

## Chemical Safety

We handle and store chemicals to perform activities such as housekeeping, maintenance, and research every day at Northwestern. It is critical you understand the chemical properties that make a product effective are also the properties that make a product hazardous. For example, degreasers are excellent cleaning agents, but are corrosive to skin. Implementing safe chemical handling and storage procedures are necessary to ensure you don't succumb to injury or illness as a result of hazardous chemical exposure.

### Routes of Exposure

Before we dive into the requirements for hazardous chemicals, we should first understand how they can cause injury and illness if not handled or stored properly. In the past five years, there have been 49 chemical-related injuries at Northwestern, most resulting from inadequate storing and handling procedures – let's discuss the following routes of exposure to prevent future chemical related injuries:

1. **Inhalation** is exposure to the respiratory tract, comprised of the mucous membrane of the mouth, throat, and lungs – the size of the contaminant particle affects the location of exposure; for example, dust may stop in the nose and throat while inhaled gases or vapors may pass rapidly into the lungs and be carried into the circulatory system
2. **Ingestion** is exposure by swallowing – though this may seem obvious to avoid, it's important to note that the simple act of neglecting to wash one's hands before eating lunch could result in ingestion of a chemical if recently handled
3. **Absorption** is exposure through the skin and eyes, which can result in localized irritation or worse, as these are portals to other organs in the body
4. **Injection** is exposure by entering the body if the skin is punctured or penetrated by chemical-contaminated objects

### Tips for Success When Talking to Your Team

**Preparation is Key:** Keep the topic relevant. Work with your team to review the various types of chemical hazards in your workplace and discuss control methods to stay safe when handling or working around chemicals.

**Stay Positive:** Keep the focus on what can be done to create a safe workplace, instead of focusing on what has gone wrong in the past.

**Share a Story, Ask for a Story:** Storytelling is a powerful method to convey information. Stories from your employees make the topic even more relatable.

### Handling and Storage

Northwestern's [Hazard Communication Program](#) is comprised of safe handling and storage procedures to prevent injury and illness and chemical safety resources. Key components of our chemical safety requirements are:

- ✓ Eliminate chemical hazards where possible, or consider a less hazardous chemical as a substitute.
- ✓ Selecting the proper PPE when working with chemicals is critical, and you should be familiar with how and when to wear PPE.
- ✓ Review the container label and safety data sheet (SDS) for any product that you are preparing to work with, enabling you to plan for specific safety precautions, such as personal protective equipment (PPE) requirements and what to do if you come into contact with the chemical.
- ✓ Know the location of nearby safety showers and eyewash stations, and how to use them.



Nitrile gloves are chemical-resistant and offer the widest range of compatibilities

Without safe chemical storage, leaks, spills and fires can occur. All chemical containers must be compatible with the chemical and clearly labelled. Store chemicals in well-ventilated areas, away from direct sunlight, and any ignition sources. In the event of a leak or spill, there should be adequate secondary containment and a spill kit located nearby.

**Learn more:** Please review the Occupational Safety and Health Administration (OSHA) [Hazard Communication standard](#) and complete [Hazard Communication training](#).

**Report all injuries** on the Risk Management [website](#) or 847.491.5084

### Safety at Home

It is important to address the hazardous chemicals found in everyday products in your home – just as one does in the workplace. Common household products that contain hazardous chemicals include gasoline, paints, and cleaning agents, such as bleach. Consider these safety tips to protect you and your family from chemical hazards:

- ✓ More is not better, just more dangerous – use all chemicals sparingly in the home.
- ✓ If you need to pour a chemical from its original container into another container, always label it – a child may not know the difference between a yellow-colored cleaning product in an old Mountain Dew plastic container and the real thing.
- ✓ Be aware that some chemicals can be extremely harmful if mixed or used incorrectly – this information can be found on the SDS.
- ✓ A secure storage area is critical, especially to prevent exposure to children – though the chemicals and quantities may differ from work, the safety principles are the same.

### For Additional Information

Contact Gwen Butler, Director, Environmental Health & Safety, at 847.491.4936.

*Do you or your team have a safety story you'd like to share? Contact Risk Management at [gwen.butler@northwestern.edu](mailto:gwen.butler@northwestern.edu) for details.*