
HAZARDOUS GOODS MANAGEMENT

Background

From time to time unavoidable hazardous waste will be generated within the system for which some form of proper disposal will be required. It is imperative that all products used, mixed or otherwise changed from their original form have documented records of what the new substance is that has been created. This is needed since unknown waste cannot be disposed of until positive identification can be established. Analysis of unknown creations can be expensive and often because of their mixtures, may require special disposal methods which add even more to the costs. Additionally, many products can be recycled if they are not contaminated by mixing them with a collection of other substances. Keeping like and kind waste in separate containers saves money, reduces the risks of chemical reactions and allows for recycling or proper disposal.

The Division mandates a system to ensure the proper handling and storage of materials classified under Workplace Hazardous Materials Inventory Systems (WHMIS) and Transportation of Dangerous Goods (TDG).

Procedures

1. All appropriate staff members must have training in WHMIS and TDG as defined by legislation.
2. Material Safety Data Sheets (MSDS) must be kept current and available to staff.
3. Disposal of material will be in accordance with legislation.
4. Facility Services will be responsible for administering this Administrative Procedure.
5. All WHMIS materials will be properly labeled and properly stored.
6. Each storage site will have, readily available, Material Safety Data Sheets (MSDS) for users (staff members and students) appropriate for that location.
7. Each principal will maintain an MSDS inventory master list of all materials on the premises.
8. WHMIS safety symbols will be displayed with MSDS sheets.
 - 8.1 Users must adhere to WHMIS legislation.
 - 8.2 Students must be instructed in the proper handling of these substances.
 - 8.3 Students must be adequately supervised during their use of these substances.
 - 8.4 Proper safety equipment will be maintained in the area and used when these substances are used.
 - 8.5 Ongoing WHMIS and TDG training will be available to all appropriate staff members.

- 8.6 All workers will be knowledgeable in handling materials and dealing with incidents and accidents resulting from the use of these substances.
9. Where possible:
- 9.1 Materials are to be purchased in quantities of less than three (3) year requirements.
- 9.2 Pre-labeled materials are to be purchased.
- 9.3 Inventory control – each storage site will have current inventory lists.
10. Disposal
- 10.1 Materials for disposal will be dated, labeled and stored separately on an on-going basis.
- 10.2 Disposable materials will be gathered annually.
11. Staff members involved in the use and management of hazardous goods must:
- 11.1 Provide a comprehensive documentation for:
- 11.1.1 Purchasing hazardous materials or products;
- 11.1.2 Purchasing hazardous materials or products that by their nature will sometime, through use, become hazardous waste;
- 11.1.3 Recycling hazardous materials;
- 11.1.4 Storing of hazardous waste; and
- 11.1.5 Disposal of hazardous materials.
- 11.2 Maintain a record of all hazardous or potentially hazardous materials on file for a period of two (2) years. Also, they must keep incompatible materials separated by TDG class and division in keeping with the legislation.
- 11.3 Maintain a log of all generated hazardous waste, keeping an inventory of exactly what mixtures have been created.
- 11.3.1 Such mixtures are to be compatible with each other such that this will not become reactive with each other.
- 11.3.2 The appropriate legislation for safety and handling must be followed.
- 11.4 Establish a clear procedure that provides strong assurances that hazardous waste will be handled, transported and disposed of in a safe manner.
- 11.5 Keep a checklist of the procedures necessary when purchasing, recycling, storing and disposing of hazardous waste.
- 11.6 Keep a written record of all hazardous or potentially hazardous products.
- 11.7 Keep a log containing a list of all generated hazardous waste.
- 11.8 Ensure that a properly labeled container holds identified hazardous waste.
12. Staff members involved in the purchase of hazardous goods must establish a means for disposal before buying.
- 12.1 Before

