

HAZARD COMMUNICATION PROGRAM

The number one purpose of the Hazard Communication Standard is “to ensure that the hazards of all chemicals produced or imported are evaluated, and that information concerning their hazards are transmitted to employers and employees.” The practice-specific hazard communication program transmits this information to employees. This program addresses container labeling and other forms of warning, MSDS sheets and employee training.

The Safety Coordinator (SC) for the VCU School of Dentistry is responsible for the oversight of the Hazard Communication Program. Additionally, Clinical Safety Coordinators (CSC) will be identified for each clinical area; and a Laboratory Safety Coordinator (LSC) will be identified for the laboratories. The SC for these respective areas will evaluate all chemicals used in their facility to determine if they are hazardous. The Safety Coordinator will compile a complete list of all hazardous chemicals used in the School of Dentistry and will update the list immediately when a new chemical is obtained. This chemical list will be contained in a manual in each clinical area and designated laboratories.

The hazard determination will be based on the information contained in the Material Safety Data Sheet (MSDS) supplied by the manufacturer of each chemical.

If a new chemical or material arrives without an accompanying MSDS, the CSC or LSC will immediately contact the manufacturer or the supplier and request the appropriate MSDS. If the coordinator is unable to get a MSDS from a supplier or a manufacturer, he or she will contact the local OSHA office for assistance. If a MSDS is not available because the material is “not hazardous,” the supplier must provide a written statement to that effect, and the written statement will be filed with the other MSDS sheets

This dental facility will follow all guidelines in this section on hazardous chemicals. The following policy explains in detail just how this practice will comply with the Hazardous Communication Standard, including instructions and other helpful information.

HAZARD COMMUNICATION POLICY

The purpose of this notice is to inform you that the VCU School of Dentistry at 520 N. 12th Street and 521 N. 11th Street has named Dr. Betsy Hagan as the person charged with overall responsibility for the Hazard Communication Program, in compliance with OSHA Hazard Communication Standard, Title 29, Federal Regulations Code 1910.1200. The Safety Coordinator has the full support and authority of the employer to ensure compliance is maintained in this facility. The Clinical Safety Coordinators and Laboratory Safety Coordinators are:

<i>John Moser</i>	<i>IMS/CS</i>
<i>Cindy Moore</i>	<i>Service Lab</i>
<i>Lynn Legg</i>	<i>Radiology</i>
<i>Paul Abbey</i>	<i>Wood and Lyons Clinic</i>
<i>Theresa Duke</i>	<i>OMFS</i>
<i>Kim Haney</i>	<i>Pediatric Dentistry</i>
<i>Anne Sherrick</i>	<i>Orthodontics</i>
<i>Hazel Luton</i>	<i>AEGD/ Wood and Lyons Clinic</i>
<i>Linda Bartlett</i>	<i>Graduate Prosthodontics</i>
<i>Ann Fowler</i>	<i>Graduate Endodontics</i>
<i>Irene McGovern</i>	<i>Graduate Periodontics</i>
<i>Steve Wilk</i>	<i>Faculty Practice</i>

The Hazard Communication Standard included in this section requires employees and employers to come into compliance with its Standards. This includes:

- 1) Ensuring that all containers are properly labeled.*
- 2) Establishing a list of hazardous chemical substances in the workplace.*
- 3) Compiling a library of MSDS sheets.*
- 4) Establishing workplace safety practices.*
- 5) Providing necessary personal protective equipment and training for all employees at risk for exposure to hazardous chemicals.*

The Hazard Communication Program teaches the hazardous nature of the substances with which you work, proper and safe handling procedures, and the steps you must take to protect yourself from harm during normal working conditions or in an emergency situation in the workplace.

This office provides written materials, including copies of the official standard and written methods of compliance. These materials are available upon request from the Safety Coordinator for each designated area. Initial and annual training is provided for all employees who may come into contact with hazardous chemicals.

OSHA requires each employee to read the Hazard Communication Standard.

LABELING AND OTHER FORMS OF WARNING

This practice will ensure that every hazardous chemical bears the appropriate labeling and warnings as prescribed in the Hazardous Communication Standard.

