CHEMICAL HAZARD COMMUNICATION PROGRAM

General Policy

In accordance with the Washington Administrative Code (WAC) 296-901-140 , Hazard Communication, this program has been developed and implemented by Whitman College.

The program's purpose is to ensure each employee is informed and trained on Hazard Communication, the location(s) and hazardous properties of the chemicals used in their workplace, and the protective controls, practices, and equipment required.

This program applies to all locations where employees might be exposed to hazardous chemicals during normal working conditions or an emergency situation except in laboratories[1] as provided at WAC 296-901-14004(3).

The Chemical Hygiene Officer has overall responsibility for the program. This program is maintained as an appendix to the College's Accident Prevention Program.

Chemical Inventory List

Each department[2] using hazardous chemicals should maintain a list of those chemicals used or known to be present by the department, and update the list as necessary. The list may be compiled for the workplace as a whole or for individual work areas. The list should be updated upon receipt of any hazardous chemical. The identity of each chemical on the list must match the product identifier on the container label and on the SDS.

[1] Laboratory shall mean any scientific laboratory or art studio where hazardous chemicals are used for any purpose other than building or equipment maintenance. Chemicals used for building or equipment maintenance are fully subject to this program within laboratories.

[2] The term "department" is presumed to mean any distinct administrative unit of the College

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Container Labeling

The user shall ensure all primary and secondary containers of hazardous chemicals in their area are properly labeled. Labels on *containers from the manufacturer or distributor* are to list the following six items:

1) Product identifier (Identity of the hazardous chemical(s) on a label or SDS);
2) Signal word (Danger or Warning);
3) Hazard statements;
4) Pictograms (see Appendix 2);
5) Precautionary statements; and
6) Name, address, and telephone number of the chemical manufacturer, importer, or other responsible party.

All *secondary containers* are to be labeled, tagged or marked with, at minimum:

- The product identifier; and
- Hazard information from the manufacturer's label and/or SDS.

Additional information from the six items listed above may be used as necessary on the secondary label to enhance hazard communication. Information not on the label must be conveyed to the employee(s) through information and training.

Safety Data Sheets (SDS)

A SDS (formerly referred to as MSDS and now structured differently for compliance with the Globally Harmonized System of Classifying and Labeling, or GHS) is any printed or written document obtained or developed by the chemical manufacturer or importer for use by the end user of the product. SDSs state important information about the product including:

- Identification of the chemical name(s) and common name(s);
- Chemical composition/ingredient information;
- Physical, health, or other known hazards;
- Exposure controls and personal protection;
- Entry route(s);
- Physical and chemical properties;
- Permissible exposure limit(s); and
- Precautions or controls for safe handling and storage.

The document also includes emergency first aid procedures, the date the SDS was prepared or last revised, and the name, address, and telephone number of the chemical manufacturer, importer, or other responsible party.

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Purchasing departments are responsible for obtaining Safety Data Sheets for the department or unit. SDSs are required when new chemicals are procured. SDSs may be obtained by contacting the manufacturer or supplier, or by searching the internet.

SDSs are available at MSDSonline to all employees for review during each work shift. If SDSs are not available, contact your supervisor before using a hazardous chemical.

Employee Information and Training

Supervisors are responsible for ensuring employees are trained prior to using, or potentially being exposed to hazardous chemicals. New employees should receive initial training on the Hazard Communication within 10 days of starting work.

Additional training shall be conducted when a new chemical hazard is introduced into the workplace. Training will be conducted before any chemical is used. Employee training is to be documented by recording the employee names, and the date and content of the training. Refresher training shall be conducted at least annually, and for impacted employees after any known or suspected accidental or unanticipated exposure.

