Public Services Health & Safety Association™

Ontario Dental Association

WHMIS Program

A Guide for Dental Practices 2016-2017

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1.0 Introduction

This guide is intended for use by dentists in their dental practices in Ontario. Its purpose is to provide an overview of the **Workplace Hazardous Materials Information System** (WHMIS) and its applicability to the dental practice. It provides a framework for the development of a hazardous materials management program that satisfies the requirements of the *Occupational Health and Safety Act* (OHSA) and the WHMIS Regulation (R.R.O. 1990, Reg. 860).

Under the OHSA and WHMIS regulation, the employer/dental practice owner, is responsible for:

1. Developing a hazardous materials management program for the protection of workers
2. Ensuring hazardous materials are appropriately labelled
3. Obtaining current Safety Data Sheets (SDS) for all WHMIS hazardous products
4. Providing training and instruction to workers in how to use, handle, store and dispose of hazardous materials safely
5. Implementing appropriate controls to protect the worker from hazards associated with the hazardous materials they use, handle or store at the dental practice.

The activities listed above may be delegated to a knowledgeable worker, but the dental practice owner is still

Hazardous material is "any substance or compound that has the capability of producing adverse effects on the health and safety of humans." (Plog, Niland & Quinlan 1996)
Hazardous materials in the workplace can be classified into three main categories:

- Biological (bacteria, viruses)
- Chemical (solid, liquid or gas)
- Physical (heat, noise, radiation, vibration, etc.)

Understanding the potentially hazardous properties of the material in question is the first step to evaluating the potential degree of risk.

Risk is the probability that harmful consequences will occur as the result of an action. Risk is a combination of the severity of the consequence and the likelihood of occurrence.

The OHSA and WHMIS regulation are enforced by the Ontario Ministry of Labour (MOL).

The WHMIS regulation outlines the requirements for hazardous products as defined by the *Hazardous Products Act*. An MOL Inspector can write orders for non-compliance with this regulation.

The OHSA requires that employers provide education and information on all hazards present in the workplace. This includes not only WHMIS hazardous products but also **consumer products** that might be used at the dental practice. If the hazards associated with consumer products are not controlled, an MOL Inspector can write orders under the OHSA.

Therefore, although this guide uses the term WHMIS Program, **it is expected that dental practices will apply the actions to both WHMIS hazardous and consumer products.**

responsible.

This guide demonstrates practical applications of the information contained for three hazardous materials found in dental practices: nitrous oxide, glutaraldehyde, and mercury. Many samples and resources are provided, including an action checklist to monitor progress in implementing the hazardous materials management program (Appendix A). **Samples should be modified to suit the individual dental practice**.

References to specific sections of the OHSA and the WHMIS regulation have been included. Legislation cited in this guide is based on Ontario statutes and regulations current at the time of release. Summaries are provided in Appendix B. Leading practices that move a dental practice beyond legislative compliance are included and identified by "LP". Definitions are provided in text, and a glossary of terms is provided.

Employees and the Health and Safety Representative (HSR)/Joint Health and Safety Committee (JHSC) may also find this guide helpful in understanding the employer's responsibilities regarding hazardous materials. Further information on the role of the HSR and JHSC can be found in the *ODA Guide to Health & Safety Programs*.

Glossary

ACD: allergic contact dermatitis

CBD: chronic beryllium disease

ceiling limit (C): the maximum airborne concentration of a biological or chemical agent to which a worker is exposed at any time

consumer product: a product packaged in a size appropriate for public use, and available to the general public through retail systems

DIN: drug information number, a required listing under the Food and Drugs Act

employer: a person who employs one or more workers, or contracts for the services of one or more workers. **OHSA s.1(1)**

fugitive emission: a gas, liquid, solid, vapour, fume, mist, fog or dust that escapes from process equipment, from emission control equipment, or from a product.

general ventilation: a system of airflow designed to reduce the concentration of airborne contaminants in the workplace; also referred to as *dilute ventilation*

hazardous products: any product, mixture, material or substance that is classified in a hazard class listed in section 3 of this manual or in Schedule 2 of the *Hazardous Product Act*

hazardous waste: a hazardous material or subject waste that is intended for disposal or is sold for recycling or recovery

HSR: Health and Safety Representative

JHSC: Joint Health and Safety Committee

job-specific training: training that focuses on the worker's actual workplace environment, job tasks and potential for exposure, recognizing that different workers work with different products and have different potentials for exposure

label: means a group of written, printed or graphic information elements that relate to a hazardous product, which is designed to be affixed to, printed on or attached to the hazardous product or the container in which the hazardous product is packaged

manufactured article: "means an article that is formed to a specific shape or design during manufacture, the intended use of which when in that form is dependent in whole or in part on its shape or design, and that, when being installed, if the intended use of the article requires it to be installed, and under normal conditions of use, will not release or otherwise cause an individual to be exposed to a hazardous product" **OHSA Reg. 860 s. 1(1)**

personal protective equipment (PPE): devices and clothing worn by workers to protect them from potential health hazards; includes gloves, aprons, hard hats, masks, respirators, etc.

pipeline: a conduit of pipe used to move water, gas, or petroleum products

ppm: parts per million

SDS: Safety Data Sheet

sensitizer: a chemical to which a person, if exposed over time, can develop an allergic response from even a subsequent low-level exposure. There are two types: skin sensitizers, which can result in symptoms such as reddening, blistering and cracking; and respiratory sensitizers, which can result in asthma-like symptoms

short-term exposure limit (STEL): the maximum airborne concentration of a biological or chemical agent to which a worker is exposed in any 15-minute period.

significant new data: means new data regarding the hazard presented by a hazardous product that change its classification, in accordance with the Hazardous Products Regulations (Canada), in a category or subcategory of a hazard class listed in Schedule 2 to the *Hazardous Products Act* (Canada), or results in its classification in another hazard class, or change the ways to protect against the hazard presented by the hazardous product

supervisor: a person who has charge of a workplace or authority over a worker **OHSA s.1(1)**

supplier: a manufacturer, processor or packager of a controlled product or a person who imports or sells controlled products in the course of business

supplier label: in respect of a hazardous product, a label provided by a supplier that contains the information required by the Hazardous Products Regulations (Canada) for that hazardous product

TDG: Transportation of Dangerous Goods

time-weighted average (TWA): the *average* of the airborne concentrations of a biological or chemical agent (determined from air samples of the airborne concentrations) to which a worker is exposed in a workday or a workweek

WHMIS: Workplace Hazardous Materials Information System

worker: means,

- A person who performs work or supplies services for monetary compensation.
- Unpaid secondary school students who are participating in a work experience program, authorized by the school board that operates the school in which the students are enrolled,
- Other unpaid learners participating in a program approved by a post-secondary institution, and,
- Any unpaid trainees who are not employees for the purposes of the *Employment Standards Act, 2000* (ESA) because they meet certain conditions.

OHSA s.1(1)

workplace label: a label applied at the workplace and providing information on the product name, its safe handling and a reference to the SDS

2.0 Roles and Responsibilities

The following three parties have compliance responsibilities under the WHMIS regulation:

- Suppliers/Manufacturers
- Employer/Dental Practice Owner/Supervisor
- Workers

The responsibilities of the three parties are detailed in the following table. The employer/supervisor responsibilities can be delegated to a knowledgeable worker, but not transferred. In addition, the HSR/JHSC supports the employer in the review, development and implementation of the WHMIS program. Further information can be found in OHSA sections 42(2) and 42(3).

Responsible Party	Responsibilities
Supplier (A person who imports or sells hazardous products in the course of business)	• Determine which of their products intended for use in the workplace are WHMIS hazardous products and classify them according to Part 2 of the Hazardous Product Regulations. • Assign an appropriate WHMIS hazard pictogram to identify each hazardous product. • Provide information about hazardous products in a WHMIS supplier label affixed to the container and in a SDS. • Update or revise the label within 180 days, and a SDS within 90 days, when they are aware of any significant new data. • Provide labels in both English and French (can be on the same label or separate).
Employer/Dental Practice Owner/ Supervisor	• Ensure that a hazardous product is not used, stored or handled in the dental practice until the WHMIS regulation is complied with. • Ensure containers of hazardous products have WHMIS labels. • Keep current SDSs readily available to employees and provided to the HSR/JHSC. • Provide education to employees to ensure an understanding of labels, SDSs and precautionary measures concerning hazardous materials. Suggested training program content is detailed in section 8.0 of this guide. • Maintain training records. • Review the WHMIS training program (whether external or in-house) in conjunction with the HSR/JHSC annually. • Instruct workers in the procedures to follow in case of an emergency involving a hazardous product or when ***fugitive emissions*** are present.
Employees	• Participate in WHMIS training sessions. • Handle, use, store and dispose of hazardous materials safely. • Contact the employer/supervisor immediately before using a product for which required information is not available. • Do not remove, alter or deface a label on a container of hazardous material and immediately notify the supervisor if any of these conditions exist. • Be aware of the location and contents of SDSs and notify the supervisor if an SDS is missing. • Properly use and maintain protective equipment, devices and clothing as required by written safe-work practices.

3.0 What are the WHMIS Hazard Classes and Categories?

WHMIS 2015 applies to two major groups of hazards: **physical and health**. Each hazard group includes hazard classes that have specific hazardous properties. The classes are listed in the table below, along with examples of hazardous materials that might be found in a dental practice, e.g. glutaraldehyde is found in sterilizer, mercury in amalgam. The **WHMIS pictograms** poster in Appendix C and in the the table beginning on the next page illustrates the pictograms.

The WHMIS regulation requires that:

- hazardous products are properly labelled with either supplier or workplace labels;
- a current SDS is available; and
- workers have been trained in the safe use, storage and handling of the controlled products.

A *manufactured article* is an article that is formed to a specific shape or design during manufacture, the intended use of which, when in that form, is dependent in whole or in part on its shape or design, and that, when being installed, if the intended use of the article requires it to be installed, and under normal conditions of use, will not release or otherwise cause an individual to be exposed to a hazardous product. An example of a manufactured article in a dental practice would be chemicals such as styrene and benzene used to make plastic dental impression trays.

Certain classes of products are either completely or partially exempt from the WHMIS 2015 regulation because there are specific requirements under other legislation.

Completely exempt products — from both the federal and provincial WHMIS requirements:

- Wood and wood products
- *Manufactured articles (see on the box on the right)*
- Tobacco or products derived from tobacco
- Hazardous wastes (the *ODA Dental Wastes Best Management Practices Manual* provides details on waste management)
- Products handled or transported under the Transportation of Dangerous Goods (TDG) Act and regulations.

