

DESCRIPTION

UVPoxy is a high-performance, two-component, water-clear epoxy system designed for tabletops, wood finishing, fluid art, and other applications requiring a clear, strong epoxy coating specifically designed to resist yellowing caused by the sun and other UV sources.

UVPoxy cures to a water-clear, high-gloss finish that is compatible with many substrates. It is formulated to have increased UV stability, moderate viscosity, and moderate system reactivity and is intended for use in quick-setting applications. While UVPoxy has been formulated to resist yellowing, it is not recommended for permanent outdoor applications.

The appearance of UVPoxy can be customized using EcoPoxy's high-intensity Metallic Pigments and Liquid Color Pigments. Compatibility of the cured system with a variety of finishing methods, application techniques, and products ensures that desired custom finishes can be achieved.

EcoPoxy is committed to creating 100% solids epoxy systems made with high bio-based carbon content materials that deliver exceptional results.

KEY FEATURES

- Significant bio-based carbon content
- Cures water clear
- High-gloss finish
- Self-leveling
- Optimized hardness
- Easy to mix and pour
- Buildable finish
- Customizable with pigments and colorants
- UV resistant
- Easily wets out most substrates

PRODUCT TECHNICAL DATA

PHYSICAL PROPERTIES

The table below summarizes physical properties of liquid UVPoxy such as appearance, bio-based carbon content and specific gravity.

PHYSICAL PROPERTIES (LIQUID)		
Appearance: Part A	Visual observation	Clear viscous liquid; pale blue
Appearance: Part B	Visual observation	Clear liquid; pale yellow
System Bio-based Carbon Content	ASTM D6866	12%
Specific Gravity: Part A at 22°C (72°F)	ASTM D1475	1.172
Specific Gravity: Part B at 22°C (72°F)	ASTM D1475	0.969

WORKING TEMPERATURE

For best results, follow working temperature recommendations. UVPoxy will take longer to cure at lower temperatures and will react faster under warmer conditions.

WORKING TEMPERATURE	
Ideal Working Temperature	22°C (72°F)
Recommended Working Temperature	20-25°C (68-77°F)

RECOMMENDED COATING THICKNESS

For best results, follow recommendations for maximum applied coating thickness. UVPoxy will take longer to cure for thinner applications. It will react faster when applied at greater thicknesses.

COATING THICKNESS	
Recommended Coating Thickness	Up to 3.2mm (1/8")

MIX RATIO

UVPoxy is formulated to have a 1:1 mix ratio by volume. Deviation from the mix ratio can result in lower mechanical properties or incomplete cure.

MIX RATIO	
Mix Ratio by Volume (A:B)	1:1
Mix Ratio by Mass (A:B)	1.2:1

VISCOSITY

Viscosity indicates the material's resistance to flow. Viscosity measurements of resin systems vary during the curing process, first decreasing as the mixture heats up, then increasing as the mixture approaches gelation. Reported **Initial Mixed Viscosity** can be dependent on the temperature of the resin components, the temperature of the environment, and the ability of the coating to release heat.

VISCOSITY		
Viscosity: Part A at 22°C (72°F)	ASTM D2196	12,640 cP
Viscosity: Part B at 22°C (72°F)	ASTM D2196	1,240 cP
Initial Mixed Viscosity at 22°C (72°F)	ASTM D2196	2,790 cP

REACTIVITY

UVPoxy is a thermosetting resin and will generate heat as it cures. **Reactivity Level** is a qualitative indicator of the rate of reaction and temperature of the resin system's cure. **Gel Time** is the point at which the mixed resin gels or becomes so viscous that it can no longer be worked. **Peak Exotherm** is the maximum temperature observed during cure, and **Time to Peak Exotherm** is the length of time between initial mixing and observation of the peak exotherm temperature. The reactivity of the resin system can be affected by factors such as ambient temperature, applied coating thickness, the initial temperature of resin and hardener, and the ability of the system to release heat.

