

Chemical Hygiene Plan

of the

Department of Biology

Valdosta State University

Valdosta, Georgia

Prepared/Revised by:

Members of the Laboratory Safety and Hazardous Materials Committee

Department of Biology

Valdosta State University

Table of Contents

1.1 Policy Statement.
. 4

1.2 Definition of Responsibilities.
. 4

 1. Chemical Safety Officer.
 4

 2. CSO Responsibilities
 4

 3. Supervisors.
 5

 4. All Department of Biology Personnel.
 6

2.1 Standard Operating Procedures.
. 6

1. General Rules.
 6

2. Personal Hygiene.
 7

3. Protective Clothing and Equipment.
 7

4. Housekeeping.
 8

5.	<u>Procedures Requiring Prior Approval.</u>	<u>8</u>
6.	<u>Spills and Accidental Releases.</u>	<u>8</u>
7.	<u>Unattended Experiments and Working Alone.</u>	<u>11</u>
8.	<u>Procurement, Storage, and Distribution of Chemicals</u>	<u>11</u>
9.	<u>Disposal of Hazardous Chemical Waste.</u>	<u>11</u>

Reproductive Toxins, Substances that Have a High Degree of Acute Toxicity,
and Chemicals of Unknown Toxicity.....
. 16

.... 1. Definitions.....
16

3.1 Records and Record Keeping.....
. 17

Appendices

Appendix A: Employee Training and Information.....
18

Appendix B: Exposure Assessments, Medical Consultations, and Examinations. .
.....19

Appendix C: Safety References.....
..... 22

Acronyms and Abbreviations

CSO	Chemical Safety Officer
CHP	Chemical Hygiene Plan
DOT	U.S. Dept. of Transportation
EPA	U.S. Environmental Protection Agency
MSDS	Material Safety Data Sheet
NFPA	National Fire Protection Association
OSHA	Occupational Safety and Health Administration
PEL	Permissible Exposure Limit
PPE	Personnal Protective Equipment
SAA	Satellite Accumulation Area
TLV	Threshold Limit Value

Department of Biology, Valdosta State University

Chemical Hygiene Plan

1.1 POLICY STATEMENT

In our work in the biological sciences, we use some equipment and materials which can be hazardous to our employees or our environment if suitable precautions are not taken. It is the policy of the Department of Biology, Valdosta State University, Valdosta, Georgia, to provide a workplace for our employees and a learning environment for our students which is both safe and healthful, and to prevent the uncontrolled release of hazardous materials into the environment.

The objective of this Chemical Hygiene Plan (CHP) is to minimize or eliminate human exposure to hazardous chemicals in the laboratory and in the field. We intend to comply with regulations, standards, and guidelines for safety in our laboratories and research facilities and activities. We intend to protect employees and students from safety and health hazards associated with hazardous chemicals that are used, and to keep all individuals' exposures to airborne chemicals below the acceptable limits.

This written plan is based largely upon a plan devised by the James Whitten Delta States Research Center, USDA-ARS, Stoneville, Mississippi. That plan, was, in turn, based upon recommendations of the Committee on Chemical Safety of the American Chemical Society as published in *Developing a Chemical Hygiene Plan* by Jay A. Young, Warren K. Kingsley, and George H. Wahl, Fr. (American Chemical Society, Washington DC, 1990). It also incorporates recommendations of *The CRC Handbook of Laboratory Safety: 4th Edition* (CRC Press, 1995; hereafter referred to as the *CRC Handbook*), *Prudent Practices for Handling Hazardous Chemicals in Laboratories* (National Academy Press, 1995; hereafter referred to as *Prudent Practices*), *The ACS Guide for Chemical Spill Response Planning in Laboratories* (ACS Task Force on Laboratory Waste Management, 1995, hereafter referred to as the *ACS Spill Guide*), the National Fire Protection Association Standard 45, "Fire Protection for Laboratories Using Chemicals" (NFPA, 1996, hereafter referred to as *NFPA 45*), NFPA Standard 30, "Flammable and Combustible Liquids Code" (NFPA, 1996, hereafter referred to as *NFPA 30*), and NFPA Standard 55, "Standard for the Storage, Use, and Handling of Compressed and Liquefied Gases in Portable Cylinders" (NFPA, 1993, hereafter referred to as *NFPA 55*). It sets forth those procedures, equipment, and work practices that are required to safeguard each person as he/she works with hazardous chemicals. This plan is designed to avoid underestimation of risk.

