

Workers Overexposed to Isopropyl Alcohol (IPA) in Disinfectants

Attention: Businesses with workers who use Isopropyl Alcohol (IPA) wipes or solutions to clean and disinfect workplaces. IPA is a colorless liquid and is also known as rubbing alcohol.

Hazardous Overexposures

Workers were recently exposed to potentially hazardous levels of IPA in the air at two separate workplaces in Washington state.

- IPA pre-saturated wipes (70% IPA) were used in one workplace
- Over-the counter “rubbing alcohol” (70% IPA solution) and pre-saturated wipes (55% IPA) were used in the other.

Ventilation in both locations was poor and several workers were exposed to IPA in the air at levels higher than the 15-minute short-term exposure limit.

IPA can be Hazardous to Workers’ Health and Safety

IPA vapor in the air can cause:

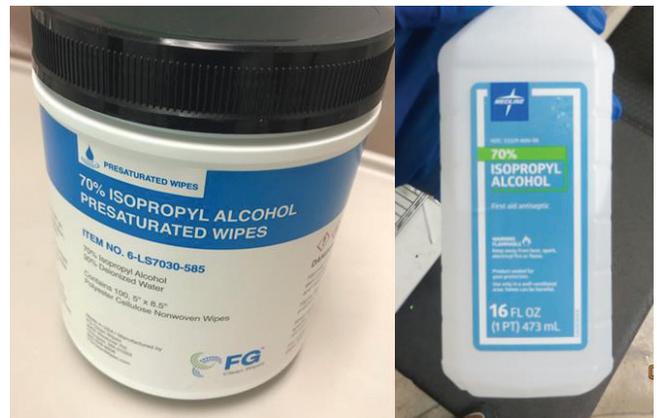
- Irritation to workers’ eyes, nose, and throat.
- Dizziness, headaches, loss of coordination, and possibly unconsciousness.

Safety Risk: IPA vapor can build up in the air and easily ignite (IPA is a Category 3 flammable liquid) to cause fires.

Safety Precautions

Occasional, brief use of IPA products (e.g., wiping down a cell phone or counter) isn’t typically a concern, but sustained wiping or spraying activities in a room or enclosed area creates risk for high exposure.

The following precautions can help employers reduce risk to workers using IPA:



Sustained use of products containing isopropanol can release enough vapor into the air to pose a risk to workers using them during disinfection activities.

- **Establish** a written Hazard Communication Program that addresses:
 - Safety Data Sheets for all IPA containing products and solutions.
 - Worker training on the health effects and safety hazards of IPA.
 - Procedures for labeling, storage, and disposal of all IPA containing products.
 - Emergency safety procedures for spills and/or splashes, fires, and health effects.
- **Measure** workers’ personal exposures to ensure they are below regulated limits: 400 ppm over an 8-hour period and 500 ppm over any 15-minute period. Results will help you determine if controls are necessary. Repeat measurements whenever there is a change in products, work practices, or other changes that may affect workers’ exposures.



- **Control IPA vapor:**
 - Use mechanical or natural ventilation by providing enough fresh air where IPA is used. If providing fresh air isn't feasible, use a system that scrubs IPA vapor from the air.
 - Use IPA in a location with better ventilation (e.g., a laboratory hood or other enclosure with a properly operating ventilation system) or near a local exhaust ventilation (LEV) system.
 - Ensure mechanical ventilation systems are maintained and are regularly checked to ensure function.
- **Train workers:**
 - How to identify hazardous effects of IPA.
 - To immediately seek fresh air if they feel dizzy or experience symptoms of high exposure.
 - To not mix IPA with other chemicals. Never combine IPA with bleach. It releases chlorine gas that burns the eyes, the throat, and may damage the lungs.
 - How to properly dilute and use IPA. Solutions of 70% IPA in water should be left on surfaces for 30 seconds to ensure disinfection. Pure (100%) IPA evaporates too quickly for such use and is less effective.
 - To clean surfaces with soap and water before cleaning with IPA.
- To safely dispose of IPA wipes or saturated materials in tightly closed containers in a cool, well-ventilated area away from sunlight and other heat sources. Do not leave them in the open or in the trash. They will continue to release IPA vapor.
- **Provide safety gear:**
 - Goggles or face shields will protect the eyes from IPA vapor and splashes and; gloves will protect from skin contact.
 - Appropriate respirators when ventilation or other controls do not keep IPA exposures within regulated limits. Follow Respiratory Protection Program requirements including ensuring workers are medically evaluated and fit tested for respirator use and trained on proper use and maintenance.
 - Emergency eyewash facilities that deliver a minimum of 0.4 gallons (or 1.5 liters) per minute of gently running lukewarm water for 15 minutes when using liquid IPA. Portable units will need to hold at least six gallons (or 22.5 liters) to meet the minimum supply requirements.
- **Post** warning signs around equipment and/or entrances to spaces where overexposures could occur that instruct workers not to enter without proper personal protective gear.

Other resources you can access

Chemical Safety Basics webpage:
www.Lni.wa.gov/ChemicalSafety

Hazardous Substance Fact Sheet – Isopropyl Alcohol (New Jersey DOH): www.nj.gov/health/eoh/rtkweb/documents/fs/1076.pdf

To find an **electronic** copy of this Hazard Alert, go to www.Lni.wa.gov/HazardAlerts.

L&I Safety web page: www.Lni.wa.gov/safety-health.

For other related rules, contact your local L&I office or visit the safety rules webpage: www.Lni.wa.gov/SafetyRules.

To find the nearest L&I office, visit www.Lni.wa.gov/Offices.

How can I get help from Labor & Industries?

The Department of Labor & Industries provides consultations, training, and technical assistance at no cost to employers. Call today to schedule a free confidential consultation or go to www.Lni.wa.gov/SafetyConsultants for more information.

You may also call 1-800-423-7233 or visit a local L&I office and ask for the Consultation Manager.

*This alert was developed by L&I's Division of Occupational Safety and Health (DOSHS) to alert employers, labor groups, and employees to potential hazards associated with work activities. **This is not a rule and creates no new legal obligations.** The information provided includes suggested guidance on how to avoid workplace hazards and describes relevant mandatory safety and health rules. DOSHS recommends you also check the related rules for additional requirements.*