The following training and information shall be provided to each employee covered by this program:

- A summary of the standard and the purpose, location and availability of the written program, the list of hazardous chemicals, and associated SDSs (a summary of the standard is at the end of this program).
- Information identifying any operations in employee work areas where hazardous chemicals are present.
- Information and training on reading chemical labels and reviewing SDSs to obtain appropriate hazard information. The glossary at the end of this program lists some common SDSs terms.
- Information and training on the physical and health hazards and/or other hazards of the chemicals in the work area, including the likely symptoms or effects of overexposure. The glossary at the end of this program lists some common physical, health and other hazard terms.
- Training on the methods and observation techniques used to determine the presence of a hazardous chemical release. Detection methods may include monitoring devices, visual appearances or odors.
- Training on the measures the department has implemented to minimize employee exposure to hazardous chemicals. These measures may include

engineering controls, specific work practices employees must follow and the use of personal protective equipment to minimize chemical exposure.
- Tasks requiring respiratory protection equipment shall not be performed by College employees.
  - Contractor work requiring respiratory protection equipment shall be performed in accordance with the contractor's Respiratory Protection Program in accordance with WAC 296.
- Training on emergency procedures to take in the event an employee is exposed to a hazardous chemical.

Chemical Spills

Employees may clean-up chemical spills ONLY when all of the following conditions are met:
- Employee(s) attempting cleanup are attendant at the time and location of the spill; and
- The identity of the chemical is known and the spill can be cleaned-up in ten minutes or less; and
- Spill cleanup procedures for the chemical(s) involved are documented; and
- Employees attempting cleanup routinely work with the chemical and are trained to safely clean up spills of it; and
- Employees can clean the spill up safely using only the type of personal protective equipment they use when working with that chemical in the course of their normal duties; and
- Appropriate clean-up supplies are readily accessible; and
- The chemical does not have a Ceiling Limit listed in WAC 296-841 or will not create an Immediate Danger to Life and Health (IDLH) atmosphere. IDLH information can be found in the NIOSH Pocket Guide to Chemical Hazards.

If any of the above conditions cannot be met immediately withdraw from the impacted area and call 911.
  - Stand by in a safe location until emergency response personnel arrive and provide further instructions

Clean-up materials shall be evaluated by EHS prior to disposal[3].

Employees may not attempt to clean-up elemental mercury spills of any volume. Contact EHS for assistance.

[3] Applies to both Whitman and contractor generated cleanup materials

Maintenance and Custodial Work in Laboratories

Maintenance and custodial employees[4] are reasonably expected to perform their duties in a variety of locations across campus. Some locations such as laboratories may contain hazardous chemicals they don't normally work with and which, if an exposure should occur, may present health hazards to them. In order to ensure maintenance and custodial staff are not exposed to chemical hazards the following conditions apply;

- Custodial employees must be trained on specific hazards and conditions in laboratory and chemical stockrooms before beginning to work in them, and their training must be updated if new hazards are introduced.
- Maintenance employees must obtain a work order approved by their supervisor to perform work in laboratories or chemical stockrooms.
- Employees must be trained to recognize potentially hazardous materials and conditions in each laboratory space where they work.
- Employees may not work with, manipulate, or move hazardous chemicals or equipment belonging to the laboratory unless authorized by their supervisor.
- Employees may not enter a workspace where a chemical spill has occurred until that spill has been cleaned up sufficiently to protect their health and safety.
    - Signs of a chemical spill include but are not limited to strong and unusual odors, unexplained mist or smoke, and pools of liquid or uncontained solids on floors or countertops
    - Call 911 if you discover a suspected hazardous chemical spill
- Employees may not empty trash cans or remove waste containers, boxes or bags bearing visible uncontained sharps or broken glass, or chemicals[5].
- If a chemical exposure occurs immediately seek medical attention
    - Call 911.
    - Use emergency shower and/or eye wash equipment if splashed with a hazardous chemical
    - Do not leave the immediate area of the incident
    - Do not attempt to self-transport or transport other contaminated persons
- Report spills and potential chemical exposures using the College's Incident Report Form

[4] This portion of the program also applies to contractor personnel

[5] Plastic pipette tips and empty chemical containers are acceptable for disposal in these receptacles; do not search or manipulate containers. If a problem is suspected leave the container and contact your supervisor

