Biosafety Plan for Aerosol Transmissible Disease Pathogens

Cal/OSHA has identified aerosol transmissible disease pathogens that require extra caution where employees perform procedures capable of creating aerosols (pipetting, centrifuging, etc.).

- See the list at http://www.dir.ca.gov/title8/5199d.html

Requirement for researchers

PIs working with listed pathogens must perform a risk assessment and establish a biosafety plan for the lab that identifies:

- Listed pathogens and the employees using them
- Aerosol generating practices and appropriate control measures

Biosafety Plan Template

To help PIs comply, EH&S Biosafety staff will distribute a Biosafety Plan template to investigators using listed pathogens. The customizable template summarizes good laboratory practices, medical monitoring, and emergency procedures.

Questions? Ask EH&S Biosafety: ehsbio@ucsd.edu

What the County Inspector Found

San Diego County Department of Environmental Health (DEH) annually inspects UC San Diego facilities that use, store, and handle hazardous materials, with the goal of protecting human health and the environment.

DEH inspected approximately 4,000 UCSD laboratories, shops, and mechanical spaces this year, looking at our handling and waste management practices and emergency response capabilities for chemical, biological, and universal hazardous materials.

DEH inspections objectively evaluate the effectiveness of campus policies, training, and internal inspection programs. This year DEH noted that while we have made significant strides in hazard reduction through better housekeeping and training, there's still room for improvement. What did the inspector find?

continued on page 3 ... see What the Inspector Found

Campus Fire Marshal Lab Inspections

The Campus Fire Marshal is responsible for conducting fire inspections of all occupied campus facilities, including labs. Campus Fire Marshal and Research Assistance Program staff are currently inspecting Health Sciences/School of Medicine facilities and labs. Chemistry/Biochemistry, Biology, Physics, and Engineering are next.

Fire inspections do NOT include a fire drill, nor interfere with research or instruction.

Inspections focus on compliance with Title 19 of the California Code of Regulations and the California Fire Code, as well campus policies.

Examples of what inspectors look for:

- Lab doors to exit corridors propped open
- Electrical safety; extension cords
- Use of open flame in Biological Safety Cabinets
- Portable fire extinguisher maintenance
- Chemical inventory fire code compliance
- Obstructed fire sprinklers (18” clearance required)

Learn what to expect and how to prepare your lab.

See Laboratory Fire Safety Inspection on Blink at http://blink.ucsd.edu/go/firesafety

Questions? Ask Assistant Fire Marshal Brian Heyman: bheyman@ucsd.edu, (858) 534-3659.
### OSHA Hazard Communication Training Requirement

Federal OSHA has revised the Hazard Communication Standard to align with the United Nations Globally Harmonized System of Classification and Labeling of Chemicals (GHS)*.

Workers must be trained about new GHS labeling elements and the new format of Safety Data Sheets (formerly Material Safety Data Sheets) by December 1, 2013.

#### Requirement for researchers

All current UC San Diego lab personnel must take the [UC Laboratory Safety Fundamentals](http://uclearning.ucsd.edu) eCourse to receive training on GHS hazard labeling required by the Federal OSHA regulation.

#### How to get the training

Take the eCourse on [UC Learning Center](http://uclearning.ucsd.edu). Search keyword: *labfun*

Questions? Ask the EH&S Research Assistance Program: ehsrap@ucsd.edu

* GHS is an international system of chemical classification, labeling, and hazard communication adopted by the UN in 2003 to improve worker safety and health by providing easy to understand chemical hazard and precaution information.

### Lab Safety Training Online

New UC lab safety training is **required** for all UC researchers.

#### Requirements for researchers

- **All UC San Diego lab staff** must complete 2 online courses to meet UCSD’s basic lab safety training requirement:
  1. [UC Laboratory Safety Fundamentals](http://uclearning.ucsd.edu) with refresher training every 3 years
  2. [Annual Laboratory Hazards Training](http://uclearning.ucsd.edu) with refresher training annually

- **All new lab hires** must complete both of the online courses before beginning work in a UCSD laboratory facility.

#### How to get the training

Go to [UC Learning Center](http://uclearning.ucsd.edu) to take online training:

- [UC Laboratory Safety Fundamentals](http://uclearning.ucsd.edu) – search keyword: *labfun*
- [Annual Laboratory Hazards Training](http://uclearning.ucsd.edu) – search keyword: *annual*

Note: Completion of [UC Laboratory Safety Fundamentals](http://uclearning.ucsd.edu) meets the federal Hazard Communication Standard requirement for training on the Globally Harmonized System of Classification and Labeling of Chemicals (GHS) label elements and new format of Safety Data Sheets.

