

Environmental Health & Safety

LABORATORY HAZARD AWARENESS TRAINING

FOR NON LABORATORY PERSONNEL

Objectives

- Hazard Awareness
 - Be familiar with the hazards, warning signs and labels
- Protective measures
 - PPE
 - Training
- Answer questions

EHS WEBSITE

<http://EHS.OREGONSTATE.EDU>

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Safety Instruction Library

Safety Instructions - Safety Document numbers are listed in ().

The [OSU Safety Policies and Procedures Manual \(SAP\)](#), part of OSU Administrative Policies and Procedures, provides general guidelines and information about EHS programs and services.

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Training Materials

The training topics listed comprise the required minimum training based on the employee's job roles and activities. The supervisor is responsible to ensure their employees receive adequate training according to the specific job tasks being performed.

Notes:

- The supervisor may need to augment the topics listed with other training materials of their own and/or unique to their work.
- Both initial and refresher training is required for each employee. Refresher training is at least every 3 years unless otherwise noted.
- The supervisor must ensure that all training is documented in writing. By viewing the training materials and acknowledging this via your ONID log-in, your training record will be uploaded into the Environmental Health & Safety Training Database.

[Animal Handling](#)

[Fire and Life Safety](#)

[Laboratory and Chemical Safety](#)

[Laboratory Hazard Awareness Training for Non-Lab Personnel](#)

[New Employee](#)

[Occupational Health and Safety](#)

[Shipping of Hazardous Materials](#)

[Shop and Maintenance Personnel](#)

Required Training:

- [Hazard Communication](#)
- [Hazardous and Universal Waste](#)
- [Lab Hazard Awareness for Non-lab Personnel](#)
- [Animal Contact Questionnaire](#)

Supplementary Safety Videos:

[Supervisor](#)

[X-Ray Safety](#)

If you have any questions regarding the Training Identification Assessment or other training needs, please contact [Environmental Health & Safety](#).

Quick Links

[HazWaste Pickup Request](#)

[LabHazard Sign Request](#)

[Lab Safety Requirements](#)

[Laboratory Safety Self-Assessment](#)

[PI Chemical Inventory-Assessment Response](#)

[Report Safety Concern](#)