Employers still have a general duty under the OHSA to ensure that workers receive training and health and safety information on partially exempt products. Partially exempt products still require appropriate labelling, and workers need to be educated in the safe handling of these products and use workplace labels if the original label is damaged, illegible or missing.

Partially exempt products — WHMIS supplier labels and SDSs are not required

- Some consumer products (see details in section 4.0 of this guide)
- Cosmetics and drugs (*Food and Drugs Act*) (these items will have a DIN listed on the bottle, such as isopropyl alcohol)
- Explosives (*Explosives Act*)
- Pesticides (*Pest Control Products Act*)
- Radioactive substances (*Nuclear Safety and Control Act*)

Although SDSs are not required for partially exempt products, an SDS is usually easily obtained and can provide additional health and safety information on which to base control decisions.

For hazardous wastes generated in the dental practice, section 4(4) of the WHMIS regulation states that the employer must ensure safe storage and handling through a combination of labels and education.

ACTION:

3.1 Post the WHMIS Pictogram Poster in an area of the dental practice where WHMIS hazardous products are used (LP).

WHMIS 2015 Pictograms

Workplace Hazardous Materials Information System (WHMIS)

Hazard Pictogram	Symbol	Classification	Example of Risk Statement	Example of Precautionary Statement	Dental Practice Examples
	Exploding Bomb	• Self-Reactive (Severe) • Organic Peroxide (Severe) • Explosive **(Not required, but may be used)**	• May explode due to reaction, fire, shock, friction, heat, puncture, or incompatible material.	• Handle with care avoiding vibration, shocks, and sudden temperature changes.	• None in dental practice.
	Flame	• Flammable • Pyrophoric • Self-Heating • In Contact with Water, Emits Flammable Gas • Self-Reactive • Organic Peroxide	• May ignite if exposed to heat, sparks, friction, flames or incompatible material.	• Keep away from heat, hot surfaces, sparks, open flames, and other ignition sources. • Store in a well-ventilated, cool place.	• Isopropanol, Acetone.
	Flame Over Circle	• Oxidizer	• May cause fire or explosion. • May enhance the combustion of other materials.	• Keep away from clothing and other combustible materials. • Keep valves and fittings free from oil and grease.	• Hydrogen Peroxide, Nitrous Oxide, Sodium Hypochlorite (Bleach)

	Gas Cylinder	• Gases Under Pressure	• May explode if heated, punctured or dropped. • Possible hazard from contents under pressure.	• Secure container; do not drop or allow to fall. • Protect from mechanical damage.	• Oxygen, Nitrous Oxide
	Corrosion	• Corrosive to Metals • Severe Skin Burns and / or Eye Damage	• May cause severe skin burns, eye damage and / or corrosive to metal.	• Do not get in eyes or on skin. • Wear hand, body, face, eye and respiratory protection, where applicable.	• Bleach, X-ray film developer, glutaraldehyde
	Skull and Cross bones	• Acute Toxicity (Fatal or Toxic)	• Potentially fatal or toxic substance even in small quantities.	• Follow manufacturer's use, handling, storage, and disposal instructions to prevent acute exposure and adverse health effects.	• Mercury, glutaraldehyde, hydrogen peroxide
	Health Hazard	• Carcinogen • Germ Cell Mutagen • Reproductive Toxicity	• May cause immediate and / or serious long term health effects.	• Obtain and learn special instructions / controls before use.	• Glutaraldehyde, Mercury, Silica

		• Respiratory Sensitizer • Specific Target Organ Toxicity (Single and /or Repeat Exposures) • Aspiration Toxicity		• Avoid repeated and / or prolonged exposure situations.	
	Exclamation Mark	• Acute Toxicity (Harmful) • Skin and / or Serious Eye Irritant • Skin Sensitizer • Respiratory Irritant and /or Sensitizer • Narcotic Effects • Hazardous to the Ozone Layer (**Not Mandatory**)	• May cause harmful effects to skin, eye, or respiratory system.	• Wear PPE appropriate for the exposure situation. • Wash potentially exposed body parts thoroughly after handling.	• Acetic Acid
	Biohazardous Infectious Materials	• Biohazardous Infectious Materials	• May cause disease in animals or humans; includes organisms or toxins from bacteria, viruses, fungi and parasites	• Follow routine practices / universal precautions, such as hand hygiene and glove use. • Follow safe laboratory practices and procedures.	• Hepatitis B, HIV in blood or tissue

				• Apply additional precautions appropriate to risk and the exposure scenario.	
No Pictogram	*NA*	• Not all hazard classes and categories have pictograms (e.g. Combustible Dusts, Simple Asphyxiant, and some less severe hazard categories).	• Risk of dust explosion or exposure. • May cause unconsciousness or death by suffocation.	• Do not use without understanding the hazard. • Apply appropriate controls.	• None in dental practices.

Note:

WHMIS 2015 does not incorporate the GHS Explosive and Environmental Hazard Classes. The requirement for pictograms are based on the severity of the hazard. Physical Hazards Not Otherwise Classified and Health Hazards Not Otherwise Classified Classes are required to have a WHMIS 2015 pictogram that is appropriate to the hazard identified. Both the Flame and Explosive pictograms are used for self-reactive substances and mixtures (type B) and organic peroxides (type B).

Resources:

Ontario Dental Association

Dental Wastes — Best Management Practices Guide for the Dental Community — April 2005, available to download at http://www.youroralhealth.ca/member/index.php?option=com_docman&task=doc_download&gid=80&Itemid=19

4.0 What is a Consumer Product?

To be packaged as a consumer product, the product must meet the following two conditions:

1. It must be packaged for the consumer (e.g. in a size of receptacle or package in which it is offered for sale and normally displayed to the public) and
2. It must be available to the general public through retail systems. Products sold through wholesale outlets are not considered available to the consumer.

Consumer products are divided into five categories based on the type of hazard they present. The following table provides examples of consumer products that might be used in a dental practice.

Category	Examples of products in a dental practice
Category 1 — Toxic products	High-level disinfectants
Category 2 — Corrosive products	Tartar and stain removers, bleach
Category 3 — Flammable products	Isopropyl alcohol
Category 4 — Quick skin-bonding adhesives	Fast-acting glues
Category 5 — Pressurized containers	Stainless steel cleaners or lubricants in a spray can

The **Consumer Product Symbols** poster in Appendix D illustrates the symbols for each hazard category, and provides information on the hazards and precautions to take.

ACTION:

4.1 Post the Consumer Product Symbols Poster in an area of the dental practice where consumer products are used (LP).

5.0 WHMIS Policy and Program Requirements

WHMIS Policy
A WHMIS policy outlines the responsibilities and accountabilities regarding hazardous materials management. It clearly states the expectations for record keeping, communication, education and evaluation of the program. Sample wording for a WHMIS policy is provided in Appendix E.

WHMIS Program
A WHMIS program provides a means to ensure products are appropriately labelled, current SDSs are available, and workers have received training (either in-house or by an external trainer) and are able to apply what they have learned in order to work safely with hazardous materials. A WHMIS Program Assessment checklist is provided in Appendix F.

Hazardous Materials Inventory List
In order to create a WHMIS program that reflects the hazardous materials in use at the dental practice, an inventory list of WHMIS hazardous and consumer products should be developed (Appendix G). This list does not need to include quantities, but should include information about the supplier/manufacturer, whether the product is a WHMIS hazardous product or a consumer product, and the prepared date of the SDS.

An individual should be designated to update the hazardous material inventory on an annual basis or as new products are acquired. The hazardous material inventory should have the date on it and can be used as the table of contents for an SDS binder, in which the SDSs for all hazardous materials in use at the dental practice are kept.

ACTIONS:

5.1 Develop a WHMIS Policy for the dental practice (Appendix E). If consumer products are in use, consider including these in the WHMIS Policy (LP).

5.2 Complete the WHMIS Program Assessment Checklist (Appendix F) to determine the status of the WHMIS Program at the dental practice (LP).

5.3 Prepare a list of WHMIS and consumer products currently in use at the dental practice (LP). Consider using the sample inventory sheet in Appendix G.

6.0 Labels

The purpose of a label is to provide basic health and safety information every time a worker picks up a container to use the product. It does not provide all the information available.

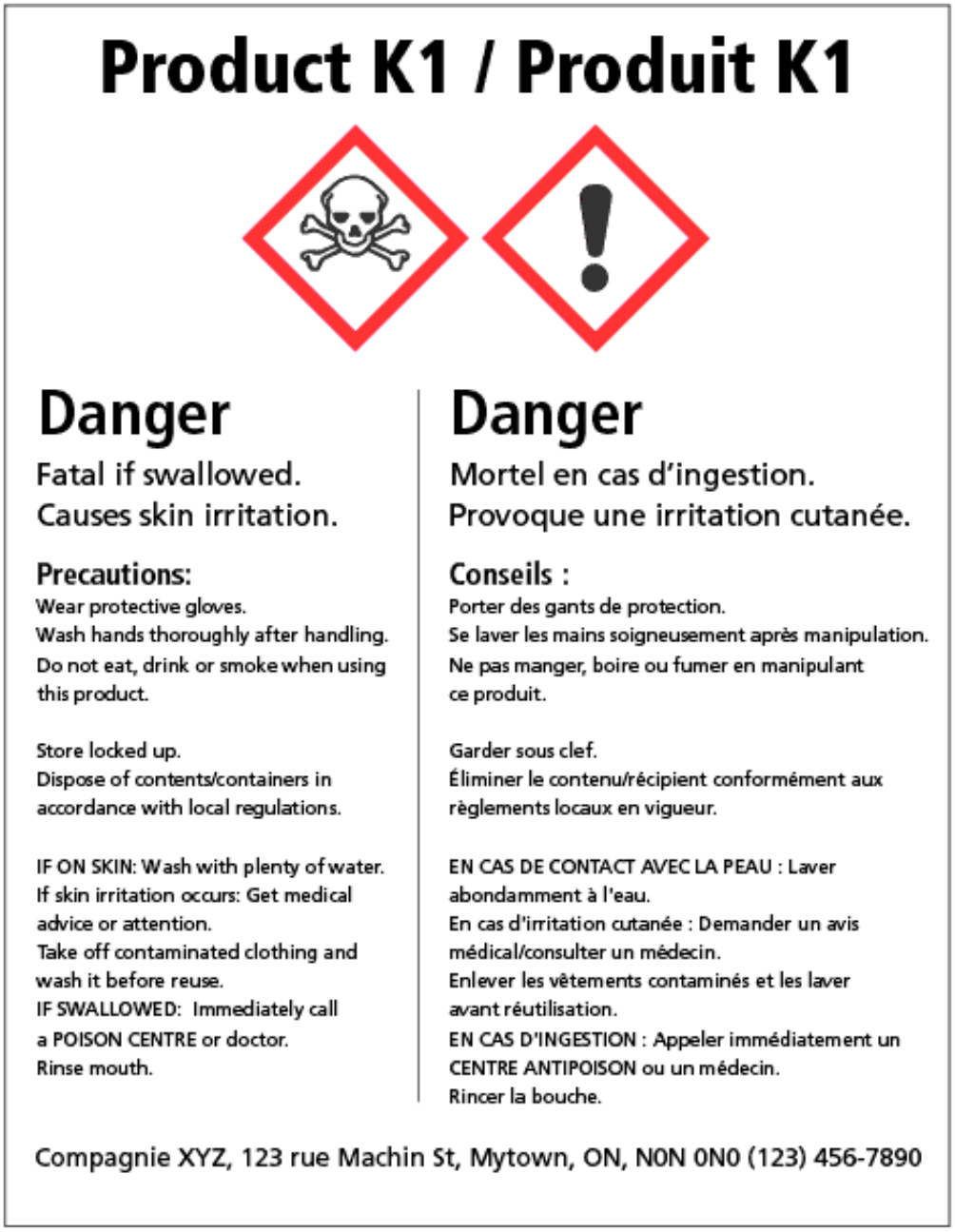
WHMIS Labels

Two types of WHMIS labels are used in dental practices: supplier and workplace. These labels provide information on the hazardous product including precautions to take when handling and using the product. All containers of hazardous materials must be properly labelled. It is important to ensure that all workers are properly trained to read the labels so that mixing of incompatible compounds does not occur.

