

**Environmental Safety  
Health  
and Update  
Safety Newsletter**

**RADIATION SAFETY INSPECTION**

The State Radiologic Health Branch recently concluded its inspection of UCSF's radiation safety program. The inspection lasted from April 27 to May 8, 1998 during which two state inspectors reviewed the radiation safety program including visiting laboratories. The overall results were very satisfactory. In their June 9, 1998 letter they acknowledged UCSF's high quality of radiation safety by stating:

*"we were gratified to find, during the inspection, that your radiation protection program and its related staff were providing the university with a high quality of radiation safety".*

There were no violations of any safety items discovered, the seven deficiencies or infractions were all minor record keeping or administrative in nature. We would like to thank, and congratulate, all radiation users for their excellent radiation safety practices.

*Keep up the good work!*

**IMPORTING AND EXPORTING BIOMATERIALS AT UCSF**

The last thing a PI needs is to have materials from a foreign colleague or supplier held up in Customs for lack of a proper import permit. For most biomaterials, a permit isn't required but it's always best to check with your DSA or the Biosafety Officer (BSO) first, just to make sure. If a permit is required, it must be obtained through the BSO (6-2097).

The agencies most commonly involved are the Centers for Disease Control and Prevention (CDC) and the Department of Agriculture (USDA). The CDC is concerned with the importation of agents associated with human disease and materials that may contain such agents. A CDC import permit is required for, among other things, diagnostic specimens suspected of containing human pathogens, cultures of human pathogens, and human blood (including serum and plasma), body fluids, tissues, wastes and cell cultures. A permit is generally not required for formalin-fixed tissues, tissues or materials where there is no evidence or indication that they contain an infectious agent of public health significance, or lab mice, rats and hamsters raised under specific pathogen-free (SPF) conditions. A CDC permit is quick and easy to obtain; the form is one page long, there is no application fee, and the turnaround time is typically only a few days. *(Continued on Pg 4, see Permits)*

**RADIATION SAFETY  
RECORD RETENTION**

The recent inspection means laboratories can now purge their old record files. The following records can now be discarded, if not required by laboratory needs:

<b>Records:</b>	<b>Retention Date:</b>
Inspection / Audit	All records up to January 1, 1998
Lab Monitoring / Wipes:	All records up to May 1, 1998
Film Badge Records:	All records up to April 1, 1998
* Usage Logs:	All records up to March 1, 1998
Waste Disposal:	All records up to April 1, 1998

\* Check your research requirements to see if the logs constitute laboratory / experiment records. They may have special retention requirements.

If you need additional information, please contact your Department Safety Advisor, or the Office of Environmental Health and Safety at 476-1300.

## ARE LATEX GLOVES RIGHT FOR YOU?

Latex gloves (LGs) are often one of the items of personal protective equipment used while performing routine clinical and laboratory procedures. LGs are appealing for several reasons: they are readily available, inexpensive, reasonably comfortable, disposable, and allow the wearer to maintain tactile sensitivity and dexterity. Use of LGs does, however, bring about the following two key safety issues:

One safety issue is that of compatibility with and permeability to the materials being handled. Latex is, unfortunately, not the best choice for working with chemicals. Some chemicals can permeate LGs; others can degrade the gloves. Some chemicals for which LGs are NOT SUITABLE are strong acids, ketones, amines, benzene, toluene, and xylene, tetrahydrofuran, peroxyacetic acid, and pyridine. One special example is dimethyl mercury: a researcher in New Hampshire is believed to have died as a result of this highly toxic chemical passing through her LGs and contacting her skin. If you're unable to verify that LGs are compatible with the materials you're using, EH&S recommends using gloves made of other materials. Most glove vendors include a chemical compatibility chart in their catalogs to help you choose the appropriate glove.

LGs are porous and are torn or punctured easily allowing the wearer to be exposed to the chemicals, biological agents, or radioactive materials being used. Double gloving offers increased protection for procedures where punctures or tears may occur.

A second safety issue is allergy to the gloves themselves. Allergy reactions can range from mild dermatitis to anaphylactic shock. Con-

tact dermatitis is the most common reaction; symptoms include dry, cracking skin, skin sores or bumps, and itching or rash under the glove area. These symptoms can be minimized by using powder-free gloves, washing hands with mild soap and water after removing gloves, and keeping hands conditioned with lotions or creams.

