00-7	nickel compounds are carcinogenic to humans; oxidizer	Poor
Nickel (II) Sulfate Hexahydrate	$NiSO_4 \cdot 6H_2O$	10101-97-0	nickel compounds are carcinogenic to humans	Good
Nitric Acid	HNO_3	7697-37-2	acutely toxic; strong oxidizer; water-and air-reactive	Fair
Nitrobenzene	$C_6H_5NO_2$	98-95-3	possibly carcinogenic to humans; acutely toxic; flammable	Fair
Nitrogen	N_2	7727-37-9	may displace	Indefinite

Appendix B - Restricted Chemicals				
Name	Formula	CAS #	Hazard*	Shelf Life ¹
			oxygen, which could cause asphyxiation; compressed gas cylinder hazards; liquid nitrogen presents a low temperature hazards	
Octyl Alcohol (Octanol or Caprylic Alcohol)	$\text{CH}_3(\text{CH}_2)_6\text{CH}_2\text{OH}$	111-87-5	flammable; toxic	Limited; refer to expiration date on label
ortho-Dichlorobenzene (1, 2-Dichlorobenzene)	$\text{C}_6\text{H}_4\text{Cl}_2$	95-50-1	flammable; toxic	Fair to poor
Oxalic Acid, Dihydrate (Ethanedioic Acid)	$\text{H}_2\text{C}_2\text{O}_4 \cdot 2\text{H}_2\text{O}$	6153-56-6	acutely toxic	Indefinite
Oxygen	O_2	7782-44-7	strong oxidizer; fire and explosion hazard; compressed gas cylinder hazards	Indefinite
para-Dichlorobenzene (1, 4-Dichlorobenzene)	$\text{C}_6\text{H}_4\text{Cl}_2$	106-46-7	possibly carcinogenic to humans; flammable	Fair to poor
Pentyl Alcohol (Amyl Alcohol or Pentanol)	$\text{CH}_3(\text{CH}_2)_4\text{OH}$	71-41-0	highly flammable; toxic	Poor
Petroleum Ether (500 mL limit)	UNDEFINED	Unavailable	highly flammable; toxic	Indefinite
Phosphoric Acid	H_3PO_4	7664-38-2	toxic; corrosive	Good
Phthalic Acid (1, 2-Benzenedicarboxylic Acid)	$\text{C}_6\text{H}_4(\text{COOH})_2$	88-99-3	combustible; toxic	Limited; refer to expiration date on label
Polymethylene Polyphenyl Isocyanate (Polymeric)	$(\text{C}_8\text{H}_5\text{NO})_n$	9016-87-9	water reactive; toxic	Fair

Appendix B - Restricted Chemicals				
Name	Formula	CAS #	Hazard*	Shelf Life ¹
Diphenylmethane Diisocyanate or MDI)				
Polyvinyl Alcohol	CH ₂ CH(OH)	9002-89-5	combustible; toxic	Indefinite
Potassium Bromate	KBrO ₃	7758-01-2	possibly carcinogenic to humans	Indefinite
Potassium Chromate	K ₂ CrO ₄	7789-00-6	chromium (VI) compounds are carcinogenic to humans; strong oxidizer; poison	Indefinite
Potassium Dichromate (Potassium Bichromate)	K ₂ Cr ₂ O ₇	7778-50-9	chromium (VI) compounds are carcinogenic to humans; strong oxidizer; poison	Indefinite
Potassium Ferricyanide (Red Prussiate)	K ₃ Fe(CN) ₆	13746-66-2	contact with acids liberates toxic gas	Fair
Potassium Ferrocyanide (Tetrapotassium Hexacyanoferrate or Yellow Prussiate)	K ₄ Fe(CN) ₆ ·3H ₂ O	14459-95-1	toxic; contact with acids liberates toxic gas	Fair to poor
Potassium Hydroxide (Potash Lye)	KOH	1310-58-3	corrosive; toxic	Fair
Potassium Iodate	KIO ₃	7758-05-6	oxidizer; toxic	Indefinite
Potassium Nitrate	KNO ₃	7757-79-1	strong oxidizer	Good
Potassium Permanganate	KMnO ₄	7722-64-7	strong oxidizer; explodes on sudden heating	Indefinite
Potassium Persulfate	K ₂ S ₂ O ₈	7727-21-1	strong oxidizer; toxic	Fair to poor; deliquescent
Potassium Sulfide	K ₂ S	1312-73-8	pyrophoric; spontaneously combustible; strong reducing agent; acutely	Fair

