



"Safety Comes First"

Case Department of Occupational and Environmental Safety

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Eating Food in the Lab: An Illegal Habit

Eating, drinking, chewing gum, applying cosmetics, taking medications, or similar activities in laboratories may result in the accidental ingestion of hazardous materials (chemical radiological, biological); therefore these activities are strictly prohibited from all Case Western Reserve University laboratory spaces. Such activities are permitted in an area (defined as a room with floor to ceiling walls and a closed door) separated from the laboratory space. If a separate area can only be accessed by going through the laboratory, then only covered food or beverage items may be carried through the laboratory. These requirements help to prevent the ingestion of hazardous materials, which can oc-

cur by touching one's mouth with contaminated hands, eating from a container that is contaminated, eating food that has come into contact with hazardous materials accidentally.

In order to reduce the likelihood of ingestion of hazardous materials the Occupational Safety and Health Administration (OSHA) and Centers for Disease Control and Prevention (CDC) have incorporated "No Food or Drink" language into various regulations and safety manuals. Below, you will find the applicable regulations:

OSHA Laboratory Standard (29 C.F.R. 1910.1450, Appendix A)
[http://www.osha.gov/pls/oshaweb/owadisp.show_document?

**p_table=standards
&p_id=10107]**

(d) Eating, smoking, etc.: Avoid eating, drinking, smoking, gum chewing, or application of cosmetics in areas where laboratory chemicals are present (22, 24, 32, 40); wash hands before conducting these activities (23, 24).

Avoid storage, handling, or consumption of food or beverages in storage areas, refrigerators, glassware or utensils which are also used for laboratory operations (23, 24)



Research Laboratory Decommissioning Procedure Checklist

"All chemical waste needs to be removed from the laboratory prior to movers entering the laboratory."

PLEASE NOTE: All intended laboratory decommissioning operations must be approved by the Department of Occupational and Environmental Safety *prior* to any other action intended to support decommissioning procedures. Please review all requirements and supporting documents prior to relocation or decommissioning of lab facilities.

Waste

All *chemical* waste needs to be removed from the laboratory prior to movers entering the laboratory.

- ◆ The Disposal Listing for Hazardous Waste and Unwanted Chemicals form must be submitted to Safety Services no later than Wednesday at 1:00 PM to have waste picked up before the end of the week.
- ◆ All waste containers must be labeled with constituent components using DOES approved labels.

All *biological* waste needs to be removed from the laboratory prior to movers entering the laboratory.

- ◆ Dispose of all pathological waste (carcasses, organs, body parts, tissues) and microbial (infectious) waste before departing the University; all infectious waste must be autoclaved.

All *radiological* waste needs to be disposed of prior to movers entering the laboratory. Arrange for pickup AFTER all wipes and surveys have been conducted AND verified by the RSO. Please review the explanation of "Free of biological, chemical and radiological hazards."

- ◆ Isotopes must be listed on the Waste Disposal Form which is available from Radiation Safety.

Relocation of Chemicals, Biological, and Radiological Inventory

All chemicals and biological inventory must be moved by DOES approved professional chemical/biological movers, unless otherwise noted.

- ◆ When relocation occurs within buildings or between adjacent buildings, this restriction may be lifted. DOES reserves the right to decide this circumstance on case by case basis.
- ◆ A complete list of all chemical and biological inventories must be provided to DOES prior to relocation.

In order to relocate radiological inventory:

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Research Laboratory Decommissioning Procedure Checklist (con.)

- ◆ Submit a Laboratory Decommission notification via e-mail or letter copy, to the Assistant Radiation Safety Officer (RSO).
- ◆ Review and annotate the RAD 6 Report, the radioisotope inventory form. This should include updates on the disposition of all personnel, radiation meters and inventory.
- ◆ If applicable, complete and submit a Radioisotope Transfer Form to the RSO.
- ◆ Submit a list of all radiological users in the affected laboratory; indicate if they are leaving the University or remaining. If they are remaining and will retain RAM use, indicate which PI will be responsible for the lab.

All chemical, biological, and radiological inventories must be removed from the laboratory at least 24 hours prior to a scheduled move. This means that all hazardous materials must be removed prior to moving company personnel entering a laboratory area.

Equipment Relocation/Disposal

A Safety Clearance Protocol and Request (SCPR) form must be filled out for each room being relocated. This form must be submitted to DOES three weeks prior to the scheduled move. This form may be downloaded from the DOES web page at <http://does.cwru.edu>.

A Safety Clearance Protocol and Request (SCPR) form must be completed for each piece of equipment that will be relocated, transferred to department ownership or disposed.

- ◆ All experiment related equipment (incubators, freezers, centrifuges, refrigerators, biological safety cabinets, chemical hoods, etc.) must be listed with an assigned number on the SCPR form in the comment/special considerations section.
- ◆ Each piece of equipment requiring clearance must be labeled with a number that corresponds to the assigned number on the SCPR form.

