
WHMIS

Workplace Hazardous Materials Information System Technical Backgrounder

WHMIS is a pan-Canadian system designed to protect Canadian workers by providing workers and employers with vital information about hazardous materials used in the workplace. WHMIS will transfer information about hazardous materials from producers, suppliers and importers to employers and in turn employees who use those materials in the workplace.

A comprehensive WHMIS program requires the co-ordination of the federal, provincial and territorial jurisdictions. Even though WHMIS is essentially an occupational safety and health initiative, the present federal Hazardous Products Act was judged to be the best existing statute in which to establish the core requirements for suppliers of hazardous materials.

The proposed legislation would fulfill the federal requirements for WHMIS to be efficiently implemented through the existing occupational safety and health legislation of the 13 jurisdictions concerned.

WHMIS applies to all industries and all workplaces in Canada. WHMIS does not apply to products already regulated by the following federal Acts:

- *Pest Control Products Act
- *Food and Drugs Act
- *Atomic Energy Control Act
- *Explosives Act.

In addition, such things as hazardous wastes, consumer products that already fall under Part II of the schedule to the existing Hazardous Products Act, wood and wood products, tobacco and tobacco products and manufactured articles are not subject to WHMIS.

WHMIS Hazard Classification

Under WHMIS, hazardous materials, or controlled products as they are referred to in the amendments to the Hazardous Products Act, are defined as pure substances and/or mixtures of substances that meet or exceed WHMIS hazard criteria. These criteria, which are objective and definitive, are set out in Schedule II to the amended federal Hazardous Products Act.

Suppliers will use available information, data from existing data systems and perti-

WHMIS SYMBOL



The symbol consists of a stylized maple leaf within a triangle, representing the pan-Canadian nature of the Workplace Hazardous Materials Information System. In the colour version, the leaf is orange, to emphasize the warning nature of WHMIS.

The leaf consists of three separate parts, each part representing one of the three key partners working together to make WHMIS a reality:

- *the part on the left symbolizes government.
- *the middle part represents industry;
- *the third part represents labour and the workforce.

The three-sided triangle emphasizes the roles of labour, industry and government in the creation and implementation of WHMIS.

Technical literature to assess materials destined for use in the workplace against WHMIS hazard criteria. Hazardous materials covered by WHMIS are grouped into distinct classes and sub-classes. These classes and sub-classes and their corresponding hazard symbols are given in Appendix 1.

WHMIS Communication System

WHMIS, first and foremost, is a communication system composed of three interrelated and equally important elements:

- *labels,
- *Material Safety Data Sheets (MSDSs), and
- *worker education programs.

The basis of these components is information and data provided by producers, suppliers and importers. This information is then applied by users according to the particular conditions and use of hazardous

material in a given workplace.

Labels

The Hazardous Products Act legislation for WHMIS will require that suppliers provide cautionary labels on containers of hazardous materials as conditions of sale and importation. A "supplier" is any person who is a manufacturer, processor or packager of a controlled product or a person who, in the course of his/her business, imports, packages or sells a controlled product.

The minimum content required by regulations for the supplier label consists of :

*A material identifier or product name that is recognized commercially. It may be a trade name or a chemical name, but it should be the name under which the material is sold.

*A Hazard symbol or symbols in the form of standard pictograms for each class of hazard assessed under WHMIS.

*Risk Phrases to describe the nature of the hazard, using appropriate words to relate the possible consequences of misuse of the product. An appropriate risk phrase might be "Toxic material - lung and eye irritant."

*Precautionary measures to be taken under conditions of normal use and possible emergency. An appropriate precautionary measure might be: "Keep away from heat."

*First Aid Measures as appropriate in case of emergency, such as "Remove to fresh air" or "in case of eye contact, flush with water for at least 15 minutes."

*Some reference to the Material Safety Data Sheet for the product. Such a reference could be "See Material Safety Data Sheet." This would serve as a reminder that the MSDS should be consulted for additional information.