Hazardous chemicals include those which pose physical hazards as well as those which pose health hazards. Physical hazards include combustible liquids, flammable gases and liquids, flammable solids, and pressure-generating chemicals such as compressed gases, pyrophoric materials, dangerously reactive chemicals, and

- ◆ Employee and student concerns about safety precautions in their work areas are promptly responded to.
- ◆ No employee is subject to any interference, discrimination, or other type of reprisal for reporting any unsafe or unhealthful condition.

The **CSO** and **supervisors** shall ensure that all employees under their supervision (including visiting scientists and students):

- ◆ Know and follow the provisions of the CHP, the Biology Department Safety Manual, and the Emergency Response Plan of Valdosta State University.
- ◆ Are trained in all hazards involved in their work and have been trained in safety procedures specific to their work assignment before beginning laboratory work, as prescribed by Appendix A of this Plan.
- ◆ Are provided with any required Personal Protective Equipment (PPE) and have received training in its use.
- ◆ Receive specialized safety training as required by their work assignments.
- ◆

- ◆ See that up-to-date records are maintained on training of employees for handling hazardous chemicals. ◆ Maintain an up-to-date list of hazardous materials used or stored, and review it annually.
- ◆ See that hazard references are available, and that necessary MSDSs are easily accessible.
- ◆ Make routine surveys of work areas to ensure that safe practices are being followed, that hazardous materials are labeled, and that hazard information is readily available and used.
- ◆ See that procurement of hazardous chemicals is organized so that hazard information and MSDSs are acquired before the chemicals are used, and that hazard labeling information is transferred if the material is repackaged.
- ◆ Maintain a list of “inimical” chemicals as defined in Section 2.4 with amounts specified which require use of procedures given in Section 2.4 and a list of “designated areas” designed for work with these chemicals.

1.2.3 All supervisors shall:

- ◆ Ensure that all employees and students under their supervision have access to copies of this CHP (<http://www.valdosta.edu/vsu/dept/cas/bio/chemsafe.htm>), the Biology Department Safety Manual (<http://www.valdosta.edu/vsu/dept/cas/bio/safety.htm>)

- ◆ Plan and conduct each operation in accordance with this CHP, the Biology Department Safety Manual, the Valdosta State University Biosafety Manual, the Valdosta State University Emergency Response Plan, and accepted safety practices.
- ◆ Participate in the review and updating of job descriptions and laboratory procedures to incorporate appropriate safety and health measures.
- ◆ Follow standard laboratory methods and procedures, and properly use any prescribed PPE.
- ◆ Maintain precautionary labels on all containers of hazardous chemicals.
- ◆ Know the location and use of MSDSs and emergency equipment.
- ◆ Know and participate in emergency planning and procedures.
- ◆ Inform their supervisor of any malfunctioning laboratory ventilation or other safety equipment.
- ◆ Inform their supervisor of any precautions, equipment, or labels required to ensure a safe work area.
- ◆ Inform their supervisor if any employee experiences symptoms or signs of possible overexposure to hazardous chemicals.
- ◆ Purchase and maintain only the minimum amounts of hazardous chemicals required for current work in their laboratory.
- ◆ Follow all policies and regulations of the Department of Biology regarding disposal of waste chemicals.

2.1 STANDARD OPERATING PROCEDURES

2.1.1 General Rules

1. Wear the appropriate eye protection at all times; see Section 2.1.3.
2. Wear proper footwear at all times; see Section 2.1.3.

3. When working with flammable chemicals, be certain that there are no sources of ignition near enough to cause a fire or explosion in the event of a vapor release or liquid spill.
4. Conduct procedures in a chemical exhaust hood or use a tip-resistant shield for protection whenever an explosion or implosion might occur.
5. Dispose of all wastes in accordance with the applicable Federal, State, and local regulations. **Waste chemicals covered under this plan shall *never* be released into a sanitary sewer system.**
6. The need to work alone in a laboratory outside of regular business hours or on weekends should be minimized to the extent possible. A “buddy” system should be followed by personnel and students working after hours. Employees and students who are working alone after hours or on weekends should have access to a telephone (or cellular telephone) as well as emergency telephone numbers.