Appendix B - Restricted Chemicals				
Name	Formula	CAS #	Hazard*	Shelf Life ¹
			toxic	
Propane	CH ₃ CH ₂ CH ₃	74-98-6	highly flammable; compressed gas cylinder hazards; vaporizing liquid may cause frostbite; toxic; will displace oxygen, which may cause asphyxiation	Fair
Propionic Acid	C ₃ H ₆ O ₂	79-09-4	corrosive; flammable; toxic	Indefinite
Propyl Alcohol (n-Propanol or Propanol)	C ₃ H ₈ O	71-23-8	highly flammable; toxic	Indefinite
Pyridine (Azine or Azabenzene)	C ₅ H ₅ N	110-86-1	highly flammable; toxic	Good
Pyrosulfuryl Chloride (Sulfur Pentoxydichloride)	Cl ₂ O ₅ S ₂	7791-27-7	water- and air-reactive; corrosive; toxic	Fair
Silver Nitrate	AgNO ₃	7761-88-8	strong oxidizer; corrosive; toxic	Indefinite
Silver Sulfate	Ag ₂ SO ₄	10294-26-5	toxic	Indefinite
Sodium Bisulfite	NaHSO ₃	7631-90-5	strong reducing agent; corrosive; toxic	Fair to poor
Sodium Chromate	Na ₂ CrO ₄	7775-11-3	chromium (VI) compounds are carcinogenic to humans; strong oxidizer; poison	Fair
Sodium Cobaltinitrite (Sodium Hexanitrocobaltate)	Na ₃ Co(NO ₂) ₆	13600-98-1	cobalt and cobalt compounds are possibly carcinogenic to humans; toxic	Indefinite
Sodium Dichromate Dihydrate	Na ₂ Cr ₂ O ₇ ·2H ₂ O	7789-12-0	chromium (VI) compounds are carcinogenic to	Poor

Appendix B - Restricted Chemicals				
Name	Formula	CAS #	Hazard*	Shelf Life ¹
			humans; strong oxidizer; poison	
Sodium Fluoride	NaF	7681-49-4	corrosive; poison	Indefinite
Sodium Hydroxide (Lye)	NaOH	1310-73-2	water-reactive; corrosive; toxic	Good
Sodium Hypochlorite	NaClO	7681-52-9	strong oxidizer; corrosive; toxic	Poor
Sodium Iodate	NaIO ₃	7681-55-2	strong oxidizer; toxic	Fair to poor
Sodium Iodide	NaI	7681-82-5	toxic	Fair to poor
Sodium Metabisulfite	Na ₂ S ₂ O ₅	7681-57-4	strong reducing agent; corrosive; toxic	Poor
Sodium Nitrate	NaNO ₃	7631-99-4	strong oxidizer; toxic	Indefinite
Sodium Nitrite	NaNO ₂	7632-00-0	strong oxidizer; poison	Indefinite
Sodium Phosphate Tribasic Dodecahydrate	Na ₃ PO ₄ ·12H ₂ O	10101-89-0	corrosive; toxic	Fair
Sodium Potassium Alloy	K ₂ Na	11135-81-2	water-reactive; in contact with water releases flammable gases which may ignite spontaneously; corrosive	Fair
Sodium Sulfide Nonahydrate	Na ₂ S·9H ₂ O	1313-84-4	explosive; flammable solid; strong reducing agent; corrosive; toxic	Fair
Sodium Thiocyanate	NaSCN	540-72-7	strong reducing agent; toxic	Poor
Sodium Thiosulfate Pentahydrate	Na ₂ S ₂ O ₃ ·5H ₂ O	10102-17-7	toxic	Poor
Stannic Chloride	SnCl ₄	7646-78-8	air- and water-	Poor

