Hazard Communication Program

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1.0 Introduction

1.1 Policy

It is the policy of Great Basin College to provide safe and healthy work and learning environments for faculty, staff, students and visitors. Implicit in this policy is a requirement to provide individuals with pertinent information about chemical hazards to which they may be exposed.

1.2 Purpose

The purpose of the GBC Hazard Communication Program is to communicate information about hazards of chemicals used on GBC campuses, and precautions that employees may take to reduce the risks associated with these chemicals.

The written Hazard Communication Program is designed to ensure that:

1.2.1

Hazardous chemicals present in the workplace are properly identified and labeled.

1.2.2

Employees have access to information on the hazards of these substances.

1.2.3

Employees are provided information and training on the GBC Hazard Communication Program and how to prevent injuries or illnesses due to exposure to hazardous chemicals.

1.2.4

Roles and responsibilities for maintaining the written program, Safety Data Sheets (SDSs) (formerly referred to as Material Safety Data Sheets (or MSDSs)), and training.

1.3 Scope

This program provides guidelines that are to be addressed in GBC workplaces where hazardous chemicals are handled, used, or stored, except for the exclusions listed below.

1.4 Exclusions

The OSHA Hazard Communication Standard (HCS) contains several exclusions. A partial listing of these exclusions is listed below for which the provisions of this Program do not apply:

1.4.1

Use of hazardous chemicals in laboratories is covered by the GBC Chemical Hygiene Plan.

1.4.2

Labeling of pesticides that are covered by labeling requirements of the Federal Insecticide, Fungicide, and Rodenticide Act.

1.4.3

Labeling of medical or veterinary devices or products that are covered by labeling requirements of the Food and Drug Administration or Department of Agriculture.

1.4.4

Hazardous waste regulated under the Federal Resource Conservation and Recovery Act.

1.4.5

Wood or wood products. NOTE: Wood treated with hazardous chemicals and wood dusts are not exempt.

1.4.6

Articles that are formed to a specific shape or design during manufacture, that have end use functions dependent in whole or in part of its shape or design during end use, and that does not release or otherwise result in exposure to a hazardous chemical under normal conditions of use (e.g., tires, PVC piping).

1.4.7

Any consumer product (including pens, pencils, adhesive tape) or hazardous substance if the product is used in the workplace in the same manner as normal consumer use and if the use results in a duration and frequency of exposure that is not greater than exposures experienced by consumers.

1.4.8

Any drug as defined in the Federal Food, Drug, and Cosmetic Act when it is in solid, final form (no alteration or preparation required prior to administration).

1.4.9

Ionizing and non-ionizing radiation, and radioactive waste

1.4.10

Biological hazards;*

*Other policies, procedures and training programs apply at GBC.

2.0 Responsibilities

2.1 Chairs and Directors

Chairs and directors are responsible for:

2.1.1

Ensuring that workplace supervisors are aware of the responsibilities and procedures contained in this document.

2.1.2

Providing administrative enforcement of this program.

2.2 Supervisors

Supervisors are responsible for ensuring implementation of this program in work areas for which they are responsible. Specific responsibilities include:

2.2.1

Identifying hazardous substances present in the work area.

2.2.2

Ensuring that an inventory of hazardous chemicals present in work areas is maintained and available to personnel who work in the area. NOTE: EH&S maintains an inventory of many campus workplaces.

2.2.3

Ensuring hazardous substances are appropriately labeled.

2.2.4

Ensuring SDSs are available to employees and that employees know how to access SDSs.

2.2.5

Developing safe handling procedures for hazardous chemicals that are present in work areas for which they are responsible.

2.2.6

Ensuring employees receive workplace specific training on physical and health hazards, emergency procedures, and safe handling procedures for hazardous chemicals used in work areas.

2.2.7

Informing visiting personnel of hazardous chemicals to which they may be exposed to in the work area, and any applicable safe work practices.

2.2.8

Ensuring that all individuals under his or her supervision follow the procedures specified in this document, and established workplace procedures for safe handling of hazardous chemicals.

2.3 Employees

Employees are responsible for conducting work as described in this document, with specific responsibilities to include:

2.3.1

Knowing the hazards of the hazardous chemicals that they use and following established safe work practices.

2.3.2

Properly labeling chemical containers in their workplaces, as described in this document.

2.3.3

Attending required training.

2.3.4

Planning and conducting operations in accordance with established procedures and good safety practices.

2.3.5

Using personal protective equipment in accordance with prescribed training and established procedures for safe handling of hazardous chemicals

2.3.6

Knowing how to access SDSs.