When working with chemicals, all personnel and students should know and constantly be aware of the

following:

1. The material’s hazards, as determ

4. How and where to properly store the chemical when it is not in use.
5. Proper personal hygiene practices.
6. The proper methods of transporting chemicals within the facility.

2.1.2 Personal Hygiene

1. Wash promptly whenever a chemical has contacted the skin.
2. Avoid inhalation of chemicals; do not “sniff” to test chemicals.
3. Do not use mouth suction to pipette anything; use suction bulbs or other appropriate apparatus.
4. Wash well with soap and water before leaving the laboratory; do not wash with solvents.
5. Do not eat, drink, smoke, or apply cosmetics in the laboratory. Do not bring food, beverages, tobacco, or cosmetic products into chemical storage or use areas.
6. Do not bring any chemicals or samples into areas used for food or beverage storage, preparation, or consumption.

2.1.3 Protective Clothing and Equipment

1. Eye protection should be worn when working with chemicals. When working with corrosive chemicals, wear goggles as required by the MSDS or other safety reference. When required, also wear a face shield large enough to protect the chin, neck, and ears, as well as the face.
2. When working with corrosive liquids, also wear gloves made of material known to be resistant to permeation by the corrosive chemical; test gloves for the presence of pin-hole leaks.
3. When working with particularly hazardous substances such as acutely highly toxic substances, reproductive toxins, or suspect carcinogens as described in Section 2.4 of this Plan or so identified in the MSDS or on the product label, always wear either a high-necked, calf-or ankle-length, rubberized laboratory apron, or a long-sleeved, calf- or ankle-length, chemical- and fire-resistant laboratory coat.
4. When working with allergenic, sensitizing, or toxic chemicals, wear gloves made of material known to be or tested and found to be resistant to permeation by the chemical and tested for the absence of pin holes.
5. Always wear low-heeled shoes with fully covering “uppers”; do not wear sandals or shoes with open toes in the laboratory.
6. Whenever exposure by inhalation is likely to exceed the threshold limits described in the MSDS, use the material within a chemical exhaust hood. If this is not possible, a proper respirator must be worn. NOTE: Medical clearance by a qualified health care professional, training, and fit testing are required prior to respirator use.
7. Carefully inspect all protective equipment before use. Do not use defective protective equipment.

2.1.4 Housekeeping

1. Access to emergency equipment, showers, eyewashes, and exits must never be blocked by anything, not even a temporarily-parked cart.
2. All chemical containers must be labeled with at least the identity of the contents and the hazards those contents present to users. For any chemical transferred to a temporary container from its labeled container, and which will be kept in that temporary container overnight, the temporary container must be labeled with the identity of the contents and the hazards those contents present to users. mB-c0.3019 Twntain .k 015 TD0 ay

2.1.6 Spills and Accidental Releases

Despite all precautions, spills and accidental releases of chemicals may occur. Every employee and student shall immediately report such incidents to his/her supervisor and to the CSO. Employees in the area of the spill or accidental release shall then be notified of the spill/release and move to a safe area. Remember, even a small spill can result in a harmful exposure to you or others, or can result in hazards that are not obvious. There are two types of spills: *simple spills*, which you can clean up yourself, and *complex spills*, which require outside assistance. The diagram on the following page can help you determine if what has occurred is a “simple spill”. ***Every faculty member and/or supervisor should develop written spill response procedures for materials used in his/her research and teaching laboratories.*** Such procedures should detail the initial steps to take when a spill occurs and include such elements as staff responsibilities, communication methods, instructions on using spill response equipment, and spill cleanup and residue disposal. c

Does it meet ALL three criteria of a Simple Spill?

1. Does not spread rapidly

✧ Spill or toxic vapors are not spreading beyond the immediate area.

2. Does not endanger people or property except by direct contact

✧ A person has not been injured in the incident.

✧ A fire is not present or an explosion has not occurred.

✧ Flammable vapors and ignition sources are not present.