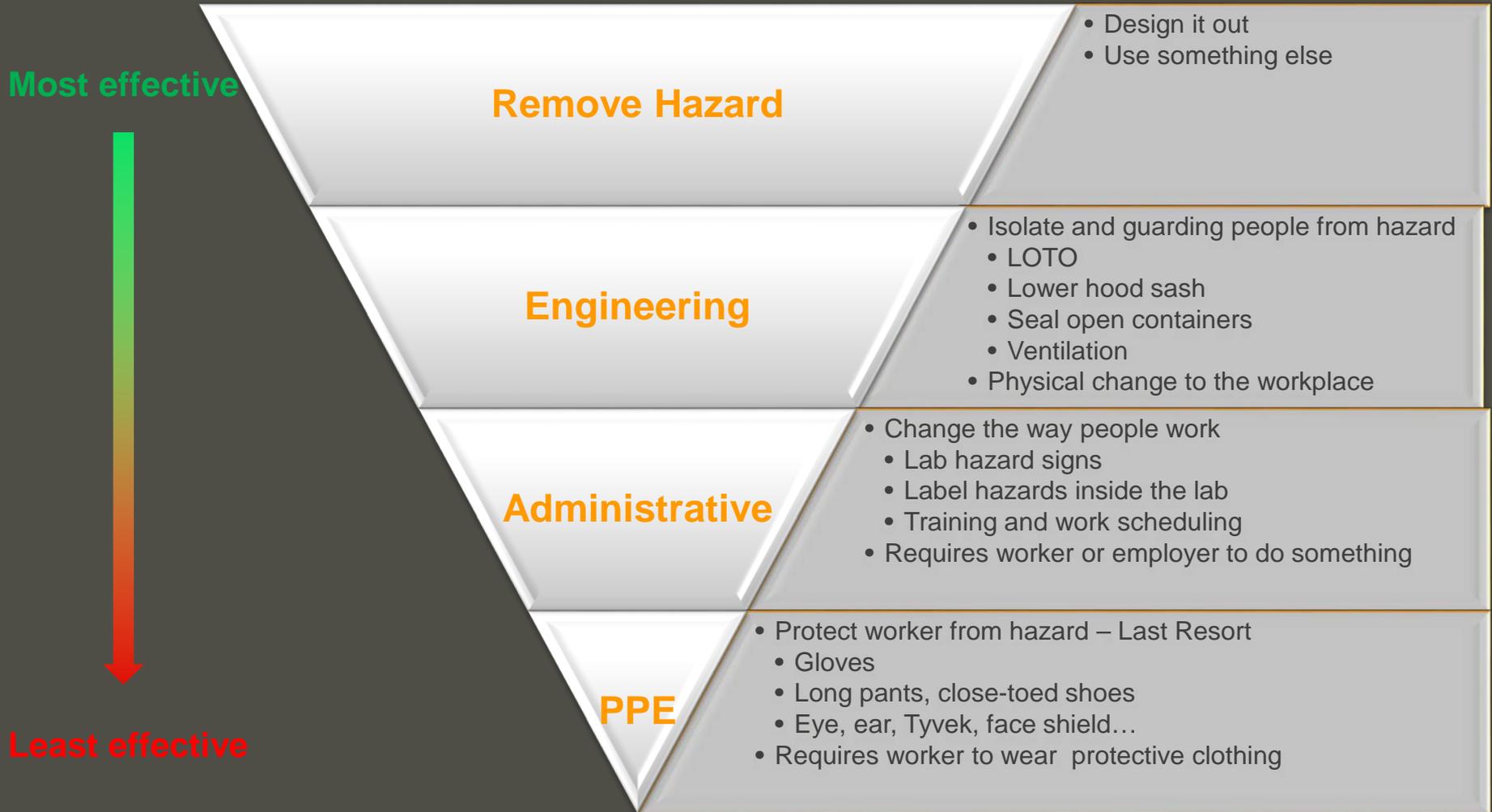
[Request Lab Safety Consultation](#)

[Safety Data Sheets \(SDS\)](#)

[Safety Training Records](#)

Training

Hazard Controls



Hazard Communication Standard

“Communicate the hazards of hazardous chemical products”

- Manufacturers and suppliers required to provide information on chemical hazards.
- Employee access to information on chemical hazards
 - OSU’s Hazard Communication Plan

EH&S Safety Instruction “Right to Know”

SDS

Hazard Communication

- Safety Data Sheets
 - SDS (*formerly MSDS*)
 - For each chemical, provides information on hazards
 - Standardized format
 - Procedures for handling hazardous chemicals

<http://oregonstate.edu/ehs/sds>

- SDS training video (24min)
- Online access to library of SDS

Material Safety Data Sheet

according to ANSI Z400.1- 2004 and 29 CFR 1910.1200

**BON AMI® POWER FOAM GLASS CLEANER**

Version 1.0

Print Date 03/26/2013

Revision Date 10/02/2012

MSDS Number 350000021130
SITE_FORM Number
30000000000000015559.001**1. PRODUCT AND COMPANY IDENTIFICATION****Product information**

- Trade name : BON AMI® POWER FOAM GLASS CLEANER
- Use of the Substance/Mixture : Hard Surface Cleaner
Company : S.C. Johnson and Son, Limited
1 Webster Street
Brantford ON N3T 5R1
- Emergency telephone number : 24 Hour Transport & Medical Emergency Phone (866) 231-5406
24 Hour International Emergency Phone (952) 852-4647
24 Hour Canadian Transport Emergency Phone (CANUTEC) (613) 996-6666

2. HAZARDS IDENTIFICATION**Emergency Overview**

Appearance / Odor : translucent / liquid / characteristic

Immediate Concerns : Caution
Avoid contact with skin, eyes and clothing.
Keep away from heat, sparks and flame.
Do not puncture or incinerate.
Do not store at temperatures above 120 Deg. F (50 Deg C), as container may burst.
Contents under pressure.