2.4 Environmental Health and Safety (EH&S) Department

EH&S is responsible for providing resources (i.e. reference materials) and technical support to assist supervisors and employees in meeting the requirements of this written program. Specific responsibilities include:

2.4.1

Developing and maintaining GBC’s Written Hazard Communication Program.

2.4.2

Assisting supervisors in identifying hazardous chemicals present in their work areas and in evaluating hazard chemicals and operations, as requested.

2.4.3

Providing general Hazard Communication training. Some administrative groups may choose to present this training themselves; however, such training must be coordinated with EH&S.

2.4.4

Assisting supervisors with development of workplace specific employee training, as requested.

2.4.5

Evaluating hazardous chemical use and recommending appropriate engineering controls, administrative controls, and personal protective equipment to reduce associated risks, as requested.

2.4.6

Making SDSs received with incoming chemicals available to all employees through an online database.

2.4.7

Maintaining an inventory of hazardous chemicals located on the GBC campus and an online database of the chemical inventory data. Some workplaces are responsible for maintaining a current inventory of hazardous chemicals that they store, and providing this data to EH&S, but EH&S is responsible for making this information available on the online database.

2.5 Facilities Maintenance Department

In addition to the general responsibilities described in this program, the Facilities Maintenance Department is responsible for the following:

2.5.1

Collecting chemical inventory information for shops and other work areas where it stores chemicals, and providing this information to EH&S as specified in section 4.4 of this document.

3.0 Chemical Labeling

3.1 Labeling of Incoming (Shipped) Chemicals

Chemical manufacturers, importers, and distributors are required by regulation to label every hazardous chemical container as described in section 3.2. If the original label is affixed and readable, individuals receiving or using the chemical do not have to take any action. If a label is missing or not readable, the responsible user must affix a replacement label that contains the information described in section 3.2.

3.2 Label Information for Incoming (Shipped) Chemicals

Incoming chemicals are those that are obtained from a chemical manufacturer, importer, or distributor. All labels on incoming chemicals must include the product identifier, supplier identification, precautionary statements, hazard pictograms, a signal word, hazard statements, and supplemental information.

3.2.1

The PRODUCT IDENTIFIER contains the name of the item as well as the product number or other distinguishing information used by the manufacturer, importer, or distributor. An identical identifier must appear both on the product label and on the corresponding safety data sheet.

3.2.2

PICTOGRAMS indicate the hazard categories that are applicable to the chemical.

3.2.3

The SUPPLIER IDENTIFICATION section contains the name of the manufacturer, importer, or other responsible party along with the address and contact information.

3.2.4

A SIGNAL WORD indicating the level of hazard. Only two signal words may be used; “DANGER” for the more severe hazard level and “WARNING” for lesser hazards.

3.2.5

Standardized HAZARD STATEMENTS describe the nature of the hazards, and where appropriate, the degree of the hazards. HAZARD STATEMENTS are specific to hazard classification categories and as such should appear identically on all chemicals possessing the same hazard, regardless of the manufacturer.

3.2.6

PRECAUTIONARY STATEMENTS describe measures that the chemical user should take in order to minimize the likelihood of adverse effects; however, the appropriate measures must be determined by an evaluation of the specific use of the chemical.

3.2.7

SUPPLEMENTARY INFORMATION includes any additional instruction or information that the label producer deems helpful.

3.3 Hazard Classification and Ratings

Chemical manufacturers and importers are responsible for evaluating chemicals and assigning applicable health and physical hazards. Specific criteria have been established for the classification of chemical health and physical hazards, with many hazard classes sub-divided into hazard categories based on the severity of the hazard. Numerical, alphanumeric, or alphabetic ratings indicate the severity of the hazard. Under the OSHA Hazard Communication Standard (HCS) criteria, the highest hazards are rated as “1” and lower hazards are rated as successively higher numerical ratings (lower the number, higher the hazard). Analogously, the lower the alphanumeric or alphabetic character, the higher the hazard. The following two tables provide a summary of the hazard classes and associated hazard category ratings.

The hazard rating scheme required by the HCS is in contrast to the commonly used National Fire Protection Association (NFPA) 704 System (represented by the “fire diamond”) and the Hazardous Materials Identification System (HMIS). Both of these systems use a numerical hazard rating scheme where “1” indicates the lowest hazard and “4” indicates the highest hazard. Tables 1 and 2 summarize the health and physical hazards that manufacturers and importer must consider when classifying a chemical under the OSHA HCS.

