Latex Alert

WARNING - Workers exposed to latex gloves and other products containing natural rubber latex may develop allergic reactions such as skin rashes; nasal, eye, or sinus symptoms; asthma; and (rarely) shock.

Laboratory personnel are at risk for developing latex allergies. As many as 11% of workers exposed to latex at work become sensitized. This may be because more people are wearing latex gloves or because physicians are more familiar with latex allergy.

To prevent sensitization and minimize affects on sensitized workers, EH&S recommends switching to nitrile type surgical gloves. Nitrile gloves are more durable than latex gloves and provide a clear indication when there is a break or tear. Nitrile gloves also offer a broader resistance to hazardous chemicals and are non-allergenic. If latex gloves are absolutely necessary, then hypoallergenic, powder-free gloves should be purchased.

Type of Reactions to Latex

Three types of reactions can occur in persons using latex products:

1) Irritant contact dermatitis - The development of dry, itchy, irritated areas on the skin, usually the hands, caused by irritation from using gloves and possibly by exposure to other workplace products and chemicals. Irritant contact dermatitis is not a true allergy.

2) Allergic contact dermatitis (delayed hypersensitivity, chemical sensitivity dermatitis) - Results from exposure to chemicals added to latex that can cause reactions similar to those caused by poison ivy. The rash usually begins 24 to 48 hours after contact and may progress to oozing skin blisters or spread away from the area of skin touched by the latex.

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Hot Flash

Radiation Safety News

The EH&S Radiation Safety Division reminds all groups using dosimeters to observe the UCSD posting requirement of dosimetry reports. The dosimetry posting requirement can be found in the UCSD Radiation Safety Manual (section V.A.6). Post the current dose report in a conspicuous location in the group’s main work area rather than filing them in a binder or a filing cabinet. The preferred posting location is on a bulletin board or wall space, near the lab’s Radiation Use Authorization and recent audit reports. It is important that all dosimetry wearers are aware of their dose results and that auditors can readily access this information as well. If you have questions about dosimetry or any aspect of the Radiation Safety program at UCSD, contact us at 534-6138, or via email: trujillo@ucsd.edu.

Personal Protective Equipment in the Research Laboratory

Engineering controls and good work practices are the most important tools to protect lab workers and minimize exposure. Even the safest experiments require the right personal protective equipment (PPE) at all times.

What to Wear?

Choice of PPE depends on other options available to control exposure, type of exposure, toxicity of the chemicals used, and type of operation. At a minimum all lab workers should have...
Personal Protective Equipment
...continued
appropriate footwear, lab coat, surgical type gloves (preferably nitrile), and safety glasses whenever they handle any hazardous materials. Adequate PPE that is in good condition must be available for all workers at all times.

Be aware that “summer like” clothing does not afford adequate protection when working in the laboratory. Unfortunately, accidents happen in the laboratory. Personnel who wear shorts and open toe (or heel) shoes in the laboratory are placing themselves at risk of injury. Use of PPE will reduce the likelihood of an accident resulting in an injury to you or a nearby colleague.

* **Eye Protection** - Should be worn whenever handling hazardous materials in a lab. Safety glasses for minor splash hazards, goggles for moderate hazards, and goggles combined with a face shield for the most severe hazards.

* **Hand Protection** - Gloves should be used whenever handling hazardous materials. Disposable, “surgical” type gloves are adequate for incidental contact. Nitrile gloves offer the best set of benefits. Latex, vinyl, and other gloves are commonly used. For non-incidental contact and gross contamination, heavy-duty gloves need to be selected for specific applications. For more information, see the *Glove Compatibility and Permeability Charts* on the EH&S web page (http://www-ehs.ucsd.edu/labsafe.htm) or contact EH&S at 534-2823.

* **Protective Clothing** – At a minimum, lab coats should be worn when handling hazardous materials. Other clothing offering more protection may also be necessary.

* **Shoes** - Wear shoes that completely cover the feet.

