

Chemical Hygiene Plan for Science Labs Rock Hill Schools (York 03)



Plan prepared by:

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August 2018



OSHA's Occupational Exposure to Hazardous Chemical in Laboratories standard (29 CFR 1910.1450), referred to as the Laboratory Standard, specifies the mandatory requirements of a Chemical Hygiene Plan (CHP) to protect laboratory workers from harm due to hazardous chemicals. THE CHP is a written program stating the policies, procedures and responsibilities that protect workers from the health hazards associated with the hazardous chemicals used in that particular workplace.

Standard Operating Procedures



- Annually, each of our teachers will watch two lab safety videos, and successfully complete the quiz through Safe Schools.
 - 1) Science Lab Safety
 - 2) Science Laboratory Chemical Spills
- Each student enrolled in Middle or High School Science will be shown the [Rock Hill Schools Student Lab Safety video](#) by their teacher. The video will be discussed and the students will each sign a lab safety pledge.
- When conducting labs, teachers and students will wear appropriate personal protective equipment (PPE) including aprons and goggles. Gloves may also be worn depending on the nature of the experiment.



- All chemicals to be used in Rock Hill Schools will be according to the **Flinn Chemical Storage Pattern**. (Appendix I)
- To determine and implement proper control measures, to reduce exposure to hazardous materials, teachers will review the SDS of any chemicals used for laboratory purposes and make decisions for the proper use of chemicals based upon the information in the SDS.
- Any chemicals that are **mutagenic**, **teratogenic**, or **carcinogenic**, will not be used in Rock Hill Schools.



- In Rock Hill Schools, no labs will be conducted that involve an open flame that is not fueled by a Bunsen burner, or larger than the flame of a tea candle. Teachers take special care to ensure that students maintain a proper distance, wear flame retardant aprons, and have flame distinguishing materials nearby.
- In Rock Hill Schools, Science teachers will be mindful of the labs and demonstrations they perform with household or easy-to-obtain materials. Students may attempt these labs or demonstrations at home where they could cause harm to themselves or someone else. When appropriate, teachers will use scientific names or chemical formulas as labels on containers, rather than using original source containers that students may recognize from home or common stores.



- Each semester, in August and January, Science teachers must complete and submit a Lab Safety Inventory (Appendix A). This signed document will be kept in their classroom and any issued reported to their school's Chemical Hygiene Officer.
- The door to each chemical storage area will bear a sign, Lab Safety Summary, (Appendix E) stating a summary of our Lab Safety procedures. Behind the sign will be the list of chemicals stored in that storage area AND a signed copy of the Lab Safety Summary (Appendix A).
- Under no circumstances will teachers in Rock Hill Schools give students chemicals or other laboratory supplies to use at home. All chemicals and Science laboratory supplies will be used under the direct supervision of a Science teacher.



- All chemicals ordered for use in Rock Hill Schools, will be ordered from **Flinn Scientific**.
- All preserved specimens for use in Rock Hill Schools, will be ordered from either **Flinn** (Appendix B) or **Carolina Biologicals** (Appendix C).
- Rock Hill Schools will adhere to the **NSTA Minimum Safety Practices and Regulations for Demonstrations, Experiments, and Workshops** (Appendix H).
- Any past and future **NSTA Safety Alerts** will be added to this Chemical Hygiene Plan to be adhered to by teachers in Rock Hill Schools.



In Case of Fire

1. ABC fire extinguisher
2. Fire retardant blanket
3. Safety Shower.
4. Fire Escape Route
5. Fire Alarm pull station
6. Fire Precautions are explained to students.

7. In the event of fire, the teachers have the option of attempting to put out the fire or evacuating immediately. If the teacher chooses to attempt to extinguish the flames, the students will be dismissed according to the evacuation route posted next to the exit. One student may be asked to pull the nearest fire alarm. As the classroom is evacuated, the door(s) will be closed to contain and flames or smoke.



Disposal of Lab Materials

- To properly dispose of laboratory chemicals, each material's SDS will be consulted. At the conclusion of each semester, teachers will send a list (Appendix D) containing the name, approximate amount, and approximate size of the container (in Liters) will be sent to the school's CHO to be compiled and sent to the District's CHO. A disposal company will be consulted for removal.
- Any dissection materials purchased will be from Flinn or Carolina Biologicals. The teacher (not the students) will place the discarded specimens into an opaque plastic bag to be sealed and placed with the school's general waste. The fluid used to preserve the specimens will be poured into a sink and flushed with water. (Appendix B, Appendix C)