Appendix B - Restricted Chemicals				
Name	Formula	CAS #	Hazard*	Shelf Life ¹
			reactive; corrosive; toxic	
Strontium Nitrate	$\text{Sr}(\text{NO}_3)_2$	10042-76-9	strong oxidizer	Indefinite
Sulfur Chloride (Sulfur Dichloride)	Cl_2S_2	10025-67-9	water-reactive; corrosive; toxic	Fair
Sulfur Pentafluoride	S_2F_{10}	5714-22-7	water-reactive; poison	Fair
Sulfuric Acid (<10%)	H_2SO_4	7664-93-9	strong oxidizer; severely corrosive; water- reactive; toxic	Good
Sulfuric Acid (>10%) (2.5 L limit)	H_2SO_4	7664-93-9	strong oxidizer; severely corrosive; water- reactive; toxic	Good
tert-Butyl Alcohol (t- Butanol or 1,1-Dimethyl Ethanol)	$(\text{CH}_3)_3\text{COH}$	75-65-0	highly flammable; irritating vapor and liquid	Fair
Terpineol (Terpene Alcohol)	$\text{C}_{10}\text{H}_{17}\text{OH}$	98-55-5	flammable; toxic	Indefinite
Thiophosphoryl Chloride	Cl_3SP	3982-91-0	air- and water- reactive; corrosive; toxic	Fair
Tin	Sn	7440-31-5	metal dust may present a fire hazard and a health hazard	Indefinite
Toluene (Methyl Benzene)	C_7H_8	108-88-3	highly flammable; toxic	Good
Toluene Diisocyanate (TDI)	$\text{C}_9\text{H}_6\text{N}_2\text{O}_2$	584-84-9	water-reactive; acutely toxic	Poor
Trichloroethane-1,1,1 (Methyl Chloroform)	$\text{C}_2\text{H}_3\text{Cl}_3$	71-55-6	poison; flammable	Fair
Trichloroethylene (Acetylene Trichloride)	C_2HCl_3	79-01-6	carcinogenic to humans; poison; flammable	Indefinite
Triethanolamine	$\text{C}_6\text{H}_{15}\text{NO}_3$	102-71-6	toxic	Fair

Appendix B - Restricted Chemicals				
Name	Formula	CAS #	Hazard*	Shelf Life ¹
2,2,4-Trimethylpentane	C ₈ H ₁₈	540-84-1	highly flammable; toxic	Limited; refer to expiration date on label
Tri-n-Butylaluminum	C ₁₂ H ₂₇ Al	1116-70-7	air- and water-reactive; strong reducing agent; pyrophoric; toxic	Fair
Trioctyl Aluminum	(CH ₃ (CH ₂) ₇) ₃ Al	1070-00-4	water-reactive; acutely toxic; flammable	Poor
Triphenyltetrazolium Chloride (Red Tetrazolium or Vitastain)	C ₁₉ H ₁₅ N ₄ Cl	298-96-4	toxic	Good
Trisodium Phosphate (Sodium Phosphate)	Na ₃ PO ₄	7601-54-9	toxic	Indefinite
Tungsten	W	7440-33-7	Metal dust may present a fire hazard and a health hazard.	Indefinite
Turpentine	C ₁₀ H ₁₆	8006-64-2	Highly flammable; toxic	Indefinite
Vanadium Trichloride	VCl ₃	7718-98-1	Toxic; air- and water-reactive; corrosive	Fair
Xylene	C ₈ H ₁₀	1330-20-7	Highly flammable; toxic by inhalation or absorption through skin.	Good
Zinc (Powder)	Zn	7440-66-6	Strong reducing agent; water-reactive; pyrophoric; metal dust may present a fire hazard and a health hazard	Indefinite
Zinc Acetylde			shock sensitive;	Fair

Appendix B - Restricted Chemicals				
Name	Formula	CAS #	Hazard*	Shelf Life ¹
			water-reactive	
Zinc Nitrate Hexahydrate (500 g limit)	$\text{Zn}(\text{NO}_3)_2 \cdot 6\text{H}_2\text{O}$	10196-18-6	Strong oxidizer	Indefinite
Zinc Phosphide	Zn_3P_2	1314-84-7	Strong reducing agent; water reactive; toxic	Fair

Appendix B2 - Restricted Chemicals (Demonstration Use Only)				
Name	Formula	CAS #	Hazard*	Shelf Life ¹
Aluminum Chloride, Anhydrous (25 g limit)	AlCl ₃	7446-70-0	air-and water-reactive; fumes in moist air form toxic gas	Good
Ammonium Dichromate (100 g limit)	(NH ₄) ₂ Cr ₂ O ₇	7789-09-5	oxidizer; chromium (VI) compounds are carcinogenic to humans	Fair
Ammonium Persulfate (100 g limit)	(NH ₄) ₂ S ₂ O ₈	7727-54-0	strong oxidizer; explosion hazard	Indefinite
Antimony Metal (50 g limit)	Sb	7440-36-0	poison; combustible powder; strong reducing agent	Indefinite
Bromine (3 - 1 g ampules limit)	Br ₂	7726-95-6	strong oxidizer; reacts violently with organics; acutely toxic by inhalation and ingestion	Indefinite
Calcium Carbide (100 g limit)	CaC ₂	75-20-7	water-reactive; reacts violently with water to generate acetylene gas; serious fire risk	Good
Chromium Oxide (Chromic Oxide) (20 g limit)	Cr ₂ O ₃	1308-38-9	strong oxidizer; poison; corrosive	Indefinite
Collodion (a solution of pyroxylin in ether and alcohol) (100 mL limit)	C ₂₅ H ₃₃ O ₁₃ (NO ₃) ₇	9004-70-0	highly flammable	Fair
Cyclohexanone (100 mL limit)	C ₆ H ₁₀ O	108-94-1	highly flammable; vapors may travel a considerable distance and ignite; may form explosive peroxides	Indefinite
Cyclohexene (100 mL limit)	C ₆ H ₁₀	110-83-8	highly flammable; vapors may travel a considerable distance and ignite; may form explosive peroxides	Poor