* **Respiratory Protection** - Labs can use disposable “dust masks” for protection from nuisance dusts, if they are used properly. Fitted respirators are rarely necessary and may only be used under the direction of EH&S. Call 534-1075 for further information. Wearing proper PPE while working in the laboratory is required by state and federal regulations and is highly recommended by industry and academic standards of good practice. Refer to the UCSD Laboratory Safety Plan (LSP) for help choosing the right PPE. The LSP has information on lab safety, PPE, and chemical hazard assessment information. This information should be added to written lab procedures or safety SOPs.

If you have any questions regarding the protective equipment, contact your Principal Investigator, consult the EH&S web page at www-ehs.ucsd.edu/labsafe.htm, or contact EH&S at 534-3660.

**Hydrofluoric Acid (HF) Commands a Healthy Respect**

Anhydrous hydrogen fluoride and hydrofluoric acid are very damaging to all body tissues. Incidental contact to the skin can result in painful burns that penetrate deeply and are slow to heal. Physical contact with dilute solutions (<50%) may not become apparent for several hours; whereas, concentrated solutions and anhydrous HF will cause immediate damage to tissue resulting in significant bodily injury and pain. More substantial danger rests in the unique properties of hydrofluoric acid. Undissociated HF penetrates the skin. When absorbed it dissociates rapidly into the fluoride ion, damaging underlying tissue. Once in the body, the fluoride ion can then cause significant destruction to soft tissue and decalcification of bone by binding with the calcium ion (as well as magnesium, sodium, and potassium). As a result, cell membranes collapse and nerves will fail to function, leading to fatal pulmonary edema. Because of the serious nature of this particular chemical hazard, EH&S is attempting to compile a list of all UCSD laboratories using HF and we need your help to accomplish the task. Please contact Doug Harvey at 822-1579 to inform EH&S of HF use, and to have specific safety information mailed directly to your lab. Through this process we hope to promote awareness of this particular hazard and improve the safety net for all those using HF. Also, review the information in Chapter 7 of the UCSD Lab Safety Plan (LSP) for general chemical safety information.

**Radioactive Waste Tags**

When completing a radioactive waste tag, please be sure to use the proper units. List the quantity of radioactivity in units of milliCuries as printed on the tag. For questions about radioactive waste, contact Tod Ferguson at 534-9745, tferguson@ucsd.edu.
Latex Alert...continued

3) **Latex allergy** (immediate hypersensitivity) - Certain proteins in latex may cause sensitization; exposures at even very low levels can trigger allergic reactions in some sensitized individuals. Reactions usually begin within minutes of exposure to latex. Mild reactions involve skin redness, hives, or itching. More severe reactions may involve respiratory symptoms; rarely, shock may occur. These reactions are similar to those seen in individuals who are allergic to bee stings.

**Who is at Risk?**

Workers with ongoing latex exposure are at risk for developing latex allergy, including health care workers (physicians, nurses, aides, dentists, dental hygienists, operating room employees, laboratory technicians, and hospital housekeeping personnel) who frequently use latex gloves and other latex-containing medical supplies. Persons with a tendency to have multiple allergic conditions are also at increased risk for developing latex allergy. Latex allergy is also associated with allergies to certain foods, especially avocado, potato, banana, tomato, chestnuts, kiwi fruit, and papaya.

Latex allergy should be suspected in anyone who develops certain symptoms after latex exposure, including nasal, eye, or sinus irritation; hives; shortness of breath; coughing; wheezing; or unexplained shock. A physician should evaluate any exposed worker who experiences these symptoms, since further exposure could result in a serious allergic reaction.

**Glove Use in Research Laboratories**

Surgical type gloves are used for barrier protection when handling infectious agents, protection against incidental contact with chemicals in the lab, and to prevent contamination of materials by lab personnel (if extended contact with chemical hazards is anticipated, a more substantial glove is required). Single use, nitrile, surgical type gloves are better suited for these purposes than latex for several reasons. Nitrile gloves are tougher and resist tearing more than latex gloves. When they are punctured, they will rip, leaving a large hole. This prevents the pinhole leaks in latex gloves that can go unnoticed for long periods. In addition, nitrile gloves offer the same barrier protection as latex and a better set of chemical compatibilities. Surgical type gloves are only suitable for incidental contact with hazardous materials. No material is impervious to all chemicals; however, nitrile gloves are more resistant to many chemicals commonly found in research labs than latex. Finally, nitrile gloves, because they contain no protein, will not cause sensitization and subsequent allergic reaction.