### Piranha Solution

Piranha solution is a mixture of sulfuric acid and hydrogen peroxide used to remove organic residues from substrates. Traditional piranha solution is a 3:1 mixture of sulfuric acid and 30% hydrogen peroxide. Some protocols call for as much as 7:1 mixtures.

As piranha use increases at UC San Diego, risk increases both for researchers and EH&S staff if piranha solution is not handled and processed appropriately.

#### Requirement for researchers

UC San Diego researchers working with strong oxidizers such as piranha solution must complete a “Strong Oxidizer” Hazard Control Plan in the Chemical Hazard Use Application (CHUA).

### Free containers, caps, and labels

UCSD requires researchers to use specific containers, vented caps, and labels (listed below) for piranha solution and other pressure generating waste streams.

Get **free** required containers, vented caps, and labels from EH&S ... just ask the Environmental Management Facility: hazwaste@ucsd.edu

1. **Clear 2.5L poly-coated acid containers** for waste storage
2. **Vented caps** designed for the 2.5L poly-coated container
3. **Specific labels** to be affixed to all piranha solution processing containers

This piranha solution management strategy is the only acceptable means for processing piranha solution at UCSD. Other pressure generating waste streams require similar management (e.g., aqua regia).

### Handling Piranha Solution

Review the [Handling Piranha Solution](http://blink.ucsd.edu) page on Blink for more information.
Properly labeled liquid chemical waste, capped, and stored in secondary containment.

What the Inspector Found ... continued

The inspector found:

Hazardous waste labeling:
- Incomplete, illegible, or missing labels on containers and waste bins
- Open, unlabeled hazardous waste containers

Hazardous waste containment:
- Contaminated containers
- Secondary containers not kept sanitary
- Full sharps containers not tightly sealed
- Containers not kept closed
- Inadequate packaging and containers that allow spillage
- Waste not accumulated in compatible, leak-proof, covered containers

Hazardous materials storage:
- Flammable/combustible materials not managed to minimize fire
- Compressed gases not properly secured
- Broken or deteriorated containers that allow spillage
- Secondary containment not used
- Empty containers not managed properly
- Chemical/universal waste accumulated for more than 90 day limit

Biohazardous waste:
- Red biohazard bags not tied off to prevent leakage during transport
- Red bags not in leak-resistant, covered containers
- Biohazard gray barrels over-filled with red bags
- Red bag waste stored in open and unacceptable recycled containers
- Red bag waste exceeding maximum 7 day storage limit
- Unlabeled hazardous waste mixed with biohazardous waste
- Full biohazardous sharps containers not tightly sealed
- Open, over-filled biohazardous sharps container

Annual Hazardous Materials & Waste Training ... Get it.

Requirement for UC San Diego employees

It’s required – employees who work with hazardous materials must complete online hazardous materials and waste training every year.

How to get the training
- Go to UC Learning Center at http://uclearning.ucsd.edu
- Use search keyword: annual

Lab employees – Take the Annual Laboratory Hazards Training eCourse, with refresher training required annually.

Non-lab employees – Take the Annual Shop & Studio Environmental Compliance & Hazards Training eCourse, with refresher training required annually.

Questions? Ask the EH&S Safety Training manager: ehs-training@ucsd.edu

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Dispose of a Freezer or Refrigerator

Surplus or broken, follow these instructions for lab appliances

- Properly defrost freezers. See www.ehs.ucsd.edu/lab/pdf/freezerdefrost.pdf
- Get a Decontamination Clearance from EH&S if the appliance may possibly have been contaminated with chemical, biological, or radioactive materials. See http://blink.ucsd.edu/safety/research-lab/laboratory/clearance.html
- Request a hazardous waste pick up for unwanted refrigerators and freezers.
- Contact Surplus Sales to collect usable appliances. See: How to Transfer Equipment to Surplus Sales on Blink.

Questions? Ask the EH&S Research Assistance Program: ehsrap@ucsd.edu

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Trifluoroacetic Acid

Trifluoroacetic acid (TFA) is a highly corrosive noncombustible colorless liquid with a sharp pungent odor.

Contact with the skin, eyes, and mucous membranes can cause severe burns. Dermal exposure to Neat TFA can cause third degree burns within seconds if not treated immediately.

Multiple documented exposures over the last few years have in some cases resulted in painful burns.

Requirement for researchers

UC San Diego researchers who work with TFA must complete an approved Hazard Control Plan for TFA in the Chemical Hazard Use Application (CHUA).

Adhering to the Hazard Control Plan significantly reduces the risk of working with this very corrosive but useful research chemical.

Learn more on Blink:
- Chemical Hazard Use Application http://blink.ucsd.edu/safety/research-lab/chemical/chua.html

Questions? Ask the EH&S Research Assistance Program: ehsrap@ucsd.edu

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