



## Managing Hazardous/Chemical Materials

### Administrative Procedure 6.45

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**Board Governance Policy Cross Reference: 1,2,3,4,12,13,17**

**Legal Reference: Public Schools Act; Workplace Safety and Health Act; and Manitoba Labour Code**

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The activities within Evergreen School Division include the use, storage and disposal of chemicals. This administrative procedure is designed to identify, eliminate and/or control chemical hazards and applies to all staff that may be required to handle hazardous chemicals.

#### **DEFINITIONS**

##### **Hazard**

“Hazard” is the harm that something can cause. The harm may be physical injury, damage to health, property and or the environment. Hazard is an intrinsic or “built-in” characteristic. In the **Workplace Hazardous Material Information System (W.H.M.I.S.)** we talk about hazardous materials; materials that can cause harm.

##### **Risk**

“Risk” is the likelihood that a hazardous material will cause harm to people, property or the environment. There are two factors that can increase or decrease risk:

1. the seriousness of the hazard
2. how much exposure there is to the hazard

It is commonly accepted that Risk = hazard X exposure.

##### **SDS**

A **Safety Data Sheet (SDS)** is a document that contains information on the potential hazards (health, fire, reactivity and environmental) and how to work safely with the chemical product. It also contains information on the use, storage, handling, and emergency procedures all related to the hazards of the material. SDSs are prepared by the supplier or manufacturer of the material.

##### **W.H.M.I.S.**

The Workplace Hazardous Material Information System is federal legislation that is intended to protect employee health & safety by identifying and addressing *risks* associated with *hazardous/controlled materials*.

The Safety Officer will coordinate W.H.M.I.S introduction education annually. To support the requirements of new hires throughout the year, an on-line PowerPoint and quiz have been developed and placed on the Division website under Employment & Human Resources. Site-specific training will be provided for custodial staff by the Head Custodian and the Building Supervisor.

## **PROCEDURES FOR MANAGING SAFETY DATA SHEETS**

Safety Data Sheet Management will be controlled using the on-line SDS Management System, CanadaSDS.

### **CanadaSDS On-Line SDS Management Service**

CanadaSDS provides an online service to manage and have the most current Safety Data Sheets (SDS) for all hazardous materials currently in each workplace. From this site all employees have access to view or print an SDS for hazardous materials.

CanadaSDS quick search website can be accessed on the divisional website under the Safety & Health Tab or by following the quick link shortcut: <https://esd.canadasds.com/search>. A password is not required to access the site.

### **How to Search for an SDS**

Click on the CanadaSDS Link. When searching for chemicals, type in the product name in the box under the title MSDS search. The system will search the website and provide you with a list of similarly named chemicals. Go through the list and find the chemical you are looking for.

**OR**

Under the heading "**Locations**", click on the down arrow and select your school and department. Then click on the search tab. This will open a new page with a list of chemicals in that department. Find the chemical you are looking for.

### **Print or View an SDS**

Once you have searched or browsed for your chemical, you can view your SDS by clicking on the "PDF" icon to the left of the product name. Your SDS will open in a new window. To print, click on the printer icon at the top of the window.

### **Workplace Labels**

Once you have searched or browsed for your chemical you can print a workplace label. To print a workplace label, click on the product summary icon, to the right of the PDF icon. A new window will open with the product summary information. Click on the "Print Label" tab on the left-hand side of the screen.

Choose the type of label you wish to print. Select the label size, pictograms, data fields or add other label data information. Select the number of labels you want printed and the location of the labels on the page. Click on generate label and your labels will print.

If you are having problems accessing/searching/etc. on CanadaSDS please contact the Divisional Safety Officer via email or at 204-641-1365.

Retention of archived SDSs will be managed by the Safety officer.

## PROCEDURES TO CONTROL THE NUMBER OF HAZARDOUS MATERIALS IN THE WORKPLACE

### Custodial, Bus Garages, Power Mechanic Shops & Industrial Arts/Woodworking Shops Hazardous Products

An approved product list has been reviewed and distributed; only the products on the list are to be purchased.

The supplier must provide all products with a Workplace Label and an SDS. Deliveries are not to be accepted if this information is not provided.