- In order to safeguard maintenance and custodial employees, laboratory personnel shall ensure hazardous materials are stored and used in such a manner that they do not present a hazard to workers. This includes but is not limited to the following;
    - Use volatile organic chemicals in working fume hood(s)
    - Close or cover chemical containers, including waste containers, when not in active use
    - Keep hazardous materials off floors and from under sinks
    - Keep aisle spaces clear
    - Do not place chemical laden glassware or other apparatus in sinks
    - Keep emergency shower and eyewash access areas free of obstructions
- Laboratory staff shall, upon request, remove or relocate hazardous materials and equipment to facilitate safe working conditions for maintenance and custodial workers.

Personal Protective Equipment (PPE)

Supervisors shall evaluate chemical hazards and select suitable PPE for each work task using information from the SDSs, container labeling and other resources as necessary. Employees shall be trained to use selected PPE. To the maximum extent practical engineering and administrative controls shall be applied to tasks prior to conduct of PPE evaluations.

On-Site Contractors

Contractors may work within and around the College's facilities. The College shall, to the maximum extent possible, remove hazardous materials from the impacted workspace(s) and will inform contractor(s) of any remaining College owned hazardous chemicals present.

Contractors in the course of their work may not expose the College's employees to hazardous chemicals.

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Hazardous Non-Routine Tasks

Periodically, employees may be required to perform non-routine tasks involving hazardous chemicals. Prior to starting work on any non-routine task the supervisor or designee shall conduct a hazard assessment and provide affected employees with the following information and training:

- The specific hazards related to the non-routine tasks
- PPE and other protective measures required
- Steps the department is taking to reduce chemical hazards
- Emergency procedures

Hazardous Substances in Unlabeled Pipes and Process Equipment

Employees required to work on or near unlabeled pipes and/or process equipment will be informed of the substances in the pipes and/or process equipment (or substances that can be reasonably expected to be present), any potential hazards and protective measures. Contact your supervisor if you encounter equipment or piping and are not sure of the contents.

Chemical Exposure Incident Procedure

In the event an employee may have been potentially overexposed (inhalation, ingestion, injection, or dermal contact) to a hazardous chemical, after the necessary medical care has been provided, the supervisor must complete an Incident Report Form. The following information should be included on the form: the specific chemical(s), the duration of the exposure, the type of exposure (inhalation, ingestion, injection, or dermal contact), and personal protective equipment used. The form shall be retained for 30 years post-employment as an employee exposure record.

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Employee Exposure Records

Washington Administrative Code 296-800-180 specifies applicable SDSs to be a part of employee exposure records which must be preserved for at least 30 years post-employment.

The SDSs for chemicals no longer used by the College, or chemicals which are used but no longer produced, shall be retained and maintained for 30 years. This includes MSDSs for chemicals which ceased being used or produced before the June 1, 2015 transition to the SDS format compliant with WAC 296-901.

Each department supervisor or designee will provide to their employees, at the time of initial employment and annually thereafter, the following information:

- The existence, location and availability of the inactive SDSs and/or MSDSs.
- The supervisor or designee is responsible for maintaining and providing access to the SDSs and/or MSDSs.
- The employee has the right to access the SDSs and/or MSDSs.

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Chemical Inventory List

Material for which an SDS or MSDS is present in the College's MSDSonline web site shall be presumed to be in inventory. Departments may maintain a local list of hazardous chemicals present in storage and in use by their employees using the example form below, or by similar means so long as the information on the example form is provided.

Trade/Chemical Name	Department/Location of Chemical	SDS On File

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Chemical Hazard Communication Standard Summary

The Hazard Communication Standard is based on a simple concept - that employees have both the need and right to know the identities and hazards of the chemicals they are potentially exposed to when working. They also need to know what protective measures are required. This knowledge should reduce work-related injuries and illnesses caused by chemical exposure.

