# Chem-Lab to Shop Floor: Chemical Hazard Awareness Beyond MSDS Stats and Facts



## FACTS

- **Beyond the Label:** Reading a Safety Data Sheet once during onboarding isn’t the same as understanding how a chemical behaves under shop floor conditions — heat, mixing, or prolonged exposure can all change its risk profile.
- **Invisible Exposure Risk:** Many chemical exposures produce no immediate symptoms. A worker can be exposed repeatedly without realizing it, while the cumulative effect builds toward illness that may not appear for years.
- **Chemical Mixing Hazard:** Combining incompatible substances, even common cleaning agents, can produce toxic gases or violent reactions. Workers unfamiliar with chemical compatibility may unknowingly create a hazardous reaction during routine tasks.
- **Secondary Exposure Pathways:** Chemicals don’t only enter the body through inhalation. Skin contact, absorption through cuts, and accidental ingestion from contaminated hands are all overlooked exposure pathways.
- **Improper Storage and Labeling:** Transferring chemicals into unlabeled containers or storing incompatible substances together increases the risk of accidental exposure or reaction.
- **PPE Mismatch:** Using the wrong glove material, respirator cartridge, or eye protection for a specific chemical creates a false sense of safety while leaving the worker exposed.
- **Delayed Health Effects:** Some of the most serious chemical-related illnesses can take twenty years or more to develop after exposure, making early awareness and consistent protective measures critical even when no harm is visible.

## STATS

- OSHA’s hazard communication and chemical labeling requirements are estimated to have prevented between 107,000 and 459,000 acute chemical injuries in the workplace.
- Employees in non-manufacturing industries were estimated to experience acute chemical illness and injury at a rate of 13,671 injuries, 38,248 illnesses, and 102 fatalities per year, according to OSHA’s Hazard

Communication Standard rulemaking record.

- The chronic disease rate associated with workplace chemical exposure was estimated at 17,153 chronic illnesses, 25,388 cancer cases, and 12,890 cancer deaths per year.
- In manufacturing, an estimated 40,000 to 50,000 workers experience chemical-source illnesses annually, with an average of 10,000 workers' compensation claims filed each year for chemical illness or injury.
- A 2024 OSHA final rule updated the Hazard Communication Standard to align with the seventh revision of the Globally Harmonized System, with phased compliance deadlines through 2028.
- Hazard Communication, general industry, ranked among the top 10 most frequently cited OSHA standards in fiscal year 2024.
- Respiratory illnesses were the single most commonly reported category in OSHA's 2024 injury and illness data.