

HAZARD ALERT



EPOXY RESIN SYSTEMS



What are Epoxy Resin Systems?

Epoxy resin systems (or epoxies) are a chemical mixture widely used in the construction industry because of their strong adhesion to surfaces, durability, and anticorrosive properties.

They are used in many different trades. Among painters, epoxies are often used for protective coatings of steel structures, such as bridges, storage tanks, and wind turbines.

Epoxies are dangerous if they come in contact with your skin or you breathe in the vapors, mists, or particles when spraying them.

What are the Health Effects?

Exposure to epoxies can cause different types of **dermatitis** (skin inflammation). Irritant contact dermatitis can cause a **painful or itchy skin rash** that typically appears on areas of exposure (such as your hands, forearms, and face). Some workers also develop an **allergy** (called sensitization). Once a worker becomes sensitized, they can have an allergic reaction each time their skin is exposed to these chemicals, even in small amounts.

Other health effects include **asthma, lung inflammation, and a decline in lung function**. Certain chemicals in epoxies may also interfere with our body's hormones.

If you are experiencing symptoms, on or off the job, talk with your doctor.

Be aware of these symbols:



Irritant/Skin Sensitizer



Skin Corrosion/Burns



Respiratory Sensitizer

Employer Requirements

The Occupational Safety and Health Administration (OSHA) requires your employer to protect you from exposure to epoxies by:

- ▶ Having a written hazard communication program,
- ▶ Training you about the Hazard Communication Standard, chemical hazards you will be exposed to on the job, and appropriate protective measures,
- ▶ Giving you access to safety data sheets for hazardous products,
- ▶ Labeling hazardous products,
- ▶ Providing you with and maintaining personal protective equipment (PPE) for protection from workplace hazard(s), and
- ▶ Having a written respiratory protection program, if respirators are required for protection from workplace hazard(s).

Your employer should also regularly conduct exposure assessments to identify and evaluate hazards present in your workplace.

When Working With Epoxy Resin Systems...

1 Use Engineering Controls

Ventilation is critical for removing chemical vapors and aerosol particles from the air. Local exhaust systems, such as dust collectors on power tools, capture contaminants at or near the source and can be used when painting indoors. Dilution ventilation, such as mechanical supply fans or natural air currents, are highly recommended when working in enclosed or covered spaces (e.g., bridge painting).

2 Wear PPE

When preparing, mixing, handling, rolling/brushing, and spraying epoxy-based products, you should wear:

- ▶ Long-sleeved shirts, polyethylene or polypropylene coveralls, and eye protection.
- ▶ Chemical-resistant gloves, such as thick nitrile or butyl rubber. **Never use cotton or latex gloves** because they can absorb and hold these chemicals against your skin.
- ▶ For the best protection, use a NIOSH-approved:
 - Powered air-purifying respirator with a particulate filter and organic vapor cartridge (OVC) when spraying in enclosed or covered spaces.
 - Half facepiece respirator with an OVC during mixing and roller/brush applications.

Keep 10 feet or more from workers using epoxy-based products or wear a respirator if you are working close by.

3 Practice Good Housekeeping and Personal Hygiene

- ▶ Wash your hands with a pH neutral soap and warm water before and after using gloves or in the event of a chemical splash. Your employer should provide portable handwashing stations.
- ▶ Clean tools and reusable gloves after each use. Use disposable products when possible.
- ▶ Change into clean clothes before leaving work. Dirty clothes should be put in a bag and laundered separately.
- ▶ Take a shower as soon as you get home to remove contaminants from your skin.
- ▶ Keep work and storage areas clean and tightly cover chemical containers when not in use.

To learn more, visit:

- ▶ **Working with Epoxy Resin Systems in Construction:**
<https://tinyurl.com/epoxyresinsystems>

- ▶ **ChooseHandSafety.org:** A one-stop source for information on skin disorders and hand injuries



Find out more about construction hazards.

To receive copies of this Hazard Alert and cards on other topics call

301-578-8500 or visit cpwr.com/hazardalerts

If you think you are in danger:

Contact your supervisor.
Contact your union.

Call OSHA

1-800-321-6742



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