Appendix B2 - Restricted Chemicals (Demonstration Use Only)				
Name	Formula	CAS #	Hazard*	Shelf Life ¹
Cyclopentanone (100 mL limit)	C ₅ H ₈ O	120-92-3	highly flammable; vapors may travel a considerable distance and ignite; may form explosive peroxides	Good
Diglyme (Diethylene Glycol Dimethyl Ether) (500 mL limit)	(CH ₃ O)CH ₂	111-96-6	combustible; oxidizes readily in air to form explosive peroxides	Limited; refer to expiration date on label
Dinitrophenylhydrazine (100 g limit)	C ₆ H ₆ N ₄ O ₄	119-26-6	flammable solid; explosive when dry	Good
Hydrides, Borohydrides (e.g., aluminum borohydride, aluminum hydride, magnesium aluminum hydride, phosphorous hydride, sodium borohydride)(100 g limit)	Unavailable		strong reducing agents; air-and water-reactive	sodium borohydride : indefinite, phosphorous hydride, magnesium aluminum hydride, aluminum hydride, aluminum borohydride : limited; refer to expiration date on label
Hydrogen (limited to lecture bottle of 4 cu. ft. or less)	H ₂	13333-74-0	flammable gas; burns with a pale blue, almost invisible flame; may displace oxygen, which could cause asphyxiation; compressed gas cylinder hazards	Indefinite
Lithium (20 g limit)	Li	7439-93-2	water-reactive; highly flammable solid; readily ignited by and reacts with many extinguishing agents	Indefinite

Appendix B2 - Restricted Chemicals (Demonstration Use Only)				
Name	Formula	CAS #	Hazard*	Shelf Life ¹
Magnesium (turnings) (100 g limit)	Mg	7439-95-4	water-reactive; flammable solid; strong reducing agent	Indefinite
Methyl Isobutyl Ketone (4-Methyl-2-Pentanone or MIBK) (250 mL limit)	CH ₃ COCH ₂ CH (CH)	108-10-1	highly flammable; vapors may travel a considerable distance and ignite; may form explosive peroxides; possibly carcinogenic to humans	Fair to poor
Pentane (100 mL limit)	C ₅ H ₁₂	109-66-0	highly flammable	Indefinite
Phosphorus, Red (Amorphous) (50 g limit)	P	7723-14-0	water-reactive; flammable solid; can change to white phosphorus if heated; strong reducing agent; acutely toxic	Indefinite
Potassium (1-container with 5 demonstration-size pieces)	K	7440-09-7	violently water- reactive; may form explosive peroxides; combustible; flammable solid; ignites when exposed to water or moisture; may ignite spontaneously in air;	Poor
Potassium Chlorate (100 g limit)	KClO ₃	3811-04-9	explosive; strong oxidizer	Indefinite
Silver Oxide (100 g limit)	Ag ₂ O	20667-12-3	strong oxidizer; contact with other material may cause fire	Indefinite
Sodium (100 g limit)	Na	7440-23-5	violently water- reactive; strong reducing agent; flammable solid; may ignite spontaneously in air	Good
Wright's Stain (Hg Containing) (100 mL limit)	UNDEFINED	68988-92-1	contains mercury; poison; acutely toxic	Indefinite

* The hazard information provided for the listed chemicals is not intended to address all safety concerns. Before attempting to work with any chemical, review and comply with information provided on the SDS.

¹ Chemicals with an indefinite shelf life may be stored in the school for up to five years. Chemicals with a shelf life less than indefinite (limited, poor, fair, and good) may be stored in the school for up to one year unless the manufacturer indicates a lesser period of time in which the chemical shall be used.