3.3.1

Table 1. Chemical Health Hazard Classifications

Hazard Class	Hazard Categories
Acute Toxicity: oral, dermal, inhalation	1, 2, 3, 4
Skin Corrosion/Irritation	1A, 1B, 1C, 2 (irrit)
Serious Eye Damage/Irritation	1, 2A (irrit), 2B (irrit)
Respiratory/Skin Sensitization	1A, 1B
Germ Cell Mutagenicity	1A, 1B, 2

Table 1. Chemical Health Hazard Classifications

Hazard Class	Hazard Categories
Carcinogenicity	1A, 1B, 2
Reproductive Toxicity	1A, 1B, 2, lactation
Specific Organ Toxicity – single exposure	1, 2, 3
Specific Organ Toxicity – repeated exposure	1, 2
Aspiration Hazard	1
Simple Asphyxiants	Single Category
Explosives	Unstable Explosives, Div. 1.1, Div. 1.2, Div. 1.3, Div 1.4, Div 1.5, Div 1.6
Flammable Gases	1, 2
Flammable Aerosols	1, 2
Oxidizing Gases	1
Gases Under Pressure	N/A
Compressed Gases	Single category
Liquefied Gases	Single category
Refrigerated Liquefied Gases	Single Category
Dissolved Gases	Single Category
Flammable Liquids	1, 2, 3, 4
Flammable Solids	1, 2
Self-Reactive Substances	Type A, Type B, Type C, Type D, Type E, Type F, Type G
Pyrophoric Liquids	1
Pyrophoric Solids	1
Self-Heating Substances	1, 2
Chemicals which, in contact with water, emit flammable gases	1, 2, 3
Oxidizing Liquids	1, 2, 3

Table 1. Chemical Health Hazard Classifications

Hazard Class	Hazard Categories
Oxidizing Solids	1, 2, 3
Organic Peroxides	Type A, Type B, Type C, Type D, Type E, Type F, Type G
Corrosive to Metals	1

3.4 Hazard Category Pictograms

The HCS requires pictograms on chemical labels to alert users of the chemical hazards to which they may be exposed. Each pictogram consists of a symbol on a white background framed within a red border and represents a distinct hazard category. The pictograms included on a specific chemical label are determined by the chemical hazard classification. The pictograms that may be used are shown below, with each chemical label including all pictograms that are applicable.

Health Hazard

- Carcinogen
- Mutagenicy
- Reproductive Toxicity
- Respiratory Sensitizer
- Target Organ Toxicity
- Aspiration Toxicity

Flame

- Flammables
- Pyrophorics
- Emits Flammable Gas
- Self-Reactivates
- 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

- Explosive
- Self-Reactives
- Organic Peroxides

Flame over Circle

- Oxidizers

Environment *(Non Mandatory)

- Aquatic Toxicity

Skull and Crossbones

- Acute Toxicity (fatal or toxic)

3.5 Replacement Labels

Each hazardous chemical container in the workplace must be labeled as described in section 3.2, or alternatively, labeling must include the product identifier and at least general information regarding the hazards using words, symbols, etc. If, for any reason, this information is not legible on the container a proper label must be promptly attached to the container. Chemical users can generate labels themselves or labels can be obtained from vendors. Contact EH&S if guidance is needed on generating or obtaining labels.

3.6 Secondary Containers

When transferring material to a secondary container (e.g. bucket, spray bottle, can, or jar), the person accomplishing the transfer must ensure that the secondary container is compatible with the material, and that the container is labeled as described in section 3.5.

NOTE: If the secondary container remains in the direct control of the person using it at all times and is emptied by the end of the work shift, a label is not required, but is highly suggested.

4.0 Chemical Inventory

An inventory of hazardous chemicals present must be maintained for each work area that utilizes and stores hazardous chemicals. The identities of the hazardous chemicals on the inventory must correspond with the identities of their corresponding SDSs.

4.1 Inventory Information

The chemical inventory must contain the following minimum information:

4.1.1

Name of chemical

4.1.2

Vendor

4.1.3

Approximate quantity on hand

4.1.4

Building and room where chemical is stored

4.2 Chemical Inventory Procedures

Chemical inventory management at GBC is divided into the two broad programmatic areas of laboratory and non-laboratory areas. Laboratory areas are generally utilized for academic education and research and are typically science and engineering programs but also include arts and agriculture programs. Non-laboratory areas are generally facilities and maintenance operational areas, service shops, and medical clinics.

4.3 Chemical Inventory in Laboratory/Academic Teaching and Research Areas

The chemical inventory of laboratory areas is completely managed by the chemistry department. Chemistry department staff inventory all incoming (newly purchased) chemical containers, apply a bar code sticker to each container to track their location on campus, and deliver the containers directly to the location where they will be used. All chemical inventory data (adding, transferring, editing, deleting chemicals) is managed in an electronic database by chemistry department staff. Laboratory personnel shall use Chimera from UNLV to inventory their chemicals.