✧ Toxic vapors or dusts (i.e., inhalation hazards) are not present.

✧ The spilled chemical is not a strong oxidizer.

✧ The spilled chemical is not air, water, or otherwise highly reactive.

✧ The identity of the spilled chemical is known.

3. Does not endanger the environment

✧ There is no risk of the spilled chemical entering a sewer or contaminating soils.

Yes

No

<p style="text-align: center;">Simple Spill</p>	<p style="text-align: center;">Get Help: This is NOT a Simple Spill</p>
<p>You can clean up yourself <i>if</i>:</p> <ul style="list-style-type: none"> ✧ you have been trained in spill response, <ul style="list-style-type: none"> cleanup and disposal and are comfortable doing it; ✧ spill cleanup equipment is available; ✧ PPE is available, and you have been trained in its use ✧ you can complete the cleanup in a normal workday 	<p>You probably need the help of trained hazardous materials response personnel.</p>

Hazardous chemicals shall be stored according to the manufacturer's instructions as detailed on the product label and/or in the MSDS. Chemical storage containers and facilities shall be commensurate with the quantities and hazards of the chemicals involved (e.g., flammability, temperature sensitivity, and water reactivity). Stored chemicals shall be examined periodically to assure container and label integrity and to check for signs of deterioration.

Toxic substances shall be segregated in a vented location with adequate hazard markings. Quantities of solvents and other hazardous chemicals shall be kept to the minimum reasonably anticipated to be needed for the work being done.

3. Distribution of Hazardous Chemicals

Chemicals shall be transported in approved carts or in a secondary container. Transportation of hazardous chemicals in the passenger elevators should be kept to a minimum, especially if the elevator is occupied by other passengers.

2.1.9 Disposal of Hazardous Chemical Waste

Hazardous wastes generated as a result of research laboratory activities must be disposed of in accordance with all Federal, State, and local regulations.

Each laboratory in which hazardous chemical waste is generated should have a designated satellite accumulation area (SAA). This area must be at or near the point where the waste is generated, and must be under the control of the operator/generator at all times. Wastes may be collected and stored at the SAA for no more than 90 days before they are transported to a licensed hazardous waste treatment, storage, and disposal unit (TSDF).

The following management standards must be observed for all SAAs:

- containers must be in good condition
- containers must be compatible with the waste
- containers must be marked with the words “Hazardous Waste,” or other words which identify the contents. It is good practice to label containers with both the contents and the “Hazardous Waste” designation to prevent the introduction of incompatible wastes into the same container.
- containers are to remain securely closed at all times, except when adding or removing waste
- each SAA should be inspected regularly, and the inspection results documented.

When the volume of accumulated waste reaches 55 gallons (or 1 quart of acutely hazardous waste), the excess waste must be moved to the Valdosta State University hazardous waste storage area as soon as possible.

2.2 PROCEDURE-SPECIFIC SAFETY PROCEDURES

Supervisors must ensure that all laboratory procedures contain a written description of specific safety practices incorporating the applicable precautions described in this section. Employees should read and understand these practices before commencing a procedure.

2.2.1 Procedures for Toxic Chemicals

The MSDSs for many of the chemicals used in the laboratory will state recommended limits or OSHA-mandated limits, or both, as guidelines for exposure. Typical limits are permissible exposure limits (PELs), threshold limit values (TLVs), and action levels.

When such limits are stated, they will be used to assist the researcher and the **CSO** in determining the safety precautions, control measures, and safety apparel that apply when working with a particular chemical.

2.2.3 Procedures for Reactive Chemicals

Reactivity information is sometimes given in the MSDS and on product labels.

1. A reactive chemical is one that:
 - ◆ is described as such in the MSDS,
 - ◆ is ranked by the NFPA as 3 or 4 for reactivity,
 - ◆ is identified by the DOT as:
 - an oxidizer,
 - an organic peroxide, or
 - an explosive, Class A, B, or C,
 - ◆ is known or found to be reactive with other substances.
2. Handle reactive chemicals with all proper safety precautions, including segregation in storage and prohibition on mixing even small quantities with other chemicals without prior approval of the supervisor and the use of appropriate PPE and precautions.