Potential Health Effects

Exposure routes : Eye, Skin, Inhalation, Ingestion.

Eyes : May cause:
Mild eye irritation

Skin : Prolonged or repeated contact may dry skin and cause irritation.

Inhalation : No adverse effects expected when used as directed.

Ingestion : May cause irritation to mouth, throat and stomach.
May cause abdominal discomfort.

Aggravated Medical Condition : Persons with pre-existing skin disorders may be more susceptible to irritating effects.

Material Safety Data Sheet

according to ANSI Z400.1- 2004 and 29 CFR 1910.1200

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SITE_FORM Number
30000000000000015559.001**3. COMPOSITION/INFORMATION ON INGREDIENTS**

Hazardous chemicals present at or above reportable levels as defined by OSHA 29 CFR 1910.1200 or the Canadian Controlled Products Regulations are listed in this table:

Chemical Name	CAS-No.	Weight percent
Isobutane	75-28-5	1.00 - 5.00
Propylene glycol monobutyl ether	5131-66-8	1.00 - 5.00

For additional information on product ingredients, see www.whatsinsidescjohnson.com.**4. FIRST AID MEASURES**

- Eye contact : Rinse with plenty of water. Get medical attention if irritation develops and persists.
- Skin contact : Rinse with plenty of water. Get medical attention if irritation develops and persists.
- Inhalation : Remove to fresh air. If breathing is affected, get medical attention.
- Ingestion : Rinse mouth with water.

5. FIREFIGHTING MEASURES

- Suitable extinguishing media : Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.
- Specific hazards during firefighting : Aerosol Product - Containers may rocket or explode in heat of fire.
- Further information : Fight fire from maximum distance or protected area. Cool and use caution when approaching or handling fire-exposed containers. Wear full protective clothing and positive pressure self-contained breathing apparatus. In case of fire and/or explosion do not breathe fumes.
- Flash point : < -7 C
< 19.4 °F
Method: Tag Closed Cup (TCC)
Note: Propellant

Material Safety Data Sheet

according to ANSI Z400.1-2004 and 29 CFR 1910.1200

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Lower explosion limit : Note: no data available

Upper explosion limit : Note: no data available

6. ACCIDENTAL RELEASE MEASURES

- Personal precautions** : Remove all sources of ignition.
Wear personal protective equipment.
- Environmental precautions** : Outside of normal use, avoid release to the environment.
- Methods for cleaning up** : If damage occurs to aerosol can:
Contain spillage, soak up with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and transfer to a container for disposal according to local / national regulations (see section 13).
Use only non-sparking equipment.
Clean residue from spill site.

7. HANDLING AND STORAGE

- Handling**
- Advice on safe handling** : Do not puncture or incinerate.
Avoid breathing vapors, mist or gas.
Do not spray toward face.
Do not use in areas without adequate ventilation.
Use only as directed.
KEEP OUT OF REACH OF CHILDREN AND PETS.
- Advice on protection against fire and explosion** : Keep away from heat and sources of ignition.
- Storage**
- Requirements for storage areas and containers** : Do not store at temperatures above 120 Deg. F (50 Deg C), as container may burst.
Keep container closed when not in use.
Keep in a dry, cool and well-ventilated place.

