About This Brochure

This document provides VCU and VCUHS employees with important information regarding the safe use of chemical substances. Under the Occupational Safety and Health Administration (OSHA) Hazard Communication Standard, all workers are guaranteed the right to know about possible hazards associated with chemical substances found in their work environment. Please review this information carefully. It could help prevent serious injury to you or a fellow worker. This brochure is provided to all VCU and VCUHS employees. Individuals who work directly with hazardous chemicals will receive additional information and training from their supervisors.

Labels and Other Forms of Warning

Chemical manufacturers are required by OSHA to label their products with the following:

- Identity of the hazardous chemical
- Appropriate hazard warnings
- The name, address, and phone number of the manufacturer

If chemicals are transferred to other containers, these containers must be labeled with the identity of the chemical and the appropriate hazard warning information.

Employee Information and Training

Before starting work, new employees are required to attend or view the new employee orientation program. Information about specific hazards within the work area is provided by the supervisor. This training must cover (at a minimum) the following topics:

- Chemicals used in various work procedures
- Personal Protective Equipment (PPE) to be worn to prevent or reduce exposures
- Work practices which could reduce or eliminate exposures; e.g., universal precautions
- Safety and emergency procedures to follow if exposure occurs; i.e., spill cleanup kits, first aid, substance neutralizers, etc.
- The location and availability of the chemical inventory and SDSs

Unit/department training must be documented and include the employee's name, job title, training date and type of training offered. Retraining is required when job processes change, involve new or different hazards, or are necessary to enhance employee safety awareness.

Chemical Effects

Chemical substances come in several different forms and can have different effects on your body. Some chemicals cause "acute" problems that you feel right away such as breathing difficulties and burns. Other chemicals cause "chronic" problems where the effects of exposure may not be evident for months or even years. As example of chronic effects is the development of silicosis in artists caused by crystalline silica dust.

Types of Chemical Substances

Some chemical forms you may come in contact with include:

Fumes, Mists and Dusts: All of these substances are carried in the air and may be inhaled; they can cause breathing problems and may also cause burning and stinging of the nose, throat and eyes. Adequate ventilation and proper protective equipment will limit your exposure to these substances.

Solvents: These products are used in several work locations and are used to dissolve other substances. Common examples are degreasers and paint thinners. These products commonly affect the skin, causing drying and cracking while the fumes or vapors may cause breathing problems. Wear gloves and work in well-ventilated areas when using solvents.

Acids and Caustic Substances: These products damage the skin and burn the eyes. Ammonia, bleach, and lye are commonly used chemicals. Protection from acids and caustics includes the wearing of protective clothing, gloves, and goggles.

If you have questions regarding the safe use of chemicals in your work environment, contact your supervisor. If additional information is needed, contact OEHS at the phone numbers listed below.

828-OEHS Office of Environmental Health & Safety
828-1392 Chemical / Biological Safety
828-7899 Fire & Occupational Safety
828-9131 Radiation Safety
Chemicals and Our Environment

There are more than a half million different chemicals currently used in the U.S. every day. Many more are introduced each year. They enhance our lives and have become an integral part of our lifestyles. Chemicals are found in nearly every work environment. Some are as commonplace as printer toner, but at VCU and VCUHS, many complex and highly toxic chemicals are used as well. It is necessary to become familiar with all of the chemical substances in your work environment, the appropriate precautions required to handle them safely, and the first aid/emergency procedures unique to those substances should an accident occur.

Routes of Entry into the Body

The basic ways chemicals enter the body are:

1. **Inhalation.** The most common way for a chemical substance to enter the body is by breathing a chemical that is mixed in the surrounding air. The lungs readily absorb particles and gases. Hazardous chemicals that can become airborne should only be used in well-ventilated areas or while using proper respiratory protection.

2. **Ingestion.** The second way chemicals enter the body is through the mouth. Chemical ingestion usually occurs unknowingly and unintentionally. Occasionally, a person ingests a chemical they mistake for a food or beverage. More likely, however, chemical ingestion occurs when one eats, drinks, or smokes contaminated food, beverages, or cigarettes. To prevent ingestion, wash your hands thoroughly before breaks.

3. **Absorption.** The third way chemicals enter the body is through the skin. Chemicals such as organic solvents can be absorbed directly through the skin barrier. Other chemicals cause damage to the protective skin layers and can then be readily absorbed. To protect yourself from accidental absorption, wear appropriate protective clothing such as gloves, impervious apron, face shield, etc.

The Hazard Communication Standard

The Hazard Communication Standard (HCS) is not only a federal law, but is also incorporated into the compliance criteria for nearly every accrediting agency; e.g., TJC, CAP, AAALAC and others. The following outlines the various steps required to comply with the HCS.

- Develop and maintain an accurate inventory of hazardous materials present in the work environment.
- Provide a source or maintain Safety Data Sheets for each item on the inventory.
- Ensure hazardous chemicals are properly labeled. Under the law, the manufacturer has the responsibility to properly label their products.
- Train employees to safely handle hazardous materials. This includes, selection, use, and maintenance of appropriate personal protective equipment.
- Develop written standard operating procedures for safely managing chemical spills and non-routine tasks.
- Inform employees about the availability of the chemical inventory, SDSs, and standard operating procedures for safely managing hazardous chemicals.

Chemical Inventory

Units/departments at VCU and VCUHS must compile a list of hazardous chemical substances. The list must be maintained in an area which is readily available to all unit/department employees. As new substances are purchased or old ones are discontinued, the inventory must to updated to reflect these changes.

<table>
<thead>
<tr>
<th>Product Identification</th>
<th>Hazard (s) Identification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Composition/information on ingredients</td>
<td>First-aid measures</td>
</tr>
<tr>
<td>Fire-fighting measures</td>
<td>Accidental release measures</td>
</tr>
<tr>
<td>Handling and storage</td>
<td>Exposure controls/ personal protection</td>
</tr>
<tr>
<td>Physical and chemical properties</td>
<td>Stability and reactivity</td>
</tr>
<tr>
<td>Toxicological information</td>
<td>Ecological information</td>
</tr>
<tr>
<td>Disposal considerations</td>
<td>Transport information</td>
</tr>
<tr>
<td>Regulatory information</td>
<td>Other information (date of preparation or last revision)</td>
</tr>
</tbody>
</table>

Safety Data Sheets

The HCS requires chemical manufacturers to provide consumers with Safety Data Sheets (SDSs). Every SDS contains these sections.

**CAUTION:** Make sure your product search is for the exact product you use. Be sure to type in the correct name brand of the product and/or the chemical concentration as applicable.