### Science Hazardous Products

**Vendors of choice** for ordering chemicals/hazardous materials required by the Science Classrooms/Labs: Fisher Scientific, Sigma Aldrich, Scholar Chemistry/Boreal/Wards Chemistry, Flinn Scientific and Aldon Chemicals.

Prior to ordering the following documents must be checked:

1. ***Excessive Risk Chemicals - Risk Exceeds Educational Utility:*** under no circumstances should any product on this list be ordered/carried in the science classrooms/labs.
2. ***High Risk Chemicals - Only Allow Very Limited Amounts in Storage:*** only appropriate for advanced-level High School Classes. Order quantity must be restricted to the smallest container size available for the product requested.
3. ***Under no circumstances is an unauthorized hazardous material (WHMIS controlled product) to be brought onto school property and into the school via a student, supplier and or any other third party. It is the responsibility of all Supervisors (Principal's and Teacher's) to manage this policy.***

**Excessive Risk Chemicals – Risk Exceeds Educational Utility****Under no circumstances shall the following chemicals be permitted in a school:**

Chemical	Chemical	Chemical
Acetic Anhydride	Dichlorobenzene	Nitrogen Triiodide
Acetyl Chloride	Dichloroethane	Nitroglycerin
Acrylamide	Dinitro Phenol	Osmium Tetraoxide (Osmic Acid)
Acrylonitrile	Dinitrophenyl Hydrazine S	Pentachlorophenol
Adipoyl Chloride	Dioxane	Perchloric Acid
Aluminum Chloride, anhydrous	Ether, Anhydrous	Phosphorous Pentasulfide
Ammonia, gas	Ether, Ethyl	Phosphorus Pentoxide
Ammonium Bifluoride	Ether, Isopropyl	Phosphorus, Red
Ammonium Bichromate	Ethyl, Ether	Phosphorus, Yellow or White
Ammonium Chromate	Ethylene Dichloride	Picric Acid, Trinitrophenol
Ammonium Dichromate	Ethyl Nitrate	Potassium Cyanide
Ammonium Perchlorate	Ethyleneimine	Potassium Perchlorate
Ammonium Sulfide	Ferrous Sulfide	Potassium Sulfide
Aniline	Formaldehyde (Formalin)	Potassium, metal
Aniline Hydrochloride	Gunpowder	Pyridine Flammable
Antimony Oxide	Hydrazine	Selenium
Antimony Powder	Hydriodic Acid	Silver Oxide
Antimony Trichloride	Hydrobromic Acid	Silver Cyanide
Arsenic Compounds	Hydrofluoric Acid	Sodium Metal Lump
Asbestos, Friable	Hydrogen	Sodium Arsenate
Azide Compounds	Hydrogen Sulfide, gas	Sodium Arsenite
Barium Chromate	Immersion Oil (old)	Sodium Azide
Benzene	Isopropyl Ether	Sodium Borohydride
Benzoyl Peroxide	Lithium Aluminum Hydride	Sodium Cyanide
Beryllium and it's compounds	Lithium Metal	Sodium Fluoride (Bifluoride)
Bromine	Mercaptoethanol	Sodium Fluoroacetate
Cadmium compounds	Mercury Compounds	Sodium Peroxide
Calcium Fluoride (Fluorspar)	Mercury, liquid	Sodium Sulfide
Carbon Disulfide	Methylene Chloride	Strontium
Carbon Tetrachloride	Methyl Ethyl Ketone	Testosterone HCl
Chloral Hydrate	Methyl Iodide (Iodomethane)	Tetrahydrofuran
Chlorine Poison Gas	Methyl Isocyanate	Thioacetamide
Chlorobenzene	Methyl Isopropyl Ketone	Thionyl Chloride
Chloroform	Methyl Methacrylate	Thiourea
Chlorosulfonic Acid	Naphthylamine, a-	Titanium Trichloride
Chromic Acid	Nickel Oxide	Triethylamine Flammable
Collodion	Nicotine	Trinitrobenzene
Cuprous Cyanide	Nitrotriacetic Acid	Trinitrophenol
Cyanogen Bromide	Nitrobenzene	Trinitrotoluene
Cyclohexene	Nitrocellulose	Uranium/Uranyl

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**High Risk Chemicals – ONLY Allow Very Limited Amounts in Storage**  
**Only appropriate for Advanced-Level High School Science Classes**  
**Must be Pre-Approved by Safety Officer Prior to Ordering**

