

**HAZARD COMMUNICATION PROGRAM
FOR
GOUCHER COLLEGE
1021 DULANEY VALLEY ROAD
BALTIMORE, MD 21204-2794**

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1.0 INTRODUCTION

In 1984, the Maryland General Assembly enacted legislation designed to give employees information about hazardous chemicals in their work places. This law is sometimes referred to as the "Hazard Communication" or "Employee Right-To-Know" law. In 1990, the Maryland Right-To-Know law was amended to include the provisions of the Federal Standard, 29 CFR 1910.1200 (Hazard Communication Standard). This law requires employers to develop, implement, and maintain at the workplace a written Hazard Communication Program.

The Goucher College Hazard Communication Program (HCP) has been developed to:

- Inform employees of the potentially hazardous substances to which they may be exposed;
- Inform employees of safety precautions to be taken while handling such substances; and
- Prevent injuries and accidents related to the use of hazardous substances.

This document will be reviewed and updated as needed to reflect changes in the location and type of hazards at Goucher College and to reflect changes in personnel responsible for maintaining the program.

1.1 Regulatory Authority

The following written HCP has been developed and implemented to comply with the provisions of Federal Standard 29 CFR 1910.1200, the Maryland Access to Information about Hazardous and Toxic Substances Law (Labor and Employment Article, Title 5, Section 5-401 et seq.) and provisions of the Code of Maryland Regulation (COMAR) 09.12.33. <http://www.dsd.state.md.us/comar/09/09.12.33.02.htm>.

The Goucher College HCP applies to any chemical present in the workplace such that employees may become exposed to it under normal conditions of use or in a foreseeable emergency. Compliance with the HCP is achieved by compiling a hazardous chemicals list, by providing Material Safety Data Sheets (MSDS) in each work area, by ensuring that containers are properly labeled, and by providing Goucher employees with hazard communication training. The definition of hazardous chemicals includes physical hazards such as compressed gases, flammable liquids and solids, combustibles, and chemical oxidizers; as well as such health hazards as carcinogens, irritants,

corrosives, sensitizers, and agents which may damage the lungs, skin, eyes or mucous membranes.

It is important to note that not all substances are governed by this program. The HCP does not apply to:

- Tobacco or tobacco products;
- Hazardous waste;
- Articles (which are defined as “manufactured item[s] other than a fluid or particle.....which under normal conditions of use do[es] not release more than very small quantities, e.g., minute or trace amounts of a hazardous chemical and do[es] not pose a physical hazard or health risk to employees”).
- Foods, drugs, cosmetics, or alcoholic beverages in retail establishments, which are packaged for sale to consumers;
- Foods, drugs, or cosmetics intended for personal consumption by employees while in the workplace;
- Any consumer product or hazardous substance, as defined in the Consumer Product Safety Act and Federal Hazardous Substances Act respectively, where the employer can demonstrate it is used in the workplace in the same manner as normal consumer use, and which use results in a duration and frequency of exposure which is not greater than exposures experienced by consumers; and
- Any drug, as defined in the Federal Food, Drug, and Cosmetic Act, when it is in solid, final form for direct administration to the patient (i.e., tablets or pills).

Appendix A of this written program contains a copy of the Occupational Safety and Health Administration (OSHA) Hazard Communication Standard (29 CFR 1910.1200), which is incorporated into the Maryland statute (Hazardous and Toxic Substances Law, Labor and Employment Article, Title 5, Section 5-403) by reference.

1.2 Program Elements

1.2.1 Written Hazard Communication Program

A written HCP must be developed, implemented, and maintained at the workplace. The HCP must contain an inventory of all chemicals that are a potential physical or health hazard and describe how information related to these chemicals is to be provided to employees, including requirements relating to labeling, posting of warning signs, maintenance of MSDSs and provision of hazard awareness training.

1.2.2 Material Safety Data Sheets (MSDSs)

The MSDS is an essential information resource for persons working with hazardous chemicals. Chemical manufacturers and importers must provide customers with an MSDS for each product containing a hazardous chemical. Employers are required to maintain copies of MSDSs for each hazardous chemical they store or use. Periodically, the MSDSs on campus should be reviewed to ensure that they are current and complete for the chemicals used or stored on site.

1.2.3 Labels and Other Forms of Warning

The chemical manufacturer, importer, or distributor must ensure that each container of hazardous chemicals leaving the workplace is properly labeled, tagged, and/or marked.

Employers are also required to properly label all hazardous materials in the workplace. This includes regular storage containers, portable containers, tanks and vessels, pumps and pipes, and temporary containers. Labels must list at least the chemical identity (name) and appropriate hazard warnings. All labels must be legible and in English.

1.2.4 Employee Information and Training

The Hazard Communication Standard requires employers to provide employees with information and training on hazardous chemicals in their work area at the time of initial assignment and whenever a new hazard is introduced into the workplace. The training will include:

- the purpose and content of this HCP and the location of the written HCP;
- instruction on the use of the MSDS;
- proper hazardous chemical labeling procedures;
- the Hazard Communication Standard included in the federal regulation and state statute;
- hazard recognition;
- hazard avoidance (use of engineering controls and personal protective equipment); and
- emergency response training.

Employees must also have access to all MSDSs.

Contractors or subcontractors that may be working in areas where hazardous chemicals are used or stored shall also receive information about the existence of hazardous substances in their areas.

