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BRUNSWICK JUNIOR HIGH SCHOOL
CHEMICAL HYGIENE PLAN

I. Introduction.

a. The federal Occupational Exposures to Hazardous Chemicals in Laboratories legislation (29 CFR 1910.1450) requires all employers to develop a Chemical Hygiene Plan which details how each employee involved in the laboratory use of hazardous chemicals will be protected from overexposure, and to describe specific work practices and procedures in the laboratory to minimize employee risk. Students are not considered employees under this law, but prudence dictates that they should be expected to comply with all practices and procedures in this Plan.

b. The following key definitions are taken from 29 CFR 1910.1450, and are applicable to this Plan:

1. "Laboratory": A facility where the "laboratory use of hazardous chemicals" occurs. It is a workplace where relatively small quantities of hazardous chemicals are used on a non-production basis. NOTE: For the purposes of this plan, the term "laboratory" applies to any Science classroom, art studio, or prep room in which hazardous chemicals are used.

2. "Laboratory use of hazardous chemicals": Handling or use of hazardous chemicals in which all of the following conditions are met:

(a) Chemical manipulations are carried out on a "laboratory scale".

(b) Multiple chemical procedures or chemicals are used.

(c) The procedures involved are not part of a production process, nor in any way simulate a production process.

(d) Protective laboratory practices and equipment are available and in common use to minimize the potential for employee exposure to hazardous chemicals.

3. "Laboratory scale": Work with substances in which the containers used for reactions, transfers, and other handling of substances are designed to be easily and safely manipulated by one person.

II. Responsibilities. Specific to this Chemical Hygiene Plan for Brunswick Junior High School, employees, administrators, and students each have responsibilities to conform to this standard. The Brunswick School Board and the Superintendent of Schools are "ultimately responsible for chemical hygiene within the institution and must, with other administrators, provide continuing support for institutional chemical hygiene" per Appendix A to 29 CFR 1910.1450, Section B.1.

a. School Administration Responsibilities:

1. Appoint a Chemical Hygiene Officer as defined in 29 CFR 1910.1450 (b), with the authority and responsibilities as given in Appendix A to 29 CFR 1910.1450, Section B.2. Formal designation shall be provided using Appendix A to this Plan.

2. Implement a Chemical Hygiene Plan conforming to 29 CFR 1910.1450.

3. Train employees with the provisions of the Chemical Hygiene Plan including: a) the location and availability of the OSHA Laboratory Standard (29 CFR 1910.1450), school Chemical Hygiene Plan, Material Safety Data Sheets (MSDSs) and other safety information.

These references must include: (a) Permissible Exposure Limits (PELs) or Threshold Limit Values (TLVs), and signs and symptoms associated with exposure; (b) the physical and health hazards of the chemicals with which the employee works; and (c) work practices, personal protective equipment, and emergency procedures to be used to ensure protection from overexposure to the hazardous chemicals used.

4. Provide regular, formal chemical hygiene and housekeeping inspections including routine inspections of emergency equipment.

5. Maintain a record of all chemical exposures and provide employee access to these records as well as any medical records.

6. Maintain a signed copy of Appendix B for each employee involved in the laboratory use of hazardous chemicals.

b. Instructional Staff Responsibilities:

1. Know the properties and safety hazards associated with each laboratory activity before students carry out the procedure.

2. Ensure that all students have been instructed in, and understand, all requisite laboratory safety procedures, and that positive documentation of such instruction and understanding, such as a signed “Safety Contract” and/or completed safety exam, is obtained for each student prior to any laboratory use of hazardous chemicals.

3. Ensure that all safety equipment is present in the laboratory and is in good working condition.

4. Provide eye protection and other necessary personal protective equipment for students.

5. Ensure that all chemicals are properly labeled with their contents and hazards.

6. Ensure that all safety rules are obeyed.

7. Promptly clean-up or direct the clean-up of spilled chemicals.

8. Dispose of chemical wastes properly.

9. Understand and comply with the procedures in this Plan.

10. Report any accidents or unsafe conditions in writing to your department chairperson, principal, or other appropriate administrator.

