

## **EPOXY ADHESIVES**

An **epoxy adhesive** is a copolymer formed by mixing together a resin and a hardener. Depending on the thickness of the application and the temperature of the work area, the epoxy will take anywhere from one minute to several days to dry completely into a hard clear coating. The curing process is highly sensitive to temperature so always follow the manufacturer's directions when working with epoxy adhesives. In fact, some professional epoxies don't require a hardener, but are activated by heat instead. The strength of hardened epoxy may degrade in high heat or under exposure to ultraviolet light. Epoxy adhesives have many different uses. Epoxies are preferred anytime a strong bond is necessary. They are used extensively in construction and manufacturing. Epoxy adhesives are used to join construction elements together or protect the underlying surfaces from dirt and moisture. Always work in a well-ventilated area when using epoxy adhesives because the vapors are dangerous. If you spill on a surface, clean it up with vinegar or acetone. If you spill on yourself, wash the resin off with vinegar. Acetone can be absorbed through the skin. Several good uses for epoxy adhesives are listed below.

### **1. Fiberglass Repairs**

Epoxy adhesives can be used to repair the bodies of passenger cars and livestock trailers, as well as the inside of boat hulls. However, they are not recommended for use on the outside of boat hulls because of their sensitivity to ultraviolet light. Clean the damaged area thoroughly and sand down any surface irregularities. Lay new fiberglass mats in place before mixing the resin and hardener. A coffee can lid is a good vessel for mixing. Use a brush to apply the epoxy mixture to the mat. Lay it on until the mat is thoroughly coated and entirely saturated. Let the resin cure according to the directions on the bottle.

### **2. Carpentry and Woodworking**

In a pinch, epoxy can substitute for wood glue when building furniture or cabinets. Its main advantage over wood glue is that it sets faster, making it useful for urgent situations. It can also be used as a secondary adhesive to reinforce the wood glue. Epoxy adhesives are used to laminate plywood with fiberglass. This increases the strength and durability of the

construction. Epoxy resin is an excellent choice for coating bar tops and other frequently wet wooden surfaces.

### **3. Wood and Metal Fillers**

Epoxy adhesives can be used to repair wood rot or rust. Just fill in the damaged part of the wooden or metal beam and allow it to dry. When working with metal, choose an epoxy with the appropriate additives to prevent unwanted chemical reactions.

### **4. Reinforce Bolts**

Epoxy adhesives are used to reinforce fasteners. A common example is bolting heavy vibrating machinery to a concrete floor. Epoxy protects the bolt from corrosion, strengthens the joint, and delays stress-induced cracking.

### **5. Jewelry Making**

Epoxy adhesives are used to make costume jewelry. Superglue a picture to a bezel cup, then laminate it with a coating of epoxy. You can also make a "window" in a metal ring. You can even make a layered montage in a deep metal well using several inclusions and several coats of epoxy.

### **Phenolic resins**

A resin very seldom used in our day to day applications are found in a myriad of industrial products. They are mainly used in the production of circuit boards. They are better known for the production of molded products including billiard balls, laboratory countertops, and as coatings and adhesives. Contact us rather