2.0 HAZARD DESCRIPTION

2.1 Program Management

The implementation, administration, and maintenance of the Goucher College HCP are the responsibility of all supervisory staff. The overall management of the HCP is the responsibility of the HCP Coordinator, who shall be appointed by the President as provided in section 3.2. The current HCP Coordinator is Goucher's Safety Officer.

Supervisory responsibilities are assigned as follows:

- Update and audit the HCP for accuracy and completeness – Legal Counsel.
- Conduct training for existing personnel – HCP Coordinator, in consultation with Department of Human Resources and supervisors.
- Maintain all records and documentation generated by the program.
 - MSDSs – maintained as provided in Section 3.0 of this plan
 - Training records – maintained by Human Resources
- Maintain Chemical List – HCP Coordinator and Legal Counsel.
- Address employee comments on the program – HCP Coordinator.
- Manage any other tasks related to program maintenance – HCP Coordinator.
- Identify personnel who order chemicals and see that they obtain MSDSs for inclusion in the HCP – HCP Coordinator.

2.2 Chemical Inventory List

In accordance with Maryland Labor and Employment Article, Section 5-405; COMAR

09.12.33; and Federal Standard 29 CFR 1910.1200, Goucher College will maintain a current inventory of hazardous chemicals that are used or stored on campus. The inventory must also include any consumer products that are covered by the Hazard Communication Standard. The list will be maintained on-line and a hard copy of the list will be maintained by the HCP Coordinator. The Coordinator, legal counsel, the Chemical Hygiene Officer, the Director of Facilities Management Services (FMS) and the Office of Public Safety will have access to the complete list on-line; departmental coordinators will have on-line access to their department's chemical list. The following departments and offices will be responsible for periodically updating their chemical list in the Magellan database, in the "Chemical List" folder: Art, FMS, Biology, Physics, Chemistry, Bon Appetit, Health Center, Athletics, and Theatre.

A copy of the completed chemical information list must be sent by the HC Coordinator to:

Maryland Department of the Environment
Technical and Regulatory Services Administration
Community Right-To-Know Section
Computer Modeling and Information Management Program
2500 Broening Highway
Baltimore, Maryland 21224

Chemical information lists must be revised, realphabetized, and resubmitted to the Maryland Department of the Environment (MDE) every two years, and Goucher College must maintain each chemical information list for forty years. All additions to the list must be placed in alphabetical order on the next two-year revision of the list. Chemicals no longer used will be removed from the revised list sent to the MDE.

The HCP Coordinator will notify affected employees of the introduction of new chemical substances. Copies of MSDSs for new chemical substances will be made readily available to affected Goucher College employees in their respective departments. Employees should contact their supervisors to determine where the MSDSs are maintained in their department. See Appendix C for a list of locations of MSDSs by department. Prior to working on site, outside contractors and subcontractors working at the Goucher College campus will be informed of possible chemical hazards in the workplace, and of the location of Goucher College's MSDSs and the chemical information list.

2.3 Chemical Hazards and Locations

The descriptions and storage locations are provided below for those chemicals found in the greatest quantities and for which the greatest potential for illness and/or injury exists. A complete listing of chemicals and locations can be obtained from the HCP Coordinator.

2.3.1 Hoffberger Science Building

The Biology and Chemistry Departments are located inside of the Hoffberger Building. Both departments have active laboratories and storage facilities that contain many different chemicals. These chemicals can be sub-divided into six major groups:

- Flammables - a chemical that is easy to set on fire and will burn readily. For liquids, a substance with a flash point below 37.8EC (100EF).
- Oxidizers - a chemical other than a blasting agent or explosive that indicates or promotes combustion in other materials, thereby causing fire either of itself or through the release of oxygen or other gases.
- Acids - a corrosive chemical compound that yields hydrogen cations when dissolved in water; whose hydrogen can be replaced by metals or basic radicals.
- Bases (caustics and alkalis) - a compound that yields hydroxyl ions in aqueous solutions, and which acts with an acid to form water and salts.
- Poisons - a substance that causes the disturbance, disease, or death of an organism.
- Radioactive substances - a substance that is energy propagated as rays, waves, or streams of energetic particles.

These groups are based on the types of hazards associated with handling each different chemical. Please see the Chemical Hygiene Plan (CHP) (<http://www.goucher.edu/x2358.xml>) for more specific details on the hazards associated with each particular chemical.

2.3.2 Robert and Jane Meyerhoff Arts Center

Flammables

This building contains the Art and Theatre Departments, which have some flammable materials and chemicals. For example, paint and paint thinners can ignite

when in close proximity to excessive heat sources. Other flammable materials in the Art Department include painting mats and ceramic glazes.

Welding

The sources of health hazards associated with welding, cutting, and brazing include potentially hazardous metal vapors, carbon monoxide, coatings, cleaning agents, fluxes, and welding rods. Physical hazards are noise, fire and burns, electrical shock, and ultraviolet radiation. Before cutting or welding is permitted, the area shall be inspected by the individual responsible for authorizing cutting and welding operations, who shall be appointed by the chair of the Art Department. This person shall designate the precautions required and grant authorization to proceed. Authorization must be granted for each area where such work is performed. A blanket authorization for a job is NOT acceptable.

2.3.3 Facilities and Maintenance Services Building

The FMS building stores small amounts of chemicals used during routine facility operations and maintenance, such as grounds-keeping and vehicle and machinery maintenance. These chemicals may consist of petroleum-related products and lawn/garden pesticides and fertilizers, and fuel sources such as gasoline, heating fuel, natural gas, and propane gas.