Material Safety Data Sheet

according to ANSI Z400.1-2004 and 29 CFR 1910.1200

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Print Date 03/26/2013

Revision Date 10/02/2012

MSDS Number 350000021130
SITE_FORM Number
3000000000000015559.001**8. EXPOSURE CONTROLS/PERSONAL PROTECTION****Occupational Exposure Limits**

Components	CAS-No.	mg/m3	ppm	Non-standard units	Basis
Isobutane	75-28-5	-	1,000 ppm	-	ACGIH TWA

Personal protective equipment

- Respiratory protection** : No personal respiratory protective equipment normally required.
- Hand protection** : No special requirements.
- Eye protection** : No special requirements.
- Skin and body protection** : No special requirements.
- Hygiene measures** : Handle in accordance with good industrial hygiene and safety practice. Wash thoroughly after handling.

9. PHYSICAL AND CHEMICAL PROPERTIES

- Form** : liquid
- Color** : translucent
- Odor** : characteristic
- pH** : 11
at 25 C(undiluted)
- Melting point** : no data available
- Boiling point** : no data available
- Freezing point** : no data available
- Flash point** : < -7 C
< 19.4 °F
Method: Tag Closed Cup (TCC)
Propellant

Hazardous Waste Training

- Training is required for everyone generating or processing hazardous chemical wastes
 - 21min video and quiz

Universal Waste

Hazardous Waste

- Certain haz wastes universally generated in large quantities with limited hazard
- Exempt from full haz waste regs
- Training Required! (11 min video)
 - Proper handling, storage, labeling and disposal

Universal Waste



Warning Signs—entry



DEPT *BLDG AND ROOM*

CAUTION



RADIOACTIVE MATERIAL
X RAY



BSL 2 Agent



CHEMICAL USE



RESTRICTED AREA
AUTHORIZED PERSONNEL ONLY
STUDENTS and VISITOR GO TO ROOM



NO FOOD OR DRINK ALLOWED IN LABORATORIES

Entrance Requirements: Lab Coat, Gloves, Protective Eyewear, BSL-2 Training Required.

			
ULTRAVIOLET LIGHT	OXIDIZING MATERIAL	LASER LIGHT	BIOHAZARD
			
CORROSIVE MATERIAL	CRYOGENICS	TOXIC MATERIALS	FLAMMABLE GAS
			
FLAMMABLE LIQUIDS	SHOCK HAZARD	CANCER HAZARD	TOXIC GAS

EMERGENCY CONTACT INFORMATION

P.I.	737-7080
Lab Contact	737-2274
Lab Contact	737-7081
Dept. Office	<i>Building / Room</i> 737-2273
Other	

FIRE- POLICE- AMBULANCE 911
 CAMPUS SECURITY: 737-7000
 ENV. HEALTH AND SAFETY 737-2273









REV: 062907



Signage signal words

A hazardous situation, if not avoided...



Danger

- Will result in death or serious injury

Warning

- Could result in death or serious injury

Caution

- Could result in minor or moderate injury, or equipment damage

Notice

- Not related to personal injury, but could result in equipment or property damage

LAB HAZARDS



Chemical



Biological



Radiation



Lasers



Animal



Physical

Chemical Hazards

- Chemicals are the most common health hazards in laboratories
- Can combine with other chemicals to make new hazards



Types of Chemical Hazards

Health Hazards

- Acute Toxicity
- Skin Corrosion/Irritation
- Serious Eye Damage/Eye Irritation
- Respiratory or Skin Sensitization
- Germ Cell Mutagenicity
- Carcinogenicity
- Reproductive Toxicology
- Target Organ System Toxicity-Single Exposure
- Target Organ Systemic Toxicity-Repeated Exposure
- Aspiration Toxicity

Pathways to Exposure

Inhalation

Ingestion

Absorption



Safe Work Practices

Have lab personnel move hazards

Wear gloves

- Other PPE

Wash your hands after performing any task, after removing gloves, always before eating

Avoid

- Hand-mouth contact
- Hand-eye contact
- Protect wounds



Personal Hygiene

- If soap and water are not present, alcohol-based hand sanitizers may be used, but soap and running water is more effective and preferred.
- Avoid wearing jewelry.
- Keep fingernails short.

