

# Science laboratory and preparation area safety

Science laboratories and preparation areas have unique risks. [AS 2243.1:2021 Safety in Laboratories, Part 1: Planning and operational aspects](#) specifies that instrument and preparation areas are included as part of the laboratory, therefore these areas should be treated in the same manner as laboratories.

Risk assessment of laboratory preparation operations should be undertaken and may include, but not be limited to:

- plant and equipment safety
- chemical safety
- manual handling
- working alone
- work practices, including placement of write up areas
- materials and work practices used
- preparation area security and authorised access
- training and induction

Supporting risk management information can be found in WHS Regulation, [Codes of Practice](#) and Australian Standards.

Control measures must be the most effective available and be implemented to reduce these risks. Apply the hierarchy of control:

- Eliminate the hazards from the preparation area e.g. not purchasing a hazardous chemical that cannot be stored safely
- Substitute a process or substance to reduce the risk
- Isolate the hazard to control the risk e.g. storing equipment in a designated storeroom rather than on work benches
- Apply engineering controls e.g. local exhaust to minimise exposure
- Adoption of safe work practices, including changes to how things are done to minimise exposure to hazards
- Use of personal protective equipment (PPE) to supplement higher level risk controls

Training, information (e.g. signage) and induction must be provided to staff in relation the procedures to follow when accessing and working in these areas. Workplaces must retain records of induction.

## Key points to remember

- AS/NZS 2243.1:2021 provides the following information for safe practice in preparation areas and classroom laboratories: Do not take, handle, prepare, store or consume food or drink for personal consumption in preparation areas or classroom laboratories
- Do not store food or drink for personal consumption in a refrigerator, freezer or cupboard which is used to store laboratory materials
- Provide adequate secure facilities for the storage, handling and preparation of chemicals.
- Keep computer stations and write-up areas separate from areas where chemicals are used or stored and where chemical activities are undertaken. Precautions should be taken to ensure that reading and writing materials do not become contaminated or damaged. Write up areas are to be separated from areas where hazardous materials or harmful processes are undertaken.

- Preparation areas are to be kept secure. Work in preparation areas is dynamic with a range risks related to the use and movement of equipment and substances. To maintain a safe environment for staff working in preparation areas:
  - access is to be limited to authorised staff, contractors or other visitors who have received work area induction
  - preparation areas are not be used as general thoroughfares to adjoining classrooms or laboratories. Where transit is required, the process is to be risk managed with respect to the needs and activities undertaken by the primary occupant(s) of the workspace.
  - in rare cases where students might access these areas for curriculum purposes, they must be fully supervised by authorised teaching or teaching aide staff at all times.
- Provide sufficient hand washing facilities for the number of staff and tasks being undertaken.
- Provide and maintain emergency showers and eyewashes that are compliant with Australian Standards.
- Appropriately store any laboratory records, stores and equipment which are not in use.
- Provide appropriate personal protective equipment (PPE) and ensure it is worn when required and appropriately maintained.
- Any heating or cooling system provided should be designed to maintain a temperature of 22+/- 2°C except where another temperature is required for the equipment or chemicals stored.
- Use appropriate local exhaust ventilation to minimise the contamination of the laboratory air by removing contaminants at the point which they are generated.
- Prevent direct sunlight from entering the interior of the laboratory, preparation or chemical storage area.
- Ensure a suitable chemical spill kit, fire response and evacuation procedures are available and staff have been trained in emergency response and equipment use.



**For further information please refer to:**

- [Chemical management procedure](#)
- [AS 2243.1:2021 Safety in Laboratories, Part 1: Planning and operational aspects](#)