WHMIS - Glossary

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Note: This document explains common terms used in WHMIS. Not all terms are listed here. These definitions are not intended to be a legal interpretation of legislatively defined terms. The definitions provided in this glossary are not always identical to the regulatory definitions provided in the HPA or HPR. For legal definitions, consult the Hazardous Products Act (HPA), the *Hazardous Products Regulations (HPR)*, and the legislation in your jurisdiction.

This glossary has three parts:

Accidental release measures – the steps to be taken in response to spills, leaks, or releases of a hazardous product to prevent or minimize adverse effects on people and property.

ACGIH® – see American Conference of Governmental Industrial Hygienists.

Acid, Acidic – See pH.

Acute – sudden or brief. “Acute" can describe either the duration (length) of an exposure or a health effect. An acute exposure is a short-term exposure (lasting for minutes, hours or days-less than 14 days). An acute health effect is an effect that develops immediately or within minutes, hours or even days after an exposure. (See also “Chronic”.)

Acute toxicity – hazardous products classified in this hazard class cause serious health effects, including death, if swallowed, in contact with skin and/or if inhaled. Acute toxicity refers to adverse effects following:

- oral (swallowing) or dermal (skin) administration of a single dose, or multiple doses given within 24 hours, or
- an inhalation exposure of 4 hours or of a duration that is converted to four hours.

Acute inhalation toxicity could result from exposure to the hazardous product itself, or to a product that, upon contact with water, releases a gaseous substance that is able to cause acute toxicity. (See also “LC50” and “LD50”.)

Acute toxicity estimate (ATE) – a numerical value that is used to evaluate acute toxicity. For a substance, the ATE is the LC50 or the LD50, if available, or a converted acute toxicity point estimate that is based on an experimentally obtained range or the classification category. For a mixture, the ATE is calculated for oral, dermal and inhalation toxicity based on the ATE values for all relevant ingredients and the percentage concentration in the product.

Administrative controls – controls that alter the way the work is done, including the timing of work, policies and other rules, and work practices such as standards and operating procedures (including training, housekeeping and equipment maintenance).

Aerosols –non-refillable containers containing a gas compressed, liquefied, or dissolved under pressure, with or without a liquid paste or powder and fitted with a release device that allows the components to be ejected as solid or liquid particles in suspension in a gas, as a foam, paste or powder or in a liquid state or in a gaseous state.

AIHA® – AIHA® stands for American Industrial Hygiene Association.

Alkali, Alkaline – see pH.

American Conference of Governmental Industrial Hygienists (ACGIH®) – an international association of occupational hygienists that develops guidelines for the practice of occupational hygiene, including Threshold Limit Values (TLVs®) and Biological Exposure Indices (BEIs®). This publication serves as the basis for occupational exposure limits in many jurisdictions around the world.

ANSI – ANSI stands for the American National Standards Institute.

Asphyxiant – see Simple asphyxiants.

Aspiration hazards –liquids or solid products classified in this hazard class may be fatal if they enter directly through the mouth or nose, or indirectly from vomiting, into the trachea and lower respiratory system.

Aspiration toxicity includes severe acute effects, such as chemical pneumonia and varying degrees of pulmonary injury or death.

Auto-ignition temperature – the lowest temperature at which a product self-ignites when no spark or flame is present.

Base, Basic – See pH.

Bailment – the transfer of possession without transferring ownership. (See also “Sell”.)

Bioaccumulative potential - describes the potential for the substance or certain components of a mixture to accumulate in animal or plant life, and possibly pass through the food chain.

Biological Exposure Indices (BEIs®) - guidance values developed by ACGIH to assess biological monitoring results. Biological monitoring involves the measurement of the concentration of a chemical indicator (such as the substance itself or a chemical formed from the substance by the body) in body components (e.g., blood, urine) of people who have been exposed to the substance. Biological monitoring is used to indicate how much of the substance has been absorbed into the body. The BEI generally identifies a concentration below which nearly all workers should not experience adverse health effects.

Biohazardous infectious materials – hazardous products that are classified in this hazard class are products that contain microorganisms, nucleic acids or proteins that cause or are a probable cause of infection, with or without toxicity, in humans or animals.

Boiling point – see Initial boiling point.

Bulk shipment - a shipment of a hazardous product that is contained in any of the following, without intermediate containment or intermediate packaging,

- a vessel that has a water capacity equal to or greater than 450 l,
- a freight container, road vehicle, railway vehicle or portable tank,
- the hold of a ship, or
- a pipeline.

Canadian Centre for Occupational Health and Safety (CCOHS) – an occupational health and safety information service with the mandate to promote workplace health and safety, and encourage attitudes and methods that will lead to improved worker physical and mental health. CCOHS provides a wide range of products and services, including free access to a large collection of factsheets on occupational health and safety topics.