Non-GBC entities that use laboratory space may have different inventory management procedures as designated in their respective space usage agreements.

4.4 Chemical Inventory in Non-Laboratory Areas

The chemical inventory of non-laboratory areas is managed by each individual program or departmental area. Each program area is responsible for providing EH&S with a copy of their chemical inventory in pre-formatted Excel spreadsheets, which are provided by EH&S. At a minimum, each program area will update their inventory annually to EH&S, although quarterly or semi-annually updates are preferred. The best accuracy is obtained by managing the inventory on an ongoing basis as chemicals are purchased and disposed.

4.4.1

EH&S will maintain an electronic archive of each program's inventory in an electronic database. Non-laboratory personnel can contact their supervisor to gain access to their chemical inventory, supervisors can contact EH&S for access to their inventory either on-line or in spreadsheet format.

5.0 Safety Data Sheets

5.1 Safety Data Sheet (SDS formerly MSDS) General Requirements

The HCS requires that the chemical manufacturer, distributor, or importer provide Safety Data Sheets (SDSs) to downstream users. SDSs include information on the properties of each chemical; the physical, health, and environmental health hazards; protective measures; and precautions for safely handling, storing, and transporting the chemical.

5.1.1

A SDS for each hazardous chemical in the workplace must be readily available to all employees and employees must receive training on how to access SDSs.

5.1.2

Each SDS must be in English; however, copies in other languages should also be available for workers whose English language skills are not sufficient to permit them to read and effectively understand SDSs written in English.

5.2 Maintenance and Accessibility of SDS's

EH&S maintains an online database of SDS's for chemicals that are inventoried by EH&S when they arrive on campus at the central receiving facility; however, this database does not include SDS's for all chemicals present on the GBC campus.

5.2.1

SDSs that are not currently included in the online database should be forwarded to EH&S so that they can be added to the database.

5.2.2

Upon receiving a hazardous chemical in a particular workplace, the supervisor or other designated person must verify that an SDS for the chemical is available to personnel, either via the EH&S online database, as a hardcopy in the workplace, or by other means. Contact EH&S if assistance is needed in obtaining a SDS.

5.2.3

SDSs must be readily accessible to employees and employees must be trained how to access SDSs. If employees work at multiple workplaces SDSs may be kept at a central location (e.g. shop); however, employees must be able to access SDSs in an emergency.

6.0 Employee Information and Training

6.1 General Hazard Communication Training

EH&S provides hazard communication training to employees who are at the greatest risk of exposure to chemicals. Each department may also choose to provide their own training. Employees should complete this training when they begin working at GBC.

6.2 Training other than the EH&S course

Groups that want to present training other than the EH&S course should contact EH&S for guidance. General training topics must include:

6.2.1

Location and availability of the GBC Hazard Communication Program.

6.2.2

Details of the GBC Hazard Communication Program, including an explanation of container labeling requirements, availability of SDSs, and how employees can obtain and use chemical hazard information.

6.2.3

How to access the chemical inventory maintained by EH&S.

6.2.4

Methods used to detect hazardous chemicals (such as chemical monitoring, visual appearance, and odor).

6.2.5

Health and physical hazards of chemicals, which may be presented for specific chemicals or by chemical class.

6.2.6

Methods and procedures that employees can use to prevent overexposure to hazardous chemicals, to include engineering controls, safe work practices, and personal protective equipment.

6.2.7

General emergency procedures pertaining to hazardous chemicals

6.3 Maintenance of General Hazard Communication Training Records

EHS maintains records of all hazard communication training presented. Departments that choose to provide their own training will forward training logs to EHS.

7.0 Crystalline Silica

7.1 Background

Crystalline silica, also referred to as “quartz”, is a common mineral found in the earth’s crust and is a basic component of the soil, sand, and granite. Cristobalite and tridymite are two other forms of crystalline silica. Crystalline silica is found in many common construction materials including sand, stone, concrete, masonry, mortar and landscaping materials. Crystalline silica is also used to make products such as glass, pottery, ceramics, bricks and artificial stone.

Respirable crystalline silica consists of very small particles of silica (less than 10 μm), at least 100 times smaller than ordinary sand found on beaches or playgrounds for example. Crystalline silica is created when cutting, sawing, grinding, drilling and crushing stone, rock, concrete, brick, block and mortar.