The Hazard Communication Standard establishes uniform requirements incorporating GHS to assure that the hazards of all chemicals imported, produced or used in U.S. workplaces are evaluated. The hazard information and associated protective measures are to be transmitted to affected employers and potentially exposed employees.

Chemical manufacturers and importers must convey the hazard information they learn from the evaluations to employers by labels on containers and SDSs. All covered employers must have a hazard communication program to convey this information to their employees through container labeling, SDSs, information and training.

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APPENDIX 1: Glossary

Acute Toxicity: Refers to those adverse effects occurring following oral or dermal administration of a single dose of a substance, or multiple doses given within 24 hours, or an inhalation exposure of 4 hours.

Carcinogen: A substance or mixture of substances which induce cancer or increase its incidence.

Chemical: Any substance, or mixture of substances.

Combustible Liquid: A liquid having a flashpoint above 140° F and less than or equal to 199.4° F.

Common Name: Any designation or identification such as code name, code number, trade name, brand name or generic name used to identify a chemical other than by its chemical name

Container: Any bag, barrel, bottle, box, can, cylinder, drum, reaction vessel, storage tank, or the like that contains a hazardous chemical. For purposes of this section, pipes or piping systems, and engines, fuel tanks, or other operating systems in a vehicle, are not considered to be containers.

Corrosive: A chemical that causes visible destruction of, or irreversible alterations in, living tissue by chemical action at the site of contact.

Flammable Liquid: A liquid having a flashpoint of not more than 140^0 F.

Flashpoint: The minimum temperature at which a material ignites when exposed to a source such as flame or spark.

Hazard Category: means the division of criteria within each hazard class, e.g., oral acute toxicity and flammable liquids include four hazard categories. These categories compare hazard severity within a hazard class and should not be taken as a comparison of hazard categories more generally.

Hazard Not Otherwise Classified (HNOC): An adverse physical or health effect identified through evaluation of scientific evidence during the classification process that does not meet the specified criteria for the physical and health hazard classes addressed in this section. This does not extend coverage to adverse physical and health effects for which there is a hazard class addressed in this section, but the effect either falls below the cut-off value/concentration limit of the hazard class or is under a GHS hazard category that has not been adopted by OSHA (e.g., acute toxicity Category 5).

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Hazard Statement: A statement assigned to a hazard class and category that describes the nature of the hazard(s) of a chemical including, where appropriate, the degree of hazard.

Hazardous Chemical: Any chemical which is classified as a physical or a health hazard, a simple asphyxiant, combustible dust, pyrophoric gas, or hazard not otherwise classified.

Health Hazard: A chemical which is classified as posing one of the following hazardous effects:

- Acute toxicity (any route of exposure);
- Skin corrosion or irritation;
- Serious eye damage or eye irritation;
- Respiratory or skin sensitization;
- Germ cell mutagenicity;
- Carcinogenicity;
- Reproductive toxicity;
- Specific target organ toxicity (single or repeated exposure); or
- Aspiration hazard.

The criteria for determining whether a chemical is classified as a health hazard are detailed in WAC 296-901-14022, Appendix A--Health hazard criteria.

Immediate Use: Means that the hazardous chemical will be under the control of and used only by the person who transfers it from a labeled container and only within the work shift in which it is transferred.

Irritant: A chemical, which is not corrosive, that causes a reversible inflammatory effect on living tissue by a chemical action at the site of contact.

LEL, or LFL: Lower Explosive Limit, or Lower Flammable Limit, of a vapor or gas; the lowest concentration that will produce a flash of fire when an ignition source is present.

Mutagen: A substance or agent capable of altering the genetic material in a living cell.

Oxidizer: A chemical that initiates or promotes combustion in other materials, causing fire either by itself or through the release of oxygen or other gases.

PEL: Permissible Exposure Limit.

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Physical Hazard: a chemical that is classified as posing one of the following hazardous effects:

- Explosive;
- Flammable (gases, aerosols, liquids, or solids);
- Oxidizer (liquid, solid or gas);
- Self-reactive;
- Pyrophoric (liquid or solid);
- Self-heating;
- Organic peroxide;
- Corrosive to metal;
- Gas under pressure; or
- In contact with water emits flammable gas.