	Supplier label (see sample label on next page)	Workplace label
When is this label used?	• Must appear on all hazardous products received at the workplace • No one can remove, modify or alter the supplier label as long as any amount of controlled product remains in the original container	• If a hazardous product is poured from the original supplier container into another unlabeled container • If there is no supplier label or it cannot be read • May appear in placard form, colour coding or other means of identification on controlled products in a pipeline (e.g. nitrous oxide), provided workers are trained in the identification system
What information must be on this label?	• Where the container size is ***over*** 100 mL: 1. Product identifier (name of the product) 2. Supplier identifier (name and address of supplier) 3. Hazard symbol(s) (corresponds to the class/ division of the controlled product) 4. Signal word (identifies the degree of risk) 5. Hazard statements (explanations of the hazards) 6. Precautionary statements (information on safe handling: general precaution, prevention, storage, first aid and disposal measures) • Must have all text in English and French (can be two separate labels). • For small quantities, refer to exemptions on the next page.	• Must have the following information — Product name — Information for the safe handling of the product — A statement that an SDS is available • Does not require a distinctive border • May contain WHMIS pictograms, or other information

Sample Supplier Label

An example of a bilingual supplier label is shown below:



Product K1 / Produit K1

Danger

Fatal if swallowed.
Causes skin irritation.

Precautions:

Wear protective gloves.
Wash hands thoroughly after handling.
Do not eat, drink or smoke when using this product.

Store locked up.
Dispose of contents/containers in accordance with local regulations.

IF ON SKIN: Wash with plenty of water.
If skin irritation occurs: Get medical advice or attention.
Take off contaminated clothing and wash it before reuse.
IF SWALLOWED: Immediately call a POISON CENTRE or doctor.
Rinse mouth.

Danger

Mortel en cas d'ingestion.
Provoque une irritation cutanée.

Conseils :

Porter des gants de protection.
Se laver les mains soigneusement après manipulation.
Ne pas manger, boire ou fumer en manipulant ce produit.

Garder sous clef.
Éliminer le contenu/récipient conformément aux règlements locaux en vigueur.

EN CAS DE CONTACT AVEC LA PEAU : Laver abondamment à l'eau.
En cas d'irritation cutanée : Demander un avis médical/consulter un médecin.
Enlever les vêtements contaminés et les laver avant réutilisation.
EN CAS D'INGESTION : Appeler immédiatement un CENTRE ANTIPOISON ou un médecin.
Rincer la bouche.

Compagnie XYZ, 123 rue Machin St, Mytown, ON, N0N 0N0 (123) 456-7890

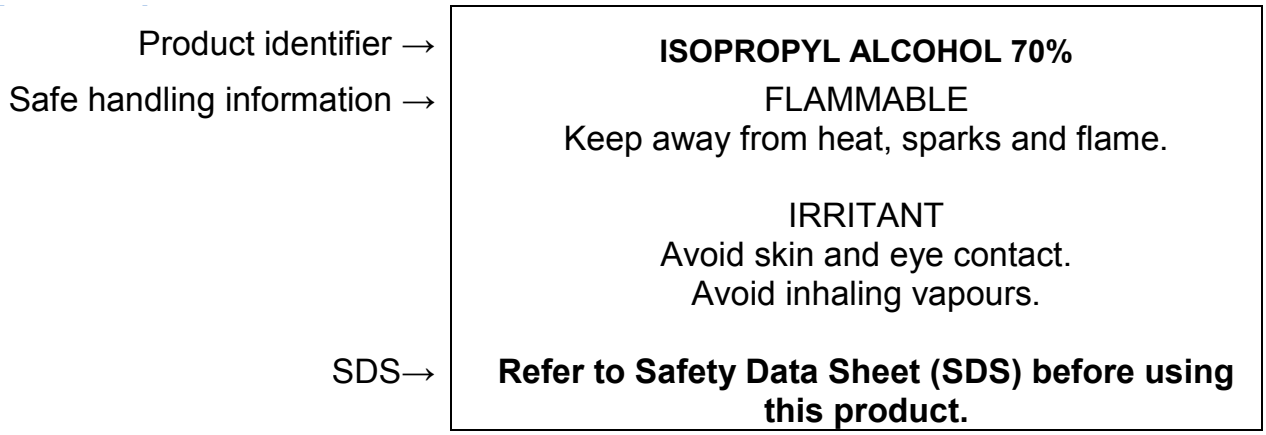
Sample Label (Source: CCOHS. WHMIS label.2015)

Small Quantity Exemptions:

100 mL or less — Exempt only from requirement to have precautionary or hazard statements on the label.

3mL or less — Where the label will interfere with normal use of the product, the product would be required to have a label that is durable and legible for transport and storage, but may be removable during use.

Sample Workplace Label



The *Hazardous Products Act* outlines conditions where suppliers may not need to affix supplier labels. **It is recommended that the dental practice always requires the supplier to affix a label before accepting the product.**

The employer/practice owner has a responsibility to ensure WHMIS hazardous products are properly labelled in the dental practice. The employer can delegate the task of affixing workplace labels to products, but is still responsible for ensuring it is done.

ACTIONS:

6.1 Ensure that workers are aware of the circumstances when a workplace label is required, and that the workers are able to affix a workplace label.

6.2 Show workers where workplace labels can be found at the dental practice.

6.3 Determine if any controlled products in use are stored in a pipeline (e.g. nitrous oxide). If yes, develop a means of identification and train workers in the identification system.

Consumer Product Labels

Consumer products such as bleach and cleaning supplies are found in most homes. However, familiarity should not discount how dangerous these products can be if they are not stored, used or disposed of properly.

The Consumer Chemicals and Containers Regulation (2001) defines the special requirements for labels, text and hazard symbols. The supplier must provide a label that meets the legislative requirements for the hazard information (size and placement, surrounded by a border, and in French and English).

Workers should always read the label before using the product. If the worker does not understand any part of the label or the label is missing, the worker should immediately bring it to the attention of his or her supervisor.

Original containers of consumer products will display appropriate labels. If however, the chemical is being transferred to another container or the label can no longer be read, then a workplace label should be placed on the container.

TDG Label

Transportation of Dangerous Goods (TDG) labels will apply to certain hazardous materials that are being transported to and from the dental practice (see sample label right).

As a leading practice during WHMIS training, point out TDG labels in order to differentiate them from the WHMIS required labels. In the dental practice, TDG labels may be found on compressed gas cylinders of nitrous oxide or oxygen.

Sample TDG Label

7.0 Safety Data Sheet (SDS)

The purpose of an SDS is to provide more detailed, technical information about a product than the label can provide. For instance, if a chemical must be disposed of in a particular way or a specific type of fire extinguisher is needed, this information will appear in the SDS, not on the label.

The employer/practice owner must obtain an SDS for every hazardous product purchased for use in the dental practice. An SDS provides technical details and physical properties of the hazardous material as well as first-aid measures that apply in the event of an emergency or when a worker is exposed to the product. SDSs are required to be accurate at the time of sale and are required to be updated (within 180 days) when the supplier becomes aware of any significant changes to the product.

The SDS can be written, printed or otherwise produced, but must meet the minimum requirements of the WHMIS regulation. Sixteen sections must be included on the SDS.

Sections 12 to 15 require the headings to be present, but under Canadian regulations, the supplier has the option to not provide information in these sections.

Tips for using the SDS

- To facilitate finding information in an emergency, highlight the:
  - Product name
  - SDS preparation date
  - First-aid section
- In the event of an incident involving a hazardous material, take the SDS to emergency or the doctor's office with the injured employee.
- Use the fire and explosion information from the SDS to help you develop the emergency response plan for the dental practice.

