# Safety Manual > Class C Checklist

**Safety Checklist for Research and Teaching Labs (Class C)**
This Checklist is to be used for Class C labs that are used for instruction and in research. Please note that there are several differences in the checklist requirements between research and teaching (instructional) labs that must be considered. Also, Class A and Class B lab units are higher hazard labs that must have special considerations in construction and operation. These higher hazard labs are not covered in this checklist. If your lab has more flammables than permitted in Class C labs, it will have to be reclassified to one of the higher classifications, and may result in the State Fire Marshal prohibiting occupancy of the lab under the current conditions. It is very important to maintain the labs as Class C labs in order to prevent disruption of research and instruction. (A "Laboratory Unit" consists of the rooms used for lab work and administration, but rooms must be contiguous. It can range in size from a single room to an entire floor or building.)

| Item | Yes | No* | Description | Comments |
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| **Fire And Explosion Safety** | | | | |
| 1 | | | Where storage cabinets and/or safety cans are not used, is the amount of Class I, II and III flammables in the lab unit less than the maximums per 100 sq. ft. shown below? **Research Labs Teaching Labs**<br>Class I (Flash Point « 73, Boiling Pt.«100F)—— 2 gallons 1 gallon<br><br>Class I, II, and III (Flash Pts. « 73- 200F)———4 gallons 2 gallons | |
| 2 | | | Where storage cabinets and/or safety cans are used, is the amount of Class I, II, and III flammables in the lab unit less than the maximums per 100 sq. ft. shown below?<br>**Research Labs Teaching Labs**<br><br>Class I (Flash Point « 73, Boiling Pt.«100F)—— 4 gallons 2 gallons<br><br>Class I, II, and III (Flash Pts. « 73- 200F)———8 gallons 4 gallons | |
| 3 | | | Is the total quantity of flammables in the laboratory unit less than the values below? Note: Use one half of these values for a teaching lab. **Sprinklered No Sprinklers** | |

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| | | | Class I totals No safety cans/cabinets 150 gallons 75 gallons<br><br>With safety cans/cabinets 300 gallons 150 gallons<br><br>Class I, II, III tot. No safety cans/cabinets 300 gallons 150 gallons<br><br>With safety cans/cabinets 400 gallons 200 gallons | |
| 4 | | | During daily use is the storage of class I & II liquids limited to 10 gallons when located outside of a storage cabinet? 60 gallons for class III liquids? 25 gallons for class I & II liquids when stored in safety cans outside of storage cabinets? | |
| 5 | | | Are flammable liquids containerized properly according to the table below? **Container Type Flammable Class**<br>**IA IB IC II III**<br><br>Glass 1pt 1qt 1gal 1gal 1gal<br><br>Metal 1gal 5gal 5gal 5gal 5gal<br><br>Safety Can 2gal 5gal 5gal 5gal 5gal<br><br>Polyethylene 1gal 5gal 5gal 60gal 60gal | |
| 6 | | | Are flammable liquid storage cabinets being used properly? **Flammable Class Max. Storage Capacity** Class I, II total 60 gallons<br>Class I, II, III total 120 gallons | |
| 7 | | | Are containers of materials that may become hazardous upon prolonged storage (ether, tetrahydrofuran, etc.) dated when first opened? Is the material evaluated every six months for continued safe use? | |
| 8 | | | Is sprinkler head clearance of 18″ in the clear maintained in all lab unit areas? | |
| 9 | | | Are penetrations in the fire rated ceilings, floors and walls of your lab unit sealed to prevent smoke, fire and vapors from escaping to other areas? | |
| 10 | | | Are floor openings sealed or curbed to prevent spillage into other rooms below? | |