The proteins responsible for latex allergies bind powder that is used on some latex gloves. When powdered gloves are worn, more latex protein reaches the skin. Also, when gloves are changed, latex protein/powder particles get into the air where they can be inhaled and contact body membranes. If you choose latex gloves, use powder-free gloves with reduced protein content. Such gloves reduce exposures to latex protein and thus reduce the risk of latex allergy. So-called hypoallergenic latex gloves do not reduce the risk of latex allergy. However, they may reduce reactions to chemical additives in the latex (allergic contact dermatitis).

**Responding to Latex Allergy**

Learn to recognize the symptoms of latex allergy: skin rashes; hives; flushing; itching; nasal, eye, or sinus symptoms; asthma; and shock, if you develop symptoms of latex allergy, avoid direct contact with latex gloves and other latex-containing products until you can see a physician experienced in treating latex allergy. If you have latex allergy, consult your physician regarding the following precautions:

* Avoid contact with latex gloves and other latex-containing products.
* Avoid areas where you might inhale the powder from latex gloves worn by other workers.
* Tell your employer and your health care providers (physicians, nurses, dentists, etc.) that you have latex allergy.
* Wear a medical alert bracelet.

Carefully follow your physician’s instructions for dealing with allergic reactions to latex.

For further information regarding the prevention and mitigation of latex allergies, visit Nancy Mitchell’s Latex Allergy Links website at http://latexallergylinks.tripod.com. For further information regarding protective equipment and the use of disposable surgical gloves, turn to page 37 of the UCSD Laboratory Safety Plan, or contact Jim Kapin, 534-2823, jkapin@ucsd.edu, UCSD’s Chemical Safety Officer.

http://www.ehs.ucsd.edu
Can I Store Flammable Liquids in my Refrigerator/Freezer?

Never store flammable liquids (i.e., ethanol, TEMED, acetone etc.) in a standard or domestic refrigerator. UCSD policy, based on several regulations, requires storage of flammable liquids that must be refrigerated or cooled in an approved “flammable storage” refrigerator or freezer. These units are available from many vendors. The problem with standard or domestic type refrigerators and freezers is the variety of ignition sources such as lights, switches, and defrost coils that are present in these units. “Flammable storage” units have no ignition sources inside the unit. In extremely rare occasions it may be necessary to use an “explosion proof” refrigerator or freezer (i.e., one with no interior or exterior ignition sources).

Environmental rooms (cold/warm rooms) can also present problems. These spaces have many ignition sources and little or no air circulation from outside. They should never be used for storage of flammable or other hazardous materials. Small quantities of hazardous materials (e.g., 500 ml) may be used in these spaces, but they should not be stored there.

Remove all flammable materials from domestic type refrigerators in your area. If purchasing a “flammable storage” refrigeration unit for your lab is not in the budget, negotiate to share one with your neighbors. Another option is cooling flammable liquids on ice as you need them. In addition, label your refrigerator with its intended use. “Food Use Only”, “Not Approved for Flammable Storage”, and “Chemical Use Only” labels are all available free from EH&S.

Laboratory Ergonomic Awareness
http://www-ehs.ucsd.edu/ergo/newerg.htm

Musculoskeletal Disorders (MSD) account for one-third of all occupational injuries and illnesses reported each year. Researchers are susceptible to MSD by performing repetitive tasks like pipetting, enduring the prolonged awkward posture of using a microscope, and applying force when opening and closing vial caps. Learn methods to alleviate discomfort and reduce injuries at Laboratory Ergonomic Awareness Class. To host a class at your department (with a minimum of 12 people), contact Daphne Thaung, dthaung@ucsd.edu, 534-1075.