11. Request information and training when unsure how to handle a hazardous chemical or situation.

c. Students’ Responsibilities:

1. Understand the experimental procedure before starting to work in the laboratory.

2. Understand the properties and hazard of the chemicals to be used.

3. Obey all safety rules and regulations.

4. Clean the work area immediately after use. Obey good housekeeping practices.

III. Basic Rules and Procedures. The Chemical Hygiene Plan shall “include...standard operating procedures relevant to safety and health considerations to be followed when laboratory work involves the use of hazardous chemicals" per 29 CFR 1910.1450(e) (3)(i).

a. General Rules:

1. Know the safety equipment. Know the location of eye wash fountains, safety showers, fire blankets, fire extinguishers, first aid kits, and emergency exits. Know how to respond in case of an emergency. Know how to use the safety equipment.

2. Know the hazards of the materials being used. Read labels carefully to ensure using the correct chemical. Know how to interpret data from a MSDS. Remember that hot and cold glassware appear the same, so allow ample time for cooling.

3. Never engage in horseplay, games, or pranks in the laboratory
Remember that the laboratory is a place for serious work. Careless behavior is dangerous and will not be tolerated.

4. Demonstrate safe behavior. Obey all safety instructions given by the teacher or in the experimental procedure. Clean up spills immediately as directed by the teacher. If uncertain how to clean up a spill, or for large spills, notify the teacher immediately. Before leaving the laboratory, return equipment and chemicals to their proper place. Clean up the work area.

5. Dispose of all waste materials according to the teacher's instructions.

6. Report any accidents or unsafe conditions to the teacher immediately.

b. Prior Approval:

1. Carry out only the experiments assigned by the teacher. Never perform unauthorized experiments.

2. Never remove chemicals from the laboratory.

3. Never work in the laboratory unless authorized to do so by the teacher. Never work alone in the laboratory. In case of an accident, a second person may be required to prevent injury or even save your life.

IV. Control Measures. The Chemical Hygiene Plan shall “include... criteria that the employer will use to determine and implement control measures to reduce employee exposure to hazardous chemicals including engineering controls, the use of personal protective equipment and hygiene practices" per 29 CFR 1910.1450(e)(3)(ii).

a. Personal Hygiene. Practicing good personal hygiene will minimize exposure to hazardous chemicals. The following procedures should be followed:

1. Do not eat or drink in the laboratory. In addition, cosmetics should never be applied in the laboratory. By engaging in these activities, you may accidentally ingest harmful chemicals.

2. Do not taste any chemical.

3. Do not smell chemicals directly. Smell a chemical only if your teacher specifically tells you to do so. In that case, always use your hand to fan the vapor to your nose.

4. Do not pipette solutions by mouth. Use a rubber suction bulb or other device to fill a pipette.

5. Wash your hands with soap and water before leaving the laboratory. This applies even if you have been wearing gloves.

b. Protective Clothing and Equipment. Clothing worn in the laboratory should offer protection from splashes and spills, should be easily removable in case of an accident, and should be fire resistant. The following rules should be followed:

1. Protect your eyes. Appropriate eye protection must be worn at all times in the laboratory. Goggles provide maximum protection from splashes. Contact lenses should not normally be worn unless approved by your teacher. Unventilated goggles are essential if contact lenses are to be worn.

2. Wear appropriate protective clothing. Chemicals may burn or irritate the skin. Some chemicals are readily absorbed through the skin and enter your body. Your clothing should cover your legs to the knees. Shorts are not appropriate for the laboratory. Laboratory coats or aprons can protect good clothing. Loose clothing should not be worn because it may dip into chemicals or catch on fire.

3. Wear shoes that cover your feet. Sandals and open-toed shoes offer no protection to your feet from broken glass that is frequently found in science laboratories. In addition, shoes will protect your feet from chemical spills.

4. Tie back loose hair. Dangling hair may fall into a Bunsen burner and catch on fire, or may fall into a chemical solution.

5. Carefully inspect all protective equipment before using. Do not use any defective personal protective equipment. Report any defective equipment.

c. Housekeeping Rules:

1. Never block access to emergency equipment — showers, eye wash, fire extinguishers, fire blankets—and emergency exits.

2. All chemical containers must be labeled with at least the identity of the contents and hazards associated with the chemical. Label all reagents with the name of the preparer and date of preparation.

3. Wastes should be segregated into appropriate containers and properly labeled.

4. Do not use chipped, cracked, or broken glassware. Place broken glassware and disposable glassware into appropriately labeled containers.

