

**PROJECT HAZARD AND CONTROL ANALYSIS**

**Department Name:** \_\_\_\_\_

**HAZARD GRADE:** **High** ( ) (potentially life threatening)  
**Medium** ( ) (potential for significant equipment or building damage)  
**Low** ( ) (minor equipment damage)

Equipment Type	
Previous Inspection Date	
Room No.	
Current Inspection Date	
Experimenter(s)	
Inspected By	
Advisor(s)	

**Part I.**

Potential Hazards	Y/N	Control Measures
High pressure or Vacuum		
High temperature		
High voltage		
Risk of explosion		
Toxic materials		
Reactive/oxidizing materials		
Cryogenics/compressed gases		
Solvents		
Loss of air		
Loss of water		
Loss of power		
Other		

**Part II. Specify potential leak hazards:** \_\_\_\_\_

**Part III. Spill Control for the following types of spills is available:** \_\_\_\_\_

**Part IV. List principle hazardous chemicals used.**

**Part V. Waste generation information**

**Location of MSDS:**

Item	Quantity	MSDS Available (✓)	MSDS Reviewed (✓)

Type of Waste	Quantity	Disposal Method Available (describe)

**Part VI. Safety Information**

**Emergency Contact Information**

Name:  
 Phone number:  
 Location:

**First aid station location:**

**Emergency Shutdown Procedures posted:**

Yes ( ) No ( ) Location:

**Required Personal Protective Equipment Available:**

Eye protection: Yes ( ) No ( ) Location:  
 Foot protection: Yes ( ) No ( ) Location:  
 Hand protection: Yes ( ) No ( ) Location:  
 Apron/lab coat: Yes ( ) No ( ) Location:  
 Respirator: Yes ( ) No ( ) Location:

**Emergency Safety Equipment**

Fire extinguisher location:  
 Eye wash fountain location:  
 Emergency shower location:

**Part VII. Historical safety problems** \_\_\_\_\_

**Part VIII. Inspection Committee Recommendations**

**Mandatory:** \_\_\_\_\_

**Optional:** \_\_\_\_\_

**Other Remarks** \_\_\_\_\_

**Attachments:** UBC Hazard Control Assessment Form and Standard Operating Procedures for project including safety features.

# UBC HAZARD CONTROL ASSESSMENT GUIDE

*If a hazard exists, there is a means of controlling it.*

There are four (4) types of controls to evaluate in the order given: a) elimination or substitution; b) engineering controls; c) administrative (e.g. procedures, posters, work schedule, etc.); and d) personal protective equipment.

*Note: Reference to procedures means specific procedures for materials/equipment/processes being used and includes relevant training.*

*- Legend for abbreviations at end of table on page 2*

Type of Hazard	UBC Procedure or Relevant Reg.	Hazard Control
<b>1. Hazardous materials used and stored</b> - hazards identified (e.g. flammability, toxicity, reactivity) - Potential significant inhalation exposures assessed	BC WCB Occupational Health and Safety Regulation (WCB OHSR); WHMIS; BC Fire Code; UBC Laboratory Chemical Safety Course Manual	- Substitute/minimize - Use of fume hoods - Install monitoring and alarm equipment - Use of appropriate containers & storage units; - Use of appropriate labels & MSDS available (WHMIS) - Develop appropriate handling, disposal and emergency procedures - Develop appropriate signage and training procedures - Use of appropriate PPE
<b>2. Compressed gas used or stored</b>	BC WCB OHSR; BC Fire Code; BC Gas Safety Act	- Use minimum quantities in lab or shop - Use appropriate means for securing and transporting - Install monitors, alarms and signage as required - Develop written work and emergency procedures; - Ensure appropriate training is conducted
<b>3. Potentially violent reaction via:</b> - Rapid decomposition - Impact sensitivity - Instability on storage to cold, heat, light, water, metals, etc. - Mischarge or wrong addition order - Quantity and rate of evolution of heat and gases - water or air contact	WCB OHSR	- Use of fume hoods - Minimize quantities used; heat generated; other variables - Isolate or shield areas - Develop means of pressure relief - Use of redundant controls; automatic shutdown mechanism - Develop procedures to vent all parts of system before breaking any lines - Use of appropriate storage areas - Develop appropriate handling & emergency procedures - Use of appropriate PPE
<b>4. Radioactive material(s) or source(s) used?</b>	CNSC Regulations ; BC WCB OHSR; UBC Radionuclide Safety and Methodology Course Manual	- Use of fume hoods - Follow CNSC procedures - Follow UBC Radionuclide Safety and Methodology Course procedures - Develop appropriate emergency procedures - Use of appropriate PPE
<b>5. Infectious or biohazardous material(s) used or handled?</b>	BC WCB OHSR; WHMIS; CIHR Guidelines; UBC Biosafety Manual	- Use of Biosafety cabinets and fume hoods - Develop appropriate medical surveillance protocols - Follow UBC protocols & procedures including emergency procedures - Use of appropriate PPE
<b>6. Catalysts, inhibitors, or contaminants (like iron) affect reactions?</b>	BC WCB OHSR; WHMIS	- Use of engineering controls - Develop appropriate handling procedures - Develop written procedures & training - Develop appropriate emergency procedures

Appendix A

Type of Hazard	UBC Procedure or Relevant Reg.	Hazard Control
<b>7. Energy Sources/Failures</b> - Heating/cooling systems - Power ( high voltage) - Machinery - Water; air - Ventilation - Automatic controls or equipment - Pressure - Materials/equipment/container integrity	BC WCB OHSR; UBC Lock-Out procedures; BC Electrical Code; BC Boiler & Pressure Vessel Code	- Use of automatic shut-off system for: - power - temperature - HVAC; ventilation; - pressure, - water and air supply systems (back-up system) - Use of appropriate signage - Use of lock-out procedures - Develop appropriate handling & emergency procedures for fires/explosions and spills
<b>8. Possible generation of :</b> - Unacceptable odour - Air pollution, - Excessive noise, - Excessive heat, - Sewer contamination	WCB OHSR; BC Special Waste & other Environmental Regulations	- Consider substitution of hazardous materials - Use of engineering controls: - fume hoods - PPE - trap or back-flow preventor (1-way valve) - Use of noise testing and absorption materials - Use of a cooling system - Use of a waste trap - Develop appropriate emergency procedures
<b>9. Hazardous waste(s) generated</b>	BC WCB OHSR; BC Special Waste & other Environmental Regulations	- Use of appropriate containers for storage - Develop written procedures & training - Develop appropriate emergency procedures
<b>10. Potential for impact of hazards of materials and process upset on neighbours, service, medical, emergency response personnel, etc.</b>	BC WCB OHSR; BC Environmental Legislation	- Notification of relevant personnel & organizations prior to incident - Develop process for notification of relevant personnel & organizations post-incident - Develop appropriate emergency procedures
<b>11. Space for equipment, materials and experimental set-ups</b>	BC WCB OHSR	- Create adequate and appropriate space
<b>12. Asbestos-containing material present.</b>	BC WCB OHSR; UBC asbestos handling procedures	- Conduct awareness training - Develop reporting procedures - Develop removal/substitution measures

**Legend:**

- BC = British Columbia
- WCB = Workers' Compensation Board
- WHMIS =- Workplace Hazardous Materials Information System
- PPE = Personal protective equipment
- CNSC = Canadian Nuclear Safety Commission
- CIHR = Canadian Institutes of Health Research
- GVRD = Greater Vancouver Regional District
- OHSR = Occupational Health & Safety Regulation