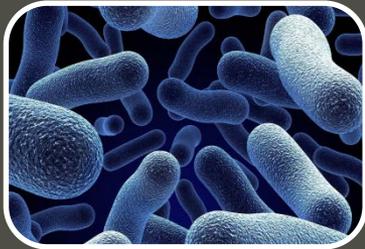


Types of PPE

- Head – hard hats, bump caps
- Eye – safety glasses and goggles
- Face – face shields
- Hearing – earplugs, earmuffs
- Hands – gloves
- Foot – safety shoes
- Clothing - vests



Biological Hazards in the Lab



Bacteria



Viruses



Insects



Plants



Birds



Animals



Humans



Contact Transmission

- In the workplace, direct contact can occur between animals and humans.
- Also important, contact with animal blood, body fluids, tissues, cages or other inanimate surfaces where animals have been housed or used.



Biological Hazards

Can cause a variety of health effects ranging from skin irritation and allergies to infections, and even death.

Look for information about the biological hazards that may be present in the workplace.

- Make sure you receive all the information relevant to your tasks.

Ask lab personnel

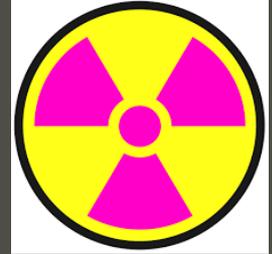
Protection from Biological Hazards

- Personal protective equipment
 - barriers to clothing, skin, eyes, nose, mouth
- Good personal hygiene
 - handwashing
- Environmental infection control
 - cleaning or disinfection of surfaces or equipment and tools



Radiation Hazards

Two ways that you can be exposed to radiation



1. Internal exposure

- By mouth, nose, eyes, or any open cut

2. External exposure

- Ionizing radiation is passed through the body and/or absorbed by tissues

Common Radiation Signs



On x-ray machines



Minimizing Personal Hazards

When working in a radiation laboratory

- Observe all radiation signs
- Do not empty radioactive trash
- Do not use or service radioactive labeled equipment without authorization from Radiation Safety