5. Never throw solid materials into sinks; use the appropriate waste containers.

6. Do not put pipettes or spatulas into reagent bottles. Do not return unused chemicals or solutions to their original bottles. Contamination can ruin current and future experiments and result in a larger amount of waste for disposal. To weigh solids, transfer the desired amount to glazed weighing paper or the appropriate glassware. Do not weigh solids directly on the pans of a balance.

7. Clean up any spills on the floor or bench immediately. Ask your teacher if you are not sure how to treat the spill.

8. Clean the area when your work is finished. Check to make sure all gas and water outlets are completely shut off. Put away all items used in the experiment in their proper place.

d. Hazardous Material Handling and Storage:

1. All chemicals in the stockroom should be stored according to chemical compatibility.

2. Use appropriate shelving or cabinets. If metal clips are used to hold shelves, they should be inspected for corrosion and replaced as necessary.

3. Store flammable liquids in approved fire cabinets.

4. Make sure shelves holding containers are secure. Attach anti-roll lips on shelves to prevent chemicals from falling.

5. When opening newly received chemicals, immediately read the warning label to be aware of any special storage precautions like refrigeration or inert atmosphere storage.

6. Do not store chemicals in aisles or stairwells, on desks or laboratory benches, on floors, or in hallways.

7. Maintain a complete inventory in the room where chemicals are stored.

8. Mark the acquisition dates on all peroxide-forming chemicals, and either periodically test them for peroxide formation or dispose of them after six months.

9. Have spill cleanup supplies (absorbents, neutralizers) in any room used for chemical storage or use.

10. Use refrigerators of explosion-proof or explosion safe design only. Standard refrigerators that have not been converted should never be used to store flammable chemicals.

11. Chemicals should be dated upon receipt, dated to be disposed where appropriate, and dated when opened (e.g., peroxides, anhydrous ethers, sodium nitrites).

12. Chemical containers should be periodically checked for rust, corrosion, and leakage.

13. Chemical labels should state the name of the chemical, be firmly attached to the container, list the chemical's hazards (including HMIS/NFPA ratings), and the name of the responsible party.

14. Chemical labels should be readable and free from chemical encrustation.

15. Maintain a clear access to and from the storage areas.

16. Where possible, storage areas should have two separate exits.

e. Inspections:

1. Eyewash fountains should be flushed for three minutes each week.

2. Safety showers should be tested at least annually

3. Fume hoods should be monitored at least annually to make sure their flow is adequate (60-120 CFM).

4. Fire extinguishers should be checked to make sure they are of the correct type (ABC) and are at recommended pressure.

5. Safety goggles and aprons should be inspected prior to each use.

6. Safety inspections should be made every three months to monitor housekeeping and to make sure safety equipment is working. The record of these inspections must be recorded.

V. Medical Program. The Chemical Hygiene Plan "shall include... provisions for medical consultation and medical examinations" per 29 CFR 1910.1450(g).

a. Exposure. When employees or supervisors suspect that an employee has been exposed to a hazardous chemical to a degree and in a manner that might cause harm to the victim, the

victim is entitled to a medical consultation and examination without cost and loss of pay to the employee. Medical records should be retained according to state and federal laws. The events and circumstances that might result in overexposure to a chemical are:

1. A hazardous chemical leaked, was spilled, or otherwise released in an uncontrolled manner;
2. A hazardous chemical was spilled on the skin or splashed in the eye;
3. A person displays symptoms that might indicated overexposure to a hazardous chemical such as rash, headache, nausea, coughing, tearing, irritation or redness of eyes, irritation of nose or throat, dizziness, loss of motor dexterity or judgment, and others.

b. Exposure Assessment. All complaints about chemical exposure will be documented on the Accident Report Form along with any action taken. If no further action is taken, the reason for that decision should be included. If it is decided to investigate the incident, the following steps should be undertaken after the victim is treated:

1. Interview the victim to determine the symptoms and circumstances of the possible exposure.
2. List the chemical under suspicion and other chemicals being used by the victim and in the laboratory.
3. List the symptoms exhibited or claimed by the victim and compare these symptoms to those stated in the Material Safety Data Sheet.
4. Evaluate the condition and proper use of all applicable personal protective equipment and engineering controls.
5. Monitor or sample the air and document the results.
6. Determine if the present control measures and safety procedures are adequate.