2.2.4 Procedures for Corrosive Chemicals and Contact-Hazard Chemicals

Corrosivity, allergenic, and sensitizer information is sometimes given in the MSDS and on product labels.

1. A corrosive chemical is one that:

- ◆ has a pH greater than 12.5 or less than 2.0, or
- ◆ is known or found to be corrosive to living tissue.

2. A contact-hazard chemical is an allergen or sensitizer that:

- ◆ is so identified or described in the MSDS or on the label,
- ◆ is so identified or described in the medical or industrial hygiene literature, or is known or found to be an allergen or sensitizer.

3. As noted in 2.1.3(1), handle corrosive chemicals with all proper safety precautions, including wearing both safety goggles and a face shield when required, compatible gloves tested for absence of pin holes and known to be resistant to permeation or penetration, and a laboratory apron or laboratory coat.

2.2.5 Procedures for Compressed Gases in Portable Cylinders

cylinders that contain them, the regulators that control their flow, the piping used to confine them during flow, and the vessels in which they are ultimately used.

A compressed gas is one that:

- ◆ is so defined by OSHA or by DOT.

 - ◆ is contained in an approved compressed gas container
1. Conspicuous signs should be posted in flammable compressed gas storage areas which identify the substance(s) and the appropriate precautions.

 2. Gas cylinders (whether empty or full) shall be transported on sturdy, wheeled carts designed for this purpose. The carts must have restraining straps or chains. Gas cylinders shall **never** be dragged, rolled, or slid across the floor.

 3. Gas cylinders shall be secured firmly at all times.

 4. The appropriate regulator valve shall be properly attached to cylinders ready for use.

2.3 CONTROL MEASURES AND EQUIPMENT

Chemical safety is achieved by continual awareness of chemical hazards and by keeping the chemical under control by using precautions, including engineering safeguards such as exhaust hoods. Laboratory personnel should be familiar with the precautions to be

taken, including the use of engineering and other safeguards. Laboratory supervisors should be alert to detect the malfunction of engineering and other safeguards.

All engineering safeguards and controls

2. The sash of chemical exhaust hoods should be lowered as much as possible while still allowing manipulation of equipment within the hood. A rule of thumb is to maintain the sash at or below the chin level of the operator. Working heights and face velocities should be marked on the hood face. If this information is not shown, faculty members/supervisors should notify the CSO, who will contact the Director of Campus Safety (Mr. Robert DeLong) and the Environmental Health and Safety Coordinator (Ms. Meredith Lancaster).

3. Laboratory employees should understand and comply with the following:
 - a. A chemical exhaust hood is a safety backup for condensers, traps, or other devices that collect vapors and fumes. It is **not** used to “dispose” of chemicals by evaporation unless the vapors are trapped and recovered for proper waste disposal.

 - b. Hoods should not be used as storage areas for chemicals, apparatus, or other materials.

 - c. Exhaust hood sashes should be lowered (closed) at all times except when necessary to adjust apparatus within the hood.

 - d. The hood fan should be kept “on” whenever a chemical is inside the hood, whether or not any work is being done in the hood.

 - e. Personnel should be aware of the steps to be taken in the event of the loss of power or other equipment failure.

 - f. Maintenance personnel shall inspect hood vent ducts and fans at frequent intervals to be sure they are both clean and clear of obstructions.

2.3.2 Flammable-Liquid Storage

1. Flammable liquids (see paragraph 2.2.2.1) in quantities greater than 1 liter should be kept in metal safety cabinets.

2. Cabinets designed for the storage of flammable materials should be properly used and maintained. Read and follow the manufacturer's information and also follow these safety practices:
 - a. Store only compatible materials inside a cabinet.

 - b. Do not store paper or cardboard or other combustible packaging material in a flammable-liquid storage cabinet.

 - c. The manufacturer establishes quantity limits for various sizes of flammable-liquid storage cabinets; do not overload a cabinet.

2.3.3 Eye Wash Fountains and Safety Showers

1. All laboratories in which corrosive or hazardous chemicals are used shall be equipped with eye washes and safety showers.