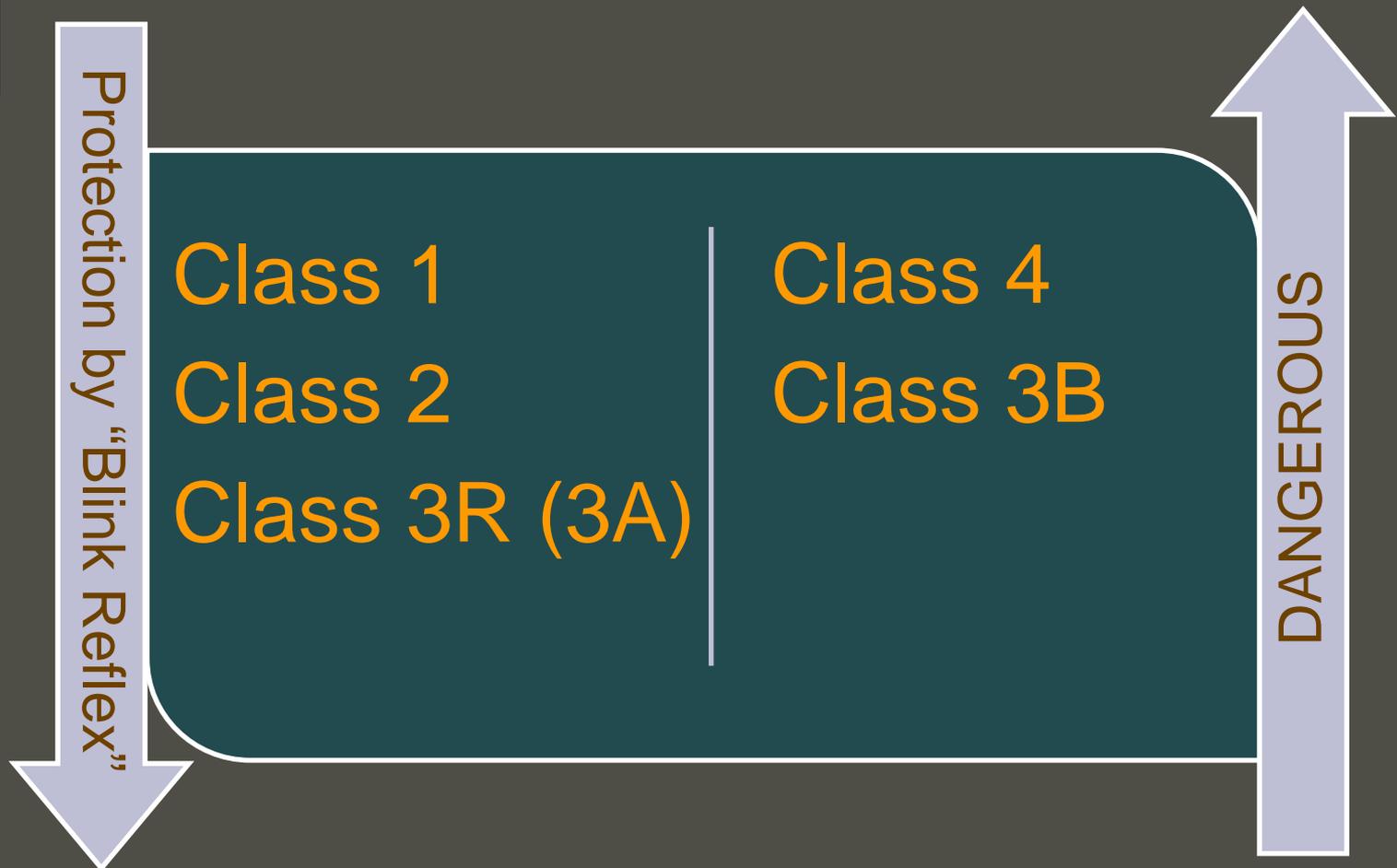


Drain pipes and Fume hood ducts

Radioactive/Biological Hazard Overview

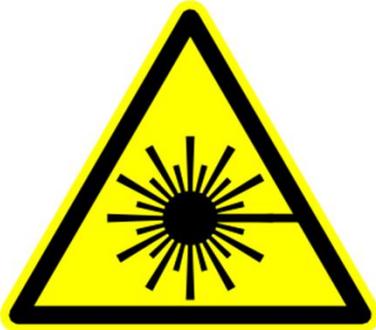
- Radioactive and biohazard material must be secured
 - Only authorized individuals should have access.
- Material or waste with radiation or biohazard labels should never be handled by non-authorized individuals
- Notify lab director of any work that will be done in the lab before starting
- Radioactive and biohazard waste must be segregated from other hazardous waste
 - picked up by EH&S

Laser Classification





WARNING



Class 4 Laser Controlled Area

Authorized personnel only when
“**Laser In Use**” light illuminated

Invisible Ultraviolet Laser Radiation.
Avoid eye or skin exposure to direct or
scattered radiation.

Laser Protection Required:
OD \geq 6 @ 248nm

KrF Excimer 248nm 6W

Lab Contact: Dr. Janet Tate, office Wngr 485

OSU Laser Safety Officer Daniel Harlan, ph. 541-737-7082

Weniger Hall Room 475

Feb 2, 2016

Laser precautions

- Do not enter if light is on
- If unsure, contact lab personnel
- Do not place any objects in beam path







Animal Exposure

Allergies, also known as hypersensitivities, are inappropriate responses of the immune system to allergens.



Any type of animal can release allergens.