SDS Section and Heading		Specific Information Elements
1	Identification	• Product identifier (e.g. Product name) • Other means of identification (e.g. product family, synonyms, etc.) • Recommended use • Restrictions on use • Supplier identifier • Name, full address and phone number(s) • Emergency telephone number and any restrictions on the use of that number, if applicable

2	Hazard identification	• Hazard classification (class, category) of substance or mixture or a description of the identified hazard for Physical or Health Hazards Not Otherwise Classified
		• Label elements:
		  • Symbol (image) or the name of the symbol (e.g. flame, skull and crossbones)
		  • Signal word
		  • Hazard statement(s)
		  • Precautionary statement(s)
		• Other hazards which do not result in classification (e.g. molten metal hazard)

3	Composition/Information on ingredients	• When a hazardous product is a material or substance:
		  • Chemical name
		  • Common name and synonyms
		  • Chemical Abstract Service (CAS) registry number and any unique identifiers
		  • Chemical name of impurities, stabilizing solvents and/or additives
		• For each material or substance in a mixture that is classified in a health hazard class:
		  • Chemical name
		  • Common name and synonyms
		  • CAS registry number and any unique identifiers
		  • Concentration
		NOTE: Confidential business information rules can apply

4	First-aid measures	• First-aid measures by route of exposure:
		  • Inhalation
		  • Skin contact
		  • Eye contact
		  • Ingestion
		• Most important symptoms and effects (acute or delayed)
		• Immediate medical attention and special treatment, if necessary

5	Fire-fighting measures	• Suitable extinguishing media • Unsuitable extinguishing media • Specific hazards arising from the hazardous product (e.g. hazardous combustion products) • Special protective equipment and precautions for firefighters
6	Accidental release measures	• Personal precautions, protective equipment and emergency procedures • Methods and materials for containment and cleaning up
7	Handling and storage	• Precautions for safe handling • Conditions for safe storage (including incompatible materials)
8	Exposure controls/ Personal protection	• Control parameters, including occupational exposure guidelines or biological exposure limits and the source of those values • Appropriate engineering controls • Individual protection measures (e.g. personal protective equipment)

9	Physical and chemical properties	• Appearance (physical state, colour, etc.) • Odour • Odour threshold • pH • Melting point/Freezing point • Initial boiling point/boiling range • Flash point • Evaporation rate • Flammability (solid; gas) • Lower flammable/explosive limit • Upper flammable/explosive limit • Vapour pressure • Vapour density • Relative density • Solubility • Partition coefficient — n-octanol/water • Auto-ignition temperature • Decomposition temperature • Viscosity
10	Stability and reactivity	• Reactivity • Chemical stability • Possibility of hazardous reactions • Conditions to avoid (e.g. static discharge, shock, or vibration) • Incompatible materials • Hazardous decomposition products
11	Toxicological information	Concise but complete description of the various toxic health effects and the data used to identify those effects, including: • Information on the likely routes of exposure (inhalation, ingestion, skin and eye contact) • Symptoms related to the physical, chemical and toxicological characteristics • Delayed and immediate effects, and chronic effects from short-term and long-term exposure • Numerical measures of toxicity
12	Ecological information	• Ecotoxicity • Persistence and degradability • Bioaccumulative potential • Mobility in soil • Other adverse effects
13	Disposal considerations	Information on safe handling for disposal and methods of disposal, including any contaminated packaging
14	Transport information	• UN number • UN proper shipping name • Transport hazard class(es) • Packing group • Environmental hazards • Transport in bulk, if applicable • Special precautions
15	Regulatory information	Safety, health and environmental regulations specific to the product
16	Other information	Date of the latest revision of the SDS

Source: CCOHS. WHMIS 2015 -SDS

The employer must inform all workers of the location of the SDS and they must be readily accessible at all times, on all shifts, for all workers (e.g. should not be stored in a locked location). Emergency responders should be able to access the SDS in the event of an emergency, such as a hazard situation arising from accidental mixing of chemicals. In this case, the actual room where hazardous materials are used may not be the best location.

An individual should be designated to maintain the SDSs (e.g. replacing an old SDS when a new SDS arrives). Check the SDS prepared date annually at a minimum, and obtain a current SDS from the supplier if required. A potentially older version of a SDS is easier to recognize when the SDS preparation date is included on the inventory list.

ACTIONS:

7.1 Obtain SDSs for all hazardous products in use.

7.2 Designate an individual responsible for maintaining current SDSs (LP).

7.3 Determine where the SDS will be located and ensure workers are made aware of this location.

8.0 Worker Education and Training

The WHMIS regulation outlines the responsibility of the employer to train all workers who work with or in proximity to a hazardous product. Review sections 6 and 7 of the WHMIS regulation for full details.

Determining who should receive training can pose a challenge to some employers. Not everyone will receive the same training since not everyone works with the same hazardous materials. As a best practice, it is recommended that, at a minimum, all workers attend the generic session of the WHMIS training program. **Receptionists should also receive generic WHMIS training as they do work "in proximity" to hazardous materials.**

WHMIS training must be specific to the dental practice. Therefore the employer cannot assume that WHMIS training received during professional training will suffice. Specific procedures and instructions for the hazardous materials in use at the particular dental practice should be reviewed with the worker, and **this training should be documented.**

The employer is required to consult with the HSR/JHSC about the content of the education program and its delivery. Training can be conducted:

- For all new workers prior to commencing work
- For all workers who change job task (with a resulting change in potential exposures)
- Prior to the introduction of a new hazardous material into the dental practice
- Annually as a refresher for all workers with the potential for exposure

Training Program Content

Training should involve both a generic and job-specific component to enable workers to use the information to protect their health and safety and that of their co-workers and patients.

Some dental practices may contract out services such as housekeeping or maintenance. The owner or employer of the contract service is legally responsible for training his/her workers.

However, as a leading practice, the employer of the dental practice should ensure that the contractors comply with all health and safety policies of the organization, including the requirements for WHMIS training. This includes supplying the contract employees with any information pertaining to hazardous materials to which their workers have the potential to be exposed in the dental practice. The contract may also state that the contracted service will provide to the dental owner, current copies of SDS for all hazardous materials to be used at the dental practice.

Generic Training

The generic component may be in the form of a session using multimedia tools such as a video, slides and a short quiz.

Topic to Cover	Suggested Content
WHMIS regulation, with emphasis on the responsibilities of all workplace parties	• WHMIS is Canada-wide • The goal of WHMIS 2015 • Responsibilities of workplace parties
Hazard classes and symbols	• The risks associated with and precautions to take for each hazard class and category • Recognizing WHMIS and consumer symbols
Supplier and workplace labels	• How to interpret supplier and workplace labels • If a form of identification other than labels is used in the dental practice, the employer must train the workers in this identification system
SDSs	• Where the SDSs are located • How to interpret the information on the SDS
Emergency response plans and procedures for handling spills, leaks, fire and explosion	• Procedures to use in the event of a spill or fugitive emissions — information on proper spill clean-up can be found on the SDS • Emergency response procedures can be incorporated into standard operating procedures and workers can be informed of their responsibilities during job-specific WHMIS training • A 24-hour emergency response number should be available and communicated to all workers during training and as changes occur • Mock drills to test the emergency plan • Location, use and maintenance of emergency eye wash stations
Occupational health principles	• Physical states, routes of exposure, routes of exit and toxicity
General principles of control methods to minimize and prevent exposure	• General need to control hazards at the source first (such as increased ventilation), then along the path (as in scavenging units), then at the worker (such as personal protective equipment)
Waste disposal (***refer to ODA Dental Wastes Best Management Practices***)	• How to safely handle, store and dispose of any hazardous waste generated at the dental practice (may include sharps, soiled dressings, mercury, lead shields, developer or fixer from X-ray processing) • Appropriate identification of the waste **WHMIS Reg. s. 4** • The designated person who oversees the proper disposal of hazardous materials, and how to contact them

Job-specific Training

Job-specific training should focus on the workers' actual workplace environment, job tasks and potential for exposure, and should be delivered during orientation or as job tasks or conditions change.

Topic to Cover	Suggested Content
Current updated hazardous material inventory and SDSs for specific departments or facilities	• The location of products and SDSs • An overview of specific SDSs for groups of hazardous materials for which the workers have the potential to be exposed • The need for workers to ask questions or share concerns before using the product
A summary of the potential risks and health effects from short-term exposure as well as the potential chronic effects of some products	• Pay particular attention to susceptible individuals, (e.g. pregnant or asthmatic workers) and the potential risks of exposure to materials such as nitrous oxide, disinfectants, mercury, etc.
A description of the proper use and maintenance of control measures	• Proper control methods and required maintenance (such as nitrous oxide or mercury scavenging units, ventilation requirements for chemical X-ray developers or cold disinfectants, the emergency eyewash station)
Policies and procedures for the proper disposal of hazardous waste (***refer to ODA Dental Wastes Best Management Practices***)	• Disposal procedures for waste generated, including: — Labelling the waste — How to arrange for waste pick-up
Emergency plans and procedures for handling spills, leaks, fires and explosions	• Specific spill clean-up procedures for various hazardous materials including: — Where spill kits are located — How to use the spill kit — Which spills are reportable and to whom • The procedure to follow in case of fugitive emissions (such as nitrous oxide leaks)
Personal protective equipment (PPE)	• The specific PPE required considering information on the SDS • Proper selection, fit, use, storage and maintenance of all PPE • The workers' responsibility to use the equipment properly and to report any defective or missing equipment to their supervisors

Evaluating Worker Knowledge

Workers' understanding of information provided can be assessed through quizzes, tests or practical demonstrations. A sample quiz is provided in Appendix H.

The use of WHMIS or consumer product posters in areas where workers are likely to be exposed to hazardous materials is an effective way of continuing to reinforce safe work practices. Also, incorporating safety as a standard of performance in the workers' performance review is recommended as a way to remind all workplace parties that they are accountable for maintaining a safe and healthy working environment on a daily basis.

Record Keeping

An attendance record should be maintained for WHMIS training sessions and should be kept on file for review by the Ministry of Labour or the HSR/JHSC. The goal of the dental practice should be 100-per-cent worker attendance/participation in WHMIS training. A sample attendance is provided in Appendix I.

WHMIS Program Review

The purpose of the annual review is to evaluate the effectiveness of the training and to determine whether the program needs to be updated or the workers retrained. This review should be documented and completed in consultation with the HSR/JHSC. The program can be reviewed on an on-going basis through regular inspection of labeling of hazardous materials, verifying that current SDS are available and observing workers following correct safe work practices.

The training program will need to be altered if new information on the hazardous material(s) becomes available, if a new hazardous material is used at the dental practice or if there is a change in processes, work methods, worker exposure or any other circumstances that may affect the health and safety of the worker.

ACTIONS:

8.1 Determine who should receive WHMIS training.

8.2 Consult with the HSR/JHSC when developing training program content.

8.3 Develop training program content for general WHMIS Training.

8.4 Develop training program content for job-specific WHMIS Training.

8.5 Adopt a method for evaluating worker understanding following WHMIS Training (LP).

8.6 Maintain an attendance record for WHMIS training provided.

8.7 Annually, review the effectiveness of WHMIS training in consultation with the HSR/JHSC.

9.0 Occupational Health Issues

To minimize negative health effects associated with the use of hazardous materials, one must understand:

- The physical and chemical properties of the hazardous material
- The way it may enter (routes of exposure) or exit (routes of exit) the body
- The potential to cause acute or chronic effects (toxicity)

Physical and Chemical Properties

The *physical state* plays an important role in determining how a hazardous material will be taken up by the body. A hazardous material can be a solid, liquid or gas. A change in conditions such as temperature, pressure, mechanical agitation, exposure to light or radiation, contact with other chemicals (mixing), etc. can change the *physical state* of the hazardous material.

All of these forms of hazardous materials have the potential to contaminate the workplace and expose workers.

The SDS section Toxicological Information details the specific routes of exposure and the known or suspected health effects of each hazardous agent. Information on first-aid procedures is also provided. An SDS does not always contain information on all potential routes of entry.

Physical States

Dust: Generated by mechanical action on a solid (e.g. crushing, breaking, grinding), dusts can be found on work surfaces. Without proper housekeeping, they have the potential to be reintroduced into the workplace. In dentistry, workers may be exposed to dusts when grinding impressions.

