

Epoxy Resin Systems

Epoxy resin systems are chemical mixtures containing two main parts, the epoxy resin and the curing agent (also called hardener). When combined, these chemicals form a hard, durable plastic material commonly known as epoxy. Epoxy resin systems also contain other chemicals, such as solvents, pigments, and fillers. Epoxies can cause severe skin problems.

Dry skin may include irritation, scaling, itching, burning, and redness.

Irritant contact dermatitis (ICD) can be acute or chronic. Symptoms include stinging, pain, itching, blisters, dead skin, scabs, scaling, fissures, redness, swelling, lumps, rash, and watery discharge.



Allergic contact dermatitis (ACD) includes many of the same symptoms as ICD. Epoxies, especially those containing bisphenol-A and amine hardeners, are powerful skin allergens. ACD is difficult to cure and may persist for years.

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How are Epoxy Resin Systems Used in Construction?

Construction workers use epoxy resin systems in many different trades. Here is a partial list:

- Brick, Concrete, and Masonry Workers use waterproof epoxy coatings to protect structures from corrosion. These workers apply epoxies to structures that come in contact with materials such as chemicals, fresh or salt water, sewage, food acids, or damaging pollutants.
- Cement Workers are exposed to epoxies that are mixed with cement. Epoxies are also used to bond concrete to itself or to steel or stone, as in monument restoration. In addition to the skin hazards posed by epoxies, exposure to cement is a well-known cause of skin disorders, including irritant and allergic contact dermatitis.
- Tilers and Grouters use epoxy adhesives to bond tiles to the substrate. Grouts containing epoxies are also used widely.
- Floor Layers and Terrazzo Workers apply paints, liquid pastes, or mortars containing epoxies to produce resilient, industrial floor covering. Epoxy resin-based flooring is used in high traffic areas, such as shopping malls, hospitals, and industrial buildings.
- Marble Workers work with marble strips that are sometimes treated with epoxy resin for decorative or strengthening purposes.
- Painters use many paints that contain epoxy resins, especially when coating surfaces that require toughness and durability, such as steel structures and bridges.
- Plumbers are exposed to epoxy resins in leak-proof sealants used in pipelines. Epoxies are also used in plumbing bonding adhesives.

Working with Epoxy Resin Systems in Construction

Best Practices Guide to Skin Protection:



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Best Practices

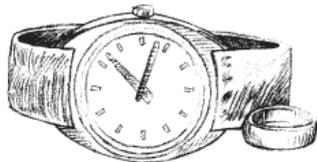
Protecting skins means more than wearing gloves. These best protective practices are recommended by experts. Maybe you can't do all these practices. But you should do as many as possible, starting with the easiest ones.

Wash with pH-neutral or slightly acidic soap. Your pharmacist can recommend one. This helps normalize your skin's pH.



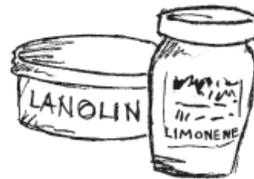
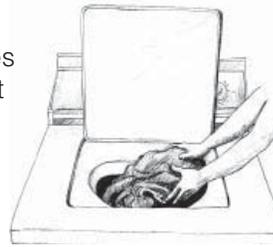
Wash before putting on gloves and each time you remove them.

Don't wear jewelry at work. It can trap material against your skin.



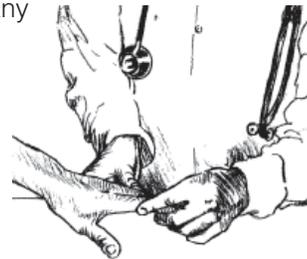
Change out of work clothes at work. Take work clothes home in a separate container, like a trash bag.

Launder work clothes separately to protect your family or your roommates.



Avoid lanolin, petroleum jelly, and other skin softening products at work. These substances can seal epoxy residue against your skin. These products should be applied only to clean skin in clean environments.

See a doctor for any persistent skin problem, even a minor one. In allergic dermatitis, early diagnosis and treatment makes the difference in preventing chronic disease. Tell the doctor you work with epoxies.



Choose the right gloves. Butyl rubber or nitrile gloves may provide the best protection, but always check w/ the epoxy manufacturer to be sure. Clean gloves daily. When gloves become grossly contaminated, throw them away and get new ones.

How to remove gloves

Before removing gloves, always clean off the outsides.

Follow the manufacturer's instructions. Watch for pinholes which can let in contaminated rinse water.



To remove gloves, first loosen them on both hands. Hold hands down so contaminated water will not drip onto skin or clothing.

Remove the first glove only to the fingers. The cuff of the glove will remain over the palm.



Now, grabbing the second glove with the first glove, remove the second glove. The first glove should slip off.

Try to handle gloves by the insides only. Don't touch the outsides.

Keep gloves in a bag until the next use.