- Common: rats, guinea pigs, rabbits, mice
- Less common: swine, cattle, sheep

Animal Exposure

background information

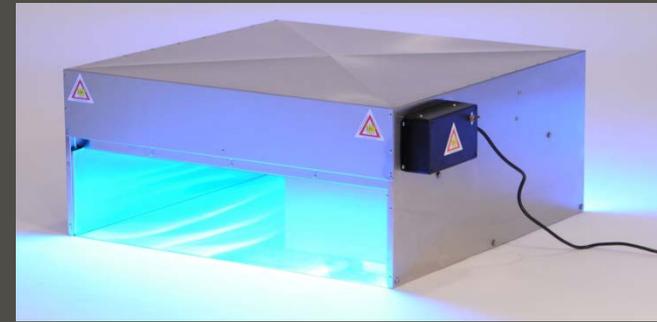
- Repeated exposure required to develop allergy
 - Allergies never develop from single exposure
 - Sensitization usually requires many exposures
- Most allergies develop in persons who repeatedly handle animals rather than those who enter animal areas but do not handle the animals

Animal Exposures Recommendations

1. All persons who must enter animal facilities to conduct repairs or do other work will be offered the opportunity of enrolling in the animal handler occupational health program.
 2. Persons who repeatedly enter animal rooms to conduct repairs or do work other than animal handling are encouraged to enroll in the animal handler occupational health program.
 3. Persons who have only occasional need to enter an animal room, but have a history of allergies (especially animal allergies) or asthma are strongly encouraged to enroll in the animal handler occupational health program.
- Enrollment forms and detailed information about the animal handler occupational health program are available on the EH&S web site:
 - <http://oregonstate.edu/ehs/bio/animal-handler>
 - Matt Philpott

Other Lab Hazards

- Cryogenic
- Confined Space
- UV Lights
- Heat
- Mechanical
- Electrical



Gas Cylinder Safety

- All compressed gas cylinders must be secured above the center of gravity by approved supports
- Cylinders in transit, storage, or not in use must have valve cap on
- Only move cylinders with appropriate cylinder cart



EH&S Gas Cylinder Safety Instruction
<http://oregonstate.edu/ehs/safety-instructions>

- Never wear gloves outside of the laboratory,
- Avoid contaminating objects such as phones, keyboards, etc.



PROPER GLOVE REMOVAL:



Step 1: Grab glove on outside next to wrist.



Step 2: Pull off inside-out. Place in gloved hand.



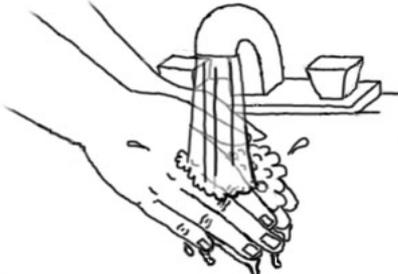
Step 3: Place fingers by wrist under glove.



Step 4: Push up inside-out and fold around glove in hand.



Step 5: Throw used gloves in proper disposal unit.



Step 6: Wash hands thoroughly.

Created by Suzette Snyder 11/15/09

Never touch your skin to the outside of either glove

Be prepared for emergencies.

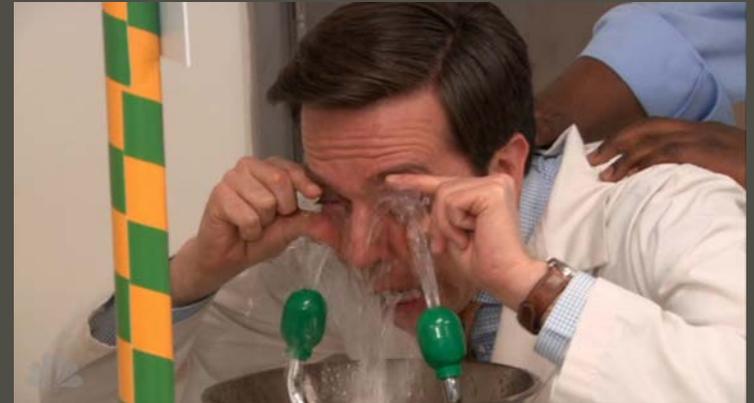
Emergency Shower/Eyewash Station

- The area around showers and eye washes must be unobstructed
- Safety showers and eyewashes are tested by EH&S yearly