Fumes: Finely divided solid particles that are formed when a volatilized solid condenses in cool air.

Smoke: Formed when a material containing carbon is burned. Smoke generally contains droplets as well as dry particles.

Mist: Liquid droplets suspended in air that can be created either by the dispersion of a liquid, such as with splashing, or formed when gases condense into a liquid state. Spraying disinfectants may produce mist.

Vapour: Gaseous state of a substance normally found in a liquid or solid state. In the dental practice, vapours are produced when X-rays films are chemically developed.

Gases: Substances that do not exist as liquids or solids at normal temperature and pressure. Nitrous oxide is an example commonly encountered in the dental practice.

Routes of Exposure

The four main routes by which substances may enter the body are:

Route	Description	Examples from dentistry
Absorption (through skin or eyes)	The skin can be damaged when a substance is absorbed, or the substance can travel to other target organs and systems. Usually these hazardous materials are identified on the SDS by the "skin notation", which indicates that there is a potential for exposure through the skin, mucous membranes or eyes, or that direct damage to the skin can result.	Glutaraldehyde is sometimes found in high-level disinfectants. It may also affect the body's immune system so that further exposure through absorption or inhalation could result in symptoms like skin irritation or asthma-like conditions. Hazardous materials that affect the body in this way are known as "sensitizers".
Inhalation	Inhalation is the main route of entry for most workplace exposures. Once inhaled, a substance has the potential to exert its effects directly on the respiratory system. If the particles are small enough, they can pass through the lungs and be absorbed into the blood stream or other target organs.	Inhalation exposure to waste anesthetic gases or X-ray film developing chemicals.
Ingestion	Once swallowed, toxic substances can enter the digestive tract where they may exert their effects or be carried to other target organs via the bloodstream.	Toxic hazardous materials may be ingested, for example, if food or drink is consumed in dusty areas, such as where impressions are made. Good hand-washing practices and housekeeping are necessary.
Injection	Workers can be exposed to drugs or blood-borne pathogens via accidental injection from needles, lancets and other sharp objects.	During use or disposal of sharps, or cleaning of certain equipment.

Routes of Elimination

The damage a hazardous material can cause to the body depends on how well the body can defend itself by reducing the toxicity of the material and by eliminating it. The liver, kidneys and bladder are important defense organs, but they can also be damaged by hazardous materials.

The **liver** breaks down a hazardous material in an attempt to make it less toxic. Sometimes, however, the material produced may be more toxic or the liver may not be able to cope with the amount of toxins. This could result in an inflamed liver condition known as hepatitis. Hepatitis can occur from exposure to biological hazards such as the hepatitis B virus or chemical hazards such as alcohol.

When substances enter the blood, the **kidneys** work as filters to remove the harmful toxins from the blood and deposit them in the urine. The **bladder** then controls the exit of the toxins from the body. Both the kidneys and bladder, therefore, may be susceptible to injury or disease from hazardous materials passing through the body. Mercury, in dental amalgams, is one such hazardous material that could cause damage to the kidneys.

Toxicity

The toxicity of a hazardous material is a measure of its ability to cause harmful health effects in a particular ***target site*** in the body when a certain concentration is reached. A hazardous material may be toxic but may not pose a health hazard if it does not enter the body. However, the more toxic a hazardous material is, the less is needed to cause a health effect if it enters the body.

The amount of hazardous material that the body can be exposed to without harmful side effects is referred to as the acceptable exposure limit. In order for a toxic material to be hazardous to human health, it must cause damage to the skin or eyes or be able to enter the body by one of the four main routes. Some individuals may be more susceptible to the hazardous materials at levels below the acceptable exposure limit.

Target Sites for Exposure

There are four main sites in the body where diseases can occur once a hazardous material has entered the body:

- At the site of entry (lungs, skin, intestines)
- In the blood that carries the agents throughout the body (circulatory system)
- In the central nervous, reproductive and digestive systems
- In the organs (liver, kidney, bladder, etc.)

Potential Effects

The effect(s) that a hazardous material may produce on the body can be classified as acute or chronic.

Acute effects are generally caused by high-level exposures and are observed immediately or soon after exposure to the hazardous agent. It is important that workers be aware that they should report acute effects immediately to their supervisor, who may be the dental owner. For example, if a worker wears latex gloves and delays reporting symptoms that may suggest the onset of contact dermatitis (inflammation of the skin), that could result in a misdiagnosis.

Chronic effects may not become evident until several years after exposure and are often different from the acute effects observed. They result from being exposed to lower doses over an extended period of time. The time lag between the actual exposure and onset or diagnosis of disease is referred to as the latency period. Workers may tend to underestimate the risks of exposure if there is a long latency period before evidence of illness or disease. For example, mesothelioma as a result of exposure to asbestos may have a long latency period.

The following example lists acute and chronic effects of exposure to dental stone, one product used when making impressions:

- **Acute:** Particles may cause eye irritation. Mixed material may develop enough heat to cause burns if large amount comes in contact with skin during hardening.
- **Chronic:** Prolonged exposure may cause lung disease.

10.0 Principles of Controlling the Hazards

To effectively control hazards, one must:

- **Recognize the hazard**
- **Assess the risk**
- **Control the hazard**
- **Evaluate the control measure to ensure it is protecting workers**

Recognition involves assessing the dental practice to determine the hazardous materials present and their associated health and safety risks. The next step, *assessing* the risk, involves determining the degree of exposure and conditions under which the worker is likely to be exposed. This might involve air sampling in order to compare worker exposure to acceptable exposure limits to determine the next course of action. Recognition and assessment of the dental practice environment are the basic building blocks on which to base hazard control.

Design of Control Procedures

When designing a control procedure for a potential hazard, the following conditions should be met:

- The hazard must be controlled to acceptable safe exposure limits (if it cannot be eliminated). The SDS may outline these safe limits referred to as time-weighted average (TWA), ceiling limit (C) or short-term exposure limit (STEL). See the Glossary for explanations of these terms.
- The control, once established, should create a safe working environment for anyone who has the potential to be exposed.
- The control should not create a public health or environment hazard.
- The control should not interfere with the workers' ability to comfortably and safely perform their duties.

Hazards can be controlled at three areas:

- Source
- Path
- Worker

The first line of defense in controlling exposure to hazardous materials in the dental practice should be at the source. The following can be used as guiding principles in implementing control measures.

Using beryllium as an example:

Recognize:
Typically, beryllium use is limited to dental laboratories when added to base metal alloys for use in dental prostheses such as crowns, bridges or partial denture frameworks. However, if beryllium-containing prostheses are maintained in the clinical dental practice (grinding or polishing), there is a potential risk of exposure.

Assess:
The TWA for beryllium is 0.002 mg/m3 and the STEL is 0.01 mg/m3 (Regulation 833 Control of Exposure to Biological or Chemical Agents).

Control:
The following controls are needed to maintain the concentration of beryllium in air below the exposure limits (American Dental Association 2005):

- Local exhaust ventilation equipped with HEPA filters for the polishing and grinding processes
- A respirator with a 100-Series filter (surgical-type masks are not sufficient to protect workers from beryllium)

At the source

- If the hazard is not critical to the process, eliminate it.
- Substitute the hazardous material for a less hazardous one. Substitution may or may not involve a change in the process. Ensure the less hazardous agent does not create a new hazard.
- Modify the process.
- Isolate the hazardous material or process so the material does not come in contact with the worker (e.g. a separate room for the mercury waste collection system, or the nitrous oxide scavenging unit, depending on the type of equipment in place).

Along the path

- Use local or general ventilation to interrupt the path of the hazardous agent. General ventilation may be applicable in some situations to reduce the concentrations of hazardous materials to acceptable limits.
- Use barriers (shields, screens, etc.). A scavenging system for nitrous oxide administration is one example.
- Employ good housekeeping practices in order to control the agent along the path. Immediate cleanup of spills is an example of how good housekeeping can help to prevent workplace exposure. The use of wet methods as opposed to dry sweeping will also help to minimize the airborne concentrations of hazardous materials that could be reintroduced into the air.

At the worker

Implementing controls at the worker level should be considered only after controls have been evaluated and implemented at the source and along the path.

- Use administrative controls where possible (job rotation, rest schedules, etc.). Management and supervisors should integrate job rotation and rest schedules into the workers' daily activities. This can help to limit the duration of exposure to acceptable limits. For these controls to be effective, both supervisors and workers need to be educated in their need.
- Forbid eating and drinking or storing food and drink in areas where hazardous materials are used or stored. If refrigerators are used to store food, they must be designated for this purpose only.
- Encourage/support good personal hygiene (e.g. thorough hand-washing after handling hazardous materials and before eating and drinking). **Hand washing is one of the best defenses against the accidental ingestion** of hazardous materials at the dental practice.

The following lists possible control measures for the use of high-level disinfectants. Typically, several options are available for the employer to choose from. As many options as possible should be implemented.

At the source

- Replacing a solution containing glutaraldehyde with one that does not
- Purchasing a dilute solution rather than a concentrate that needs to be diluted
- Providing increased ventilation in the cleaning room

Along the path

- Placing a cover on a container
- Using a hose to transfer liquid from one container to another

At the worker

- Providing gloves and protective eyewear

11.0 Personal Protective Equipment

Personal protective equipment (PPE) is to be considered the last line of defense in the control of exposure to hazardous materials, because if the equipment fails, the worker will be exposed.

If PPE is used:
- It must be properly fitted
- Workers must be trained in its proper use, care and maintenance
- Workers need to understand why and under what circumstances it is to be used
- Workers should be involved in the selection of PPE, where appropriate, in order to improve compliance with wearing the equipment

It is the **supervisor's duty** to ensure that all workers wear or use all PPE required and provided by the employer. It is each **worker's duty** to wear all PPE provided by the employer. **Employers** should always ensure that the required PPE is available and being used. To be effective, health and safety leaders and employers/supervisors should always set an example for workers by wearing the appropriate PPE in areas and situations where it is required.

Emergency Eyewash Stations

If there is the potential for an eye and/or skin injury due to contact with a hazardous material, eyewash stations should be immediately accessible. It is important for supervisors during the job-specific component of WHMIS training to review with workers the location, accessibility and proper procedures for using and maintaining all emergency equipment.

ACTIONS:

11.1 Ensure appropriate PPE is provided.

11.2 Ensure workers wear or use the required PPE.

11.3 Provide an emergency eyewash station if there is a potential for eye injury due to contact with a hazardous material.