- 12.1.1 When a product is being considered for purchase its disposal requirements must be reviewed.
 - 12.1.2 This must include the product itself and its container when empty. Staff members are to refer to *Alberta User Guide for Waste Managers*.
 - 12.1.3 As a condition to purchase, the supplier must identify the product(s) under the TDG legislation, even if the product does not fall under the legislation.
 - 12.1.4 This information will be needed when it comes time for disposal.
 - 12.2 After
 - 12.2.1 When a product first arrives on site it must be identified with its TDG class, sub-class and division. This is normally marked on the MSDS sheet.
13. The purchase, storage, handling and disposal of chemicals will be in accordance with the terms of this Administrative Procedure and the *Safety in the Science Classroom* as published by Alberta Education, 2006. The Legend of Hazard Ratings of this guide are as follows:
- 13.1 Rating
 - 13.1.1 "T" Toxic
 - 13.1.2 "E" Explosive
 - 13.1.3 "R" Reactive
 - 13.1.4 "C" Carcinogenic
 - 13.2 Health
 - 13.2.1 "4" Can cause death or major injury despite medical treatment
 - 13.2.2 "3" Can cause serious injury despite medical treatment
 - 13.2.3 "2" Can cause injury. Requires prompt treatment
 - 13.2.4 "1" Can cause irritation if not treated
 - 13.2.5 "0" No hazard
 - 13.3 Fire
 - 13.3.1 "4" Very flammable gases or very volatile flammable liquids
 - 13.3.2 "3" Can be ignited at all normal temperatures
 - 13.3.3 "2" Ignites if moderately heated
 - 13.3.4 "1" Ignites after considerable preheating
 - 13.3.5 "0" Will not burn
 - 13.4 Reactivity (Stability)
 - 13.4.1 "4" Readily detonates or explodes
 - 13.4.2 "3" Can detonate or explode but requires strong initialing force or heating under confinement
 - 13.4.3 "2" Normally unstable but will not detonate
 - 13.4.4 "1" Normally stable. Unstable at high temperature and pressure. Reacts with water
 - 13.4.5 "0" Normally stable. Not reactive with water

14. The following chemicals will be prohibited from use in all schools:
 - 14.1 Any health hazard rated at "3" or "4" (excluding concentrated hydrochloric, sulphuric and nitric acids provided they are purchased in small quantities of 500 mL. or less). It is suggested that mercury thermometers are replaced by alcohol thermometers;
 - 14.2 Any chemicals proven to be carcinogenic in humans. The use of asbestos pads will be eliminated in laboratory work;
 - 14.3 Any chemicals with fire rating of "3" or "4"; and
 - 14.4 Any chemicals with a reactivity rating of "3" or "4".
15. Chemicals will be disposed of in accordance with Potentially Hazardous Chemicals Information Guide. Chemicals will not be disposed of in the local landfill disposal site or sewers. Arrangements for collection may be made with the University of Alberta or other agencies which will properly dispose of the chemicals.
16. The use of potentially hazardous chemicals listed with a health, fire, or reactivity rating less than "3" or "4" will be subject to the following safety precautions:
 - 16.1 A record will be kept of their presence and intended use and disposal;
 - 16.2 An annual review will be conducted to ensure that chemicals that have been used for some time are disposed of if they are no longer required;
 - 16.3 Such chemicals will not be utilized if adequate equipment and facilities are not available;
 - 16.4 Personnel handling such chemicals will be knowledgeable of the potential hazards and safety precautions, and first aid procedures and will have a copy of the *Safety in the Science Classroom* as published by Alberta Education, 2006.
17. Staff members using hazardous goods must list what is in a container. When a hazardous product is used or mixed in such a manner that a new substance is created that new substance becomes a hazardous waste. It in itself can be identified as a substance containing one (1) or more known hazardous products.
 - 17.1 The temporary storage disposal container is to be labeled with a work site WHMIS label, class 9 TDG label, and one or more secondary TDG labels are to be placed on the container giving specific reference to each of the products that were mixed into the container.
 - 17.2 The container log is to have a record of what amounts of each of the hazardous products were introduced, and each time they were introduced.
 - 17.3 The amounts of products introduced into each container will be recorded in weight, quantity or percentage. The rule to follow is "you created it, you know what it is that you mixed, it is an exact known mixed substance and therefore it can be properly disposed of."
 - 17.4 Without all of this information the waste will not and cannot be transported from any site.
 - 17.5 Additionally, without all of this information the waste cannot be recycled or mixed with other products to form a safe non-hazardous substance which can be easily disposed of.