Chemical	Chemical
Acetamide	Potassium Chlorate
Ammonium Nitrate	Potassium Chromate
Barium Peroxide	Potassium Dichromate
Butyric Acid	Radioactive Products
Cadmium Sulfide	Sebacoyl Chloride
Calcium Carbide	Silver Compounds
Chromium Trioxide	Sodium Chlorate
Ethidium Bromide	Sodium Chromate
Hexamethylenediamine	Sodium Dichromate
Hexanediamine 1-6	Sodium, metal, small chips
Hydrogen peroxide >29%	Strontium Nitrate Oxidizer
Lead Components	Thermite
Lead Nitrate	Toluene
Magnesium, powder	Wood's Metal
Phenol	Xylene

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### **Purchase of Hazardous Material**

Any employee requesting to purchase a hazardous material that is not currently in the CanadaSDS site book must fill out a Hazardous Material Request Form. The form must be submitted to their workplace supervisor for approval. This is a way in which to allow the supervisor to be aware of and control hazards within the building they manage. The supervisor may wish to consult the Divisional Safety Officer in order to gain understanding of the risks associated with the hazardous material being requested.

The supervisor (e.g. Principal) will then:

1. sign the Hazardous Material Request Form
2. scan the completed form to the Safety Officer for authorization

The Safety Officer will determine if the hazardous material is safe for school use and advise via email the workplace supervisor to confirm approval or rejection of the original request.

If approved, the Safety Officer will update CanadaSDS database and email the workplace when the new SDS is available (as required).

The reference to hazardous material for the purpose of this requirement will be liquids, gases, solids, powders, pastes or gels that are not food items or personal hygiene products.

### **House Hold Products**

Purchasing a product that is packaged for household use is not permitted. These types of products would be non-food type items such as “over the counter” scented room aerosols and dish detergents. Contact the Safety Officer if clarification is required regarding a specific product.

## INVENTORY AUDITS

To ensure on-going data integrity of the CanadaSDS data base, two inventory audits will be conducted annually in each workplace for each site book:

### 1. A complete inventory audit of the workplace conducted by the workplace:

- i. The Safety Officer will issue an Inventory Check List (generated from CanadaSDS) by site book to each workplace. Each workplace supervisor is responsible to review the lists for accuracy i.e. noting any required omissions and or deletions.
- ii. The Workplace Inventory Check Lists must be returned to the Safety Officer by the defined return date (normally 30 days from issue date).
- iii. The Safety Officer will use the lists to update the CanadaSDS site books.

### 2. A random inventory audit conducted by the Safety Officer:

- i. The Safety Officer will complete a random audit for each site book.
- ii. Discrepancies will be reviewed with the workplace supervisors.
- iii. CanadaSDS will be updated accordingly.

## HAZARDOUS WASTE DISPOSAL

All departments that work with chemicals eventually produce chemical waste. Everyone associated with these departments share the legal and moral responsibility to minimize the amount of waste produced and to dispose of chemical waste in a way that has the least impact on the environment. Depending on what is contained in the waste, some waste must be professionally incinerated or deposited in designated landfills, while other waste can be neutralized or discharged into the sewer system. The SDS must always be referred to as the primary source of information regarding disposal.

### Waste Storage Prior To Disposal

Each supervisor (Science Teacher, Head Custodian, Head Mechanic) is responsible for ensuring the waste is stored in properly labeled containers. Labels will be provided by request from the Divisional Safety Officer and are to be accompanied with an SDS and any other pertinent information required by the disposal company. Waste must be segregated to avoid unwanted reactions. To allow for cost-effective disposal, waste should be stored in closed containers, except when additional waste is being added. Science department inorganic liquid waste must be stored in chemical resistant hazardous waste containers. Containers can be requested through the Divisional Safety Officer. Each department must maintain a secure waste storage area.

1. The Safety Officer must be notified via email of the last of a product being disposed of internally to ensure the SDS for the disposed product is archived/deleted in the CanadaSDS site book.
2. For any hazardous material which cannot be disposed of at the workplace, supervisor/workers must complete a Hazardous Material Disposal Request Form.
3. The Hazardous Material Disposal Request Form must be signed by the supervisor of the workplace & sent to the Safety Officer for approval & processing.
4. The Safety Officer will arrange for disposal, advise the workplace, and update the CanadaSDS site books accordingly.