2. Only those persons trained to work with inimical chemicals will work with those chemicals in a designated area or transport them to or from the approved storage areas. All such personnel will:
 - a. Use the smallest amount of chemical that is consistent with the requirements of the work to be done.
 - b. Appropriately decontaminate a designated area when work is completed.
3. Store all inimical chemicals in locked and enclosed spaces.
4. Because the decontamination of jewelry may be difficult or impossible, do not wear jewelry when working in designated areas.
5. Wear long-sleeved fully-buttoned disposable laboratory coats and gloves known to resist permeation by the chemicals when working in a designated area. Such lab coats and gloves are to be worn only in the designated area while working with inimical chemicals, and are to be removed and bagged for proper disposal at the end of the work session. Do not wear lab coats or gloves into any offices, public areas, or areas approved for food or beverage storage, preparation, or consumption.

3.1 RECORDS AND RECORD KEEPING

1. Records of air concentration monitoring results, exposure assessments, and medical consultations and examinations will be maintained by the Biology Department Head for at least 30 years and they will be accessible to employees or their representatives.

2. Documentation on distribution and maintenance of MSDSs, safety training of employees and students, and of significant employee and student safety suggestions shall be maintained by the Biology Department Head for the life of the Department of Biology.

3. Specific records required in the event of lost work time resulting from an exposure or accident on the job (such as OSHA Form 200 or its equivalent) will be maintained for five years.

4. Records documenting employee and student exposure complaints and suspected exposures, regardless of the outcome of an exposure assessment, will be maintained for 30 years after the employee has terminated employment with the Agency.

5. Other records which may be useful for future reference include:
 - a. Major safety suggestions from employees and students. A suggestion that is

operating equipment, the record may prove to be invaluable if that equipment develops a defect or malfunction at a later date.

APPENDIX A

Employee Information and Training

All newly-hired laboratory employees will receive training in all applicable safety procedures before beginning any laboratory work, and will have access to this CHP (<http://www.valdosta.edu/vsu/dept/cas/bio/chemsafe.htm>), the Biology Department Safety Manual (<http://www.valdosta.edu/vsu/dept/cas/bio/safety.htm>) the Valdosta State University Biosafety Manual (<http://www.valdosta.edu/vsu/dept/cas/bio/BiosafeMan.htm>), the Valdosta State University Policy on the Humane Care and Use of laboratory Animals (<http://www.valdosta.edu/iacuc/>), the Valdosta State University Policy for the Protection of Human Subjects in Research and Research-Related Activities (<http://www.valdosta.edu/grants/irb98a.shtml>), the Valdosta State University Emergency Response Plan (Biology Department Office, Room 2035, Biology-Chemistry Building)., and the Controlled Substances Act (<http://www.usdoj.gov/dea/pubs/csa.html>).

Supervisors are responsible for training employees and students under their supervision in all safety procedures specific to the employee's work assignment before such work is initiated.

1. The supervisor shall provide all laboratory employees and students with information and training concerning the hazards of chemicals in his/her laboratory areas.
2. The supervisor shall provide such information and training when an employee is initially assigned to a laboratory where hazardous chemicals are present and also prior to assignments involving new hazardous chemicals and/or new laboratory work procedures.
3. All employees and students shall be informed of:
 - a. The content, location, and availability of the Chemical Hygiene Plan.
 - b. The PELs, action levels, and other recommended exposure limits for hazardous chemicals as found in used in the employee's work area.

c. Signs and symptoms associated with

APPENDIX B

Examinations Exposure Assessments, Medical Consultations, and

1. Suspected Exposures to Toxic Substances

There may be times when employees or supervisors suspect that an employee has been exposed to a hazardous chemical to a degree and in a manner that might have caused harm to the victim. If the circumstances suggest a reasonable suspicion of exposure, the victim is entitled to a medical consultation by a licensed physician and, if so determined in the consultation, also to a medical examination by a licensed physician at no cost and with no loss of workday time attributed to the victim.

1.1 Criteria for Reasonable Suspicion of Exposure

1. It is the policy of the Department of Biology to promptly investigate all employee-reported incidents in which there is even a remote possibility of employee overexposure to a toxic substance.
2. Events or circumstances that might reasonably constitute an overexposure include:
 - a. A hazardous chemical leaked, spilled, or was otherwise rapidly released in an uncontrolled manner.