2.4 Other Hazards

The Hazardous Communication Program regulates chemical hazards in the workplace. Physical hazards found at Goucher may be addressed by separate OSHA standards regulating training, labeling, storage, and handling procedures. Several of the physical hazards found at Goucher College may include:

- Electrical hazards - OSHA 1910 Subpart S;
- Confined spaces - COMAR 09.12.35, proposed OSHA 1910.146;
- Ladders and stairs - OSHA 1910 Subpart D;
- Mechanical equipment - OSHA 1910 Subpart O;
- Bloodborne Pathogens - OSHA 1910.1030;
- Welding - 1910.251 - 1910.257
- Noise - OSHA 1910.95; and
- Compressed gases - OSHA 1910.101.

2.4.1 Asbestos

Asbestos in construction is regulated under Federal OSHA Standard 1926.1101, and under Maryland regulation COMAR 26.11.21. For non-construction related environments, asbestos is regulated under OSHA's General Industry Standard, 1910.1001. Asbestos, a fibrous silicate mineral, is a particularly dangerous air contaminant when particles are of respirable size. Asbestos-containing material (ACM) abatement during construction, renovation, encapsulation, or demolition projects may cause elevated exposures to abatement workers and other project personnel, unless appropriate hazard control and personal protective measures are initiated and rigorously implemented. The requirements for conducting ACM abatement projects are detailed in either project technical specification documents or project specific work procedures. ACMs may be encountered in various products associated with construction-type activities. These products include shingles, floor tiles, asbestos cement, roofing felts, insulation, and acoustical panels, among many others. In addition, housekeeping or maintenance activities which disturb ACM can result in an employee exposure. Effective implementation of an asbestos management program can serve as a risk management tool for controlling workers' exposures during abatement operations, or housekeeping and maintenance activities, as well as work activities where contact with ACM or presumed asbestos-containing materials (PACM) may inadvertently occur. *OSHA has ruled that virtually all buildings constructed before 1980 should be assumed to be asbestos-containing.*

Chronic exposures to elevated airborne asbestos fiber concentrations can cause severe health effects, including disabling respiratory disease and various types of cancer. Inhaling or ingesting asbestos fibers from contaminated clothing or skin can also result in these diseases. The symptoms of these diseases generally do not appear for twenty (20) or more years after initial exposure. Specific diseases associated with asbestos include asbestosis, lung cancer, mesothelioma, and cancer of the stomach and colon.

To control exposures to asbestos fibers, the administrative (work procedure) and personal protection controls contained in the project technical specification documents must be implemented. Of particular importance are the requirements

intended to minimize exposures from the inhalation and ingestion routes. Goucher works with an outside consultant to ensure that any work operations that may expose employees to asbestos incorporate the necessary administrative and personal protection controls.

2.4.2 Lead-in-Paint

Elevated exposures to heavy metals such as lead, cadmium, and/or chromium can cause severe health effects including irritability, neuropathy, high blood pressure, mental retardation (particularly among infants), and other health-related problems. Of particular importance are the requirements intended to minimize exposures from the inhalation and ingestion routes. Lead paint disturbance during construction activities is regulated under OSHA Standard 29 CFR 1926.62. To control heavy metal exposures from the lead-based paint (LBP) as well as from other lead-containing dust and sediments (e.g., paint chips), generated during construction or renovation activities, personal protection and administrative controls and project technical specification documents must be developed.

2.4.3 Fertilizers and Pesticides

Fertilizers play a vital role in agriculture and also are commonly used in urban areas. However, commercial fertilizer is a major source of nitrate, which can contaminate ground water. Improper handling of fertilizers can affect ground water by allowing nitrogen to seep through the soil and down into the water. Other potential sources of nitrate are septic systems, livestock yards, livestock waste storage facilities, and silage storage.

Accidental exposure or over-exposure to pesticides can have serious implications on human health. While the majority of the pesticides can be used with relatively little risk (as long as label directions are followed), some are extremely toxic and require special precautions. All pesticides used must be EPA-approved.

2.4.4 Chlorine

Chlorine is an acutely toxic, highly corrosive, and extremely reactive substance. It is primarily a respiratory irritant, readily detectable at low concentrations. In sufficient

concentrations, chlorine gas will irritate mucous membranes, skin, eyes, and the respiratory system. Prolonged exposure to high concentrations of chlorine gas will cause respiratory distress and death from suffocation. Sodium hypochlorite is used in the swimming pool area at Goucher, and must be properly labeled.

3.0 MATERIAL SAFETY DATA SHEETS (MSDSs)

3.1 Introduction

The MSDS is a key part of the Hazard Communication Program. MSDSs address the handling of hazardous materials during routine and emergency situations and they should be well-organized and easily accessible in case of an emergency.

The process of obtaining, filing, and updating MSDSs is currently handled by the various departments that order and use hazardous substances. Copies of MSDSs for materials used in various departments and sites are maintained as followed:

- Science Department – MSDSs maintained in lab storage room;
- Sports and Recreation Center (SRC)– MSDSs maintained in Athletic Department office;
- Art Studios – MSDSs maintained in individual studios, photo labs, and art department office;
- Dunnock Theatre – MSDSs maintained in workshop storage space.
- Food Service locations – MSDSs maintained at each dining site;
- FMS – MSDSs maintained in the FMS office;
- Health Center – MSDSs maintained in the Health Center office.