REACTIVITY	
Reactivity Level	Moderate
Gel Time (100 g)	45 min
Peak Exotherm	121°C (250°F)
Time to Peak Exotherm	53 min

PROCESSING CHARACTERISTICS

Working Time begins when Part A and Part B are first mixed together and continues until the epoxy begins to thicken. Specified working times are based on applying the coating immediately after mixing is complete. Working times can be significantly shorter if the resin is left in the mixing container for too long. Up until the working time limit is reached, the epoxy can be manipulated to achieve custom effects. It will self-level and allow bubbles to rise to the surface.

Tacky to Touch is the period where a second application can be done without the need to abrade the surface for adhesion. During this period, the project will need to be protected from contaminants that can adhere to the surface. To determine tacky to touch, wear gloves and lightly touch the surface of the coating. No resin will stick to the glove's surface, but tackiness between the glove and surface will be apparent. The onset of tacky to touch has not been reached if the surface significantly deforms in this process.

Set to Touch defines the point at which the surface is no longer tacky and at risk of contamination. A second pour is not recommended without first abrading the surface of the first layer. Determine if set to touch has been reached using the same method as tacky to touch. There is no observable tackiness between the glove and the surface.

Time to Finishing is the point in time at which the coating has cured and has achieved sufficient hardness that subsequent finishing and handling can occur without resulting in damage.

Full Cure is the point in time when resin achieves full mechanical properties.

The table below shows processing characteristics for a standard-sized panel coated up to 1.6mm (1/16”) with UVPoxy. The ambient temperature was 21°C (70°F), with 50% RH. Processing characteristics will vary depending on factors such as resin volume, coating thickness, ambient conditions, and mold materials.

PROCESSING CHARACTERISTICS	
Working Time	30-40 minutes
Tacky to Touch Period	4-10 hours
Set to Touch	10 hours
Time to Finishing	48 hours
Full Cure	48 hours

CURED RESIN PROPERTIES

Density is a measure of the degree of compactness of a substance. It is expressed as a mass per unit of volume.

Shore D Hardness is a measure of the cured resin's resistance to deformation via indentation. Resins with higher hardness will be more resistant to scratches.

Glass Transition Temperature is the temperature at which the cured resin changes from a rigid, glassy material to a soft, non-melted material. Above the glass transition temperature, the resin may permanently deform when force is applied.

Water Absorption is a measure of the mass of water absorbed by a cured resin sample when fully immersed for a specific length of time.

Abrasion Resistance is the mass of cured resin removed from a specimen by a standard (size, abrasive) rotating disk operated at a specified speed over a set number of cycles. Materials with high abrasion resistance are better able to withstand the wear and tear caused by friction.

Cured resin properties were obtained for a coating that was cured at room temperature, after a minimum of 48 hours. Tests were performed according to applicable ASTM standards. These typical values are provided for reference only.

CURED RESIN PROPERTIES		
Density	Theoretical	1.07 g/cm ³ (0.039 lb/in ³)
Shore D Hardness	ASTM D2240	80
Glass Transition Temperature (Tg) by DSC	ASTM E1356	36°C (97°F)
Water Absorption	ASTM D570	TBD
Abrasion Resistance	ASTM D4060	TBD

STORAGE

Store in a cool, dry, well-ventilated location out of direct sunlight. Protect from freezing and physical damage. Do not store in a location subject to frequent temperature changes as the product may crystallize. Use the product as soon as possible after opening. If storing the remainder of the product for another project, keep the container tightly closed.

STORAGE	
Recommended Storage Temperature	15-25°C (59-77°F)
Shelf Life	2 years; unopened

SAFETY AND PRECAUTIONS

Consult Safety Data Sheet (SDS) before use. Wear protective gloves, clothing and eye/face protection. Use only in well-ventilated areas. Avoid contact with the skin and eyes. Take off contaminated clothing and wash before reuse. Keep containers tightly sealed when not in use. Avoid breathing vapors and fumes. Wash hands thoroughly after handling. During finishing operations wear proper PPE and avoid dust. When fully cured, UVPoxy is an inert plastic.

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