

Epoxy Surfboard Resin by Resin Research:

Be sensible – suit-up, use good ventilation and a mask, suitable eye and ear protection and use your flipping common sense. If you hate any toxic substance coming near you, then you'll have to leave the world. We are surrounded with it. (On a personal note, I can never understand why people, mostly the old guard, still want to stuff chemicals down their throats, up their noses and anywhere else for their private thrills yet have a real grizzle when it comes to products in the workplace).

I digress – here is what Greg Loehr says about the safety of his Epoxy Resin: “On the health issues, with our epoxy (Resin Research), I have never seen any sensitization that doesn't involve a co-toxin. The one in particular in our business is acetone. It serves as a vehicle for toxins through the skin. We eliminated acetone from our shop long ago and have never had any problems. We now use soap and water, which work better anyway. Our resins also do not contain phenol or formaldehyde, which many other systems do. These are some other co-toxins I mentioned above. Also our hardeners are based solely on cycloaliphatic diamine technology as opposed to straight chain amines. This also reduces toxicity. We also have safeguards built into our formulations to reduce toxicity. This makes our hardeners much safer to use than most other epoxies.

Epoxy Safety Issues Toxicity. Vapor from most epoxies is much lower than it's polyester counterparts. The resins we produce (Resin Research Epoxies) are all high solids and have 1/50th the vapor of polyester surfboard resins. In our shop (which is well ventilated) we don't even wear masks. Epoxy is also NOT a carcinogen. That has been well proven by OSHA and many others in industry. What epoxy is, is a skin sensitizer. This varies greatly between different epoxy systems depending on different company's formulations. Most older epoxy hardeners are formulated with a chemical known as TETA or another called DETA. These base hardeners are in the aliphatic amine family, are very reactive, somewhat unstable, quite toxic and easily can cause sensitization of the skin (or dermatitis). Most of these hardeners are also modified with phenol and formaldehyde. Phenol is what dermatologist use for chemical skin peels and increases TETA and DETA's toxicity to the skin dramatically. Many of these older hardeners are up to 50% phenol. Formaldehyde is also no picnic as it also increases risk because of its ability to act as a vehicle for the phenol and amines through the skin and into the blood system. By the way, the reason these epoxy hardeners are still used today is because they're CHEAP. DETA and TETA cost 1/5 what a modern diamine-based hardener costs to produce. Anyone who has worked with many of the West System epoxies will be familiar with these low cost systems. Modern epoxy hardeners are nothing like their 60's counterparts. As I mentioned above, they are formulated with modern diamines and have vastly reduced incidences of sensitization. They also have lower vapor, better colour, better finish, and lower exotherm. They contain NO phenol and NO formaldehyde. Our company was one of the first in the US to formulate and market diamine-based epoxy hardeners 20 years ago, which gives us an edge in experience with these chemicals. As superior as they are they still must be respected as skin sensitizers. The simple way to eliminate problems related to dermatitis in the workplace is to reduce or preferably eliminate contact with the skin. This means gloves. That's it. We wear disposable vinyl gloves. Vinyl is preferable to rubber because rubber gloves are also skin sensitizers. The other, even more harmful, ingredient is contaminated acetone. Like formaldehyde above it is a vehicle for toxins into the bloodstream. Fortunately, epoxy can be cleaned up with soap and water. Not standard bar soap but with products like Go-Jo and Fast Orange. These products are water based and don't act as a vehicle the way VOC solvents do. In 20 years of producing epoxy surfboards we have NEVER had one incidence of dermatitis in our shop. I have also NEVER seen a case of dermatitis that didn't have something to do with the co-toxin acetone. Given the aforementioned resin parameters and if shop practice adheres to the above suggestions, epoxy resins are MUCH safer to use for producing surfboards than their polyester counterparts”.

Greg Loehr 5 March 2003