3.2 The Hazard Communication Program Coordinator

The President shall designate an individual as Hazard Communication Program Coordinator. The HCP Coordinator shall designate individuals to serve as HCP departmental coordinators within the following departments or work areas:

Athletics
Science
Art Studios

Dunnock Theatre
Food Services
Office of Public Safety
Health Center

The primary duties of the HCP Coordinator and departmental coordinators include:

- Reviewing MSDSs with new employees and with all employees at the introduction of new hazards into the workplace or during the annual refresher course;
- Transmitting safety information to employees; and
- Conducting a periodic review to ensure that MSDSs are available and current for each work area and that all containers are properly labeled.

3.3 Access to the MSDS and Chemical Inventory

Maryland and OSHA require that all employers provide timely access to the hazardous chemical inventory list and MSDSs for any employee or employee representatives requesting access.

The Goucher College hazardous chemical inventory and MSDSs are maintained in individual departments where the hazardous substance is used, as described in section 3.1. Employees may consult the MSDS collection in these offices during regular business hours. In the event of an emergency, employees should contact the Office of Public Safety to obtain access to the MSDS collection.

3.4 MSDS Review and Update

The hazardous chemical inventory list and the lists maintained at all satellite collection areas (e.g., SRC, Meyerhoff Arts Center) for MSDSs must be updated every six months to ensure that they reflect all hazardous materials currently on site. The HCP Coordinator and departmental coordinators shall ensure that this review and update occurs.

The HCP coordinator shall coordinate the collection of MSDSs for all chemicals brought on site by other contractors and subcontractors, and evaluate the hazards associated with these substances. Legal counsel shall review contracts with all contractors to ensure that they contain a requirement that the contractor provide information about hazardous materials brought to the campus.

3.5 Interpretation of the MSDS

All employees are responsible for reading the MSDSs for chemicals to which they may be exposed. Useful information found in MSDSs includes:

- The material's chemical, physical, and potentially toxic properties;
- Recommended personal protective equipment;
- Recommended first aid treatment; and
- Instructions for safely handling both day-to-day operations and emergencies, such as spills and fires.

OSHA has not yet required a uniform format for MSDSs. Each manufacturer has the option of using its own form as long as the required information is present. Most manufacturers divide the MSDS into eight sections under the following headings:

- Emergency contact information;
- Identification of hazardous ingredients;
- Physical/chemical characteristics;
- Fire and explosion data;
- Reactivity data;
- Health hazard data;
- Precautions for safe handling and use; and
- Control measures.

Each section provides essential information for safe handling of chemicals in normal and emergency operations.

3.5.1 Emergency Contact Information

Supplier contact information is essential in dealing with emergency situations. Many questions regarding emergency handling of chemicals are best answered by the manufacturer.

3.5.2 Identification of Hazardous Ingredients

In this section, chemicals are identified by trade names and common chemical names. Hazardous ingredients are identified and the percentage of each in the product is defined.

Occupational exposure limit information is also found in this section. These may include the legally enforceable OSHA Permissible Exposure Limit (PEL) or the

American Conference of Governmental Industrial Hygienists (ACGIH) Threshold Limit Value (TLV), a recommended guideline. These exposure limits are an indicator of the respiratory hazard of the material. The ACGIH TLVs are frequently updated, based on current medical and scientific studies. Although they are not legally enforceable, they often offer more protective exposure guidelines than the OSHA PELs, which in some cases are based upon obsolete ACGIH TLVs several years old.

3.5.3 Physical/Chemical Characteristics

Each chemical has characteristic properties affecting its dispersal in the environment. The physical state of a material, gas, liquid, or solid, affects the potential route of entry into the body. If the material is a gas or vapor, it can be readily inhaled. Liquids can become reactive and/or toxic upon contact with skin or become hazardous when in contact with incompatible materials. Information about the physical and chemical characteristics of a material is useful when selecting personal protective equipment and determining fire and spill containment equipment and procedures. Several key characteristics are:

- Boiling point refers to the temperature at which a material boils under ordinary atmospheric pressure. If the material is a mixture, a boiling range may be given. Generally, substances with a boiling point below 100°C are potential inhalation hazards and substances with a boiling point above 100°C are potential toxic and skin absorption hazards.
- Vapor pressure indicates how much vapor a liquid may generate. It refers to the pressure of saturated vapor above the liquid, usually measured at 68°F (20EC) and given in millimeters of mercury (mm Hg). A high vapor pressure (>10 mm Hg) indicates that a liquid will readily evaporate.

Vapor Pressure

>10 mm Hg	High
> 1 but < 10 mm Hg	Moderately Volatile
<1	Low Volatility

- Vapor density refers to how heavy the pure gaseous form of the material is in relation to air. The weight of a given volume of a vapor or gas is compared as a ratio with the weight of an equal volume of air. A material with vapor density greater than air (>1) will collect near the ground. For example, ammonia has a vapor density of 0.6, allowing the

gas to rise when released into the atmosphere. In contrast, chlorine gas has a vapor density of 2.5 and will remain low to the ground, especially in confined areas.

Vapor Density

1	Vapor is the same weight as air
Above 1.0	Vapor is heavier than air and will sink
Below 1.0	Vapor is lighter than air and will rise

- Solubility refers to the ability of a material to mix with water, usually measured at 50°F. Solubility may be given in weight percent or the following terms may be used instead of numbers.

Solubility

Negligible	Less than 0.1 percent solubility
Slight	0.1 to 1 percent solubility
Moderate	1 to 10 percent solubility
Appreciable	More than 10 percent solubility
Complete	Soluble in all proportions

- Specific gravity predicts whether a material will float or sink in water. The density of a given volume of material in grams/cubic centimeters is compared to the density of an equal volume of water at 39.2°F (4°C). Specific gravity and solubility are useful for spill clean-up operations.

