



Revised 10/21/11

## **Explanation of the Safety Self-Inspection Checklist for Laboratories**

### **One Inspection form per Laboratory Room**

#### **SAFETY INFORMATION AND TRAINING**

1. The Chemical Hygiene Plan is found in Section 5 of the College of Chemistry Health and Safety Manual. All researchers should be aware of the contents of the plan. Each lab group must also assign various safety responsibilities under the plan. The written Injury and Illness Prevention Program (IIPP) is found in section 3 of the College of Chemistry Health and Safety Manual. The College Emergency Response Plans are available in Section 10 of the Health & Safety Manual. All researchers must be knowledgeable of the information in these safety plans and know to call 2-9090 from a campus phone to report all injuries and accidents.
2. SOP's are a written set of instructions that are peer reviewed by a cross-section of the group's experienced researchers, which document how to safely perform work or a specific hazardous task. (add existing language... "There is a Campus...")
3. Review your labs current operations and identify one hazardous technique that is performed by more than one person and develop with the users a SOP using the template found in Section 7 of the Health & Safety Manual. The SOP does not have to be completed before turning in the Self Inspection. Submit completed, reviewed SOP to kumpf@berkeley.edu.
4. Inventories must be updated annually. They must be submitted to Campus EH&S using the 4D Client Chemical Inventory (CI) database. Call EHS&S (3-0526) if you are unfamiliar with how to submit an inventory using the CI system.
5. Self explanatory.

#### **GENERAL SAFETY AND HOUSEKEEPING**

6. The rectangular, 8.5 X11 yellow door sign issued by Campus EH&S. It contains the following information: Occupants' names; office, home and emergency telephone numbers; listing of hazards in the lab and a "Safety Glasses Required" notice.
7. Signs and labels as appropriate for hazards in labs (i.e. radioactive materials, biohazards, carcinogens, lasers, strong magnetic fields, hot and cold surfaces, high voltage, etc).
8. Each lab sink and cup sink must have a blue "No Hazardous Chemicals" label. Fume hoods require a "Cal-Commitment to Clean Air" label. All labels are available from EHS&S (3-0648).
9. Clean areas are limited to areas identified by the occupants where chemicals are not used or stored.
10. Self explanatory.
11. The minimum clearance for work and exit aisles is 36 inches.
12. Self explanatory.
13. Self explanatory.
14. Self explanatory.

#### **PERSONAL PROTECTIVE EQUIPMENT (PPE)**

15. Safety eyewear must meet ANSI Z87-1989 standard.
16. See Chemical Hygiene Plan (Section 5 of the College of Chemistry Health and Safety Manual) for details.
17. See Chemical Hygiene Plan (Section 5 of the College of Chemistry Health and Safety Manual) for details. DO NOT wear contaminated gloves in hallways or open/close doors with contaminated or possibly contaminated gloves. Wear a clean outer glove if you must wear gloves in the hallways. A glove compatibility chart is provided in Section 8 of the manual.
18. Before using PPE, check to see if they are clean and free of defects. Proper storage means away from heat sources, chemical and dust exposure.

#### **FUME HOODS**

19. The Ventilation Inspection Results sticker indicates the acceptable (minimum of 100 linear feet per minute) face velocity checked by Campus EH&S.
20. Self explanatory.
21. Self explanatory.
22. Self explanatory.
23. When not in use, all volatile material containers must be capped or covered to avoid vaporization. This includes containers in and under the fume hood.
24. Self explanatory.

#### **VENTILATION**

25. Self explanatory.
26. Self explanatory.
27. Negative pressure should be checked periodically by cracking open the main lab door and holding a Kimwipe up to the gap. Kimwipe should blow into the lab.
28. Self explanatory.



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#### **SEISMIC HAZARD PREVENTION**

29. Shelves, file cabinets, heavy research equipment, etc. must be braced to a wall and/or floor. The College Shops should be contacted to brace furniture and equipment.
30. Self explanatory.
31. Heavy objects (i.e. those that can cause bodily harm upon falling) should be stored on or near the floor. Must maintain at least 24" clearance between overhead items and ceiling.

#### **ELECTRICAL**

32. A plug strip with a circuit breaker may be used for temporary set-ups.
33. Self explanatory.
34. Do not operate equipment with frayed, brittle, or taped electrical cords.
35. 3-prong plugs are used for powering all electrical equipment.
36. All switches, junction boxes, or electrical outlets require covers.

#### **LABORATORY EQUIPMENT**

37. Self explanatory (especially pulleys on vacuum pumps).
38. Disconnects are shut-off switches for different power sources.
39. Contact EHS&S (3-0648) for more information.
40. Self explanatory.
41. College policy states that Rotovaps must be used with oil-less or recirculating bath pumps for low boiling point solvents. An efficient dry ice trap must also be used. Please review the College policy in Section 2 of the College of Chemistry Health and Safety Manual. Contact EHS&S (3-0648) for more information.

