

# EARTHQUAKE PLANNING FOR CHEMICAL STORAGE AREAS



Areas that store and use chemicals may be more susceptible to damage from earthquakes. This focus sheet contains tips for increasing the resilience of such areas to minimize damage and disruption if an earthquake occurs.

## GENERAL

- Laboratories and research areas should **review Section 9 of the UW [Laboratory Safety Manual](#)** for guidance (available on the EH&S website).
- **Secure heavy equipment and furniture** that might block exit routes.
- Keep **exits and aiseways free and clear** of obstructions.
- Know where **emergency gas shut-off valves** are located.
- Additional information can be found on the [UW Emergency Management](#) and [FEMA](#) websites.

## CONTAINER STORAGE

- **Keep containers closed** when not in use.
- Provide **lips or restraints** for chemical storage shelves to keep chemicals and glassware in place.
- Store [particularly hazardous chemicals](#) in approved **storage cabinets that close and latch**.
- Chemical cabinets should be **secured to the floor or wall** to prevent tipping or movement.
- Store chemical containers in **secondary containment trays or tubs** to capture spills.
- Always **store incompatible chemicals separately**. Guidance is available on the EH&S website.

Contact EH&S at (206) 543-7262 or [ehsdept@uw.edu](mailto:ehsdept@uw.edu) for more information.

## CHEMICAL USE

- **Close fume hood sashes** as far as possible to contain spills and maintain adequate ventilation.
- Consider options for **backup or emergency power** for any chemical processes that could pose a fire or health hazard if power is suddenly lost.
- Have **spill supplies and containment equipment** readily available. Review [spill guidelines](#) on the EH&S website.
- After an earthquake, **always test emergency washing equipment** to make sure it is still operational before using corrosive or toxic chemicals.

## GAS SYLINDERS/CRYOGENS

- **Remove pressure regulators** and place cylinder caps on cylinders not in use.
- **Secure gas cylinders** with straps or chains fastened to the wall.
  - Full height cylinders should be **strapped in two locations**, one strap at 1/3 and a second strap at 2/3 of the cylinder's height.
  - A single strap is acceptable for small cylinders and lecture bottles.
  - A **cylinder boot** can be added to provide even more protection.
- Cryogenic Dewars are less likely to fall over during an earthquake, but are still subject to movement and must be braced to a wall or other sturdy object.
- Use **flexible connections** for gas lines.
- Additional information on [compressed gas cylinder and cryogen storage](#) is available on the EH&S website.