Labels and other forms of warning for each incoming hazardous chemical will be inspected by the Safety Coordinators for compliance with Section (f) of the Occupational Health and Safety Standards (copy included with this document) and to ensure that proper forms of warning are posted. Anytime incoming chemicals are not fully and adequately labeled, the Clinical Safety Coordinator or the Laboratory Coordinator will complete the labeling according to the regulation.

The Clinical and Laboratory Safety Coordinators will ensure that all containers and chemicals in this practice are labeled whether they are hazardous or not. Manufactured products in their original containers are already labeled, and have hazard warnings such as Flammable, Eye Irritant, etc. The problem lies with secondary, unmarked containers, which must be labeled before being put into use.

Chemicals that are not in the original container require labels. A label must be affixed to the outside of the container and clearly note:

- *The **CHEMICAL IDENTITY** of the material*
- *The **NAME AND ADDRESS** of the manufacturer*
- *The **HAZARDS** associated with its use*
- *The **TARGET ORGANS***

Clearly print this information on labels and cover them with clear, waterproof tape for permanency.

A photocopy of the original label may be used as the label for an unmarked bottle prevents if it can be done without defacing the original label.

No label on incoming containers of hazardous chemicals shall be removed or defaced.

If chemical materials are transferred into a temporary container and the container is only for immediate use by the person who transferred it, no labels are required for the portable container.

Any unlabeled container must be reported to the appropriate Safety Coordinator named in this policy.

Labels are used to warn employees who may have contact with containers of the potential hazard posed by their contents. Biohazardous labels must be attached to containers of regulated waste, including refrigerator and freezers containing regulated waste or other potentially infectious materials.

CHEMICAL INVENTORY LIST

The School of Dentistry will maintain a chemical inventory list as described below. A list of all hazardous chemicals used in each location of this facility will be prepared and will include the following information: CHEMICAL NAME, BRAND NAME and/or MANUFACTURER, whether the chemical is HAZARDOUS OR NON-HAZARDOUS, AND MSDS ON FILE NOTATION. If no MSDS is required, that will be noted.

The list for each location in the dental school is compiled and reviewed periodically. Every bottle, carton, gas cylinder, and machine at the location must be inspected and every container, which is hazardous, i.e., bears a hazardous warning, must be included in the list. These lists are maintained separately.

Words like "Flammable," "Requires ventilated areas," "Do not heat beyond 120 degrees," etc. constitute hazard warnings. Household products do not require listing unless they are used in a manner or quantity different from typical household use. Bleach does require listing.

Completing the List

*Lists are available from the Safety Coordinator in each area. If a substance is hazardous, the **CHEMICAL NAME**, the **BRAND NAME**, and hazardous status will be recorded.*

The last column is a check off list. When the Material Safety Data Sheet for each listed hazardous material has been received, the Safety Coordinator will note it in that column.

MSDSs are updated as necessary by the manufacturer. Updated MSDSs will replace outdated ones in the MSDS library. New MSDSs must be posted in a prominent place for two weeks, then filed with the others. The Safety Coordinator for each area is ultimately responsible for the accuracy of the lists. Old MSDSs must be kept for at least 3 years.

The Safety Coordinators will check all new chemicals received regarding hazards and MSDS requirements. If someone other than the Safety Coordinator receives new chemicals, that person should notify the Safety Coordinator soon as possible to ensure proper MSDSs sheets are obtained and filed and employees can be trained in its use and hazards if necessary.

After the chemical list is completed and checked, MSDSs (Material Safety Data Sheets) are obtained for each product from the manufacturer or from the distributor who sold the product.

EXEMPTIONS

Pharmaceutical products that are covered if they meet OSHA hazard criteria include liquids, semi-solids (creams, ointments, lotions), powders and aerosols. OSHA hazard classes cover both health hazards (e.g., highly toxic, sensitizer, etc.) and physical hazards (e.g., flammable liquid, etc.)

In particular, any drugs which are in gel, powder, liquid or aerosol form require an MSDS sheet as well as drugs which have been changed from their original solid form prior to patient administration, such as by crushing. (Ref: HazCom Standard 29 CFR 1910.1200 (g)(1).