### Disposing Of Waste

Staff should be aware of the appropriate method of disposal for any chemical used in their department. When in doubt, refer to the (M)SDS or the source of the chemical (manufacturer or supplier).

1. Make disposal options a part of all laboratory instructions for students. For each chemical waste produced, instruct students as to the appropriate disposal, including disposing of the substance in a disposal container or down the drain.
2. Place all hazardous waste in a properly labeled container. The label needs to indicate the date, type of waste and the staff member's name. Labels can be requested via the Divisional Safety Officer.
3. Immediately following an activity, place the waste containers in a secure location until the containers can be removed to the central storage area.
4. Some chemical wastes may be recycled.

<b>WASTE STORAGE &amp; DISPOSAL</b>			
<b>Liquids</b>			
<b>NON-TOXIC WATER-SOLUBLE LIQUIDS</b> Buffers, <20% Alcohol (ethanol, methanol)	<b>WASTE MACHINE OIL</b>	<b>CONCENTRATED ACIDS BASICS AND ALL OTHER CHEMICALS AND CHEMICAL WASTE</b>	<b>UNWANTED DRY CHEMICALS AND CHEMICALLY CONTAMINATED WASTE</b> (e.g. Ethidium Bromide)
Pour down a laboratory drain. Flush with copious amount of cold water	Collect in a suitable container. Store Securely. Fill out the hazardous waste disposal form and email to Divisional Safety Officer.		
<b>Solids</b>			
<b>SHARPS</b> Needles, blades, scalpels, tips. Pack in puncture proof container.	<b>GLASS</b> Broken glass, brittle plastic	<b>PAPER AND DISPOSABLES</b> e.g. Gloves	
Email Divisional Safety Officer for pick up.	Pack securely in boxes, label box to indicate. Dispose in caretaking garbage.	Dispose with regular garbage.	
<ol style="list-style-type: none"> <li>1. No chemicals are to be left for the school custodial staff.</li> <li>2. All hazardous waste must be labelled with Hazardous Waste Labels or original labels if original contents.</li> </ol>			

### Drain Disposal

1. Do not pour chemicals down the drain unless they have been neutralized or are in very dilute quantities.
2. Any substance from a department should be flushed with at least 100 times its own volume of tap water.

3. Acids and bases should be at a neutral pH before pouring down the drain.
4. For additional information on drain disposal of substances, see the National Research Council's Prudent Practices in the Laboratory (1983).
5. If in doubt about the proper disposal of a chemical, check with the Safety Officer or refer to the manufacturer or supplier.
6. For compounds not suitable for drain disposal, ensure the chemicals are properly labeled (labels can be requested from the Safety Officer) and notify the Safety Officer for disposal.

### **Chemical Spill Response**

Trained individuals with the knowledge of the spilled chemical's hazards and the precautions that must be taken should only handle chemical spills.

1. Remove all staff and students from the immediate area or from the classroom if necessary.
2. Teacher/Administrator must determine if:
  - a. Teacher can manage the clean-up process i.e. small spill in science class; or
  - b. Call for clean-up from Maintenance Crew (equipped with Respirators); or
  - c. Call 911 for major spills.
  - d. Safety Officer must be contacted immediately for all situations involving Maintenance Crew Clean Up & 911 Calls.
3. All spills must be dealt with individually and disposed of completely without delay, i.e. Do not keep a general spill bin, dispose of each individual spill as they occur.
4. Have specific SDS readily available, read all precautions listed.
5. Locate & use PPE as per SDS.
6. Ensure Prep Labs are stocked with a pail of sand and a pail of kitty litter.
7. Locate & use Spill Clean Up Kit (if applicable)
  - a. Work from outside the spill area.
  - b. Lay out dam/sock so that it completely surrounds the spill.
  - c. Apply applicable absorbent from kit to soak up spill.
  - d. Allow time for absorbent to soak up maximum amount of spill.
  - e. Collect absorbent & place in plastic bag (provided with spill kit).
  - f. Dispose of sock in plastic bag.
  - g. Wash spill area with applicable solution.
  - h. Dispose of plastic bags via maintenance department. Do not leave with other garbage for end of day pick up.