The completed SCPR form must be submitted to DOES, and officers will attach to the equipment a label confirming decontamination and cleanliness. **ONLY THEN CAN IT BE MOVED.**

All equipment being relocated must be free of radiological, biological, and chemical hazards. "Free of radiological, chemical and biological hazards," indicates that the following actions have been taken:

- ◆ Conduct all radiological wipes and surveys to ensure there is no contaminated...

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"All chemical, biological, and radiological inventories must be removed from the laboratory at least 24 hours prior to a scheduled move."



Research Laboratory Decommissioning Procedure Checklist (con.)

"All Bio-Safety Cabinets (BSC) units must be decontaminated by the University's approved, external vendor, Laboratory Certification Services."

...equipment or rooms. Attach a detailed room map with RAM labeled equipment in the survey.

- ◆ Keep labels affixed to all equipment until reviewed by the RSO representative who will ensure contamination is less than 220 dpm/100 cm².
- ◆ Notify the RSO that this survey has been completed so that the RSO can verify all wipe and survey results.
- ◆ Contaminated equipment may be transferred within Case if overseen by the RSO to minimize any spread of radioactive contamination. You are required to follow all directions of the RSO, with regards to safe handling and relocation of "hot" equipment.
- ◆ Please notify the RSO if you intend to use any outside contractors for moving of equipment. DOES has a list of approved movers, but if you select another vendor, they must have the required "Right to Know" training from DOES.
- ◆ The disposal or relocation of hot equipment is prohibited without approval or evaluation by the RSO.

All chemically contaminated equipment should be wiped down with 1-propanol (iso-propanol). All *biologically* contaminated equipment must be wiped down with an approved disinfectant OR a 10% bleach solution. A 10% bleach solution is a mixture of 10 parts bleach (commercially available products) with 90 parts of water.

All Bio-Safety Cabinets (BSC) units must be decontaminated by the University's approved, external vendor, Laboratory Certification Services. Please contact DOES for the details of this procedure.

NOTE: Permission must be obtained from Safety Services before moving freezers. Please contact DOES for moving requirements. In general, all refrigerators must be defrosted and cleaned out prior to being moved. Please contact DOES for moving requirements.

Room Clearance

Before a room can be cleared by DOES the room must be completely emptied of all chemicals, sharps, bio-hazards, radioactive waste, etc. This is the exclusive responsibility of the Primary Investigator, per requirements of the Faculty Handbook of CWRU. Empty glass bottles may be disposed of in a cardboard box once the cap has been removed, the bottle has been rinsed three times, the label has been defaced, and the bottle is labeled as empty.

Important Contact Information

Chemical Safety Services: 368-2907 (<http://does.cwru.edu>), fax: 368-2236
Radiation Safety: 368-2906 (<http://does.cwru.edu>), fax: 368-2236



Eating Food in the Lab: An Illegal Habit (con. from page 1)

OSHA Bloodborne Pathogens Standard (29 C.F.R. 1910.1030 (d)(2)(ix) and 1910.1030(d)(2)(x)) [http://www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=STANDARDS&p_id=10051]

1910.1030 (d)(2)(ix)

Eating, drinking, smoking, applying cosmetics or lip balm, and handling contact lenses are prohibited in work areas where there is a reasonable likelihood of occupational exposure.

1910.1030 (d)(2)(x)

Food and drink shall not be kept in refrigerators, freezers, shelves, cabinets or on countertops or benchtops where blood or other potentially infectious materials are present.

Also, in the “Biosafety in Microbiological and Biomedical Laboratories (BMBL) 5th Edition” printed by the U.S. Department of Health and Human Services, Centers for Disease Control and Prevention and National Institutes of Health, standards prohibiting eating and other associated activities in the laboratory are very clear. The Standard Microbiological Practices for Biological Safety and Animal Biological Safety levels 1, 2, 3, and 4 are as follows:

Persons must wash their hands after working with potentially hazardous materials and before leaving the laboratory.

Eating, drinking, smoking, handling contact lenses, applying cosmetics, and storing food for human consumption must not be permitted in laboratory areas. Food must be stored outside the laboratory area in cabinets or refrigerators designated and used for this purpose.

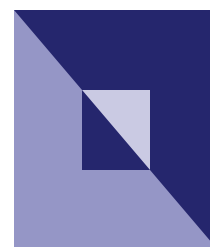
Besides prohibiting eating, drinking, chewing gum, applying cosmetics, taking medications, and other similar activities, there are some actions that you can take to prevent exposure to hazardous material by ingestion:

- ◆ Wash your hands before handling anything (cigarettes, chewing gum, etc.) which goes into your mouth. Wash your hands when you leave the laboratory.
- ◆ Use the water fountains for a drink--not a laboratory faucet.
- ◆ Remove gloves and wash your hands before using the water fountain or bathroom.
- ◆ Never use chemicals (salt, sugar, alcohol, bicarbonate, etc.) from the laboratory or stockroom on food.
- ◆ Never use laboratory glassware as a food or drink container
- ◆ Never store food or drink in a laboratory refrigerator or ice machine.
- ◆ Never consume ice from a laboratory ice machine.

All questions should be directed to the DOES office at 368-2907.