- b. A laboratory employee or student had direct skin, eye, or inhalation contact with a hazardous chemical.

- c. A laboratory employee or student manifests symptoms, such as headache, rash, nausea, coughing, tearing, irritation or redness of eyes, irritation of nose or throat, dizziness, loss of motor dexterity or judgement, etc., and
 - some or all of the symptoms disappear when the person is removed from the exposure area and breathes fresh air, and

 - the symptoms reappear soon after the employee or student resumes work with the chemicals.

- d. Two or more persons in the same laboratory work area display similar symptoms or complaints.

1.2 Exposures

All complaints (concerning possible exposures) and their disposition, no matter what the ultimate disposition may be, are to be documented. If no further assessment of the event is deemed necessary, the reason for the decision should be included in the documentation. If the decision is to investigate, a formal exposure assessment will be initiated.

1.2.1 Exposure Assessment

In case of emergency, exposure assessments are conducted after the victim has been treated.

NOTE: It is not the purpose of an exposure assessment to determine that a failure on the part of the victim, or others, to follow proper procedures was the cause of an exposure. The purpose of an exposure assessment is to determine that there was, or was not, an exposure that might have caused harm to one or more employees or students; and, if so, to identify the hazardous chemical(s) involved. Other investigations might well use results and conclusions from an exposure assessment, along with other information, to derive recommendations that will prevent or mitigate any future exposures. However, the purpose of exposure assessments is to determine facts, not to make recommendations.

Unless circumstances suggest other or additional steps, these actions constitute an exposure assessment:

1. Interview the complainant and the victim, if not the same person.

2. List the essential information about the circumstances of the complaint, including:
 - the chemical under suspicion

 - other chemicals used by the victim

 - all chemicals being used by others in the immediate area

 - other chemicals stored in that area

 - symptoms exhibited or claimed by the victim

- how these symptoms compare to symptoms stated in the MSDS, or other reliable data source, for each of the identified chemicals

 - were control measures, such as PPE and hoods, properly used?

 - were any air sampling or monitoring devices in place? If so, are the measurements obtained from these devices consistent with other information?
3. Monitor or sample the air in the area for suspect chemicals.

 4. Determine whether the present control measures and safety procedures are

- c. The signs and symptoms of exposure the victim is experiencing, if any.
3. The physician shall furnish the following, in written form, to the Biology Department Head:
 - a. Recommendations for follow-up, if determined to be pertinent.
 - b. A record of the results of the consultation, and if applicable, of the examination and any tests that were conducted.
 - c. Conclusions concerning any other medical condition noted that could put the employee at increased risk.
 - d. A statement that the employee has been informed both of the results of the consultation or examination and of any medical condition that may require further examination or treatment.
4. These written statements and records should not reveal specific findings that are not related to an occupational exposure.

2.1 Documentation

All memos, notes, and reports related to a complaint of actual or possible exposure to hazardous chemicals are to be maintained as part of the record.

2.2 Notification

Employees shall be notified of the results of any medical consultation or examination with regard to any medical condition that exists or might exist as a result of overexposure to a hazardous chemical.

APPENDIX C

Safety References

Safety Resources

Paper copies of MSDSs are maintained in the Department of Biology Main Office, Biology-Chemistry Building, Room 2035, as well as in the appropriate laboratories.

Useful Websites for Chemical Safety Information:

Valdosta State University Campus Safety - <http://services.valdosta.edu/safety/>

VSU Campus Safety, Useful Links - <http://services.valdosta.edu/safety/links.aspx>

U.S. Dept. of Labor, Occupational Safety and Health Administration --
<http://www.osha.gov/>

National Fire Protection Association – <http://www.nfpa.org/>

Agency for Toxic Substances and Disease Registry – <http://www.atsdr.cdc.gov/>

Hazardous chemicals and MSDSs:

<http://hazard.com/msds/>

<http://www.ilpi.com/msds/index.html>

Environmental Health & Safety, University System of Georgia –
<http://www.usg.edu/ehs/GA>

Gateway for Safety and Health Information Resources (Osh.net) – <http://www.osh.net/>

University of Connecticut Environmental Health and Safety Home Page –