Chemical Sensitivity Dermatitis can occur due to the chemicals added to the latex during glove manufacturing. The reaction is similar to poison ivy: a rash occurs within 24 to 48 hours, and may spread outward from the contact site. With each subsequent exposure to the LGs, the skin rash will reappear and become more severe. Use of vinyl, nitrile, or neoprene gloves is the best means of prevention of the allergy.

Actual allergy to the latex itself is a significant problem. Several latex proteins are thought to mediate an IgE response in many individuals. These proteins are somewhat water soluble, and are also found suspended in the powder used for some gloves. These properties are thought to contribute to the eye, nose, and respiratory symptoms often seen. Depending on the routes of exposure, the quantity of latex allergen, and the degree of individual sensitivity, immediate allergy reactions can occur. These include conjunctivitis, eyelid swelling, rhinitis, dizziness, shortness of breath, and tachycardia. If the source of the allergen is removed, symptoms usually disappear.

In some highly sensitive individuals, anaphylactic reactions may occur; these are life threatening - they include the above symptoms plus hypotension, and can lead to death. Individuals with other true allergies, particularly food allergies,

are thought to be most at-risk.

Significant allergies occur frequently enough that NIOSH (National Institute for Occupational Safety and Health, part of CDC) has issued an alert on Work-related Latex Allergies and has recommended Steps to Reduce Exposures. NIOSH data indicate that as many as 8 - 12% of health care workers regularly exposed to latex become sensitized. Individuals who become sensitized to latex should use another type of glove.

Gloves are available in a number of other materials; one extremely popular material is nitrile. The properties of nitrile allow manufacturers to make gloves which are thin and retain the tactile properties of LGs; they also provide better resistance to many chemicals, are comfortable, inexpensive, and disposable. Other useful glove materials include neoprene, butyl, PVC (polyvinyl chloride), and vinyl. Standard lab supply catalogs provide information on each type, and should be consulted before choosing a glove for a particular task.

Latex is found in other common items, including condoms, balloons, medical and dental equipment, elastic bandages, household rubber gloves, paints and adhesives. Individuals who suspect they may be allergic to latex should consult a physician.

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## SHOWERS AND EYEWASHES

If you spilled a corrosive chemical on your skin, or splashed it in your eyes, would you know what to do? Do you know the location of the nearest emergency shower and eye wash, and how to use them properly?

When a corrosive chemical comes in contact with your eyes or skin, tissue damage begins immediately. The rate and extent of the damage is obviously dependent on the specific chemical involved. The most important action you must take is to halt the damage. You should immediately flush or irrigate the affected area with large amounts of water for 15 minutes!

Well-designed, easily accessible emergency showers and eyewashes facilitate this process. The showers and eyewashes installed at UCSF must meet the criteria established by the American National Standards Institute (ANSI). These criteria are spelled out in ANSI Standard Z358.1.

An emergency shower is designed to provide a sufficient source of water to cover your whole body: the flush pattern must cover at least 20 inches, and the flow rate must be at least 20 gallons per minute, delivered at a flow rate which is non-injurious to the user. The fluid must be potable water, preserved water, preserved buffered saline, or other medically accepted solution. The most practical way to meet these requirements is through the use of drinking water plumbed directly to the shower fixture, as is done at UCSF.

Emergency eyewash stations must provide a controlled flow of flushing fluid to both your eyes simultaneously. Eyewashes must provide an uninterrupted flow for at least 15 minutes, at a flow rate

0.4 gallons per minute. You must be able to easily activate the eyewash, and it must remain ON without the use of your hands. Although eyewashes may be plumbed or self-contained, the plumbed ones are preferred, due to the need to provide flow for 15 minutes. Self-contained units also require more maintenance and attention - assurance that the unit is filled, and the fluid does not become contaminated.

Drench hoses located at sinks are common and can be used to supplement an eyewash but not as a "stand alone" substitute for an eyewash.

Accessibility of the showers and eyewashes is critical; immediate irrigation has been shown to reduce tissue damage. Where showers and eyewashes are required, Cal-OSHA mandates they be located such that they can be reached in ten seconds or less. Cal-OSHA requires eyewashes at all work areas where "during routine operations or foreseeable emergencies, the eyes of an employee may come in contact with a substance which can cause corrosion, severe irritation, or permanent eye damage, or which is toxic by absorption." Emergency showers are required where "during routine operations or foreseeable emergencies, an area of the body may come in contact with a substance which is corrosive or severely irritating to the skin or which is toxic by skin absorption." Where both eyewashes and showers are required, they should be co-located so both can be used simultaneously.

