

EpoPro[®] 621A/B

HIGH TEMPERATURE EPOXY SYSTEM

EpoPro[®] 621A/B is an advanced, multifunctional epoxy system designed for manufacturing high temperature resistant composite parts by filament winding, impregnation, and laminating processes. The mixed system provides a long work-life and a cured polymer with an exceptionally high glass transition temperature. The cured polymer and composites made from it demonstrate excellent retention of mechanical properties at elevated temperatures and outstanding chemical resistance. The cured polymer also provides good electrical insulating properties.

BENEFITS

- Low Pot life and low viscosity at processing temperatures
- Excellent wetting of most clothes, fibers, & filaments
- 446°F / 330°C Glass transition temperature possible with post cure
- Excellent Chemical Resistance
- Very Good Electrical Properties

TYPICAL PROPERTIES	VALUE	TEST METHOD
<u>EpoPro[®] 621A</u>		
Visual Appearance	Clear brown liquid	Visual
Density	1.16 g/cm ³	ASTM E-201
Viscosity, Part A, @ 25°C	30,000 – 50,000 cP	ASTM D-2393
Viscosity, Part A, @ 50°C	4,500 cP	ASTM D-2393
Flash Point	149°C	ASTM D-92
<u>EpoPro[®] 621B</u>		
Visual Appearance	Clear brown liquid	Visual
Density	1.02 g/cm ³	ASTM E-201
Viscosity, Part B, @ 25°C	160 cP	ASTM D-2393
Flash Point	130°C	ASTM D-92
<u>Mixed Properties</u>		
Mixed Viscosity	700 cps	
Mix Ratio	100A: 35B by weight or 100A : 40B by volume	Calculated
Shelf-life	at least 2 years stored at 2-8°C, 6 months stored at 25°C – see notes below	
Pot Life @ 50°C	22 hours	ASTM D-2471
Pot Life @ 70°C	6 - 7 hours	ASTM D-2471
Gel Time @ 150°C	21 minutes	ASTM D-2471
Suggested cure times	2 hours @ 150°C + 2 hours @ 180°C	
*Note: many other cure schedules are possible. Please contact us for assistance if you'd like to use an alternate cure schedule.		

PHYSICAL PROPERTIES

	<u>VALUE</u>	<u>TEST METHOD</u>
Color	transparent brown to amber*	Visual
Shore D Hardness	89	ASTM D-2240
Ultimate Flexural Strength	17,400 psi	ASTM D-790
Ultimate Flexural Modulus	442,000 psi	ASTM D-790
Ultimate Tensile Strength	10,500 psi	ASTM D-638
Ultimate Tensile Modulus	461,000 psi	ASTM D-638
Ultimate Tensile Elongation	2.8%	ASTM D-638
Tg by DMA, onset, dry	237°C	ASTM D-4065
Tg by DMA, onset, wet	231°C	ASTM D-4065
Tg by TMA, dry	214°C	ASTM D-4065

NOTE: Typical Properties determined using EpoPro® 621A/B cured 2 hours @ 150°C + 2 hours @ 150°C - unless otherwise stated. Values are based on laboratory or average production results – not for specification purposes.

*Customer colors available by request. Custom viscosity, pot life and cure speeds are also available by request.

SUGGESTED PROCESSING GUIDELINES

EpoPro® 621A/B can be processed using vacuum-assisted resin transfer molding (VARTM), resin transfer molding (RTM), Seemans Composite Resin Injection Molding Process (SCRIMP), hand-lay up, and conventional filament winding procedures.

For best results, carefully heat the 621A to 50°C +/- 5°C and then slowly stir in the 621B until a clear homogenous solution is obtained. Scrap the sides and bottom of the mixing container several times during mixing to ensure the material is thoroughly mixed.

To obtain clear castings and for best mechanical & electrical properties, vacuum de-gas the solution once thoroughly mixed. Maintain the temperature at 40C – 50C during de-gassing. De-gas for 15 minutes at a vacuum level of 30 inches of mercury or greater.

STORAGE GUIDELINES

Store this material in a clean, cool and dry environment in its tightly closed original container. The EpoPro® 621A, like all multifunctional epoxies in its class, will increase in viscosity over time if stored at 20°C – 25°C. Refrigerated Storage is suggested for best shelf-life. At 2°C – 8°C the EpoPro® 621A will provide a shelf-life of 2 years from date of shipment. The EpoPro 621B will have a 2 year shelf-life from date of shipment when stored between 2°C and 40°C. both products should be protected from exposure to direct sunlight.

HANDLING PRECAUTIONS

Product Datasheet



Mandatory and recommended industrial hygiene procedures should be followed whenever these products are being handled and processed. For additional information please consult the corresponding material safety data sheets.

PERSONAL HYGIENE

EpoPro® 621A

WARNING! Causes eye & skin irritation. Prolonged or repeated skin contact may cause allergic skin reaction. Harmful if inhaled or swallowed. Avoid contact with eyes, skin, or clothing. Wear eye protection and impervious gloves when handling. Wash thoroughly after handling. Avoid breathing vapor or mist. Keep containers closed when not in use. Use only with adequate ventilation. Do not take internally.

EpoPro® 621B

WARNING! May causes eye and skin irritation, or respiratory irritation. Do not get in eyes. Avoid contact with skin and clothing. Avoid breathing vapor or mist. Keep container closed when not in use. Use with adequate ventilation. Wash thoroughly after handling. Do not take internally

FIRST AID

In case of contact: **Skin** – Immediately wash skin thoroughly with mild soap and water. Remove contaminated clothing and wash before reuse. Destroy contaminated shoes and other articles made of leather. **Eyes** – Immediately flush eyes with plenty of water for 15 minutes and get prompt medical attention. **Inhalation** - Remove person to fresh air. Administer oxygen or artificial respiration if necessary. Call a physician. **Ingestion** - Do not induce vomiting. Dilute with plenty of water and contact physician immediately. Never give anything by mouth to an unconscious person.

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