12.0 Practical Application

This section demonstrates the application of hazard control information presented in this guide to three common chemical hazards in dental practices:

- Nitrous oxide
- Glutaraldehyde
- Mercury

12.1 Nitrous Oxide

Product use: A general anesthetic to reduce patient anxiety and/or pain during treatment.

Routes of Exposure: Inhalation (primary), skin and eye

Toxicity: The time-weighted average is 25 parts per million (ppm) or 45 mg/m^3 averaged over an eight-hour workday or a 40-hour work/week (*Occupational Health and Safety Act* in Regulation 833 Control of Exposure to Biological or Chemical Agents). The concentration in air is determined by testing the air.

Acute effects: Irritability, headaches, fatigue and nausea (Quarnstrom 2002)

Chronic effects: Repeated exposure over time may have adverse reproductive effects, decrease neurobehavioral functions and injure other organs. Further information can be found in the references listed on the following page.

Recognize, Assess and Control:

The controls listed may vary based on the extent to which nitrous oxide is used in the dental practice.

Possible sources of exposure	Control options
• Inadequate scavenging systems which may blow patients' exhaled gas directly into the breathing zone of dental staff (Quarnstrom 2002)	• Use of a double-nasal mask as opposed to a single-nasal mask. An oral evacuation rate of 45 L/min recommended by National Institute of Occupational Safety and Health (NIOSH) (Freilich, Alexander, Sandor & Judd 2007)
• Poorly maintained scavenging systems resulting in higher ambient concentrations of nitrous oxide (Howard 1997)	• Development and implementation of a maintenance program that includes scheduled inspections of equipment by staff prior to use. Inspection should start at the storage tanks and end with the scavenging mask (Howard 1997) • Documented monthly inspections of the equipment are recommended to ensure there are no leaks • Documentation process to ensure compliance of maintenance program and record of results and corrective actions taken (Howard 1997) • Installation and repairs of equipment completed by authorized dealers only (Howard 1997)
• Inadequate room ventilation that fails to exchange sufficient quantities of air, or that circulate contaminated air back into the room (Howard 1997)	• Effective ventilation including fresh air inlets in ceilings, exhaust vents located at the floor, and auxiliary ventilation to supplement general ventilation (Howard 1997) • On-going ventilation system maintenance • Regular monitoring of nitrous oxide concentrations in the workers breathing zone and ambient levels (Howard 1997)
• Patient behaviours that reduce the effectiveness of the scavenging mask and result in increased ambient nitrous oxide exposures for staff (American Academy of Pediatric Dentistry Council on Clinical Affairs Committee 2006)	• Instructing the patient to refrain from mouth breathing and talking during the administration of nitrous oxide (American Academy of Pediatric Dentistry Council on Clinical Affairs Committee 2006)
• Work practices such as removing the scavenging mask from the patient without first purging the scavenging system with oxygen. This allows trace amounts of nitrous oxide to enter the air in the breathing zone of staff (Quarnstrom 2002)	• Develop proper work practices to reduce contamination of the room air during administration of anesthetic gases, such as flushing the scavenging system before removal of scavenging mask by administering oxygen to the patient for at least five minutes following the administration of nitrous oxide (Henderson & Matthews 2000) • When scheduling appointments, space out the appointments in which nitrous oxide administration will be necessary (Howard 1997)

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12.2 Glutaraldehyde

Product use: A colourless liquid that acts as a rapid cold sterilizing and disinfecting agent. Trade names for glutaraldehyde include but are not limited to Cidex®, Sonacide®, Sporicidin®, Hospex® and Omnicide®

Routes of Exposure: Inhalation, skin and eye absorption.

Toxicity: The ceiling limit is 0.05 parts per million (ppm) (*Occupational Health and Safety Act* in Regulation 833 Control of Exposure to Biological or Chemical Agents). The concentration in air is determined by testing the air.

Acute effects: Short-term exposures to glutaraldehyde at airborne levels below 0.02 ppm have resulted in irritation to the eyes and nose (OEHHA 2000). Skin irritation has been found to occur with solutions containing up to two-per-cent glutaraldehyde (Ravis et al. 2003)

Chronic effects: Long-term exposures have been associated with occupational asthma (OEHHA 2000) and allergic contact dermatitis (ACD) (Ravis et al. 2003). Further information can be found in the references listed on the following page.

Recognize, Assess and Control:

The controls listed may vary based on the extent to which glutaraldehyde is used in the dental practice.

Possible sources of exposure	Control options
• Producing vapours when pouring the glutaraldehyde solution from one container to another (e.g. into the reservoir of the automated processor) (OSHA 2006)	• Replace glutaraldehyde with alternatives such as orthophthaldehyde or peracetic acid where possible (Ravis et.al. 2003) • Provide minimum air exchange of 10/hour for the room where disinfecting occurs (OSHA 2006) • Use enclosed equipment, pumps and transfer lines wherever possible (OSHA 2006) • Use a "safety nozzle" to prevent splashing when pouring the solution from one container to another (OSHA 2006) • Designate certain areas for disinfecting with warning signs at their entrance (OSHA 2006) • Use local exhaust ventilation installed at the point of release of glutaraldehyde vapours (a preferred method as it captures and removes the contaminated air right at the source) (OSHA 2006)
• Opening the cleaning container to immerse the dental instruments for disinfection (Ravis et. al. 2003)	• Keep containers of glutaraldehyde solutions covered when not directly in use
• During the flushing out of instruments using a syringe (OSHA 2006) • During the handling of soaked instruments and rinsing of trace amounts of glutaraldehyde (Ravis et. al. 2003) • When disposing of used glutaraldehyde solutions (OSHA 2006) • When conducting maintenance or inspection procedures on automated processors (OSHA 2006)	• Use nitrile gloves (ACD still occurs with use of latex or vinyl gloves) (Ravis et. al. 2003) • Don lab coats when using glutaraldehyde (OSHA 2006)
	General controls • Provide safe-handling training to workers who are expected to work with glutaraldehyde (Ravis et al. 2003) • Store unused glutaraldehyde in well-sealed, labelled containers in a clearly identified area (OSHA 2006) • Enforce a policy that ensures no food, drinks, smoking or cosmetics are near the area where glutaraldehyde is used (OEHHA 2000)

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12.3 Mercury

Product use: One of the ingredients in restorative material for oral care.

Routes of Exposure: Inhalation, skin and eye absorption in small amounts.

Toxicity: Under the OHSA, mercury is a designated substance (Designated Substances Regulation 490/09). However, this does not apply to an employer who is engaged in the practice of dentistry (as defined in the Regulated Health Professions Act) or a worker who works in the office of such an employer.

Acute effects: cough, chest tightness, shortness of breath and fever.

Chronic effects: over time could result in a chronic metallic taste, oral inflammation, difficulty breathing and vomiting (CCOHS 2008). Nervous system effects including tremors, emotional instability, sleeplessness, memory loss, muscle weakness, headaches, slow reflexes and a loss of feeling or numbness (CCOHS 2008). Over long-term exposure, mercury accumulates in the brain, and in the pituitary and thyroid glands; this may cause irregular and painful menstrual cramps and reduced ovulation (Olfert 2006). May have reproductive effects (CCOHS 2008; Olfert 2006).

Recognize, Assess and Control:

The controls listed may vary based on the extent to which mercury is used in the dental practice.

Possible sources of exposure	Control options
• Direct skin contact with freshly mixed dental amalgam (Martin & Naleway 1995)	• Use pre-capsulated dental amalgam (ODA 2005)
• Placement and condensation of dental amalgam (Martin & Naleway 1995) • Vaporization of mercury from contaminated instruments (American Dental Association Council on Scientific Affairs 2003) • Leaky dental amalgam capsules (Martin & Naleway 1995) • Open storage of dental amalgam scraps or used capsules (American Dental Association Council on Scientific Affairs 2003)	• Provide a well-ventilated workspace that offers fresh air exchange and an outside exhaust located far from intake vents • Periodically check dental operatories for mercury vapours using dosimeter badges; record results and recommended corrective actions (American Dental Association Council on Scientific Affairs 2003) • Train workers in safe handling procedures for mercury and amalgams, as well as the hazards of mercury vapours • Use an air-tight container for scrap amalgam (ODA 2005) • Practice good hygiene, both personal and in work practices (hand hygiene, removing professional clothing before leaving the workplace) (American Dental Association Council on Scientific Affairs 2003)
• Accidental spills of mercury or dental amalgam (Martin & Naleway 1995)	• Use floor coverings that are non-absorbent, seamless and easy to clean. Carpet is strongly discouraged because, in the event of a spill, mercury droplets can seep through and remain inaccessible to chemical decontamination (American Dental Association Council on Scientific Affairs 2003)
• Replacing or restoring a dental amalgam filling (Martin & Naleway 1995) • Disposing of dental amalgam waste (removed filling)	• Use high-volume extraction systems when finishing or removing amalgams (American Dental Association Council on Scientific Affairs 2003) • Use appropriate PPE (nitrile gloves, safety glasses and face mask) when preparing waste dental amalgam for disposal (ODA 2005)

References

American Dental Association Council on Scientific Affairs 2003, 'Dental mercury hygiene recommendations', Journal of the American Dental Association, vol. 134, pp. 1498-1499.

Canadian Centre for Occupational Health and Safety (CCOHS) 2015, 'Mercury', viewed 3 Dec 2016, https://www.ccohs.ca/oshanswers/chemicals/chem_profiles/mercury.html

Martin, MD, Naleway, C, Chou, HN 1995, 'Factors contributing to mercury exposure in dentists', Journal of the American Dental Association, vol. 126, no.11, pp. 1502-1511.

Occupational Health and Safety Act 2010, 'Designated Substances Regulation 490/09 ', pp. 376, Thomson Carswell, Toronto.

Ontario Dental Association, 2005, Dental Wastes - Best Management Practices Guide for the Dental Community – April 2005, available for members to download at http://www.youroralhealth.ca/member/practice-management/5-practice-management/your-environmental-responsibilities/231-waste-management.html

13.0 Summary

WHMIS was designed to give employers, supervisors and workers the information they need to work safely with hazardous materials in the workplace. Employers, workers and suppliers need to work together to implement and maintain an effective Workplace Hazardous Materials Information System across Canada. Every organization plays a key role in its success by developing, implementing and maintaining a WHMIS program in their workplace.

This document provides information needed to implement the generic requirements of WHMIS, namely:
- Classification of hazardous products
- Labels
- SDSs
- Worker education and training

It also provides the building blocks upon which a successful job-specific WHMIS program can be built for a dental practice. The success of job-specific WHMIS training will depend on a commitment throughout the dental practice – by employer, supervisors, workers and HSR/JHSC members.