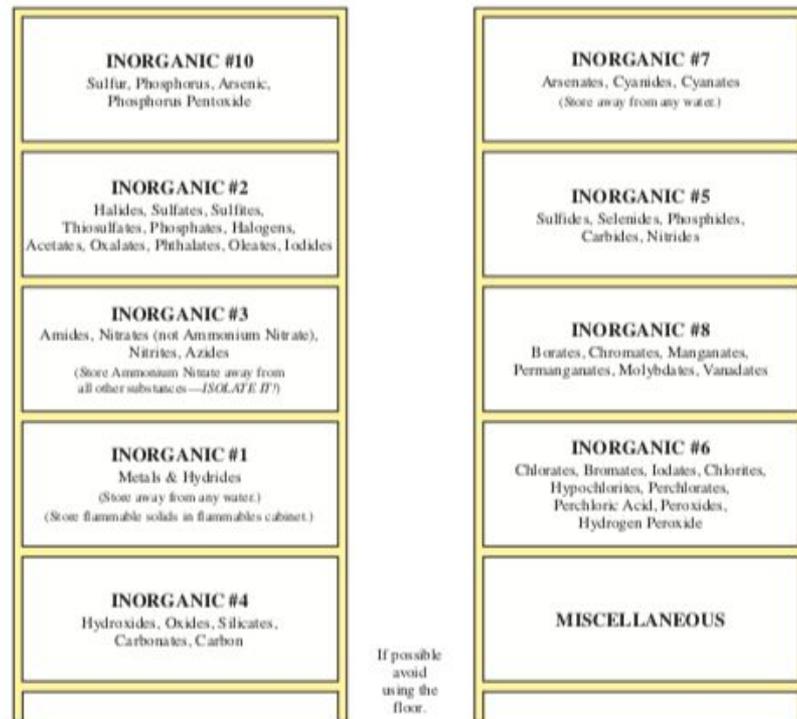
Flinn Chemical Storage Pattern



SUGGESTED SHELF STORAGE PATTERN—ORGANIC



SUGGESTED SHELF STORAGE PATTERN—INORGANIC



Teachers must keep their chemical storage areas locked at all times.

A Better Visual



Organics

Inorganics



Teachers must keep
their chemical storage
areas locked at all
times.



Science Lab Safety Plan Addendum

(Appendix A)



| | |
|--|--|
| Date | |
| Name of School | |
| School Address | |
| School Phone Number | |
| Name of Principal | |
| Science Department Chair | |
| Chemical Hygiene Officer (school administrator) | |
| Addendum Items After your review of the RHSD Lab Safety plan, please indicate any <u>additional</u> safety procedures, or <u>special considerations</u> for your school. | |
| | |
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| | |

**Due annually
on Oct. 1**



Science Teacher Lab Inventory

(Appendix B)



| | | | | | | |
|---|--------------|----|-----|---------------|----|-----|
| School | | | | | | |
| Teacher | | | | | | |
| Room/Lab Number | | | | | | |
| | August _____ | | | January _____ | | |
| ALL of the fume hoods are working. | Yes | No | N/A | Yes | No | N/A |
| The safety shower is working. | Yes | No | N/A | Yes | No | N/A |
| The fire extinguisher is full. | Yes | No | N/A | Yes | No | N/A |
| The eye-wash sink is working. | Yes | No | N/A | Yes | No | N/A |
| The gas ports for ALL bunsen burners are working. | Yes | No | N/A | Yes | No | N/A |
| The exit(s) from your classroom/lab are unobstructed. They should always be unlocked. | Yes | No | N/A | Yes | No | N/A |
| The lock on the chemical storage area works. The chemical storage area is locked. | Yes | No | N/A | Yes | No | N/A |
| You have access to enough flame resistant aprons that ALL students are able to wear one during lab. | Yes | No | N/A | Yes | No | N/A |
| You have access to enough goggles that ALL students are able to wear one during lab. | Yes | No | N/A | Yes | No | N/A |

Each teacher should complete this inventory in August and January. Anything marked NO should be reported to the school's CHO for repair.



(Appendix D)



Science Lab Chemicals Requiring Outside Disposal

School _____ Date _____

| Location (room number) | Chemical Name | Approximate Amount (optional units) | Approximate Size of Container (use L) |
|------------------------------|---------------|---|---|
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Chemicals to be
disposed
December and
May



Lab Safety Summary

Rock Hill Schools (York 03)



For Students

- Students must watch the RHSD Lab Safety video and sign a Lab Safety Agreement.
- Students must follow the directions given by the teacher.
 - Measure correctly.
 - Only combine the chemicals stated in the directions.
 - Clean up as directed by the teacher.
- Students must wear their apron and goggles appropriately.
- Students should tie back long hair and wear closed-toe shoes during lab experiments.
- Students must alert the teacher of any spills, broken glass, or unintentional fires.
- Students should know the location and proper use of the fire extinguisher, fire blanket, safety shower, and eyewash station.

For Teachers

- Teachers must watch the Safe Schools Lab Safety videos and complete the quizzes.
- Teachers must clearly explain directions and expectations to students prior to each lab experience.
- Teachers must maintain an inventory of all chemicals and the proper SDS for

This sign should hang on the door of the chemical storage area.



(Appendix E)



Chemical Inventory List

Teacher Name _____

Room Number _____

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Teachers should list all of the chemicals they have stored in their chemical storage area. This inventory should hang behind the Lab Safety Summary.



Safety Signs Displayed

- Exits
- Eyewash Area
- Safety Shower
- Fire Extinguisher
- Fire Blanket
- Fume Hood

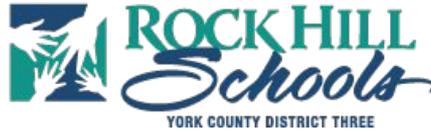




Reporting of Incidents

- In the event of a spill, fire, or injury, the teacher should send an email to 1) the school's Department Chair, 2) Chemical Hygiene Officer, and the 3) District Chemical Hygiene Officer (kmassey). The email should contain the following information
 - date and time of incident
 - names of affected students
 - explanation of the incident
 - teacher's response to the incident

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**Questions regarding Lab Safety in
Rock Hill Schools
should be directed to:**

Kimberly G. Massey at kmassey@rhmail.org