Emergency showers and eyewashes are installed at UCSF, following both the Cal-OSHA requirements and the ANSI standard. EH&S flushes showers and eye-

washes monthly, and annually checks them for adequate flow rate. A designated individual in the laboratory should perform a weekly flush of eye washes to minimize microbial accumulation in the system. UCSF Facilities Management performs repairs or modifications on the equipment as needed.

All individuals in your laboratory must cooperate to maintain clear access to the shower and eyewashes. Aisleways should be clear, and the area around the station must not be used for storage. The open area must be at least 60 inches in diameter. Electrical equipment must be sufficiently far away so that it does not get wet if the shower is operated.

Know how to properly use both the shower and the eyewash. If corrosive materials have been spilled on your clothing, remove the clothing, and flush the affected skin areas directly! If your eyes are involved, keep your eyelids open and let the fluid flush your eyeballs directly. Periodically use your hands to hold your eyelids open as far as possible and flush beneath your eyelids. You should flush any contaminated area for at least 15 minutes. If, at the end of the 15 minutes you feel any burning or irritation, continue flushing. When the irritation ceases go, or have someone take you, to Employee Health Services as soon as possible.

In summary, the user should know the location of the nearest emergency eyewash and shower, how to activate them, and how to effectively flush the corrosive material from your skin or eyes. We hope that you never need to use your shower or eyewash, but if you do, knowing how to use them may save you from serious harm.

**COMMUNICABLE  
DISEASE  
PROGRAM  
SURVEY**

*Environmental Health & Safety #717  
50 Medical Center Way  
San Francisco, California 94143*

EH&S has been charged with developing the UCSF Communicable Disease Policy (CDP) for the Chancellor's Advisory Board on AIDS and Emerging Infections. In order to develop a comprehensive program, and to compile accurate data on the number of personnel impacted by the program, a survey is being sent to Investigators who have a Biological Use Authorization (BUA). If you received one of the surveys, please complete it as we need as much data as possible to accurately project the full scope and cost of the CDP for the Chancellor.

**Thank you.**

**PLEASE HAVE ALL PERSONNEL IN  
YOUR LAB INITIAL HERE AS  
EVIDENCE OF CONTINUING  
EDUCATION, AND KEEP THIS  
NEWSLETTER IN YOUR LOGBOOK.**

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*(Permits, Continued)*

If you're uncertain whether CDC will require a permit, it's best to apply anyway. If a permit isn't needed, CDC will issue Letter of Authorization to be used in case a Customs Officer feels you should have a permit and asks for one. The Letter of Authorization will ensure release of your parcel to you as though it were a permit.

The USDA is concerned with importation of animals, plants, their products, agents associated with animal and plant disease and materials that may contain such agents. The import requirements have recently been relaxed for transgenic and knock-out mice and rats and some other common lab animals and their blood, tissue, DNA, extracts, antibodies, feces, sera and antisera. In lieu of a per-

mit, certain conditions must be met; the BSO can provide you with details. However, an import permit is still required for, among other things, primate, dog, cat, livestock and poultry and their source materials, monoclonal antibodies, hybridomas, and cell lines (because they're often shipped in medium containing fetal bovine serum). A USDA permit application is one page for most materials, an additional one-page supplement for cell cultures, and a \$27.50 application fee. Processing time is typically between three and six weeks.

Export licenses are very rarely needed at UCSF. The exportation of biomaterials is controlled by the Department of Commerce Bureau of Export Administration. This agency's concern is with the export of materials that might be

used in warfare or terrorism and the provision of high levels of technology to countries considered not yet ready for that level. Before shipping any biomaterials out of the U.S., please check with the BSO regarding export restrictions or the need for an export license.

To apply for an import permit, download the appropriate form from the EH&S web site, complete and sign the form and send it to the Biosafety Officer (Box 0942 or fax 476-0581). If no changes are needed, turnaround by the BSO is typically within one work day. Copies of all issued permits and Letters of Authorization should be forwarded to the BSO for inclusion in the BUA files; a copy should also be filed in your Biosafety Logbook behind Tab 9. Please call your DSA or the BSO with any questions.