Any medication that is in solid final form for direct administration to the patient does not require an MSDS sheet to be on file.

Exempted *are pharmaceuticals which are received sealed, remain sealed, and go home with the patient sealed (samples, dispensed products if sealed), tablets and capsules which remain tablets and capsules (are not pulverized or broken apart for administration in the practice.)*

Also exempted are most products brought from home for personal use and most consumer products provided that the employer can demonstrate that the products are used in the workplace as intended by the manufacturer, resulting in no greater exposure than would be experienced in the home. Bleach, "White-Out"-type products, copier toner cartridges, and some detergents require MSDSs.

INTERNALLY PRODUCED HAZARDOUS MATERIALS

Biohazardous medical waste, chemical waste and/or compressed air, handling and disposal of the biohazardous wastes are covered under the waste section of the Bloodborne Pathogen Program.

EMPLOYEE INFORMATION AND TRAINING

Information and training as required by Section (h) of the Hazard Communication Standard will be provided to all employees at the time of initial assignment, or whenever a new hazard is introduced into their work area, and for any existing hazard(s). Employees will be taught the fundamental health and physical hazards associated with the specific chemicals to which they are exposed or would be exposed in a foreseeable emergency. Employees will be trained to know the chemical's effect on the body; how to detect an overexposure; what personal protective equipment or procedures are needed when handling the chemical; how to properly and safely cleanup an accidental spill; and how to read and understand the MSDS.

Training will be provided annually for all employees. Written records of the training will be kept in the Office of Clinics.

Training will be provided with assistance from consultants, utilizing such aids and methods as: verbal instruction; demonstration of handling certain chemicals; protective equipment use; interpretation of labels and wall charts; question and answer sessions.

Training will be provided by this facility, as required by OSHA, during the Fall Semester. This training may include seminar presentation, videos, written materials and tests. Time will be allotted for employee questions. Training will occur:

- *During normal working hours and at not cost to the employee.*
- *For all employees, full time or part time, as potential risk for hazardous chemicals.*
- *When new hazardous materials and associated information are received.*
- *Whenever safe handling and emergency procedures are modified.*
- *Annually as a refresher training for all employees using hazardous materials.*
- *For new employees before their initial assignment.*
- *For contract workers.*

In the unlikely event that an employee will be involved in a non-routine task, that employee will be informed of the hazard involved, and trained at specific training sessions prior to performing the task.

CHEMICAL SPILL KIT

This practice will maintain spill kits (components listed below), replacing components as they are consumed, and will train all employees on how to properly clean up spills, whether of chemical or biological origin.

*All employees must refer to the MSDS sheet for proper cleanup procedures of a chemical spill. This spill kit is to be used in the cleanup of **ALL** chemical spills and biohazardous spills of more than 15 ml. Special biohazardous spill kits are available, with the absorbent also acting as a disinfectant. Mercury spill kits or a sulfur-containing powder must be used to remove mercury. Mercury cannot enter the general waste stream.*

The personal protective equipment (apron, nitrile gloves, masks and gloves) will be worn by any employee when cleaning up the spill.

If the spill involves blood or other potentially infectious materials, then the spill bag or container must be placed in the biohazardous waste container. Proper disinfection of the spill area is imperative following cleanup of a biohazardous substance (see exact protocol under Infection Control Program – Emergency Procedure Program).

SPILL CLEAN-UP PROCEDURES

1. **Isolate the area and seek assistance. (For serious chemical spills such as mercury, contact the Office of Environmental Health and Safety at 828-9834.)**
2. *If the spill is chemical, get the MSDS Sheet and read how to clean up spill.*
3. *Retrieve the spill kit. (Located in Wood and Lyons Clinic dispensaries and a wall-mounted kit in one student lab for each class).*
4. *Put on the appropriate personal protective equipment: face protection, gown, and heavy-duty gloves.*
5. *Pour absorbent on the spill, using enough that the spill becomes manageable in a solid form.*
6. *Using the broom and scoop in the chemical spill kit, sweep up the spill and dispose according to MSDS directions or, if a biohazardous spill, dispose in a red bag.*
7. *Clean the area with soap and water.*
8. *If the spill is potentially biohazardous, spray the area with a hospital grade disinfectant using the spray-wipe-spray technique.*