18. All hazardous products are not compatible and it will be necessary to have more than one (1) temporary storage disposal container. (Acids-Solids), (Acids-Liquid), (Bases-Solid), (Bases-Liquid) each require separate containers in their own classes, i.e. flammable, corrosive, reactive, toxic, and environmental.
19. Non-hazardous products are not to be mixed with hazardous products as doing so increases the amount of hazardous materials to be processed.
20. Users must not mix recyclable products with hazardous waste as they can be purchased at a minimal cost. (e.g. Varsol, paint thinner, antifreeze (glycol), automotive oil etc.).
21. Hazardous waste will be removed and transported from any Division site in accordance with TDG regulations. Before removing or transporting hazardous goods an employee must:
 - 21.1 Fill out a Division request for Plant Maintenance Services; and
 - 21.2 Fill out a "TDG" Weigh Bill (Form 546-01).
22. WHMIS Handbook
 - 22.1 Facility Services will maintain a Master Handbook which will include a copy of all Material Safety Data Sheets (MSDS) for controlled products used in all facilities.
 - 22.2 Each work site Supervisor will be responsible to update their copy of the WHMIS Handbook.
 - 22.3 Facility Services will assign a WHMIS number to each controlled product.
 - 22.4 When a new controlled product is purchased a copy of the MSDS must be forwarded to the Facility Services and a WHMIS number will be assigned to that product.
 - 22.5 Each facility will maintain a Bring Forward System to obtain updated MSDS for all controlled products. When obtained the new updated MSDSs will be forwarded the Facility Services for numbering.
 - 22.6 Facility Services will provide work site labels (Small/Medium/Large) if required. However, the request to have a work site label done must include all information to put on the label.
 - 22.7 Facility Services will forward amended table of contents to each site whenever it is updated.
23. MSDS Binder
 - 23.1 Facility Services will maintain a Master Binder (Labeled MSDS/S) of Material Safety Data Sheets for products used on all sites.
 - 23.2 Each site Supervisor will maintain their own MSDS Binder containing only the products used on their site.
 - 23.3 Material Safety Data Sheets must be updated every three (3) years.
 - 23.3.1 Each site Supervisor must check the Table of Contents pages of the MSDS binder to see if any Material Safety Data Sheets need to be updated. Example: bring forward the MSDS/S binder on the 15th day of each month.
 - 23.4 Each site Supervisor must request updated Material Safety Data Sheets for their own products from their Supplier or Manufacturer and forward the updated Material Data Sheets to Facility Services.

- 23.5 Once the updated Material Safety Data Sheets have been received, Facility Services will:
- 23.5.1 Highlight the Product Identifier / Product Name / Trade Name and the MSDS effective date for quick identification and for listing on Contents page;
 - 23.5.2 Replace with the old MSDS in the MSDSs Binder;
 - 23.5.3 Change the UPDATE in the Table of Contents of the MSDSs Binder;
 - 23.5.4 Type in the upper right hand corner of the updated MSDSs the Alphabetical Number e.g. 100 - (A), 200 - (B); and
 - 23.5.5 Send the form letter with the updated MSDS, along with the updated Table of Contents page, only to those sites that have this product on site as noted under the PRODUCT and USER section of the Table of Contents.
- 23.6 Products listed under the Contents which have an asterisk (*) beside the WHMIS number are not a controlled product regulated under WHMIS. However these are contained in the MSDS Binder for information to the workers since they may propose a hazard due to their contents.

Reference: Section 33,52,53,68,197,222,225 Education Act
Dangerous Goods Transportation and Handling Act
Hazardous Chemicals Act
Occupational Health and Safety Act
Potentially Hazardous Chemicals Information Guide (1981)
Safety in the Science Classroom. Alberta Education

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