

Instructions for filling out the lab sign template

Please note: **DO NO EDIT THE SIGN TEMPLATE FROM THE WEB-LINK. You must use Adobe Acrobat Reader to properly edit the sign.**

Save the pdf to your computer then open with adobe acrobat reader. You will NOT be able to save a copy of the sign; you will have to print it when you have filled in the sign. THE SIGN MUST BE PRINTED IN COLOR!

What are the hazards that are available on the door signage?

Chemical Hazards:

There are different types of chemical hazards. Review your safety data sheets (SDS) that correspond to your chemical inventory to determine your hazards.

Compresses Gases:

All compressed gases are hazardous because of the high pressures inside the cylinders.

Biological Hazard:

For the purposes of door signage, a biological hazard is an organism (virus, bacteria, fungi) that has the ability to cause disease in healthy humans.

Organisms are divided into risk groups. Risk Group 1 organisms do not cause disease in healthy humans, but may cause disease in immunocompromised adults. Examples include: *E. coli* strains DH5a, BLR, BL21, and K12; *Bacillus thuringiensis*; etc. Risk Group 1 organisms are typically handled using Biosafety Level 1 containment practices.

Biological hazards include Risk Group 2 organisms. Risk Group 2 organisms have the ability to cause disease in healthy humans. A few examples include: *Bacillus cereus*, *Pseudomonas aeruginosa*, Virotypes of Enteric *E. coli* (ETEC, EPEC, EAEC, etc.), **all Human cell lines**, etc. Other biological hazard experimentation include the use of Risk Group 2 host-vector systems, or DNA from Risk Group 2 organisms that is cloned into nonpathogenic prokaryotic or lower eukaryotic host vector systems. These experiments/organisms are typically handled using Biosafety Level 2 containment practices.

High Voltage:

For the purposes of door signage, the term “high voltage” will apply to equipment/lines that are 600 volts and over.

Radioactive Hazard:

For the purposes of door signage, this term will apply only to radioactive equipment and materials. This hazard designation will not apply to lasers.

Laser Hazard:

Laser hazards for door signage only apply to Class 3B and Class 4 lasers.

Class 3B lasers or laser systems are those that can produce a hazard if viewed directly. This includes intra-beam viewing of specular reflections. Normally, Class 3B lasers will not produce a hazardous diffuse reflection. Class 3B is broken into four different frequency and energy regions:

- Infrared (1.4 μm to 1000 μm) and ultraviolet (200 nm to 400 nm) laser devices. Emits radiant power in excess of the Class 1 limit for the maximum possible duration inherent to the design of the laser device. Cannot emit an average radiant power of 0.5 W or greater for viewing times greater than 0.25 seconds, or a radiant exposure of 10 J/cm² within an exposure time of 0.25 seconds or less.
- Visible (400 nm to 700 nm) CW or repetitive pulsed laser devices. Produce a radiant power in excess of the Class 1 assessable exposure limit for a 0.25 second exposure (1 nW for a CW laser). Cannot emit an average radiant power of 0.5 W or greater for viewing time limits greater than 0.25 seconds.
- Visible and near-infrared (400 nm to 1400 nm) pulsed laser devices. Emit a radiant energy in excess of the Class 1 limit but cannot emit a radiant exposure that exceeds that required to produce a hazardous diffuse reflection.
- Near-infrared (700 nm to 1400 nm) CW devices or repetitively pulsed laser devices. Emit power in excess of the exposure limit the Class 1 for the maximum duration inherent in the design of the laser device. Cannot emit an average power of 0.5 W or greater for periods in excess of 0.25 seconds.