The WHMIS label information will be contained within a distinctive WHMIS border to distinguish it from any other labeling on a container. The specific content of risk phrases, precautionary statements and first aid measures are not mandated. Supplier labels are to be in both official languages.

Under occupational safety and health legislation, employers must provide the supplier label, or an equivalent label containing the same minimum information, in the workplace.

WHMIS is intended to be flexible and effective. Its workplace labeling is therefore "performance oriented," and the precise format of the labeling is not mandated. Labels, signs, placecards, tags or other identifiers may be used to get the information across effectively.

Material Safety Data Sheets

Material Safety Data Sheets, as required by WHMIS regulations under an amended Hazardous Products Act, and occupational safety and health legislation, are intended to supplement the information on labels with more detailed information about hazards, possible health effects and protective measures. The information provided is expected to be comprehensive and must include what can reasonably be expected to be known about the material and the hazards it may present. This includes data required to provide effective engineering controls, safe work procedures, choice of proper personal protective equipment, procedures to be followed in the case of emergencies, and data for monitoring workplace conditions and the health of exposed workers.

While the exact format of a Material Safety Data Sheet is not prescribed, its content is. Main headings are specified for the kinds of information in an appropriate manner under each heading. A supplier Material Safety Data Sheet must be provided to an employer on or before the date of the first shipment of a hazardous material. Suppliers must routinely review, update and re-issue Material Safety Data Sheets every three years, or sooner, if necessitated by changes in data or information available on the hazardous material. Supplier Material Safety Data Sheets must be available in both official languages.

Employer-produced Material Safety Data Sheets to be required by occupational safety and health legislation can also be developed, but are to contain no fewer categories of information than the supplier

Material Safety Data Sheets. An employer Material Safety Data Sheet will bear a reference to the supplier Material Safety Data Sheet. Both must be readily accessible in the workplace.

The following are the minimum categories of information on Material Safety Data Sheets.

Product Identification and use including where applicable and available:

- * Manufacturer's name, street address, city, province, postal code and emergency telephone number.
- * Supplier's name, street address, city, province, postal code and emergency telephone number.
- * Chemical name
- * Chemical identity (where specific chemical identity is legitimate proprietary information. Chemical family must be listed)
- * Trade name and symptoms
- * Product Use.

Hazardous ingredients of product including where applicable and available:

- * Hazardous ingredients
- * Approximate concentration by percent (may be listed as a concentration range)
- * Chemical Abstracts Service (CAS) or United Nations (UN) numbers
- * Lethal dose - 50% (LD₅₀ - specify species and route) - Lethal concentration - 50% (LC₅₀ - specify species and route)

Physical data for product including where applicable and available:

- * Physical state (gas, liquid or solid)
- * Odour and appearance
- * Specific gravity
- * Vapour pressure (mm)
- * Vapour density (Air = 1)
- * Evaporation Rate
- * Boiling Point (°C)
- * Freezing Point (°C)
- * Solubility in Water (20°C)
- * pH
- * Density (g/ml)
- * Coefficient of water/oil distribution

Fire and Explosion Hazard of Product

including where applicable and available:

- * Flammability (if flammable, specify under what conditions)
- * Means of extinction
- * Special procedures
- * Flashpoint (°C) and method
- * Upper explosion limit (% by volume)
- * Lower explosion limit (% by volume)
- * Auto-ignition temperature (°C)

*Transportation of dangerous goods flammability classification

- *Hazardous combustion products
- *Explosion data-sensitivity to impact
- *Sensitivity to static discharge

Reactivity data including where applicable and available:

- *Chemical stability (if unstable, under what conditions)
- *Incompatibility to other substances (if incompatible, identify which substances)
- *Reactivity and under what conditions
- *Hazardous decomposition products

Toxicological properties of product including where applicable and available:

- *Route of entry:
 - Skin contact
 - Skin absorption
 - Eye contact
 - Inhalation acute
 - Inhalation chronic
 - Ingestion
- *Effects of acute exposure to product
- *Effects of chronic exposure to product
- *Exposure limit(s)
- *Irritancy of product
- *Sensitization to material
- *Carcinogenicity, reproductive effects, teratogenicity, mutagenicity
- *Synergistic materials

Preventive Measures, including where applicable and available a summary of the following information

Personal protective equipment

- *Gloves (Specify)
- *Respiratory (Specify)
- *Eyes (Specify)
- *Footwear (Specify)
- *Clothing (Specify)
- *Other (Specify)
- *Engineering controls (eg. ventilation, enclosed process, etc.) Specify
- *Leak and spill procedure
- *Waste Disposal
- *Handling procedures and equipment
- *Storage requirements
- *Special Shipping Information

First Aid Measures including where applicable and available:

- *First Aid Measures
- *Sources used
- *Additional Information

Preparation date of MSDS:

- *Person, group, department, etc.
- *Telephone Number
- *Date

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Worker Education Programs

Under occupational safety and health legislation, WHMIS will require employers to establish education and training programs for employees exposed to workplace hazardous materials. These programs would ensure that employees have the information needed and are able to apply it for the safe use of hazardous materials.

The programs should include a description of all the mandatory and performance oriented aspects of WHMIS and of employer and employee responsibilities. The worker education programs should include:

- *Instruction about the content required on supplier and workplace labels, and the purpose and significance of this information.
- *Instruction about the content required on a Material Safety Data Sheet, and its purpose and significance.
- *Procedures for the safe handling, use, storage and disposal of hazardous materials in a specific workplace.

During the development of safety and health activities relating to exposure to hazardous materials, the suppliers should consult with the safety and health committee or representative for a particular workplace.

the information and training concerning hazardous materials that is provided to workers should be reviewed by employers at least annually, or more frequently if required by a change in conditions. This review should be carried out in consultation with any existing safety and health committee.

WHMIS recognizes that worker training continues to be the prime responsibility of employers. It ensures that worker education programs in federal, provincial and territorial jurisdictions will be uniform and will complement the labelling and Material Safety Data Sheet elements of the system.

Information Disclosure

WHMIS requires that suppliers under an amended Hazardous Products Act, and employers, under occupational safety and health legislation, disclose, on the Material Safety Data Sheet, hazard information of which they are aware of which they can reasonably be expected to know. The name and concentration of an ingredient would be disclosed on the Material Safety Data Sheet if it comes within one of the following categories:

- *an ingredient which falls within the

WHMIS hazard criteria.

*an ingredient about which nothing is known with respect to its toxicological properties.

*an ingredient which a supplier has any reason to think may be harmful.

WHMIS will protect legitimate proprietary information from disclosure. In addition, there will be no need to divulge ingredients which fall below a minimum concentration level.

The WHMIS Ingredient Disclosure List is a collection of names of chemical ingredients which may not fall under the WHMIS hazard criteria but, because of their toxicological properties, need to be identified to facilitate monitoring of workplace conditions and the safety and health of workers.

WHMIS does not require the mandatory testing of materials. When a chemical mixture has not been tested for its toxicological properties, whether or not the mixture is subject to WHMIS depends on the respective toxicity of the ingredients and the amount of each ingredient in the mixture.

Proprietary Information Protection

Exemption for disclosure of information on the Material Safety Data Sheet or label on the grounds that its release would be economically harmful to the supplier or employer is provided for in WHMIS through an amended hazardous Products Act and occupational safety and health legislation. The criteria for establishing the validity of a proprietary information claim are:

- *whether the information is known outside the firm or business,
- *whether the information is known by persons inside the firm or business,
- *the measures taken to guard the secrecy of the information by the firm or business,
- *the present or future value of the information to the firm or the firm's competitors,
- *the amount of effort or money expended in developing the information.