See WAC 296-901-1424, Appendix B-Physical hazard criteria.

Pictogram: A composition that may include a symbol plus other graphic elements, such as a border, background pattern, or color, that is intended to convey specific information about the hazards of a chemical. Eight pictograms are designated under this standard for application to a hazard category.

ppm: Parts per million is the concentration of a gas or vapor in air - parts (by volume) of the gas or vapor in a million parts of air.

Precautionary Statement: A phrase that describes recommended measures that must be taken to minimize or prevent adverse effects resulting from exposure to a hazardous chemical, or improper storage or handling.

Product Identifier: The name or number used for a hazardous chemical on a label or in the SDS. It provides a unique means by which the user can identify the chemical. The product identifier used must permit cross-references to be made among the list of hazardous chemicals required in the written hazard communication program, the label and the SDS.

Pyrophoric Gas: A chemical in a gaseous state that will ignite spontaneously in air at a temperature of 130°F (54.4°C) or below.

Pyrophoric Liquid or Solid: A liquid or solid which, even in small quantities, is liable to ignite within five minutes after coming into contact with air.

Reproductive Toxicity: Includes adverse effects on sexual function and fertility in adult males and females, as well as adverse effects on development of the offspring.

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Safety Data Sheet (SDS): Written or printed material concerning a hazardous chemical that is prepared in accordance with WAC 296-901-14014.

Sensitizer: A chemical that causes a substantial proportion of exposed people or animals to develop an allergic reaction in normal tissue after repeated exposure to the chemical.

Signal Word: A word used to indicate the relative level of severity of hazard and alert the reader to a potential hazard on the label. The signal words used in this section are “danger” and “warning.” “Danger” is used for the more severe hazards, while “warning” is used for the less severe.

Simple Asphyxiant: A substance or mixture that displaces oxygen in the ambient atmosphere, and can thus cause oxygen deprivation in those who are exposed, leading to unconsciousness and death.

Specific Gravity: A chemical that is weighed against the weight of an equal volume of water. If a material cannot be dissolved and floats on water it has a specific gravity less than one. If the number is greater than one it will sink.

STEL: Short Term Exposure Limit

Teratogen: A substance or agent which can cause malformations in the fetus.

TLV: Threshold Limit Value

TWA: Time Weighted Average

UEL, or UFL: Upper Explosive Limit, or Upper Flammable Limit of a vapor or gas; the highest concentration that will produce a flash fire when an ignition source is present.

Vapor Density: The weight of a vapor or gas compared to the weight of an equal volume of air. Materials lighter than air have vapor densities less than 1.0. Materials heavier than air have vapor densities greater than 1.0.

Water-Reactive: A chemical that will react with water to release a gas that is either flammable or presents a health hazard.

APPENDIX 2: Pictograms

HCS Pictograms and Hazards

Health Hazard  • Carcinogen • Mutagenicity • Reproductive Toxicity • Respiratory Sensitizer • Target Organ Toxicity • Aspiration Toxicity	**Flame**  • Flammables • Pyrophorics • Self-Heating • Emits Flammable Gas • Self-Reactives • Organic Peroxides	**Exclamation Mark**  • Irritant (skin and eye) • Skin Sensitizer • Acute Toxicity (harmful) • Narcotic Effects • Respiratory Tract Irritant • Hazardous to Ozone Layer (Non-Mandatory)
Gas Cylinder  • Gases Under Pressure	**Corrosion**  • Skin Corrosion/ Burns • Eye Damage • Corrosive to Metals	**Exploding Bomb**  • Explosives • Self-Reactives • Organic Peroxides
Flame Over Circle  • Oxidizers	**Environment** (Non-Mandatory)  • Aquatic Toxicity	**Skull and Crossbones**  • Acute Toxicity (fatal or toxic)