To be effective, a WHMIS program must be maintained and evaluated. The WHMIS Program Assessment discussed earlier in this guide can be used to assess the effectiveness of a WHMIS program. It is recommended that all elements of a WHMIS program be reviewed with the HSR/JHSC at least annually or more frequently if required by changes in job conditions. It is important to encourage participation from all workplace parties in developing, implementing and maintaining a workplace WHMIS program and to communicate the outcome of the program evaluation.

Further Sources of Information

Canadian Nuclear Safety Commission (CNSC)
280 Slater Street,
P.O. Box 1046
Ottawa, ON K1P 5S9
Tel. 613-995-5894 or 1-800-668-5284
Fax 613-995-5086

Canadian Centre for Occupational Health and Safety (CCOHS)
250 Main Street East
Hamilton, ON L8N 1H6
Tel. 905-570-8094
Toll-free 1-800-668-4284
Fax 905-572-2206
Website: www.ccohs.ca

Workplace Hazardous Materials Bureau, Health Canada
269 Laurier Avenue West, 4903E
Ottawa, Ontario K1A 0K9
Tel. 1-855-407-2665
Teletypewriter: 1-800-465-7735 (Service Canada)
Email: WHMIS_SIMDUT@hc-sc.gc.ca

Public Services Health & Safety Association (PSHSA)
4950 Yonge Street, Suite 1800
Toronto, ON M2N 6K1
Tel. 416-250-7444
Toll-free 1-877-250-7444
Fax 416-250-7484
Website: www.pshsa.ca

Occupational Health Clinics for Ontario Workers – Provincial Office
1090 Don Mills Road, Suite 606
Toronto, ON, M3C 3R6
Toll free 1-877-817-0336 (all clinics)
Tel: 416-510-8713
Fax: 416-443-9132
Website: http://www.ohcow.on.ca/

Ontario Ministry of Labour (MOL)
Occupational Health & Safety Branch
505 University Avenue, 19th Floor
Toronto, ON M7A 1T7
Toll-free: 1-877-202-0008
TTY: 1-855-653-9260
Fax 905-577-1316
Website: www.labour.gov.on.ca

Poison Control Centre
Toll-free 1-800-268-9017

Transportation of Dangerous Goods (TDG) Directorate
Transport Canada
330 Sparks Street
Ottawa, ON K1A 0N5
Tel.(Canutect information line) 613-992-4624 (call collect)
TTY/TDD: 1-888-675-6863
Fax 613-993-5925

CANUTEC (Emergency Services involving dangerous goods)
Tel. 613-996-6666 (call collect) or *666 on a cellular phone

Workplace Safety and Insurance Board (WSIB)
Health Care Division
200 Front Street West, 6th Floor
Toronto, ON M5V 3J1
Tel. 416-344-1002
Toll-free 1-800-387-0066
Website: http://www.wsib.on.ca

Appendix A: Action Checklist

Section	Action	Person Responsible	Date Completed
3.1	Post the WHMIS Pictogram Poster in an area of the dental practice where WHMIS hazardous products are used (LP).		
4.1	Post the Consumer Product Symbols Poster in an area of the dental practice where consumer products are used (LP).		
5.1	Develop a WHMIS Policy for the dental practice (Appendix E). If consumer products are in use, consider including these in the WHMIS Policy (LP).		
5.2	Complete the WHMIS Program Assessment Checklist (Appendix F) to determine the status of the WHMIS Program at the dental practice (LP).		
5.3	Prepare a list of WHMIS and consumer products currently in use at the dental practice (LP). Consider using the sample inventory sheet in Appendix G.		
6.1	Ensure that workers are aware of the circumstances when a workplace label is required, and that the workers are able to affix a workplace label.		
6.2	Show workers where workplace labels can be found at the dental practice.		
6.3	Determine if any hazardous products in use are stored in a pipeline (e.g. nitrous oxide). If yes, develop a means of identification and train workers in the identification system.		
7.1	Obtain SDSs for all hazardous products in use.		
7.2	Designate an individual responsible for maintaining current SDSs (LP).		
7.3	Determine where the SDS will be located and ensure workers are made aware of this location.		
8.1	Determine who should receive WHMIS training.		
8.2	Consult with the HSR/JHSC when developing training program content.		
8.3	Develop training program content for general WHMIS Training.		
8.4	Develop training program content for job-specific WHMIS Training.		
8.5	Adopt a method for evaluating worker understanding following WHMIS Training (LP).		
8.6	Maintain an attendance record for WHMIS training provided (Appendix I).		
8.7	Annually, review the effectiveness of WHMIS training in consultation with the HSR/JHSC.		
11.1	Ensure appropriate PPE is provided.		
11.2	Ensure workers wear or use the required PPE.		
11.3	Provide an emergency eyewash station if there is a potential for eye injury due to contact with a hazardous material.		

Appendix B: Overview of Legislation

WHMIS is Canada-wide legislation. The goal of WHMIS is to reduce workplace injury and illness caused by *hazardous materials* in use.

WHMIS applies only to hazardous products. A hazardous product is a product, material or substance classified in accordance with subsection 15(1) of the Hazardous Product Regulation to be included in a class listed in Schedule 2 of the *Hazardous Products Act* (Canada).

Ontario Occupational Health and Safety Act

Part IV of the OHSA sets out the requirements for toxic/hazardous substances.
A toxic substance is defined as a biological or chemical agent or combination of such agents that is likely to endanger the health and safety of a worker.

The following provides an overview of the topics included:
Section 33: Orders of director regarding toxic substances
Section 34: Repealed (New biological or chemical agents)
Section 35: Designation of substances
Section 36: Repealed (Inventory of hazardous substances)
Section 37: Hazardous material identification and data sheets
Section 38: Material safety data sheets to be made available
Section 39: Assessment for hazardous materials
Section 40: Confidential business information
Section 41: Hazardous physical agents
Section 42: Instruction and training

Toxic substances are further addressed in the WHMIS regulations under the OHSA.

Ontario WHMIS regulation

The WHMIS regulation is enforced under the OHSA. WHMIS became law in Ontario on October 31, 1988. The regulation was updated in 2015 to align with the Global Harmonized System (GHS). The Ontario WHMIS regulation enhances the federal legislation in the areas of responsibilities, Safety Data Sheets (SDSs) and worker education (the right to know).

Consumer Chemicals and Containers Regulations (2001)

A consumer product is generally used for personal, family or household purposes. Suppliers are exempt from the WHMIS requirements for supplier labels and SDSs if the products are included in Part II of Schedule I of the *Hazardous Product Act* (restricted product) and are “packaged as consumer products”. Under the federal *Hazardous Product Act*, the Consumer Chemicals and Containers Regulations (2001) detail the special labelling and child-resistant packaging requirements that apply to consumer products.

References:

Hazardous Products Act available to download at
http://laws-lois.justice.gc.ca/eng/acts/H-3/

OHSA available to download at
http://www.e-laws.gov.on.ca/html/statutes/english/elaws_statutes_90o01_e.htm

WHMIS Regulation 860 available to download at
http://www.e-laws.gov.on.ca/html/regs/english/elaws_regs_900860_e.htm

Appendix C: WHMIS Pictogram Poster

WHMIS 2015 Pictograms

Workplace Hazardous Materials Information System (WHMIS)

Hazard Pictogram	Symbol Descriptor	Classification	Example of Risks	Example of Safe Handling Procedure
	**Gas Cylinder**	• Gases Under Pressure	MATERIALS WHICH ARE NORMALLY GASEOUS KEPT IN A PRESSURIZED CONTAINER • May explode if heated, punctured or dropped	ENSURE CONTAINER IS ALWAYS SECURED • Store in appropriate designated areas • Do not drop or allow to fall • Protect from mechanical damage
	**Flame**	• Flammable • Pyrophoric • Self-Heating • In Contact with Water, Emits Flammable Gases • Self-Reactive • Organic Peroxide	MATERIALS WHICH WILL CONTINUE TO BURN AFTER BEING EXPOSED TO A FLAME OR OTHER IGNITION SOURCE • Maybe ignite if exposed to heat, sparks, friction, flames or incompatible material	STORE IN PROPERLY DESIGNATED AREAS • Keep away from heat, hot surfaces, sparks, open flames, and other ignition sources. • Store in a well-ventilated, cool place.
	**Flame over circle**	• Oxidizer	MATERIALS WITH CAN CAUSE OTHER MATERIALS TO BURN OR SUPPORT COMBUSTION • Including Oxidizing Gases, Liquids, Solids • May cause fire or explosion • May enhance the combustion of other materials	STORE IN AREAS AWAY FROM COMBUSTIBLES IN WELL-VENTILATED, COOL PLACE • Store in proper containers which will not rust or oxidize • Keep away from heat, hot surfaces, sparks • Keep valves and fittings free from oil and grease
	**Exclamation Mark**	• Skin and/or Eye Irritant • Skin Sensitizer • Acute Toxicity (harmful) • Narcotic effects • Hazardous to the Ozone Layer*	POISONOUS MATERIALS WHICH CAUSE IMMEDIATE AND SEVERE HARM	AVOID BREATHING DUST OR VAPOURS AVOID CONTACT WITH SKIN OR EYES • Wear personal protective equipment which is effective for exposure situation • Work in well ventilated areas • Wash potentially exposed body parts throughly after handling
	**Health Hazard**	• Carcinogenicity • Germ Cell Mutagenicity • Reproductive Toxicity • Respiratory Sensitization • Specific Target Organ Toxicity • Aspiration Hazard	MATERIALS WHICH CAN CAUSE OR ARE SUSPECTED OF CAUSING SERIOUS LONG TERM HEALTH EFFECTS	WORK IN A WELL VENTILATED AREA • Store in appropriate designated areas • Avoid direct contact • Use personal protective equipment • Obtain and learn special instructions / controls before use • Avoid repeated and / or prolonged exposure situations
	**Biohazardous Infectious**	• Biohazardous Infectious Materials	INFECTIOUS AGENTS OR BIOLOGICAL TOXIN CAUSING SERIOUS DISEASE OR DEATH • May cause anaphylactic shock • Includes exposure to Viruses, Yeasts, Molds, Bacteria, and Parasites which may cause disease in animals or humans	FOLLOW SAFE LABORATORY PRACTICES AND PROCEDURES • Avoid forming aerosols and breathing vapours • Store only in special designated areas with limited access and appropriate engineering controls • Follow routine practices / universal precautions, such as hand hygiene and glove use
	**Corrosion**	• Corrosive to Metals • Serious Eye Damage • Severe Skin Burns	MATERIALS WHICH REACT WITH METALS AND LIVING TISSUE • Skin Corrosion/Burns • Serious Eye Damage • Corrosive to Metals	USE APPROPRIATE STORAGE CONTAINERS AND ENSURE PROPER NON VENTING CLOSURES • Wear appropriate Personal Protective Equipment including respiratory protection
	**Exploding Bomb**	• Self-Reactive (Severe) • Organic Peroxide (Severe) • Explosive*	MATERIALS WHICH MAY EXPLODE DUE TO REACTION TO FIRE, SHOCK, FRICTION, HEAT, PUNCTURE, OR INCOMPATIBLE MATERIAL	HANDLE WITH CARE AVOIDING VIBRATION, SHOCKS AND SUDDEN TEMPERATURE CHANGES • Store in appropriate containers • Ensure storage containers are sealed • Store and work in designated areas
	**Skull and Crossbones**	• Acute toxicity (Fatal or toxic)	MATERIALS WHICH CAN CAUSE TOXICITY OR DEATH EVEN IN SMALL QUANTITIES	AVOID BREATHING FUMES AND VAPOURS AND SKIN CONTACT • Wear appropriate personal protective equipment • Work in well ventilated areas • Follow manufacturer's use, handling, storage, and disposal instructions to prevent acute exposure and adverse health effects
	N/A	• Not all hazard classes and categories have pictograms (e.g. Combustible Dusts, Simple Asphyxiant, and some less severe hazard categories)	MAY CAUSE UNCONSCIOUSNESS OR DEATH BY SUFFOCATION • Risk of dust explosion or exposure	DO NOT USE WITHOUT UNDERSTANDING THE HAZARD • Apply appropriate controls
	**Environment** (not mandatory)	• Aquatic Toxicity*	MAY BE HARMFUL TO AQUATIC LIFE OR CAUSE LONG-LASTING EFFECTS TO THE AQUATIC ENVIRONMENT	USE PRODUCT ACCORDING TO DIRECTIONS • Avoid release to the natural environment. • Dispose in accordance with all regulatory requirements and obligations

