SAFE WORK PRACTICE – HAZARDOUS MATERIALS WHMIS

PURPOSE AND SCOPE

The purpose of this practice is to ensure the safe handling, storage, and use of hazardous materials in the workplace in accordance with the Workplace Hazardous Materials Information System (WHMIS) regulations and the Globally Harmonized System of Classification and Labelling of Chemicals (GHS7). This policy applies to all employees who may be exposed to hazardous materials in the course of their work, regardless of their position or location.

PREREQUISITES

Training: All personnel must have completed WHMIS training. A review of this practice followed by the WHMIS evaluation (10E) will be completed upon hire or when significant new data arises. New employee orientations (10A) include a discussion of the relevant hazardous materials and SDSs.

Inventory: Newtz management ensures that hazardous products in the workplace are identified, properly stored, and that current labels and SDSs are provided. SDS Inventory is reviewed annually, updated when new products are inventoried, and updated within 90 days when there is new information about safe use, handling storage or emergency response.

BEFORE USE

- Before working with hazardous materials, review the SDS instructions for the safe handling, storage, and use of these materials, as noted in the SSRA (2C).
- Ensure the emergency response plan (8A) is posted with locations of relevant controls. Review additional emergency response and evacuation procedures when applicable.

HAZARD IDENTIFICATION

All hazardous materials used in the workplace must be identified and classified in accordance with WHMIS regulations. WHMIS applies to two major groups of hazards **classes**: physical, and health.

- Physical hazards are based on the physical or chemical properties of the product – such as flammability, reactivity, or corrosivity to metals.
- Health hazards are based on the ability of the product to cause a health effect – such as eye irritation, or carcinogenicity.

Hazard **categories** use numbers and letters to communicate the severity of a product's risk. Hazard severity is ranked numerically (Category 1 is the highest risk) and alphabetically (1A is higher risk than 1B).

This information must be provided to employees in the form of labels on containers and Safety Data Sheets (SDSs).

Pictogram	Hazard and Category	Description
	**Flame** • Flammable gases Category 1A and 1B Flammable gas; Category 1A Chemically unstable gas (A and B); Category 1A Pyrophoric gas • Flammable aerosols (Category 1 and 2) • Flammable liquids (Category 1, 2 and 3) • Flammable solids (Category 1 and 2) • Pyrophoric liquids, solids and gases (Category 1) • Self-heating substances and mixtures (Category 1 and 2) • Substances and mixtures which, in contact with water, emit flammable gases (Category 1, 2 and 3) • Self-reactive substances and mixtures (Types B*, C, D, E and F) • Organic peroxides (Types B*, C, D, E and F) • Chemicals under pressure (Category 1** and 2**)	Flammable products ignite (catch fire) easily, and the main hazards are fire or explosion. Self-heating and pyrophoric products can catch fire if exposed to air, if pyrophoric the ignition is quicker. Self-reactive products may react on their own to cause a fire or explosion, or may cause a fire or explosion if heated. Organic peroxides may cause a fire or explosion if heated.
	**Flame Over Circle** • Oxidizing gases (Category 1) • Oxidizing liquids (Category 1, 2 and 3) • Oxidizing solids (Category 1, 2 and 3)	These three classes cover oxidizers, which may cause or intensify a fire or cause a fire or explosion.
	**Gas Cylinder** Gases under pressure: • Compressed gas • Liquefied gas • Refrigerated liquefied gas • Dissolved gas Chemicals under pressure (Category 1**, 2** and 3)	Hazardous because of the high pressure inside the cylinder or container. The cylinder or container may explode if heated. Refrigerated liquefied gases are very cold and can cause severe cold (cryogenic) burns or injury.

Pictogram	Hazard and Category	Description
	**Corrosion** • Corrosive to metals (Category 1) • Skin corrosion/irritation – Skin corrosion (Category 1, 1A, 1B and 1C) • Serious eye damage/eye irritation – Serious eye damage (Category 1)	Products may be corrosive (chemically damage or destroy) to metals. Products that cause severe skin burns or irritation. Products that cause serious eye damage or irritation.
	**Exploding Bomb** • Self-reactive substances and mixtures (Types A and B*) • Organic peroxides (Types A and B*)	Products may react on their own to cause a fire or explosion or may cause a fire or explosion if heated.
	**Skull and Crossbones** Acute toxicity: • Oral (Category 1, 2 and 3) • Dermal (Category 1, 2 and 3) • Inhalation (Category 1, 2 and 3)	Products are fatal, toxic or harmful if inhaled, following skin contact, or if swallowed. Acute toxicity refers to effects occurring following skin contact or ingestion exposure to a single dose, or multiple doses given within 24 hours, or an inhalation exposure of 4 hours. Can result from exposure to the product itself, or to a product that, upon contact with water, releases a gaseous substance that is able to cause acute toxicity.
	**Health Hazard** • Respiratory or skin sensitization – Respiratory sensitizer (Category 1, 1A and 1B) • Germ cell mutagenicity (Category 1, 1A, 1B, 2) • Carcinogenicity (Category 1, 1A, 1B, and 2) • Reproductive toxicity (Category 1, 1A, 1B, 2) • Specific Target Organ Toxicity – Single exposure (Category 1 and 2) • Specific Target Organ Toxicity – Repeated exposure (Category 1 and 2) • Aspiration hazard (Category 1)	Respiratory sensitizer is a product that may cause allergy or asthma symptoms or breathing difficulties if inhaled. Skin sensitizer is a product that may cause an allergic skin reaction. Products may cause or are suspected of causing genetic defects to body cells that can be passed on to future generations, cancers, fertility or the unborn, damage to organs, lungs, chemical pneumonia, drowsiness or dizziness.