The **Spill Kit should contain the following items: Absorbent; Personal Protective Equipment (face shield, gown, gloves), small broom and dust pan, bags for disposal, paper towels for cleaning, disinfectant.*

STORAGE AND HANDLING OF HAZARDOUS CHEMICALS

Chemicals will be stored in cool, dry areas at temperatures between 67°F and 94°F, unless the manufacturer notes otherwise. Storage areas should be constructed so that shelving is fixed securely to the floor or wall and should be away from direct sunlight, high heat and humidity, and ignition. Access to the storage area should be limited to authorized personnel only.

Chemicals will be stored in properly labeled containers with special attention given to hazard warnings. These warnings will alert employees using the chemicals not to store incompatible materials in the same area. Chemicals need to be stored by their potential hazard, not alphabetically. These hazard classes areas follow: Health Hazard, Carcinogen, Compressed Gas, Corrosive, Flammable, Moderate Poison, Non-Hazardous, Radioactive, Severe Poison, Water Reactive, and Oxidizers.

Flammables need to be stored in special storage areas. Water reactive chemicals need dry storage. Strong oxidizers need to be separated from other chemicals. Compressed gas cylinders should be secured and supported.

Each employee should read the manufacturer's or supplier's directions before using any product, noting the possible hazards, both physical and health, of the product. The proper information should be on the label for products containing hazardous chemicals.

MATERIAL SAFETY DATA SHEETS (MSDSs)

The Safety Coordinators for each area will maintain a library of MSDSs on every substance on the hazardous chemical list. These sheets will be available to all employees at all times.

Manufacturers must prepare an MSDS for each product they make. The sheets contain a wealth of emergency, cautionary and general information about the product. Each employee must be familiar with the MSDS sheet for each hazardous product they use. Page 7, Paragraph G of the Hazardous Communications Standard explains the MSDS sheet. Each person handling hazardous chemical substances must read this.

The MSDS will prevail if a difference exists between the label information and the MSDS sheet. If there is any question if a chemical is hazardous, presume that it is. The MSDS sheet will answer the question.

If the MSDS have not been received, the Safety Coordinator will contact the manufacturer of the chemical or the supplier of the chemical to ensure receipt of the MSDS.

MATERIAL SAFETY DATA SHEETS (MSDSs) INTERPRETATION

Identity

This section identifies the product; for example, "Isopropyl Alcohol." The information recorded here will be used on the corresponding label for the individual product. If the employer feels the information found on the MSDS form corresponds with the material(s) the workplace is using, the brand name of the product can be entered here.

Section I

Name, address, and phone number of the manufacturer or distributor of the product is located here. The date the MSDS was prepared is also indicated in this section.

Section II – Hazardous Ingredients

This section lists the hazardous components of the material identified in the IDENTITY section. In the Isopropyl Alcohol example, Isopropanol would be listed here. A brief description to identify the material is listed also.

- *OSHA PEL: defines the permissible exposure level of the chemical.*
- *ACGIH TLV: defines the American Conference of Governmental Industrial Hygienists Threshold Limit Value. TLV means the airborne concentration of the substance that represents conditions under which it is believed nearly all workers may be repeatedly exposed day after day without adverse effects.*

Section III – Physical/Chemical Characteristics

This section contains information physical characteristics of the chemical: the boiling point, appearance, melting point, solubility in water, vapor pressure, and density (see the Glossary of Terms located in this section for the definitions of these characteristics).

Section IV – Fire and Explosion Hazard Data

This section contains information on the flash point of the chemical, how to distinguish a fire involving the chemical, and any unusual hazards associated with this chemical.

Section V – Reactivity Data

This will give the worker information that can aid in the storage and handling of the chemical.

Stability: *this is how a chemical will react in its pure state when it self-reacts under conditions of shock, pressure, or temperature.*

Incompatibility: *how other materials or contaminants in which the hazardous chemical may come in contact with will produce a reaction.*

Hazardous Decomposition Products: *hazardous chemicals may produce dangerous amounts by burning, heating, or oxidizing.*

Hazardous Polymerization: *this takes place when a chemical cures or hardens releasing large amounts of energy. The catalyst to cause this may be from heat, temperature, sunlight, etc.*

Section VI – Health Hazard Data

Information here must note the target organs that are affected.