“Persons must wash their hands after working with potentially hazardous materials and before leaving the laboratory.”



Safe Alternatives to Ethidium Bromide



"The DOES office requires that laboratory personnel collect all ethidium bromide gels in a container and dispose of them as hazardous waste."

In research, working with toxic agents is sometimes a necessity, but with recent technological advances by some research supply companies, many of these toxic agents can be substituted for something that is less likely to cause harm. One such example of this comes from Invitrogen. Invitrogen has recently been marketing a product called SYBR®SAFE as a replacement for ethidium bromide in laboratories that conduct gel electrophoresis.

Ethidium bromide is termed a mutagen because of its characteristic as a DNA intercalator, meaning that it inserts itself between DNA base-pairs in the double-helix. In order for this to occur, the DNA double helix must expand slightly by unwinding, which may lead to errors in normal cellular processes such as; DNA replication, transcription, and repair.

Because of the mutagenic hazard associated with ethidium bromide, special care must be taken when working with the chemical and disposing of gels

and solutions containing ethidium bromide. The DOES office requires that laboratory personnel collect all ethidium bromide gels in a container and dispose of them as hazardous waste.

SYBR®SAFE offers a safe alternative to ethidium bromide, and it also does not require the same level of waste management. The alternative does not demonstrate the mutagenic properties of ethidium bromide, and agarose gels containing the material do not need to be treated as hazardous waste. The DOES office asks that the agarose gels are collected in a cardboard box lined with a plastic bag; once the box is filled it can be taped shut and taken by custodial services. No forms are required for the disposal of agarose gels containing SYBR®SAFE.

Please note that this *only applies* to agarose gels containing SYBR®SAFE. Due to the carcinogenic properties of acrylimide, these gels must be collected in a cardboard box lined with a plastic bag;

then disposed of as hazardous waste.

SYBR®SAFE is sold in 400 μ L of a 10,000X concentrate, and it costs about \$45.00. This product can be used to soak gels after electrophoresis or when precasting gels before electrophoresis.*

A similar product is available through AMRESCO® called EZ-Vision™, and it is sold as a 6X loading buffer that is added to the DNA prior to loading the gel.

If you have any questions please see the links below, or speak with your Invitrogen or AMRESCO sales representative regarding these products.

Invitrogen: <http://probes.invitrogen.com/media/pis/mp33100.pdf>

AMRESCO: <http://www.amresco-inc.com/media.acux?path=/media/products/dfu/dfu-N650.pdf>

*Special thanks to Eric Art's Laboratory members for the information regarding SYBR®SAFE.

Upcoming Training Sessions*

NOTE: While all laboratories must attend training at DOES, labs must hold specific training in the CHP and ECP as it pertains to the actual work they do. Labs will also need an outline of the CHP and ECP training and a sign in sheet to accompany. Store the sign-in sheet and outline with the CHP and ECP. It will be asked for during lab inspections.

New Hazard Communication (Right-to-Know) Training

Retraining is required annually.
DOES Small Meeting Room - Service Building 1st Floor
PREREGISTRATION IS REQUIRED - Please call 368-2907

New Radiation Safety Training

Retraining is required annually.
DOES conference room - Service Building 1st Floor
PREREGISTRATION IS REQUIRED - Please call 368-2906

New Laser Safety Training

Retraining is required annually.
DOES conference room - Service Building 1st Floor
PREREGISTRATION IS REQUIRED - Please call 368-2906

FOR THE FOLLOWING CLASSES:

Laboratory Safety Retraining
Regulated Chemical Retraining
Hazard Communication (Right-to-Know) Retraining
Bloodborne Pathogen Retraining
Radiation Safety Retraining
Laser Safety Retraining
Respirator Safety Retraining

Please retrain on the Internet at <<http://does.case.edu>> and click on Training.
Print test and fax or mail it to the DOES office.
If your training is more that one year overdue, then you must attend the training class in person and cannot retrain online.

FOR THE FOLLOWING CLASSES:

New Laboratory Safety Training
New Regulated Chemical Training (Formaldehyde, Benzene, Methylene Chloride, Vinyl Chloride, etc.)
New Bloodborne Pathogen Training
New Respirator Safety Training
New BSL-3 Safety Training

Retraining is required annually.
DOES Conference Room - Service Building 1st Floor
PREREGISTRATION IS REQUIRED - Please call 368-2907

*THIS IS A TRUNCATED LIST OF OUR OFFERINGS. As always, consult our website (<http://does.case.edu>) for a full schedule of training sessions.



Please remember that our updated DOES website provides many resources to meet your safety needs. The DOES website (<http://does.case.edu/>) includes all of the following resources:

- Safety Services Manuals and Forms
- Archived DOES Newsletters
- Training Class Schedules
- Staff Information
- MSDS
- Important Safety Links
- Our Mission Statement
- Contact Information

If you have any questions about our website, please feel free to contact us at ext. 2906/2907

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Remember, all back issues of the DOES Newsletter can be found online at <http://does.case.edu>. Simply click on the "Newsletter" link in the left-hand column!

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