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| 11 | | | Is a second means of exit provided when one or more of the following conditions exists?<br>• Explosion hazard blocks escape or access to work area.<br>• Lab work area exceeds 1000 sq. ft.<br>• A hood is located adjacent to the primary means of exit access.<br>• A compressed gas cylinder (larger than lecture bottle size) is in use that contains a gas that is flammable or has a health hazard rating of 3 or 4, and could prevent safe egress in case of accidental release of contents.<br>• A cryogenic container is in use that contains a gas that is flammable or has a health rating of 3 or 4, and could prevent safe egress in case of accidental release of contents. | |
| 12 | | | Is furniture arranged so that a means of access to an exit can be reached easily from any point? Are hallways and exits clear of obstructions? | |
| 13 | | | Is an evacuation and emergency action plan available for employees in the unit? Are Exit signs visible and functioning? | |
| 14 | | | If fire doors are not self-closing, are they closed? | |
| 15 | | | Is a portable fire extinguisher located within 25 feet of your lab unit? | |
| 16 | | | Is access to lab units where explosion hazards exist restricted to only those necessary for the work? | |
| 17 | | | Are compressed gas cylinders with a health hazard rating of 3 or 4 (and a rating of 2 where no physiological warning properties exist) kept inside a continuously mechanically ventilated hood or other enclosure with no more than 3 cylinders per hood or enclosure? | |
| 18 | | | Are there no more than 6 compressed gas cylinders (10×50 in.) per 500 sq. ft. (3 in a non sprinklered space) of flammable gases/oxygen, no more than 3 liquified flammable gas cylinders (9×30 in.) per 500 sq. ft.(2 cylinders in non sprinklered space), and no more than 3 cylinders (4x15in.) of health hazard rating of 3 or 4? | |
| 19 | | | Are compressed gas cylinders capped when not in use and secured at all times? | |

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| 20 | | | Are cylinders that are not necessary for current use stored outside the work area in a safe location? | |
| **General Safety Considerations** | | | | |
| 1 | | | Is a laboratory safety coordinator appointed for each department? | |
| 2 | | | Are all chemical shipments dated when received and when opened? | |
| 3 | | | Is there an inventory of chemicals with the suspect or known carcinogens identified? | |
| 4 | | | Are chemical Safety Data Sheets (SDS) available in the laboratory? | |
| 5 | | | Are chemicals stored by hazard classification and compatibility? Are hazardous chemicals stored in the open in the laboratory work area kept to the minimum necessary for the work being done? | |
| 6 | | | Is all laboratory equipment periodically inspected for defects? | |
| 7 | | | Is protective equipment, such as gloves, face shields, etc., provided and used by lab personnel as called for on the SDS? | |
| 8 | | | Are electrical outlets grounded? Where work with portable tools and/or cords is in a wet area, are ground fault interrupters used (unless the tools are double insulated)? | |
| 9 | | | Are extension cords used only in temporary situations where the use will not exceed 90 days or the life of the experiment? Are they adequately sized for the electrical current and protected against damage? (The minimum size for an extension cord is #16AWG.) | |
| 10 | | | Are all original and subsequent containers of chemicals and other agents labeled/identified, with precautionary information provided? Are the storage cabinets and other storage areas also labeled in the same manner? | |
| 11 | | | Are entrances to laboratory units, laboratory work areas, storage areas, and associated facilities identified by signs to warn emergency response personnel of unusual or severe hazards not directly related to the fire hazard of contents? | |
| 12 | | | Are written standard operating procedures that incorporate safety requirements such as personal protective equipment, etc., used? | |

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| 13 | | | Is regular surveillance for abnormal conditions made on unattended or automatic laboratory operations involving hazardous chemicals? | |
| 14 | | | Are emergency eye wash/showers available to those exposed to chemical accidents? | |
| 15 | | | Are emergency telephone numbers prominently posted on telephones? | |
| 16 | | | Are lab unit workers trained in safety requirements such as fire extinguishers, first aid, etc.? | |

* “No” answers must be accompanied by comments that explain corrective action needed

Report completed by:

Title:

Laboratory Room # :

Building:

Date of Report: