

# UBC Physics and Astronomy - Safety Inspection Checklist (updated 2010 Dec)

Room Number(s): \_\_\_\_\_

Date: \_\_\_\_\_

Lab Supervisor: \_\_\_\_\_

Lab Representative: \_\_\_\_\_

Inspected By: \_\_\_\_\_

	Yes	No	N/A	Comments	Footnotes
<b>A Safety Documentation</b>	_____	_____	_____		
1 Monthly inspection posted and up to date.	_____	_____	_____		(4)
2 Records of safety training for lab members (Employee Training Record form, workplace safety orientation records, keyforms)	_____	_____	_____		(1)
<b>B Emergency Procedures and Identification</b>					
1 Emergency numbers and procedures on door and near phone (last updated: _____)	_____	_____	_____		(1)
2 Fire Extinguisher present and accessible (circle all classes: A / B / C / D ) (expiration date: _____)	_____	_____	_____		(2)
3 Shower and eyewash present and accessible (expiration date : _____)	_____	_____	_____		(1)
4 First-aid kit present, accessible, and adequately stocked, record of usage (last checked: _____)	_____	_____	_____		(1)
<b>C Housekeeping</b>					
1 Bench tops and sinks reasonably clear	_____	_____	_____		
2 Tripping hazards absent, passageways clear	_____	_____	_____		
3 Emergency exits clear and doors unlocked from inside	_____	_____	_____		
4 Food absent from work areas	_____	_____	_____		
5 Chairs are in good condition	_____	_____	_____		
6 Step ladder available if required	_____	_____	_____		
<b>D Earthquake Hazards</b>					
1 Restraints on tall heavy furniture/equipment, attached to wall with metal restraints	_____	_____	_____		
2 Heavy equipment that could block exit routes are secured	_____	_____	_____		
3 Equipment not stored in high unsecured areas.	_____	_____	_____		
<b>Personal Protection</b>					
1 Safety glasses, face shields, protective coats available	_____	_____	_____		(1)
2 Hearing protection available	_____	_____	_____		(1)
3 Variety of appropriate hand protection available	_____	_____	_____		(1)
<b>E Experimental Apparatus</b>					
1 Automated/unattended experiments are labeled with emergency contact info.	_____	_____	_____		(1)
2 Active powered equipment is marked with lights or signage.	_____	_____	_____		

	Yes	No	N/A	Comments	Footnotes
<b>F Electrical &amp; Mechanical Equipment</b>					
1 No frayed, cracked, or makeshift electrical wiring	_____	_____	_____		(5)
3 High voltage (> 750 V) equipment and outlets labeled	_____	_____	_____		(5)
4 Refrigerators for solvents, are spark-proofed and have no food	_____	_____	_____		
5 Electrical interlocks functioning as designed	_____	_____	_____		
6 Sufficient outlets available to eliminate overloading of circuits	_____	_____	_____		(1)
7 Moving machinery is well-maintained, has proper guards in place	_____	_____	_____		
8 Powered machinery has easily accessible Start/Stop Switch	_____	_____	_____		
9 Machinery & electrical equipment are properly grounded	_____	_____	_____		
<b>G Waste Containers - General, Sharps, Chemical</b>					
1 Sharps in a labeled container	_____	_____	_____		(1)
2 Broken glassware in a labeled container	_____	_____	_____		(1)
3 Waste solvent containers are properly used (closed, labeled, proper storage)	_____	_____	_____		
<b>H Chemicals and Hazardous Materials</b>					
1 Chemical inventory less than 1 year old, posted in accessible location for emergency situations	_____	_____	_____		(6)
2 Material Safety Data Sheets available and less than 2 years old (or a link provided for online access)	_____	_____	_____		(6)
3 Solvent cabinet available and closed	_____	_____	_____		
4 Less than 25L solvents outside safety cabinet	_____	_____	_____		
5 Chemical and solvent containers are closed, intact, stored safely	_____	_____	_____		
6 All labels are intact, legible, not overwritten or eroded over time	_____	_____	_____		
7 Carcinogens, corrosives, flammables labeled	_____	_____	_____		(6)
8 Incompatible materials stored separately	_____	_____	_____		(6)
9 Peroxide-forming chemicals and ethers absent (can form shock-sensitive explosive crystals; see handout)	_____	_____	_____		
10 Perchloric and Picric acids absent (can be explosive with organic materials)	_____	_____	_____		(6)
11 Friable asbestos absent (crumbled, pulverized, powdered by hand pressure)	_____	_____	_____		(6)
<b>I Specialized Materials</b>					
1 Cryogenic (<-150 C) and high temperature hazards labeled	_____	_____	_____		
2 Radiation hazards have appropriate warning signs and site license (expiration date: _____)	_____	_____	_____		(3)
3 High Magnetic Fields have appropriate warning signs (including warnings for personal medical devices)	_____	_____	_____		
<b>J Compressed Gas Cylinders, Vacuum Systems, Dewars</b>					
1 Large gas cylinders secured to wall or bench	_____	_____	_____		
2 Small gas lecture bottles (2-3" diameter, 12-8" long) upright and secured	_____	_____	_____		
3 Closed dewars are protected by safety pressure releases, and are mechanically stable	_____	_____	_____		
4 Dewars have cryo gloves and safety glasses available	_____	_____	_____		
5 Pneumatic and liquid tubing is not cracked/brittle/pinched	_____	_____	_____		
6 Water taps used for drainage/vacuum have backflow prevention valves (or (or "no tubing" signs posted on barbed water taps).	_____	_____	_____		
7 Vacuum pumps filtered or vented outside building	_____	_____	_____		

Yes No N/A Comments Footnotes

**K Lasers**

- 1 All laser users attended UBC laser safety training course (or equivalent with PI approval) \_\_\_\_\_ (7)
- 2 Eye protection available for wavelength with adequate OD \_\_\_\_\_
- 3 Laser tables and beam paths below eye level \_\_\_\_\_
- 4 Beams terminated with fire-resistant beam stops \_\_\_\_\_
- 5 Laser operators wear no watches, ties or reflective jewelry while laser is operating. \_\_\_\_\_
- 6 Warning signs at entrance to lab, lasers classified appropriately (2, 3a, 3b, 4a, 4b) \_\_\_\_\_
- 7 Warning signs posted for invisible radiation \_\_\_\_\_

**L Fume Hoods**

- 1 Fume hoods tidy, not used for storage \_\_\_\_\_
- 2 Area in front of hood kept clear \_\_\_\_\_
- 3 Sash at recommended height and air flow on \_\_\_\_\_
- 4 Unattended materials labeled with researcher contact info and expected date of removal \_\_\_\_\_

**M Special Items**

- 1 No hazardous materials/chemicals to be disposed of through UBC Health Safety (chemicals, mercury, unknown materials) \_\_\_\_\_ (8)
- 2 No large equipment or furniture to be disposed of or made available for other labs \_\_\_\_\_

**N Follow-up**

- 1 All items noted in the checklist should be corrected and will be checked again during the next annual lab inspection.
- 2 The following items require immediate attention and will be

re-inspected by (name) \_\_\_\_\_

on the date \_\_\_\_\_:

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Signature of Lab Representative / Date: \_\_\_\_\_

## FOOTNOTES:

- (1) **Safety Documentation and Equipment** - Material currently stocked in PHAS Stores includes:  
Sharps containers  
Eyewash stations and replacement fluid  
Replacement materials for first-aid kits  
Emergency and warning stickers and room labels  
Emergency contact posters and forms  
Binder of chemical safety information (can be signed out)
- (2) **Fire Extinguishers** - A list of expired extinguishers will be passed on to Safety Inspection Committee for checking.  
Types of extinguishers: A = ordinary / B = flammable liquids, gasses / C = electrical equipment / D = combustible metals
- (3) **Radiation Safety** - Guidelines for Radiation Safety can be found from UBC HSE:  
<http://www.hse.ubc.ca/safety/radiationsafety.html>
- (4) **Monthly Inspection Record** - Supervisors are responsible for conducting monthly inspections of their work areas and to ensure hazardous conditions are corrected. Annual formal lab inspections are the responsibility of local safety committees. Reference:  
  
[http://www.hse.ubc.ca/about/forms\\_publications/forms\\_publications\\_n\\_r/safetyorientation.html](http://www.hse.ubc.ca/about/forms_publications/forms_publications_n_r/safetyorientation.html)
- (5) **Electrical Wiring and High-Voltage Safety**: Worksafe BC guidelines for electricity  
[http://www.worksafebc.com/publications/health\\_and\\_safety/by\\_topic/assets/pdf/electricity.pdf](http://www.worksafebc.com/publications/health_and_safety/by_topic/assets/pdf/electricity.pdf)
- (6) **Chemical Safety and Compatibility**: A binder with information on chemical safety can be signed out from PHAS stores.  
Chemical Inventory :  
[http://www.hse.ubc.ca/\\_shared/assets/hazardousinventory6646.xls](http://www.hse.ubc.ca/_shared/assets/hazardousinventory6646.xls)  
MSDS database (link from UBC HSE):  
<http://ccinfoweb.ccohs.ca/msds/search.html>  
Electronic MSDS forms are acceptable if access is readily available:  
<http://www2.worksafebc.com/Publications/OHSRegulation/Part5.asp?ReportID=18022>  
Chemical Incompatibility Guide:  
[http://www.hse.ubc.ca/\\_shared/assets/24\\_Chemical\\_Incompability\\_Guide4803.pdf](http://www.hse.ubc.ca/_shared/assets/24_Chemical_Incompability_Guide4803.pdf)  
Picric Acid:  
[http://www.hse.ubc.ca/\\_shared/assets/22\\_Picric\\_acid\\_handling\\_by\\_users4800.pdf](http://www.hse.ubc.ca/_shared/assets/22_Picric_acid_handling_by_users4800.pdf)
- (7) **Laser Safety Training** - UBC HSE offers periodic laser training courses  
[http://www.hse.ubc.ca/gosignmeupCBM/dev\\_students.asp](http://www.hse.ubc.ca/gosignmeupCBM/dev_students.asp)
- (8) **Chemical Waste Disposal** - Disposal procedure is described in full here:  
<http://www.physics.ubc.ca/HSE/>