All of the above conditions must apply to a significant degree for a claim to be valid.

Industry proprietary information claims will be ruled on by a single national independent tripartite Commission. This Commission reporting to Parliament through the Minister of Consumer and Corporate Affairs will be established by a new Hazardous Materials Information Review Act. The Hazardous Materials

Information Review Commission will be responsible for initial screening decisions on the validity of claims and for the tripartite adjudication of any appeals to these rulings. If necessary, judicial review on points of law by Courts will be the final stage of the process. The commission will handle all supplier and employer claims originating in Nova Scotia. Nova Scotia has established a compatible mechanism to rule on provincial employer claims. When a claim is considered valid the Material Safety Data Sheet will be reviewed to ensure adequate hazard information is shown.

The commission will comprise a tripartite governing body with representation from industry, organized labour and federal and provincial safety and health jurisdictions. It will have a President, a Screening Division, and an Appeals Division. The President will be the chief executive officer of the Commission and will be appointed by the Governor in Council.

Upon determination of the validity of proprietary information claim, at either the screening or appeal levels, the commission will notify the claimant of the decision, publish a record of the decision in Part I of the Canada Gazette and make the record of the decision available to any party on written request.

If a claim is not considered valid by the commission, the owner of the claimed proprietary information will be required either to re-issue a new Material Safety Data Sheet with complete information to purchasers who previously received a Material Safety Data Sheet, or to withdraw the hazardous material from the market.

Where an appeal is made concerning a proprietary information claim, either by the owner of the information or another affected party, a review will be made of all the information pertaining to the claim by a tripartite Appeal Panel. The panel will be composed of one representative each from industry and labour, and one provincial, territorial or federal member.

To make the Commission self-financing, revenues to cover screening and appeal costs will be charged to users as undernoted:
*for products currently on the market, a fee to accompany a "statement of intent-to-file" a proprietary information claim paid by a supplier to the Commission (suggested \$500);
*a claim fee paid by the claimant of proprietary information to the Commission

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(Suggested \$1800)

*an appeal filing fee paid by an appellant to the Commission (suggested \$2000).

To ensure the safety of workers in medical emergencies, suppliers will be required to divulge, in confidence, the proprietary information to treating medical professionals. The commission may also release such information in confidence to treating medical professionals in an emergency. To facilitate this, a 24 hour emergency response mechanism will be used. The commission may also release such information in confidence to federal, provincial and territorial occupational safety and health agencies.

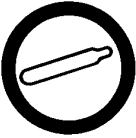






Implementation

WHMIS requires the co-operative implementation of federal and provincial legislation. An amended federal Hazardous Products Act will nationally mandate as conditions of sale and importation. WHMIS label and MSDS requirements on suppliers of hazardous workplace materials. The commission to deal with proprietary information claims and appeals will be established under a new Hazardous Materials Information Review Act.

Complementary standardized federal and provincial occupational safety and health legislation will place obligations on employers regarding labels. MSDSs and education programs in the workplace.

An amendment to the Canada Labour Code - Part IV will extend the protection of the proprietary information mechanism to federally regulated employers. All other authorities required to implement the WHMIS program are currently contained in the Code. Revised occupational safety and health regulations under the Canada Labour Code will be promulgated to implement WHMIS requirements in federally regulated workplaces

CLASS SYMBOLS AND SUBCLASS DESIGNATIONS

Class	Subclass Designations	Symbols
Compressed Gas		
Flammable and Combustible Material	Flammable Gas Flammable Liquid Combustible Liquid Flammable Solid Flammable Aerosol Reactive Flammable Material	
Oxidizing Material		
Poisonous and Infectious Material	Very toxic	
	Toxic	
	Biohazardous Infectious Material	
Corrosive Material	Chlorine, Hydrogen Fluoride, Hydrogen Chlorine, Hydrogen Bromine, Hydrogen Iodide and Ammonia Other Corrosive Materials	
Dangerously Reactive Material		