Specific Gravity

1	The material is the same density as water
Above 1.0	The material is heavier than water
Below 1.0	The material is lighter than water

- Warning properties such as the appearance and odor of a chemical allow for its recognition as a potential hazard. For example, the pungent

odor of ammonia gives this chemical a good warning property. However, such properties may not always provide ample warning of hazardous conditions, for example if the odor threshold is above the recommended exposure limit.

3.5.4 Fire and Explosion Data

Fires and explosions require three ingredients: a combustible fuel, sufficient oxygen, and an ignition source (heat or flame). All MSDSs provide information about the flammability of a material which may be critical to predicting the risk of fire and explosion. This section provides specific information for fire-fighting personnel, including the proper methods for extinguishing the fire and any special hazards associated with a fire involving the material(s). Some of the terms associated with fire and explosion hazards are explained below.

- Flash point is the temperature at which a liquid produces enough flammable vapor to ignite. Liquids with flashpoints below 100°F are generally considered flammable in varying degrees. For example: isopropanol (rubbing alcohol) has a flashpoint of 53°F and is considered moderately flammable; ethyl ether has a flashpoint of -49°F and is extremely flammable. Chemicals such as chlorine and chloroform, with flashpoints well above 150°F, are considered non-flammable.
- Auto-ignition temperature is the minimum temperature needed to cause self-sustained combustion in the absence of a spark or flame. For example, phosphorus powder will ignite upon contact with air at 87°F.
- Flammable or Explosive Limits: Combustion only occurs when the proper fuel:air ratio is present. This "flammable or explosive" range is defined by the LEL (Lower Explosive Limit) and UEL (Upper Explosive Limit). Concentrations of fuel in air below the LEL are "too lean" to burn and support combustion. The highest flammable ratio of fuel in air, the Upper Explosive Limit (UEL), defines a level at which there is too much fuel to oxygen (e.g., the mixture is "too rich" to burn). Generally, any concentration greater than ten percent of the LEL is considered dangerous. Also, consider that spraying or spreading a flammable substance around may have the effect of creating a situation where the fuel:air ratio enters the flammable range.

3.5.5 Reactivity Data

The ability of a chemical to react with other substances must be considered both for safe storage and emergency situations. It is essential that

information be available on the stability of a chemical and how it might react with air, water, or other chemicals in the workplace. This section of the MSDS lists specific chemical incompatibilities and potentially hazardous by-products of reactions.

3.5.6 Health Hazard Data

Important information in this section includes route of entry, long (chronic) and short-term (acute) health effects, symptoms of exposure, and emergency first-aid procedures. Special handling procedures, respirators, and protective clothing selection may be required based on chemical toxicity information.

3.5.7 Precautions for Safe Handling and Use

This section lists proper handling procedures, including transportation and storage of materials. Spill control, cleanup, and disposal procedures are also described here.

3.5.8 Control Measures

This section lists recommended engineering controls and advises on the selection and use of personal protective equipment, hygienic practices, and ventilation precautions, as well as any other control which may be needed to reduce the risk of exposure.

4.0 LABELING

4.1 Introduction

Chemical container labels are an important tool for informing employees and outside emergency response personnel of the potential chemical hazards which may be encountered at Goucher College. They are designed to provide easily understandable facts about the contents of the container.

Not all chemical containers on the Goucher campus originate directly from a chemical manufacturer, and therefore will require labeling by Goucher employees. Examples include storage buildings, tanks and reaction vessels, pumps, and temporary storage containers or pipes which carry chemicals from a source. For all of these structures, labels or signs should be prominently placed in the work area.

The manufacturer is responsible for labeling each and every container of hazardous chemicals in a shipment. The label format will differ from company to company, but all labels must contain similar information. Goucher employees should check that the proper information is present; otherwise, the product should be returned to the shipper. Labels should contain:

- Information written in English;
- The name of the chemical;
- The name, address, and emergency phone number of the company that made or imported the chemical;
- Potential physical hazards (fire, explosion);
- Any important storage or handling instructions;
- Potential health hazards; and
- Recommendations for personal protective equipment and procedures to be used when working with the chemical.

4.2 Labeling Procedures

4.2.1 Ordinary Containers

Chemical containers used for daily storage (i.e., drums, bottles, bags) containing hazardous chemicals must bear clearly visible labels providing, at a minimum, the following information:

- The common chemical name;
- An appropriate safety warning (i.e., "corrosive" or "poison").

4.2.2 Tanks and Reaction Vessels

Tanks and vessels must be labeled with permanently attached placards, no less than one foot by one foot in size and clearly visible from all directions. The placards must contain the following information:

- The common chemical name;
- An appropriate safety warning (i.e., "corrosive" or "poison"); and
- The name and address of the chemical distributor and emergency phone numbers.

4.2.3 Pumps and Pipes

All pumps and pipes used to transfer or transport hazardous chemicals must be labeled according to this section. Labels on pipes must be placed at an appropriate uniform distance which allows an employee to follow the chemical flow within a facility. Labels on pipes and pumps must be visible from all accessible sides and include the following information:

- The common chemical name;
- An appropriate safety warning; and
- The name and address of the chemical manufacturer or distributor (pumps only).

4.2.4 Temporary Containers

The employer is not required to label portable containers into which hazardous chemicals are transferred from labeled containers, and which are intended only for the immediate use of the employee who performs the transfer. However, temporary containers such as buckets or bottles not designed to carry chemical substances must not be used to store or carry such substances. Flammable liquids can only be stored in approved fire safety containers and cabinets.