Pictogram	Hazard and Category	Description
	• Acute toxicity – Oral, Dermal, Inhalation (Category 4) • Skin corrosion/irritation – Skin irritation (Category 2) • Serious eye damage/eye irritation – Eye irritation (Category 2 and 2A) • Respiratory or skin sensitization – Skin sensitizer (Category 1, 1A and 1B) • Specific target organ toxicity – Single exposure (Category 3)	See above.
	**Biohazardous Infectious Materials** (Category 1)	These materials are microorganisms, nucleic acids or proteins that cause or is a probable cause of infection, with or without toxicity, in humans or animals.
NO PICTOGRAM REQURED	• Aerosols - Category 3 • Flammable gases – Category 2 • Flammable liquids – Category 4 • Self-reactive substances and mixtures – Type G • Organic peroxides – Type G • Combustible dusts – Category 1 • Simple Asphyxiants – Category 1 • Serious eye damage/eye irritation – Eye Irritation – Category 2B • Reproductive toxicity – Effects on or via lactation	

* Both the Flame and Explosive pictograms are used for Self-reactive substances and mixtures (Type B) and Organic peroxides (Type B).
** Both the Flame and Cylinder pictograms are used for Chemicals under pressure, categories 1 and 2.
NOTE: Physical and health hazards not otherwise classified are required to have a GHS pictogram that is appropriate to the hazard identified.

LABELLING

All containers of hazardous materials must be labelled in accordance with WHMIS regulations. Labels must be prominently visible and easy to read. In most cases, suppliers are responsible for labelling the hazardous products that they provide to customers; however, a workplace label will be required if:

- a hazardous product is produced at the workplace and used in that workplace,
- a hazardous product is decanted into another container and not used immediately, or
- a supplier label becomes lost or illegible.

Label Information	Description	Supplier Label	Workplace Label
Product Identifier	The brand name, chemical name, common name, generic name or trade name of the hazardous product.	Full description required	Product name as per SDS
Initial Supplier Identifier	The name, address and telephone number of either the Canadian manufacturer or the Canadian importer.	Full description required	Not required
Pictograms	Hazard symbol within a red "square set on one of its points".	Required	May be included
Signal Word	Word used to alert the reader to a potential hazard and to indicate the severity of the hazard. “Danger” indicates high hazard, “Warning” is used for less severe hazards.	Required	May be included
Hazard Statements	Standardized phrases which describe the nature of the hazard posed by a hazardous product. The statements are short and describe the most significant hazards of the product	Required	Recommended
Precautionary Statements	Standardized phrases that describe measures to be taken to minimize or prevent adverse effects resulting from exposure to a hazardous product or resulting from improper handling or storage of a hazardous product. These statements can include instructions about storage, disposal, handling, first aid, personal protective equipment and emergency measures.	Required	Required
Supplemental Label Information	Some supplemental label information is required based on the classification of the product.		

SAFETY DATA SHEETS

Safety Data Sheets (SDSs) are summary documents that provide information about the hazards of a product and advice about safety precautions. SDSs provide more detailed hazard information about the product than the label. Use this information to identify the hazards of the products you use and to protect yourself from those hazards, including safe handling and emergency measures. SDSs tell users what the hazards of the product are, how to use the product safely, what to expect if the recommendations are not followed, how to recognize symptoms of exposure, and what to do if emergencies occur. SDSs are usually written by the manufacturer or supplier of the product and must be updated when there is new information that changes how the hazardous product is classified, or when there are changes to the way you will handle, store or protect yourself from the hazards of the product.

Section and Heading		Specific Information Elements
1	**Identification**	• Product identifier (Product name) • Other means of identification (product family, synonyms, etc.) • Recommended use • Restrictions on use • Canadian 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 or subcategory) 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 (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 fire-fighters
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 (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, including acute toxicity estimates (ATEs)
12	**Ecological information**	• Ecotoxicity • Persistence and degradability • Bio accumulative 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

*These impurities and stabilizing products are those that are classified in a health hazard class and contribute to the classification of the material or substance.
**Each ingredient in the mixture must be listed when it is classified in a health hazard class and is present above the concentration limit that is designated for the hazard class in which it is classified or is present in the mixture at a concentration that results in the mixture being classified in any health hazard class.
***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.

REVIEW: Canadian Centre for Occupational Health and Safety: WHMIS GHS