Class 4, "high power" laser systems normally have average outputs of greater than 500 milliwatts, present a "high risk" of injury and can cause combustion of flammable materials. This class includes pulsed visible and near IR lasers capable of producing hazardous diffuse reflections, fire, and skin hazards. Also, systems whose diffuse reflections may be eye hazards and direct exposure may cause serious skin burns. Class 4 lasers normally require restrictive warning labels and even more restrictive control measures (e.g., safety goggles, interlocks, warning signs, etc). Class 4 lasers are further divided into two sub-classes based on frequency (i.e., wavelength):

- Ultraviolet (200 nm to 400 nm) and infrared (1.4 μm to 1000 μm) laser devices. Emit an average power of 0.5 W or greater for periods greater than 0.25 seconds, or a radiant exposure of 10 J/cm² within an exposure duration of 0.25 seconds or less.
- Visible (400 nm to 700 nm) and near-infrared (700 nm to 1400 nm) laser devices. Emit an average power of 0.5 W or greater for periods greater than 0.25 seconds, or a radiant exposure in excess of that required to produce a hazardous diffuse reflection.

Steps:

**1. Choose ONE sign (seven options) that is most applicable to your lab.
Which sign do I choose?**

Visit the EHS website to view the signage. The door signage is listed within the "Lab Safety" tab on the left side of the page.

Machine Shop Door Signage- This is appropriate for areas that have equipment and supplies for machining. The signage may also apply if no other signage fits your lab's needs.

Lab Safety Door Signage- This is appropriate for lab chemical hazards. This door signage is applicable to most labs.

Biohazard - Radioactive Hazard Door Signage- This is appropriate for laboratories that have infectious organisms (Risk Group 2) AND radioactive materials, with or without hazardous chemicals.

If you choose this sign, you must contact Sarah DiFurio at 372-3587 PRIOR to posting to confirm your lab is in compliance with radiological requirements.

Biohazard Door Signage- This is appropriate for laboratories that have infectious organisms (Risk Group 2) with or without hazardous chemicals. These organisms are handled using Biosafety Level 2 containment (BSL2) containment practices.

Radioactive Hazard Door Signage- This is appropriate for laboratories that have radioactive materials with or without hazardous chemicals.

If you choose this sign, you must contact Sarah DiFurio at 372-3587 PRIOR to posting to confirm your lab is in compliance with radiological requirements.

High Voltage Door Signage- This is appropriate for labs high voltage equipment with or without hazardous chemicals.

Laser Hazard and High Voltage Door Signage- This is appropriate for labs high voltage equipment and laser equipment with or without hazardous chemicals.

If you choose this sign, you must contact Sarah DiFurio at 372-3587 PRIOR to posting to confirm your lab is in compliance with applicable laser safety requirements.

Laser Hazard Door Signage- This is appropriate for labs laser equipment with or without hazardous chemicals.

If you choose this sign, you must contact Sarah DiFurio at 372-3587 PRIOR to posting to confirm your lab is in compliance with applicable laser safety requirements.

2. Save the appropriate sign to your computer.

3. Fill out the sign.

For all door signage you must complete:

Location: this is building and room number

Revision Date: fill in the date this sign was revised (most likely today's date)

Emergency Contacts: every section must be completed; name, title, department, office location, office phone, and an after-hours contact number. A **minimum of two** emergency contacts must be listed.

Custodial Staff Allowed: Check the box appropriate to your area. If you check yes, custodial staff will maintain the applicable housekeeping duties to your space. **If you check no, custodial staff will not maintain your area. It will be your responsibility to maintain all housekeeping duties. If you have lasers (Class 4) or powerful magnets then you MUST choose NO. Custodial staff will not be allowed to service this lab space.**

For all door signage (excluding Machine Shop Door Signage):

In the light orange colored box on the left hand side of the page, click in the check boxes for the hazards that are present in your lab. If you have unstable chemicals (Diethyl Ether, Sodium Azide, Alkali Metals, etc.), compressed gases and/or other hazards, please type those in.

In the purple box on the left hand side of the page, type the location of the SDS and additional lab safety protocols (these items should be kept together in the lab).

The gray box outlines the entry requirements for the lab. The only box inside the gray box that can be edited is the additional entry requirements. Type in the additional requirements for your lab beyond the minimal personal protective equipment (PPE).

For Machine Shop Door Signage:

In the section titled “additional precautions required for entry” list out precautions that are required for entry such as personal protective equipment (PPE).

4. Print the sign in color.

5. Place into the frame holder next to or on the lab door.

6. Update the signage anytime information changes

Any questions regarding the signage should be sent to Sarah DiFurio at sdifurio@tntech.edu or x3587.