4.2.5 Empty Containers

Empty containers must be cleaned and all labels removed prior to disposal. If a label cannot be removed, the word "EMPTY" must be placed in a visible location(s) on the container prior to its disposal.

4.2.6 Ammonia Containers

OSHA has issued specific regulations for labeling and marking containers of anhydrous ammonia. Questions about the labeling of such containers

should be addressed to the HCP Coordinator. (See also, 29 CFR 1910.111, Storage and Handling of Anhydrous Ammonia.)

4.2.7 Buildings and Storage Areas

Though not required by the Hazard Communication Standard, the American National Standard Institute/National Fire Protection Association (ANSI/NFPA) Standard 704 is a useful document to help communicate health (toxicity), fire (flammability), and reactivity (stability) information to persons involved with emergencies in which chemical substances are involved. This guideline is referenced by OSHA in the General Industry Standard and is the recommended means of hazard identification and warning throughout the chemical industry. However, this labeling system should not be used unless all personnel in the department are trained to understand the labeling system.

The entrances of buildings and storage areas which contain large quantities of hazardous chemicals must be labeled with the ANSI/NFPA 704M diamond sign/placard in order to appropriately warn emergency personnel of hazards contained within a building or storage area. The HCP Coordinator will assist departments with proper ANSI/NFPA labeling, where necessary.

5.0 HAZARD AVOIDANCE AND CONTROLS

5.1 Safe Work Practices - Policy

All employees must familiarize themselves with the provisions of this policy and MSDSs relevant to any chemicals they use or to which they may become exposed. All precautions recommended on an MSDS must be taken to protect against adverse effects of exposure.

5.2 Engineered Controls

5.2.1 Ventilation Systems

The science laboratories are equipped with fume hoods for local exhaust

ventilation. The photography developing room is equipped with a fume hood for local exhaust ventilation.

5.2.2 Spill Control

Goucher employees should only attempt to clean-up small, incidental chemical spills that are less than one liter. For larger spills, employees should follow the procedure outlined in the Chemical Hygiene Plan, and included in Appendix D to this plan.

5.2.3 Fire Safety Systems

Smoke detectors, heat and flame sensors, and sprinkler systems are located throughout the Goucher College campus. The fire alarm system is monitored by computer from the Office of Public Safety. Annunciator panels are located in each building. Fire extinguishers are available in all buildings and are usually located near the exits. Extinguishers are inspected quarterly.

5.2.4 Communications Systems

Portable radios are available, as necessary, to certain personnel, including Public Safety officers, members of the Residence Life staff, and the events coordinator.

Wall-mounted telephones are located in various places on campus. Emergency and non-emergency phone numbers are located either on the phone or on a nearby wall. Emergency phones identified by blue lights are located outside of buildings in various locations on campus.

5.3 Safety Equipment

5.3.1 Eyewashes and Showers

Eyewashes and showers are located throughout Goucher College campus in areas where chemicals are stored and used. Should a chemical come into contact with the skin or eyes, the affected area should be flushed with

large amounts of clean water for a minimum of 15 to 20 minutes. Eye contact with caustic materials (such as caustic soda, lime, potassium permanganate) requires, at a minimum, 20 minutes of rinsing. Eyewashes should be inspected weekly, and the water flushed for approximately three minutes to remove accumulated sediment in the supply water. Showers are tested monthly. The HCP Coordinator shall designate one individual within each department whose responsibility is to ensure that eyewashes and showers are inspected and tested according to this schedule, and that inspection records are maintained. In addition, an outside contractor inspects and tests eyewashes and showers on an annual basis.

5.3.2 First-Aid Kits

First-aid kits for minor injuries are located throughout the campus. These kits should be periodically inspected by the HCP Coordinator to ensure that they are properly stocked.

5.3.3 Monitoring Equipment

The use of direct-reading instruments is required prior to entry into confined spaces and chemical spill areas to prevent any injuries to personnel. Only those employees that have received confined space entry training are allowed to work in such conditions. Appropriate monitoring equipment will be utilized prior to entering confined spaces (e.g., oxygen meters, explosimeter). Under no circumstances will an employee be allowed to work alone in a confined space, or an area of a chemical spill.

5.3.4 Electrical & Mechanical Safety

Electrical safety equipment is located in the FMS building. The lockout/tagout program is currently being updated to ensure compliance with the latest OSHA safety regulations.

5.4 **Personal Protective Equipment (PPE)**

OSHA regulations emphasize that engineering controls, rather than the use of PPE,

be applied whenever possible to control workplace hazards. When this is not possible, proper use of PPE is required. Some types of personal protective equipment must be worn at all times while within certain areas, while others are only needed during special operations.

Prior to the use of any PPE, training is necessary to ensure proper use and fit. This training must occur before the employee is exposed to the hazard. Training must be documented and records maintained by the HCP Coordinator.

5.4.1 Hard Hats

The Goucher College construction areas are hard-hat areas and must be properly posted as such. Extra hard-hats are available in the FMS or the contractor's trailer for visitors needing to access those areas.

5.4.2 Ear Protection

Ear plugs are available from FMS to all personnel exposed to excessive noise.

5.4.3 Respiratory Protection

It is not anticipated that Goucher employees may be involved in activities requiring respiratory protection. Employee exposure monitoring and a medical examination and training are required by OSHA prior to the use of respiratory protection by employees. Employees who think they may need respiratory protection should contact the HCP Coordinator.