*Not required by WHMIS, but may be used

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Appendix D: Consumer Product Symbols Poster

Public Services Health & Safety Association™

CONSUMER PRODUCT SYMBOLS

These warning labels are used for household, science education kits and special products

	Hazard Category	Precautions	Degrees of Hazard	Label Warning
TOXIC PRODUCT	**Poisonous** May be lethal. *or* May cause serious and irreversible effects.	Do not get in eyes or on skin. Do not breathe fumes. Wear protective clothing and safety equipment as indicated on the label.	**Very toxic** **Toxic** **Harmful**	- Extreme Danger - Sales Restricted - Danger - Caution
CORROSIVE PRODUCT	**Causes Burns** Will cause chemical burns to the skin, eyes and lungs. May form dangerous fumes when mixed with other chemicals.	Do not mix with other chemicals. Do not get in eyes or on skin. Do not breathe fumes. Do not swallow. Wear protective clothing as indicated on the label.	**Very Corrosive** **Corrosive** **Irritant**	- Extreme Danger - Danger - Caution
FLAMMABLE PRODUCT	**Fire hazard** May ignite if exposed to a spark or flame or May spontaneously ignite	Read the specific instructions on the label. Use only in well ventilated areas. Keep away from flames and objects that spark. Store in a safe location.	**Very Flammable** **Flammable** **Spontaneously Combustible**	- Extreme danger - Danger - Caution
PRESSURIZED CONTAINER	**Explosion Hazard** Under Pressure may explode if heated. If ruptured hazardous contents will be released	Do not puncture. Do not burn. Store away from heat.		
QUICK SKIN BONDING ADHESIVES	**Bonds Skin Instantly**	Do not get in mouth, eyes or on skin.		

Example of Consumer Labelling

The symbols and hazard warnings must be on the front or main display panel of the container.

POISON DANGER CORROSIVE

These warnings may be located in a border anywhere on the displayed part of the container.

English	Français
warnings, precautions, first aid, and hazardous ingredients	avertissements, précautions, premiers soins, et ingrédients dangereux

Health & Safety ONTARIO | ESAQ | Municipal Health & Safety Association | Ontario Safety Association for Community & Healthcare

For More Information:

Public Services Health & Safety Association 4950 Yonge Street, Suite 902, Toronto ON M2N 6K1 416-250-2131 or 1-877-250-7444 www.pshsa.ca

ODCCP-POSAEN010810

Appendix E: WHMIS Policy

Purpose: The Workplace Hazardous Materials Information System (WHMIS) program provides **(Dental Practice Name)** and its workers with the information needed to ensure a safe working environment under the WHMIS regulation. The WHMIS program will be implemented according to the requirements under the WHMIS regulation to reduce the frequency, severity and costs associated with incidents and illness related to hazardous materials in the work environment.

Objectives:

- The WHMIS program will provide a uniform system for the proper labelling, handling, storage, use and safe disposal of hazardous materials in the dental practice.
- The WHMIS program will provide ready access to information in the form of current Safety Data Sheets (SDSs).
- The WHMIS program will provide for training and education of all workplace parties.

Responsibilities:

- **(Dental Practice Name)** will be responsible for implementing all elements of the WHMIS program including labels, SDSs, training and education.
- All supervisors are expected to work in accordance with the requirements of the WHMIS program.
- All workers will use the WHMIS information, control equipment and personal protective equipment provided to work safely to protect themselves, their co-workers, patients and the environment.

Education/Orientation:

- WHMIS training will be delivered to all staff at orientation, prior to commencing work, and annually as required if there is a change in job task with resulting change in potential for exposure.
- A worker's immediate supervisor will be responsible for delivering the job-specific component of the WHMIS orientation.
- All workers of **(Dental Practice Name)** will attend WHMIS information and training sessions and demonstrate knowledge of the program through successful completion of the training course and quiz, to verify knowledge transfer.

Record Keeping: The master copies of the SDSs will be maintained by **(name of designated person)**. The employer will maintain a written record of the review of the WHMIS program, and copies of training records (attendance sheets and quizzes).

Resources: (Dental Practice Name) will provide all regular workers, at no cost, with the necessary information, training and personal protective equipment required to perform their tasks safely.

Communication: Changes to the program will be communicated to all staff by posting the information on the health and safety bulletin board and addressing it as an agenda item at the general/safety meeting.

WHMIS posters depicting the symbols and associated risks will be posted in all work areas where there is a potential for exposure to hazardous materials. The SDSs will be readily available to all workers, on all shifts and will be located at the reception desk.

Program Evaluation and Review: The employer's designate, (name of designated person), will consult with the HSR/JHSC in the development, review and implementation of the WHMIS program. Safety, including WHMIS, will be a measurable index on the workers' annual performance appraisals.

Signature: _____ Title: _____ Date: _____

Appendix F: WHMIS Program Assessment Checklist

Instructions: Answer all questions with Yes or No. Not all questions may apply to all dental practices. A No response may indicate a need for improvement in your WHMIS program. Please note that this is not a compliance checklist.

Dental Practice: **Location:**	**Reviewed by:** **Date:**
General	
Have you conducted a WHMIS inventory?	__ Yes __No
Do you know which products fall under the WHMIS requirements?	__ Yes __No
Are existing engineering controls adequate to protect the worker and the environment?	__ Yes __No
Labels & Identification	
Do all containers of hazardous products have either a supplier or workplace label as appropriate?	__ Yes __No
If chemicals have been decanted into other containers, do all the containers have workplace labels?	__ Yes __No
Have you used a placard for any hazardous product not in a container (e.g. nitrous oxide or oxygen in a pipeline)?	__ Yes __No
Is all hazardous waste that is generated on-site identified?	__ Yes __No
SDSs	
Do you have supplier SDSs for all hazardous products?	__ Yes __No
Do you have the most current SDSs?	__ Yes __No
Can all workers access SDSs at all times?	__ Yes __No
Does the HSR/JHSC have access to the SDSs?	__ Yes __No
Training	
Have all workers attended annual training?	__ Yes __No
Is there a record of attendance and training tests?	__ Yes __No
Do all workers know how to read labels, SDSs, etc...?	__ Yes __No
Do all workers properly use, handle and dispose of chemicals? (If not, determine if retraining is necessary.)	__ Yes __No
Have all workers been trained in the use and maintenance of PPE?	__ Yes __No
Do workers know what to do in an emergency? (This could be verified with a mock drill.)	__ Yes __No
Is there a mechanism to review the worker-training program at least annually?	__ Yes __No

Appendix G: Hazardous Materials Inventory List

Dental Practice: Date Revised:

Name / Identifier	Manufacturer	Supplier	Hazardous Product (WHMIS)	Consumer Product	Location Used	Date of SDS

Completed by: _____ Date: _____

Instructions
1. List all chemicals, chemical compounds and chemical mixtures used or stored in your work area.
2. Update this inventory if a controlled product is imported/discontinued from use. The hazardous materials inventory should be verified at least annually. SDSs must be kept current and up to date. Reviewing this on an annual basis would be a good management practice.

Appendix H: WHMIS Quiz

Working on your own, please complete this quiz. It is designed to assess your understanding of the basic principles of WHMIS. You may refer to your handouts to complete the questions below. You have 20 minutes to complete this quiz.

1. TRUE OR FALSE

T or F a) Hand-washing is one of the best defenses against the accidental ingestion of hazardous materials in the workplace

T or F b) The employer is responsible for preparing supplier labels

T or F c) The worker should notify the supervisor/employer if an SDS has expired

T or F d) A workplace label must refer to the SDS

T or F e) Controlling a hazard by using personal protective equipment is not the preferred method

2. a) This symbol means (circle one):

A) Biohazardous infectious
B) Specific target organ toxicity
C) Oxidizing materials
D) Compressed gases

2. b) This symbol suggests I can protect myself by:

A) Wearing gloves
B) Working in a well ventilated area
C) Wearing eye protection
D) All of the above

3. The SDSs for the products I use are located:

_____

4. Review the SDS for *(enter one of your PRODUCT NAMES here)* and answer the following questions:

A) If I were working with (PRODUCT NAME), I would be required to wear:

_____

B) *(PRODUCT NAME)* can enter the body by:

_____

C) What is one acute effect of exposure to *(PRODUCT NAME)*?

_____

D) What is one chronic effect of exposure to *(PRODUCT NAME)*?

_____

E) Briefly describe the first-aid measures that would be taken if a worker's eyes were exposed to *(PRODUCT NAME)*.

_____

F) What would the workplace label include for *(PRODUCT NAME)*?

_____

Appendix I: Attendance Record

Date:	Training Aids Used (circle): VIDEO LECTURE QUIZ	
Employee Name	Job Title	Signature

Ontario Dental Association

WHMIS Program

A Guide for Dental Practices 2016-2017

Developed by the Public Services Health & Safety Association in collaboration with the Ontario Dental Association.

Public Services Health & Safety Association™

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