CANUTEC - CANUTEC stands for Canadian Transport Emergency Centre, which is operated by the Transportation of Dangerous Goods (TDG) Directorate of Transport Canada. CANUTEC provides information and communications assistance in case of transportation emergencies involving dangerous goods. It is accessible in Canada by telephone, 24 hours a day, year-round at (613) 996-6666 (collect) or *666 on a cell phone.

Carcinogenic – refers to being liable (likely) to lead to cancer or to increase the incidence of cancer.

Carcinogenicity – hazardous products classified in this hazard class may cause cancer or are suspected of causing cancer. Carcinogenicity means the production of cancer or an increase in the incidence of cancer occurring after exposure to a mixture or substance.

CAS Registry Number –the Chemical Abstracts Service Registry Number. This identification number that contains up to 10 digits is assigned to a chemical by the Chemical Abstracts Service, a division of the American Chemical Society. The CAS number is a unique identifier that designates only one substance.

Ceiling (C) – See Occupational exposure limit values.

Chemical name – a scientific designation of a material or substance:

- that is made according to the naming rules of either the Chemical Abstracts Service, a division of the American Chemical Society, or the International Union of Pure and Applied Chemistry, or
- that is internationally recognized and that clearly identifies the material or substance.

Chemical stability – the ability of a product to remain unchanged under normal ambient and anticipated storage and handling conditions of temperature and pressure. An unstable product may decompose, burn or explode under normal environmental conditions. Any indication that the product is unstable gives a warning that special handling and storage precautions may be necessary.

Chemically unstable gas – a flammable gas that is liable to react explosively even in the absence of air or oxygen.

Chemicals under pressure – relates to hazardous products that are liquids or solids that are packaged in a receptacle (other than an aerosol dispenser) and that are pressurized with a gas at a gauge pressure of 200 kPa or more at 20°C. This hazard class excludes any gas under pressure as defined by the *Hazardous Products Act* and regulations.

Chronic– long-term or prolonged. “Chronic” can describe either the length (duration) of an exposure or a health effect. A chronic exposure is a long-term exposure (lasting for months or years). A chronic health effect is an adverse health effect resulting from long-term exposure or a persistent adverse health effect resulting from a short-term exposure.

Closed cup – a test procedure used to measure the flash point of a product, using a closed cup, which prevents the vapour from escaping. A closed cup flash point is generally lower than a flash point measured using an open cup method.

CNS – CNS stands for central nervous system.

Coefficient of water/oil distribution – the ratio of a product's distribution between the water and oil portions of a mixture of water and oil. A value of less than 1 indicates that the product is more soluble in oils. A value of greater than 1 indicates that the product is more soluble in water.

Combustible dusts – hazardous products classified in this hazard class may form combustible dust concentrations in air. These products are in the form of finely divided solid particles that, upon ignition, are liable to catch fire or explode when dispersed in air.

Combustible liquids –a term used under WHMIS 1988. The current WHMIS legislation no longer formally defines combustible liquids. They are now included in the Flammable Liquids hazard class. Combustible liquids will not ignite or burn as readily as categories 1 and 2 of flammable liquids.

Complex mixture – a mixture that has a commonly known generic name and that is:

- naturally occurring,
- a fraction of a naturally occurring mixture that results from a separation process, or
- a modification of a naturally occurring mixture or a modification of a fraction of a naturally occurring mixture that results from a chemical modification process.

Petroleum distillates and turpentine are examples of complex mixtures. A complex mixture can be comprised of many individual ingredients whose concentrations may vary from batch to batch.

Conditions to avoid – conditions such as heat, pressure, shock, static discharge, vibrations or other physical stresses that might result in a hazardous situation involving the product.

Confidential business information (CBI) – also known as “trade secrets” - certain information does not have to be disclosed on a WHMIS SDS and/or label if the supplier or employer believes that providing the information could affect (hurt) their business. Health Canada must approve the claim, which must follow the rules set out under the *Hazardous Materials Information Review Act*. CBI examples include the chemical identity or concentration of an ingredient in a hazardous product.

Container – includes a bag, barrel, bottle, box, can, cylinder, drum or similar package or receptacle but does not include a storage tank. (See also “Outer container”.)

Control parameters – include occupational exposure limits and biological limit values. Depending on their source, occupational exposure limit values have different names and often have different numerical values. (See also “Occupational exposure limit values”.)

Controls – measures used to protect workers from exposure to a hazardous product. Control measures include engineering controls (e.g., ventilation), administrative controls (e.g., scheduling, training) or personal protective equipment.

Corrosive to metals – hazardous products classified in this hazard class are liable to damage or destroy metal by chemical action.

Critical temperature – the temperature above which a pure gas cannot be liquefied, regardless of the degree of compression.

Decomposition temperature – the temperature at which the product chemically decomposes.