#### **GAS CYLINDERS**

42. Toxic gases must be approved for purchase by Campus EH&S. Ventilation controls are required; gas monitoring and other controls are sometimes required. Refer to the Toxic Gas Program Fact Sheet in Section 7 of the College of Chemistry Health and Safety Manual for more information.
43. IF you use Toxic Gases outside of a fume hood it is a violation of Campus Policy. Notify Mike Kumpf at 643-0648 to have a toxic gas cabinet installation evaluation performed.
44. Secure cylinders using chains in two locations. Do not use straps or "C" clamps. Contact the College Shops to install gas cylinder supports in your lab.
45. Self explanatory.
46. Keep oxidizing gases separate from flammable gases (20 ft separation if possible).
47. The College Shops can help ground cylinders.
48. For example, do not use tygon tubing to deliver H<sub>2</sub> gas to your experiment.
49. Compressed gas cylinders must be included in the 4D Client Chemical Inventory database.
50. Compressed oxygen cylinder safety posters and training were developed when the "house" oxygen was discontinued. Contact the EHS&S office at 3-0648 for training and postings related to its use.

#### **FIRE PREVENTION AND RESPONSE**

51. Self explanatory
52. Fire extinguisher training is given to all new graduate students. All other researchers may not necessarily be trained and should not use a fire extinguisher until training is completed.
53. Maintain a clearance (36 in) around all sides of each fire extinguisher
54. Check to make sure inspection tags are on each extinguisher. Check tags to verify the last inspection date.
55. Self explanatory. If you discover an unmounted fire extinguisher, call College Physical Plant (2-5231)
56. Self explanatory
57. Self explanatory
58. Paper, boxes, rags, etc., are considered combustibles.
59. Approved items are bicycles and chairs that do not block egress.

#### **EMERGENCY EYEWASH/SHOWERS**

60. Self explanatory. You should be able to walk to the nearest eyewash in 10 seconds from anywhere in the lab!
61. Always maintain a 36 in clearance around all sides of the eyewash/shower unit.
62. The Chemical Hygiene Plan for your lab indicates who is responsible for inspecting eyewashes. Check the Green and White tags to insure that inspections are occurring each month.
63. The campus tests showers. Check the inspection tag to verify the last inspection date.



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#### **CHEMICAL SPILL RESPONSE AND PREPAREDNESS**

64. Consult "Wastewater Slug Discharge Prevention and Emergency Notification" fact sheet in section 7 of the College of Chemistry Health and Safety Manual.
65. Chemical stores (791 Tan) sells spill clean-up material. It is wise to keep small spill kits inside the labs, ready to use.

#### **WASTE MANAGEMENT**

66. The Emergency Assembly Areas are located on the multi-colored posters near elevators and building entrances. This is where you evacuate to in case of an emergency. Stay at the EAA until instructed to leave.
67. The Disaster Aid Stations can be set up by anyone gaining entrance to the emergency caches. There are canopies, cots, tables, chairs first aid kits, toolboxes, floodlights and generators. If an emergency situation arises, report to your EAA and ask to help at the aid station.
68. Anyone who generates hazardous waste on Campus is considered a Generator and is required to have hazardous waste generator training. It is found in the beginning of the HWP online waste tracking program. Be sure to have everyone generating waste take this one time online training.
69. Drain disposal guidelines are available in section 6 of the College of Chemistry Health and Safety Manual
70. Use the HWP to track and label your hazardous wastes. BE sure to create a completed label and affix to your waste container before the first drop of waste goes into the container.
71. Keep bottles capped when not in use and keep all liquids in secondary containment trays, even in hoods.
72. Other provisions apply. Consult with Campus EH&S (2-3073) to ensure radioactive waste is handled appropriately.
73. Consult "Using Autoclaves Safely" fact sheet in section 7 of the College of Chemistry Health and Safety Manual for more information.
74. Many provisions apply (i.e. BUA instructions for handling and disposal). Consult Campus EH&S at 2-3073 and section 6 of the College of Chemistry Health and Safety Manual for more information.
75. Sharps containers may be purchased from 791 Tan Hall. Make sure to deface the biohazard label if the sharps are only chemically contaminated. Label those as Contaminated Lab Debris.
76. Self explanatory.
77. Each flammable storage cabinet in your lab cannot contain more than 60 gal total.
78. Glass containers shall exceed one (1) gallon in capacity. All other containers (including safety cans) shall not exceed two (2) gallons in capacity. Partially filled containers are counted as full containers.
79. Consult the Chemical Hygiene Plan (Section 5 of the College of Chemistry Health and Safety Manual) for chemical segregation guidelines.
80. Chemical storage areas include: Drawers, cabinets, shelves, refrigerators, freezers, etc.
81. Labeling must contain, at least, the CAS or Common name of the material and an indication of hazard.
82. Clean area labels available from EHS&S (3-0648).
83. No food or beverage is to be stored in chemical storage refrigerators. Refrigerator labels available from EHS&S (3-0648). Flammable chemicals should ONLY be stored in flammable rated refrigerators.
84. Date containers when they arrive in the lab AND when they are first opened. Manage containers according to "Guidelines for the Safe Handling of Peroxidizable Chemicals" in section 7 of the College of Chemistry Health and Safety Manual.
85. Acid baths and base baths are located away from sinks, hood sinks, and floor drains. Secondary containment is provided.