7.1.1

There are many types of activities that produce crystalline silica dust which could result in worker exposure to respirable crystalline silica; including but not limited to, the following:

- abrasive blasting with sand,
- abrasive blasting of concrete (regardless of the abrasive)
- sawing brick or concrete,
- sanding or drilling into concrete walls,
- mixing concrete
- sawing, hammering, drilling, grinding, chipping of concrete
- brick and concrete block cutting and sawing
- demolition of concrete and masonry structures
- grinding mortar,
- manufacturing brick, concrete blocks, stone countertops, or ceramic products and cutting or crushing stone
- handling soil samples or silica sand in activities such as dry pouring, mixing, sieving
- crushing, loading, hauling and dumping or rock
- dry sweeping of concrete, rock, or sand dust
- pressurized blowing of concrete, rock, or sand dust

Industrial sand used in certain operations, such as foundry work and hydraulic fracturing (fracking) is also a source of respirable crystalline silica exposure.

7.2 Hazards of Crystalline Silica

Occupational exposures to respirable crystalline silica particles increase the risk of developing serious silica-related diseases, including:

7.2.1

- Silicosis, an incurable lung disease that can lead to disability and death,
- Lung cancer
- Chronic obstructive pulmonary disease (COPD),
- Kidney disease

7.3 Occupational Exposure Limits

OSHA has established a maximum exposure limit, or Permissible Exposure Limit (PEL), for airborne respirable crystalline silica of 50 micrograms per cubic meter (50 µg/m^3) of air, calculated as an 8-hour Time Weighted Average (TWA). Additionally, OSHA has established an action level (AL) for respirable crystalline silica of 25 µg/m^3, calculated as an 8-hour TWA. Occupational exposures at or above the action level triggers additional requirements, to include medical surveillance and increased air monitoring.

8.0 Non-Routine Tasks

A non-routine task is an event or activity that occurs infrequently; therefore, details of the hazards and protective measures may not be fully developed or known by persons who will perform the task. Examples include disposal of outdated products and use of hazardous chemicals during infrequent maintenance or repair work.

8.1 Task Review

Prior to beginning a non-routine task a review of the procedure and chemicals to be used must be conducted by the supervisor, personnel who will perform the work, and other knowledgeable persons as needed. This review must consider the entire procedure, to include proper collection and disposal of chemical waste.

8.1.1

All recognized hazards associated with the procedure must be considered, along with potential incidents such as fire, explosion, personnel exposure, and chemical release.

8.1.2

Mitigative controls must be implemented as needed to control the risks associated with the procedure so that the work can be performed safely. Contact EH&S if assistance is needed in conducting a task review.

9.0 Hazard Communication by Personnel Outside the Department or Workplace

9.1 GBC Personnel

GBC personnel, who will perform work in a location that is not their normal workplace, and where hazardous chemicals are stored or used, must contact the workplace supervisor or other designated person prior to performing the work. The supervisor or designated person is responsible for informing personnel who will perform the work of the identity and location of any hazardous chemicals that may be encountered, the

availability of SDSs (if requested), and precautions to be taken to prevent personnel exposure and other incidents.

9.2 Work Conducted by Contractor Personnel

When requested, contractors are required to submit legible copies of SDSs for all chemicals that they will use on GBC property or in GBC facilities prior to the onset of work. Contractors must have SDSs with them whenever they possess or use hazardous chemicals.

9.2.1

It is the responsibility of the GBC project coordinator to ask the contractor about the use of hazardous chemicals, and if chemicals will be used, whether or not preventative measures will be required to prevent overexposure to contractor or GBC personnel. If chemicals will be used under conditions which are expected to produce significant odor outside of the immediate work location, or personnel exposure that may cause adverse health symptoms (e.g., irritation, headache) in either contractor or GBC personnel, the project coordinator must ensure that appropriate control measures will be implemented prior to initiation of work. EH&S should be notified in these cases and included in design of the control measures.

10.0 Communication of Hazard Information to Non-GBC Personnel

In situations where non-GBC personnel are performing work on GBC owned or controlled property (i.e. contractors and visitors), the primary GBC contact (i.e., Facilities Services project coordinator or workplace supervisor) must provide the non-GBC personnel with information on the identity and location of hazardous chemicals to which they will be exposed.

10.1 SDSs

When requested, the primary GBC contact must provide non-GBC personnel with access to SDS’s for each hazardous chemical owned or controlled by GBC to which they will be exposed to while performing work at GBC.

10.2 Communicating Precautionary Measures

The primary GBC contact must ensure that non-GBC personnel are informed of required precautionary measures prior to beginning work. These measures must consider normal operating conditions and foreseeable emergencies, and must include

provisions for personnel exposure, fire, chemical releases, and other incidents, all as applicable.