5.4.4 Protective Clothing

Protective clothing and/or lab coats should be worn when working with chemicals and is necessary during chemical spill cleanup. Proper care of protective clothing is essential in maintaining the integrity of the material. Protective clothing should be stored in a dark, cool, dry place, preferably in its original container.

5.4.4.1 Eye Protection

Eye protection is necessary to prevent eye injuries resulting from chemical or physical hazards. Eye protection (e.g., safety glasses, splash goggles, face shields) Eye protection must be used during all chemical operations and all operations posing a physical hazard to the eyes

5.4.4.2 Coveralls

Coveralls include cloth coveralls or uniforms for everyday work, and chemically resistant suits (laminated tyvek).

5.4.4.3 Gloves

Protective gloves are available at various locations throughout the campus. Glove selection must be based on the potential hazard (i.e., acid gloves for work with acids).

5.5 Emergency Response Procedures

5.5.1 Hazard Recognition

Efficient, effective emergency response requires that all Goucher personnel fully understand their responsibilities to act (if such action is appropriate, and if personnel possess the training), to notify others, and to know the location and proper use of available equipment and other resources.

The basic principle to follow in dealing with any emergency situation is the following:

ALL EMERGENCY ACTIONS, EXCEPT FOR THE MOST MINOR, WILL BE PERFORMED BY THE LOCAL FIRE DEPARTMENT OR OTHER SPECIALLY TRAINED PERSONNEL. ALL OTHER PERSONNEL SHOULD VACATE THE AREA UPON NOTIFICATION BY TRAINED EMERGENCY PERSONNEL.

5.5.2 Personnel Responsibilities

Priorities for response and notification will differ depending on whether the situation can be controlled on site with existing resources, or alternatively, cannot be controlled on site, requiring outside assistance to resolve. Training to recognize and assess potential hazards at the campus will be provided in accordance with the Hazard Communication Standard, as well as OSHA 1910.120, and 1910.38. In addition, reference should be made to Goucher's Chemical Hygiene Plan, dated June 2005.

5.5.2.1 Notification Procedures/Assembly

All personnel must be familiar with proper notification procedures. All personnel detecting a chemical spill, fire, or other potential hazard should act as follows:

- Warn coworkers away from the area;
- Call Goucher Office of Public Safety at 337-6112 if emergency response action is required. When calling, have the following information available:
 1. Name and phone number;
 2. Location of incident;
 3. Exact description of incident (e.g., what was spilled and approximate quantity spilled);
 4. Any injuries that have occurred.

Goucher Office of Public Safety will notify the Local Fire Department to initiate subsequent emergency procedures.

5.5.2.2 First Aid

The first priority upon discovery of any injured personnel is to protect and/or stabilize the injured person and communicate by radio or any other means to summon needed medical assistance. After being stabilized and protected, injured personnel should receive interim first-aid only from properly trained staff.

5.5.3 Sheltering and Evacuation Procedures

The local Fire Department Incident Commander is responsible for making the decision to issue shelter-in-place or evacuation instructions to all personnel in or around the college. Shelter location may vary depending upon the type and location of the emergency. Fire and Police Department personnel are responsible for implementing the mechanics of such instructions.

Sheltering-in-place makes sense under the following conditions:

- there is no time to move people safely,
- outdoor concentrations of a toxic substance are expected to be harmful, and
- hazardous chemical discharges are not expected to be prolonged.

Therefore, there may be situations when sheltering-in-place rather than evacuation may be recommended by the Fire Department Incident Commander. Goucher College personnel instructed to shelter-in-place will be so instructed via the portable radio system, or any other means available. The most critical issue for persons deciding to shelter is the importance of minimizing outside air infiltrations and/or ventilation rates into buildings.

5.5.4 All-Clear Announcement

As soon as the danger has passed, information will be communicated to all personnel on site using the appropriate communication system.

5.5.5 Incident Report

Records of the occurrence of incidents or atypical situations at the campus are routinely recorded in Incident Reports by the Office of Public Safety. However, more formal documentation is required as a follow-up to all emergency incident response actions. In such case, the HCP Coordinator shall follow-up with the Office of Public Safety to evaluate the emergency response performance and suggest improvements. Documentation of

recommendations and improvements shall be maintained in log form by the HCP Coordinator.

6.0 INFORMATION AND TRAINING

6.1 Introduction

Training is an essential part of an effective safety and health program. It is absolutely necessary in the prevention of accidents and exposures, and encourages the proper response to such incidents. The HCP Coordinator, in consultation with the Department of Human Resources and supervisory staff of Goucher College, is responsible for assuring that all employees receive:

- Hazard communication training;
- Knowledge of safe work practices;
- Instruction on the proper use of personal protective equipment.

In addition, Goucher must provide information about its Hazard Communication Program to all contractors who may be at risk of exposure to hazardous chemicals on Goucher College property.

6.2 Training Procedures

6.2.1 Initial Training

The HCP requires that employees be trained at the time of assignment to work with hazardous chemicals, and whenever new chemical hazards are introduced in the work area. The HCP Coordinator, in consultation with Human Resources, will ensure that initial employee training takes place as part of the orientation process for new employees. This training must occur prior to exposure to hazardous materials or conditions. In appropriate cases, employees may be sent off-site for training.

6.2.2 Introduction of New Hazards

The HCP requires that employees be trained for each new hazard

introduced into the workplace. The employee must be informed of the location of the hazard, the methods and observations for the detection of releases, physical and health hazards, and personal protective equipment requirements, work practices and emergency procedures associated with the chemical. Supervisors shall be responsible for informing employees of new hazards in the workplace, and ensuring that all employees receive appropriate training.