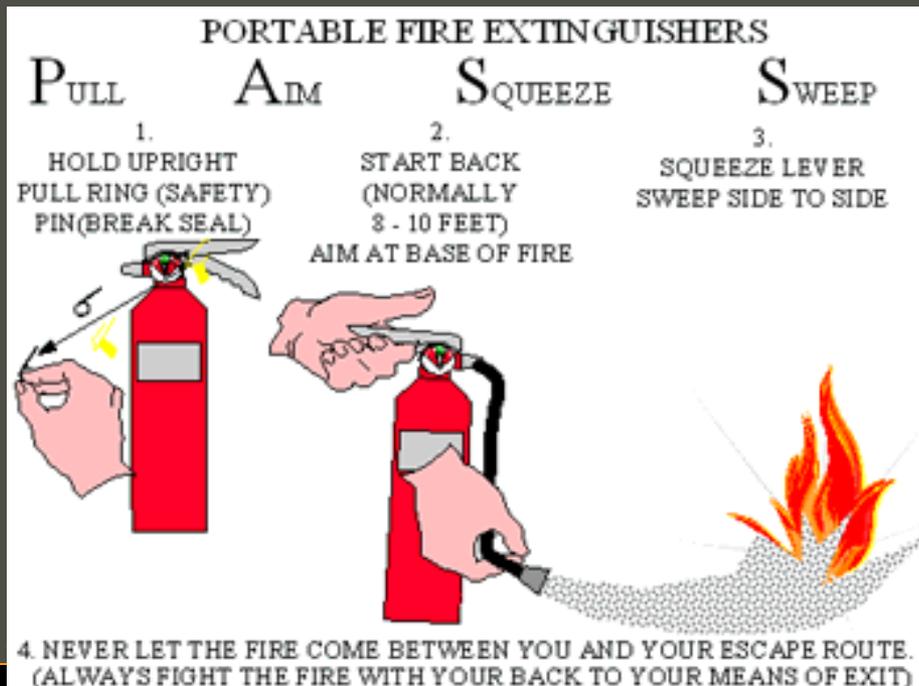
Personal Contamination

- Flush contaminated area with water
- Remove contaminated clothing
- Rinse with water for 15 minutes
- Seek medical attention if irritation persists



Fires

- Let the Fire Department fight fires
- When in doubt, call 911, pull a fire alarm, exit the building.
- Small fires can sometimes be extinguished, but can quickly get out of control – especially if there are flammable chemicals involved.



You should not use an extinguisher without training.

OSU fire extinguisher training
<http://oregonstate.edu/ehs/training>
(11min video)

Spills

- Small spills of hazardous materials can often be dealt with by you and laboratory personnel.
 - Warn others – secure the area
 - Put on/wear personal protective equipment before attempting to clean or contain a spill.
 - Use absorbent materials to contain and soak up liquids; if biological, use effective disinfectant.
 - Use appropriate containment (bags, etc.) to collect and dispose of absorbed hazardous materials.

**For assistance: EH&S “On Call”
Contact FS WCC 541-737-2969**

Medical Emergencies



For emergencies, dial 911.

- For splashes of hazardous chemical or biological materials into the eyes, nose or mouth, flush extensively with water using an eyewash station; seek medical attention.
- For sharps accidents, cuts or abrasions, cleanse the wound with soap and water, treat with antiseptic from the First Aid Kit, then seek medical attention as necessary.



Questions?

ehs.oregonstate.edu

737-2273