Routes of Entry

Carcinogenicity

NTP: *National Toxicology Program report*

IARC Monographs: *International Agency for Research on Cancer*

OSHA: *does OSHA classify this chemical as a potential carcinogen?*

Section VII – Precautions for Safe Handling and Use

- **In The Event Of A Spill:** *list here what is to be done in the event of a spill or leak.*
- **Waste Disposal Method:** *how to dispose of hazardous solids and liquids. How to properly clean up after an accidental spill.*
- **Precaution To Be Taken:** *describes storage and handling so as not to cause a hazardous reaction.*

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- ***Waste Disposal Method:*** how to dispose of hazardous solids and liquids. How to properly clean up after an accidental spill.
- ***Precaution To Be Taken:*** describes storage and handling so as not to cause a hazardous reactions.

Section VIII – Control Measures

- ***Respiratory Protection:*** list the type of protective equipment, type of ventilation and precautions to be used when handling this material or when accidentally spilled.
- ***Protective Gloves:*** give the type of gloves needed to handle the hazardous material or indicate if protection is needed.
- ***Eye Protection:*** list goggles or face shield protection if needed.
- ***Ventilation:*** Local exhaust is equipment that captures fumes at the source. Mechanical exhaust would imply general room ventilation and not specifically at the source.
- ***Work/Hygiene/Maintenance Practices:*** notes what personal hygiene steps the employee must take when handling this material.

When a new product comes into the workplace, all employees need to be informed of the new hazards associated with the chemicals in this product. The Safety Coordinator for each area will provide training prior to any employee working with the new chemical.

FIRST AID

In Section IV, Health Hazards of the MSDS form, information can be found on emergency and first aid procedures for the chemical listed.

This portion of the manual further explains the information found on the MSDS form. Common first aid procedures will be described as well as a general guide to handling chemicals to avoid ingestion, inhalation, eye contact, and contact with skin.

INGESTION

- *Swallowing chemicals can result in reactions that range from irritating the stomach to serious injury or death.*

The best way to prevent ingestion is by not using your mouth to start siphoning chemicals. Use an aspirating bulb or other device to siphon chemicals or liquids.

- *Contaminated containers used to store food, or eating foods with contaminated hands is another way to induce ingestion.*

It is best not to eat or drink where chemicals are being stored. Do not store food and chemicals in the same refrigerator. Wash your hands before you eat.

- *Know the hazards of each chemical that you are using.*

The symptoms of chemical poisoning can be: irritation and burning of the lips, throat, mouth; nausea and vomiting; diarrhea; breath odor.

- *If mouth contact or swallowing of a chemical occurs, you must know what to do or not do. The treatment objective in poisoning by mouth is to dilute or neutralize the poison as quickly as possible. Induce vomiting except when a corrosive poison is swallowed or if the victim is unconscious or having convulsions. Maintain respiration, preserve vital functions, and seek medical assistance without delay.*

TREATMENT FOR POISONING

<i>You know that the victim has not swallowed a strong acid, strong alkali, or petroleum product, but do not have the original container.</i>	<i>You do not know what poison the victim swallowed.</i>
<i>1. Dilute the poison with water or milk.</i>	<i>1. Dilute with water or milk.</i>
<i>2. Induce vomiting except for those chemicals listed above.</i>	<i>2. Try to find what poison was taken and when.</i>
<i>3. Get medical help immediately.</i>	<i>3. Get medical help promptly.</i>

INHALATION

Safety procedures

- *For fume poisoning from inhaled gases, remove victim to fresh air. Start artificial respiration if needed. Call for medical help.*

Toxic chemicals can enter the body through the lungs in the form of vapors, gases, dusts, or even liquid. This can cause permanent injury to the lungs, nervous system, other body organs, or even death. Know the chemicals you are handling. Do not smell chemicals that are not properly identified. The symptoms of severe poisoning may not be known for hours.

