# Epoxies in Preservation and Restoration

## Why use Epoxies in Preservation and Restoration Projects?

Epoxy Technology, Inc. offers specialty adhesive epoxies well suited for use in Preservation and Restoration Projects. Since the 1970's, these types of projects started to focus mainly on the use of epoxies for structural repairs.

The benefits of using epoxies for wood impregnation is they will not absorb water and are impervious to salt water, oils, and stains along with a high temperature resistance. Because of these advantages, epoxies can repair moisture damage to dry rot wood in artifacts, create skeletons by bonding bone parts together, and gap filler for voids. EPO-TEK® adhesives are able to bond to wood, metal, glass and fiberglass reinforcements.

## What are Typical Applications?

- Repairing moisture damage and dry rot to wood; such as, totem poles and historical boat repair
- Bonding ancient bones
- Refurbishing pottery, sculptures and tiles
- Restoring stain glass works
- Reconditioning historical musical instruments, such as crystal flute and violins
- Repairing piano blocks

## What EPO-TEK® Products are Best Suited for Preservation and Restoration Projects?

| EPO-TEK | Key Advantages/ Characteristics |
|---|---|
| **301** | very low viscosity, room-temperature curing, clear/colorless |
| **301-2** | very low viscosity, room temperature curing, long pot life (8 hours), clear/colorless |
| **301-2FL** | more flexible version of EPO-TEK® 301-2, low stress, clear/colorless |
| **302-3M** | low viscosity, excellent water, chemical, and solvent resistant properties, clear/colorless |

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# How Do The EPO-TEK Properties Compare?

| EPO-TEK® | NO. of COMPONENTS | COLOR Before/After CURE (thin film) | CURE TEMPERATURE (minimal) | VISCOSITY @ 23°C | GLASS TRANSITION TEMPERATURE (Tg) | DIE SHEAR STRENGTH @ RT (80mil x 80mil) | SPECTRAL TRANSMISSION | TGA DEGRADATION TEMPERATURE | CTE Below Tg/ Above Tg (in/in/°C) | POT LIFE (@ room temp.) | SHELF LIFE (@ room temp. unless noted) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 301 | Two | Clear/Colorless | 65°C – 2 hours<br>23°C – 24 hours | 100 - 200 cPs<br>@ 100 rpm | ≥65°C | ≥10 kg/3,400 psi | ≥99% @ 382-980nm<br>≥97% @ 980-1640nm<br>≥95% @ 1640-2040nm | 430°C | 39 x $10^{-6}$<br>98 x $10^{-6}$ | 1-2 hours | 1 year |
| 301-2 | Two | Clear/Colorless | 80°C – 3 hours<br>23°C – 2 days | 225 - 425 cPs<br>@ 100 rpm | ≥80°C | ≥15 kg/5,100 psi | ≥94% @ 300nm<br>≥99% @ 400-1200nm<br>≥98% @ 1200-1600nm | 360°C | 61 x $10^{-6}$<br>180 x $10^{-6}$ | 8 hours | 1 year |
| 301-2FL | Two | Clear/Colorless | 80°C – 3 hours<br>23°C – 3 days | 100 - 200 cPs<br>@ 100 rpm | ≥45°C | ≥10 kg/3,556 psi | ≥97% @ 1000-1600nm<br>≥99% @ 400-1000nm | 325°C | 56 x $10^{-6}$<br>211 x $10^{-6}$ | 10 hours | 1 year |
| 302-3M | Two | Clear/Colorless | 65°C – 3 hours<br>23°C – 24 hours | 800 - 1,600 cPs<br>@ 1 rpm | ≥55°C | ≥10 kg/3,400 psi | >95% @ 460-1620nm | 351°C | 56 x $10^{-6}$<br>193 x $10^{-6}$ | 1 hour | 1 year |


**Please consult our *Application Experts* at Epoxy Technology to find the most suitable adhesives for your specific technical challenges at: techserv@epotek.com.**



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