

# EARTHQUAKE PLANNING FOR CHEMICAL STORAGE AREAS

## INTRODUCTION

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

Additional general information can be found on the [UW Emergency Management website](#) on and [FEMA website](#).

## GENERAL

- Laboratories and research areas should review Section 9 of the Laboratory Safety Manual (LSM) for guidance (available on the EH&S website).
- Make sure heavy equipment and furniture that might block exit routes is secured. Keep exits and aisleways free and clear of obstructions.
- Know where emergency gas shut-off valves are located.

## 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 can be found on the EH&S website.

## 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 CYLINDERS/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 at 1/3 and 2/3 cylinder 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.