Handle chemicals in well-ventilated spaces or exhaust the fumes to remote areas. Use a mask. Be advised that the work area can contain vapor or dust levels too low to detect by smell. Effects of chemicals may be cumulative or not known for hours or years.

Maintain a clean work area. Do not smoke in areas where chemicals are handled.

The maximum permissible exposure for specific chemicals has been established and documented as the TLV information on the MSDS form.

Symptoms and First Aid for Inhalation

Irritation of the skin, eyes, or respiratory system are symptoms of severe poisoning. Additional symptoms may include difficulty in breathing, headache, nausea, sleepiness, or nausea occurs; leave the contaminated area at once, get fresh air, and get medical assistance.

SKIN CONTACT

Safety Procedures

- *Avoid skin contact of chemicals by wearing protective clothing such as gloves, goggles, and laboratory aprons or other protective clothes.*

The skin can come in contact with chemicals from splashing, immersion, or saturation of clothing. This contact can lead to dermatitis and chemical burns of the skin that include blistering and tissue death.

- *Know the chemical you are working with. The protective clothing you may be using may not give adequate protection against the chemical due to the chemical breakdown of the material or permeation through it.*

When removing gloves that have come in contact with the chemical, wash the gloves before you remove them to prevent the chemical from being transferred onto the skin. Remove saturated clothing that contacts the skin.

- *Using soap or detergent can be used to aid in the removal of some chemicals, but may not neutralize them. Know your first aid for the chemical you are working with. Check the MSDS if unsure.*

Do not use organic solvents in cleaning any skin surfaces. These solvents may be absorbed through the skin or may increase the rate of absorption of other chemicals.

Symptoms and First Aid for Skin Contact

The symptoms associated with skin contact may include irritation, inflammation, blisters, and tissue damage. Chemical burns may not be apparent immediately. If first aid information advises, or irritation or inflammation continues, seek medical attention.

In case of contact with a chemical on the skin flush the area with water for at least 15 minutes, unless the manufacturer advises otherwise.

Do not reuse contaminated clothing until they are properly decontaminated.

EYE CONTACT

Safety Procedures

- *Wear proper eye protection when you are working with chemicals or when you are in an area where others are working with a chemical.*

Permanent injury or blindness can be caused by liquid, solid, or gaseous chemicals entering the eye. Many laboratories require protective eye wear in all work areas.

- *Do not touch your eyes with contaminated hands. Eye protection is necessary whenever particles or liquids may be thrown into the eye (see Potential Health Hazards under SAFETY section of the MSDS).*
- *The eye protection you use should include safety lenses that will not shatter.*
- *Contact lenses should not be worn in areas where chemicals, dust, or particles can be splattered because gases can concentrate under the contact lens causing damage to the eye, or causing soft lenses to stick to the eye as the gases are absorbed. Small particles can get trapped under the lenses causing irritation and inflammation. Soft lenses can dry out in hot, low humidity environments. This can cause difficulty in removal in an emergency.*

Symptoms and First Aid for Eye Contact

The symptoms of injury to the eye may include: painful burning sensation, watering of the eye, inflammation, and sensitivity to light. Strong alkalies may not produce pain immediately.

A 30-second delay in treatment of the eye contact with a chemical can result in loss of vision.

*Action must take place immediately when an eye injury occurs. Use a **soft flow of cool water** immediately when a chemical enters the eye. Wash the eye for 15 minutes. Hold the lids open and roll the eyeball around to wash the eye thoroughly.*

Seek medical attention immediately.

Eyewash Stations

This facility will install eyewash stations as needed. All stations are clearly identified.

The eyewash station must be “easily accessible” to the laboratory and x-ray, and unobstructed for ease of use to employees who are performing those tasks which may result in splashes of hazardous chemicals to the eye.

It must be approved by the American National Standards Institute (ANSI).

It must be operational with one hand movement; provide a continuous flow of clean water for at least 15 minutes; be continuously operating while the employee holds both eye lids open; be balanced on both sides, with sufficient force to meet in the middle.

This practice will maintain proper use by following the manufacturer’s instructions and cleaning as needed.

Try to find what poison was taken and when.