VI. Signs and Labels. The following signs and labels should be posted prominently in the laboratory:

a. Emergency telephone numbers of emergency personnel, emergency facilities, administration, and the teacher.

b. Identity labels showing the contents of containers (including waste receptacles) and associated hazards.

c. Location of exits, safety showers, eyewash station, fire extinguisher, fire blanket, and other safety equipment;

d. "NO FOOD" labels on all laboratory refrigerators.

e. Warnings at areas or equipment where special or unusual hazards exist.

VII. Spills and Accidents.

a. The school will have an emergency plan in place that includes specific procedures for laboratory accidents. Each student, teacher and staff member should know immediately what to do and where to go in case of any emergency.

b. Take immediate notice of persons who may have come into contact with the spilled chemical. Address their needs promptly.

c. Evacuate the spill area. Until you are certain that the spill is not hazardous to students in the general area, limit the number of people who might be exposed.

d. Protect yourself. Never clean up a spill without proper protective clothing.

e. Identify the chemical that is spilled, isolate it, and contain it.

f. Clean up and dispose of the chemical in a safe, legal, and responsible way.

g. Clean up yourself disposing of gloves you used in the cleanup.

VIII. Waste Disposal. The Chemical Hygiene Plan shall provide "procedures for safe removal of contaminated waste" per 29 CFR 1910.1450 (e)(viii)(D).

a. Waste should be collected for disposal at frequent intervals.

b. Disposal of laboratory waste will be conducted in accordance with all applicable local, state and federal regulations.

c. Only those laboratory waste materials verified as non-hazardous will be disposed of on-site. Indiscriminate disposal by pouring waste down the drain or adding them to the general trash is forbidden.

d. Collected and segregated waste materials, which may be hazardous, and can be transported and safely stored, will be transferred in small quantities to the Bus Garage for subsequent transfer to a licensed hazardous material handling contractor.

e. For hazardous waste materials which cannot be safely transferred to the Bus Garage, the Facilities Director will be immediately notified in order to arrange direct on-site transfer to a licensed hazardous material handling contractor.

IX. Training. Employees shall be provided with information and training to ensure they are aware of the hazards of chemicals that are present in their laboratory. This training must include:

a. The location and availability of the OSHA Lab Standard, school Chemical Hygiene Plan, chemical safety reference materials (including Material Safety Data Sheets), and the PELs for OSHA-regulated substances;

b. The applicable details of the OSHA lab standard and the Chemical Hygiene Plan;

c. Signs and symptoms associated with exposure to hazardous chemicals with which they may work;

d. Methods and observations that may be used to detect the presence or release of a hazardous chemical (visible appearance, odor, monitoring equipment);

e. Prudent work practices, personal protective equipment, and emergency procedures to protect workers from overexposure to hazardous chemicals.

Adopted: 4/13/05

Appendix A – Designation of Chemical Hygiene Officers

_____ (primary) and _____ (alternate) are hereby appointed as the Chemical Hygiene Officers for Brunswick Junior High School in accordance with 29 CFR 11910.1450 (e)(vii) and as defined in 29 CFR 1910.1450 (b). The authority and responsibilities of the Chemical Hygiene Officer are as provided in Appendix A to 20 CFR 1910.1450, Section B.3.

It is understood that the ultimate responsibility for the attached Chemical Hygiene Plan, and its successful execution, rests with the Brunswick School Board and the Superintendent of Schools.

Submitted: _____

Principal, Brunswick Junior High School (date)

Reviewed/Approved: _____

Facilities Director, Brunswick School Dept. (date)

Appendix B - Acknowledgment Sheet for the Chemical Hygiene Plan

After reading the Brunswick Junior High School Chemical Hygiene Plan, please complete and return this form to your supervisor or departmental office. Your supervisor will provide additional information and training as appropriate.

I acknowledge that I have read, understood, and have received a copy of the Brunswick Junior High School Chemical Hygiene Plan. Also, I have had the opportunity to ask and receive answers to questions I had concerning this document.

Signature_____

Date_____

Name (Please print) _____

Employee Number _____

Team Leader/Department Head _____

Position _____