6.2.3 Refresher Training

Refresher training shall be provided to affected employees on an annual basis. Refresher training will consist of HCT1 as defined below.

6.3 Program Content

6.3.1 Introduction

Information and training will be provided based on job responsibility and potential for chemical exposure. The HCP Coordinator, in consultation with the Department of Human Resources and the employee's supervisor, will determine the level of training for employees. Training for new hazards and non-routine tasks will be handled on an individual basis and will occur prior to employee exposure to the hazard.

6.3.2 Hazard Communication Training Level 1 (HCT 1)

This is a general but facility-specific program designed to provide all employees with a general knowledge of the hazards present at Goucher College. HCT 1 is designed for employees who, in an emergency, will take no further action beyond notifying authorities (i.e., maintenance, local fire department, Office of Public Safety, administrative personnel). Training requirements at this level include:

- Contents of the Hazard Communication Standard;
- Location and availability of the written Hazard Communication Program;
- Location of the hazards at the campus and information about their associated health risks;
- Information about the consequences of a hazardous substance release and the methods and observations used for detecting such releases;
- Information about how to use an MSDS;

- Information about control measures necessary to reduce the risk of personal injury.

6.3.3 Hazard Communication Training Level 2 (HCT 2)

HCT 2 is designed for employees whose duties lead to a greater potential for contact with hazardous substances. Goucher personnel who use hazardous chemicals in performing their job duties, are exposed to such chemicals indirectly in performing their job duties, or who are first responders to emergencies must be trained at this level. In addition to the contents of HCT 1, those trained at HCT 2 will receive the following:

- Specific chemical hazard information including review of specific MSDSs;
- Proper chemical handling techniques;
- Monitoring instrumentation and personal protective equipment; and
- Specific procedures for dealing with spills and other abnormal releases of chemicals.

6.3.4 Other Training

Specific categories of Goucher College employees may also receive the following training:

- Laboratory Chemical Hygiene training for laboratory workers under OSHA 1910.1450; and
- Fire Extinguisher Training under OSHA 1910.157.

6.3.5 Recordkeeping Procedures

Documentation of training is an important part of the HCP because it serves the purpose of demonstrating compliance with the requirements of the HCP. It shall be the responsibility of Human Resources to maintain the employee training records at Goucher College. The individual conducting the training session will ensure that a course roster is filled out for each training session. In addition, a training record form will be filled out and signed by each employee and the training instructor for each training class received. The following information must be included on this form.

- Employee's name;

- Work area;
- Training course name;
- Course date;
- Course location;
- Employee signature; and
- Instructor signature.

Appendix A

Federal OSHA Hazard Communication Standard
(29 CFR 1910.1200)

Available at:

http://a257.g.akamaitech.net/7/257/2422/20cot20031500/edocket.access.gpo.gov/cfr_2003/julqt/r/29cfr1910.1200.htm

Appendix B

CHEMICAL LIST/DEPARTMENT _____

Date prepared _____ *

Chemical name MSDS on file (check if yes) Room/lab location of chemical Date added*

* When a new chemical is acquired, please list the date of acquisition

Please forward this list to the Hazard Communication Program Coordinator.

APPENDIX C
LOCATION OF MSDSs BY DEPARTMENT

<u>Department</u>	<u>Location of MSDS</u>
Athletics	Athletics office
FMS	FMS Office
Health Center	Health Center office
Public Safety	Office of Public Safety
Art Department	Individual art and photography studios and art department office
Theatre Department	Dunnock Theatre chemical storage room

APPENDIX D EXCERPT FROM GOUCHER COLLEGE CHEMICAL HYGIENE PLAN

HAZARDOUS MATERIALS SPILL OR ACCIDENT PROCEDURES

The following emergency procedures will be communicated to all personnel prior to working with hazardous materials. If a fire or other serious accident occurs, do not try to handle the emergency. Pull the Fire Alarm and get yourself and other occupants out of the space and building as quickly as possible.

In the event of an accident or a spill involving hazardous materials that does not result in a fire or a threat to personal safety, the staff should notify the instructor or supervisor immediately and then:

1. Evaluate the spill, considering:
 - Are the materials innocuous, corrosive, flammable, toxic, volatile or explosive?
 - Identify all materials by common or chemical name.
 - How much is spilled?
 - Determine danger to staff or visitors.
 - Determine danger to equipment or property.
2. Contain the spill using appropriate absorbent material to prevent further damage to personnel or equipment.
3. Evacuate the area if the spill cannot be contained, or if the spilled material produces irritating odors, or flammable, or explosive vapors.
4. Clean up of spilled materials:
 - A. Spills of innocuous material can be cleaned up by personnel or housekeeping.
 - B. Small spills (< 1 liter) of acids, bases and flammables should be cleaned up by personnel using appropriate neutralizer/absorbents and proper personal protective equipment.
 - C. Spills of toxic or explosive material and large spills (> 1 liter) of corrosive or so designated flammable materials should be cleaned up only by appropriately trained emergency response personnel. Contact the CHO. **Call Goucher Emergency Response Personnel at 337-6112 if emergency response action is required.** When calling, have the following information available:
 1. Name and phone number;

2. Location of spill;
3. Exact description of what was spilled (state any compounds which may form toxic compounds) and approximate quantity spilled;
4. Any steps taken to control the spill; and
5. Any injuries that have occurred.