Selected Chemicals

GLUTARALDEHYDE

Glutaraldehyde in healthcare facilities is generally used as cold sterilant for medical instruments. The most common concentration for sterilization purposes is 2%. Additives may include surfactants, odorants, corrosion inhibitors, buffers, and dyes. (Buffered solutions must be replaced every two weeks.)

Popular products containing glutaraldehyde include Cidex, Wavicide, Metricide, and Omnicide.

Employees at risk include cleaning staff and dental assistants.

Adverse health effects may include nose, eye, and skin irritation, skin sensitization, and allergic contact dermatitis. Severe headaches have also been reported.

An exposure limit ceiling for glutaraldehyde of 0.2 ppm is currently recommended by the National Institute for Occupational Safety and Health. OSHA enforces this limit under its general duty clause. The American Conference of Governmental Industrial Hygienists recently lowered that level to 0.05 ppm. OSHA has not yet enforced the lower limit.

Monitoring may be accomplished by the use of personal monitoring badges and direct-reading instruments.

Proper ventilation of a minimum of six air changes per hour is recommended to protect employees from over-exposure. Containers should be covered whenever possible.

Personal protective equipment should be used to prevent skin contact, including face protection and heavy-duty gloves. Employees must not inhale glutaraldehyde fumes, must wash skin immediately if contaminated, and must remove contaminated clothing and wash it before wearing it again.

Spills must be immediately cleaned up according to a written procedure.

Employee training must include all of the above information.

RADIOLOGY CHEMICALS

Hazards from x-ray fixer are almost non-existent. The use of personal protective equipment (gloves and eye shields) with good ventilation should prevent problems. Should exposure occur, wash the affected area thoroughly with soap and water. If the eyes are exposed, use an eye wash station!

The x-ray developer, on the other hand, can cause kidney damage, skin and eye irritation, and allergic skin reactions.

Personal protective equipment should be worn when handling x-ray developer and should include, minimally, heavy-duty utility gloves and eye protection. It should be handled only in well-ventilated areas.

First-aid Measures

- **Inhalation:** *If symptomatic, move to fresh air. Get medical attention if symptoms persist.*
- **Eyes:** *Flush with clean water using the eyewash station for 15 minutes. Again, seek medical help if symptoms persist.*
- **Skin:** *Remove clothing and wash with soap and water. Thoroughly clean or dispose of contaminated shoes and clothing. Seek medical attention if skin irritation or allergic reaction develops.*
- **Ingestion:** *If swallowed, induce vomiting as directed by medical personnel. Call a physician or poison control center immediately.*

Common sense prevails. Always handle chemicals as little as possible, wear personal protective equipment, and provide adequate ventilation.

Flush affected areas with copious quantities of water, after removing any contaminated clothing. Seek medical attention if symptoms persist or go beyond a very mild, transient reaction.

MERCURY

While many hazardous chemicals in the healthcare environment have been replaced with less-hazardous substitutes, some are still around. Mercury is one of them, still found in some thermometers and in blood pressure cuffs.

- ***What do you need to know about mercury?***

Mercury is an extremely hazardous chemical. While it is not flammable or reactive, it poses serious health risks.

Mercury enters the body through inhalation of vapors, injection and skin contact.

Inhalation of vapors may cause coughing, chest pains, nausea, and vomiting.

Chronic effects of overexposure may include irreversible kidney, liver, and/or brain damage.

- ***How should you respond to a spill?***

Contact Chemical Spills at 828-9834

First Aid Mercury contact:

- *Contact Employee Health*
- *Immediately flush eyes or skin with copious quantities of clean water for at least 15 minutes while removing contaminated clothing and shoes.*
- *Wash clothes before reuse.*

First Aid for Swallowing:

- *Contact Employee Health*
- *If conscious, induce vomiting immediately.*

First Aid for Inhalation:

- *Contact Employee Health*
- *Move to fresh air*
- *If not breathing, give artificial respiration*
- *If breathing is difficult, give oxygen.*

NOTE: *While mercury is very hazardous, health problems are experienced only with direct contact or ingestion, or over long periods of time. A one-time exposure to a small quantity will not be harmful unless ingested.*