Density – the weight of a product for a given volume. Density is usually given in units of grams per millilitre (g/mL) or grams per cubic centimetre (g/cc). The volume of a product in a container can be calculated from its density and weight.

Dilution ventilation – See Ventilation.

Disposal considerations – information for safe handling for disposal, and recommended methods for disposal of the hazardous product, including any contaminated packaging.

Engineering controls – controls used to remove the hazardous conditions or separate a worker from a hazard. These controls include design of or modifications to plants, equipment, or processes to reduce or eliminate hazards (e.g., process enclosure, isolation of an emission source, or ventilation).

Evaporation rate – a term that indicates how quickly a product evaporates compared to n-butyl acetate. The evaporation rate of butyl acetate is 1. A value greater than 1 means the product has a high evaporation rate and will mix with air very quickly.

Explosive limits – see Lower explosive limit (LEL) or Lower flammability limit (LFL) and Upper explosive limit (UEL) or Upper flammability limit (UFL).

Exposure limit values – see Occupational exposure limit values.

Extinguishing media – agents which can put out fires. Common extinguishing agents are water, carbon dioxide, dry chemical, and "alcohol" foam. It is important to know which extinguishers can be used on fires caused by the hazardous products in the workplace (suitable extinguishing media) so they can be made available at the worksite. It is also important to know which agents cannot be used (unsuitable extinguishing media) since an incorrect extinguisher may not work or may create a more hazardous situation. If several products are involved in a fire, an extinguisher effective for all of the products should be used.

Eye irritation – hazardous products classified for Eye irritation, as part of the Serious eye damage/eye irritation hazard class, produce changes in the eye after exposure of the eye to a substance or mixture which are fully reversible within an observation period of 21 days after exposure. Effects could include redness, itching or swelling.

First-aid measures – emergency care given immediately to a person who is experiencing symptoms of exposure to the product.

Flammable (or flammability) limits – see Lower explosive limit (LEL) or Lower flammability limit (LFL) and Upper explosive limit (UEL) or Upper flammability limit (UFL).

Flammable – able to ignite (catch fire) easily.

Flammable gases – hazardous products classified in this hazard class are gases that have a flammable range when mixed with air (at 20° C and 101.3 kPa).

Flammable liquids – hazardous products classified in this hazard class are liquids that have a flash point of not more than 93°C.

Flammable solids – hazardous products classified in this hazard class are readily combustible solids or solids that are liable to cause or contribute to fire through friction. A “readily combustible solid” means a powdered, granular or pasty hazardous product that can be easily ignited by brief contact with an ignition source and, when ignited, has a flame that spread rapidly.

Flash back – occurs when a trail of flammable gas, vapour or aerosol is ignited by a distant spark, flame or other source of ignition. The flame then travels back along the trail of gas, vapour or aerosol to its source. A serious fire or explosion could result.

Flash point – the lowest temperature at which the application of an ignition source causes the vapours of a liquid to ignite (catch fire). The lower the flash point, the more easily the product will ignite and burn.

Fugitive emission – a gas, liquid or solid, vapour, fume, mist, fog or dust that escapes from process equipment or from emission control equipment or form a product where workers may be readily exposed to it.

Freezing point – the temperature below which a liquid product becomes solid. (See also “Melting point”.)

Fumes – very small, airborne, solid particles formed by the cooling of a hot vapour. For example, a hot zinc vapour may form when zinc-coated steel is welded. The vapour then condenses to form fine zinc fume as soon as it contacts the cool surrounding air. Fumes are smaller than dusts and are more easily breathed into the lungs.

Gases under pressure – hazardous products classified in this hazard class are compressed gases, liquefied gases, dissolved gases, or refrigerated liquefied gases. Compressed gases, liquefied gases and dissolved gases may explode if heated. Refrigerated liquefied gases may cause cryogenic (severe cold) burns or injury.

These products consist of a gas contained in a receptacle under a pressure of 200 kPa or more at 20°C, or that is liquefied, or liquefied and refrigerated, but excludes any gas that has an absolute vapour pressure of not more than 300 kPa at 50°C or that is not completely gaseous at 20° C and 101.3 kPa. Note: Under GHS (version 7), aerosols must not be classified as gases under pressure.

General ventilation – see Ventilation.

Germ cell mutagenicity – hazardous products classified in this hazard class cause or may cause an increased occurrence of heritable gene mutations, including heritable structural and numerical chromosome aberrations in germ cells, occurring after exposure to a mixture or substance.

Globally Harmonized System of Classification and Labelling of Chemicals (GHS) –an international system that defines and classifies the hazards of chemical products, and communicates health and safety information on labels and SDSs in a standardized way. The GHS is developed through consensus at the United Nations. The GHS “purple book” is a guidance document. Only the elements of GHS that have been explicitly adopted in legislation (e.g., in the HPR) are enforceable.

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