

EpoPro[®] 230

1 COMPONENT, LOW VISCOSITY EPOXY IMPREGNATING RESIN

EpoPro[®] 230 is 1-part epoxy system that is excellent for VPI, trickle impregnation, and dip and back systems. It features a very low viscosity, very good room temperature stability and an excellent balance of electrical and mechanical properties. EpoPro 230 is a heat curing resin and is designed to be vacuum stable, so that impregnation can occur under high vacuum without volatilization of the epoxy resin. The system is solvent free and free of volatile organic compounds (VOCs). The EpoPro 230 demonstrates excellent adhesion to most materials and provides excellent chemical and heat resistance.

The EpoPro 230 resin is available in a standard clear to very light yellow color or in custom colors. Many other custom variations are available including toughened or flexibilized versions, accelerated versions offering shorter cure times, and many other modifications designed to suit your application or production process. Please contact us to discuss your application if you'd like to receive samples of a custom variant that would be suitable for your application.

SUGGESTED APPLICATIONS:

- Solvent and VOC free
- Low viscosity for excellent penetration into tightly wound coils
- Vacuum stable

HANDLING PROPERTIES	VALUE	TEST METHOD
<u>EpoPro 230</u>		
Visual Appearance	Clear, light yellow	
Density	1.13 g/cm ³	ASTM E-201
Viscosity, Part A, @ 25°C	400 cps	ASTM D-2393
Flash Point	>100°C	ASTM D-92

Mix Ratio (part by weight)	1 component / No –mix system		
Shelf-life	at least 6 months @ 25C or less		
Pot life (100 grams) @ 90°C	22 minutes	18 minutes	25 minutes
Cure Schedules:	2 hours @ 150°C or 4-6 hours at 125°C*		
*Note: many other cure schedules are possible. Please contact us for assistance if you'd like to use an alternate cure schedule. Also, it may be desirable in some applications to allow the resin to gel at 90° for 15 - 30 minutes prior to higher temperature curing. This low temperature gelling will tend to reduce shrinkage and reduce stress on embedded wires and components.			

PHYSICAL PROPERTIES (Tested at 25C unless otherwise noted – cured 2 hours @ 150C)		
		<u>TEST METHOD</u>
Appearance	Clear to light yellow	Visual
Hardness, Shore D At 25°C	85D	ASTM D-2240
Tensile Strength	8,300 psi	ASTM D-638
Tensile Elongation	2.0%	ASTM D-638
Tensile Modulus	420,000 psi	ASTM D-638
Flexural Strength	15,200 psi	
Flexural Modulus	435,000 psi	
Compressive Yield Strength	17,000	
Compressive Modulus	391,000 psi	
Curing Shrinkage (linear)	0.008%	
Glass Transition Temperature (Tg)	140°C	ASTM D-648
Coefficient of Thermal Expansion (CTE):		ASTM E-831
below Tg / above Tg (ppm/°C)	70 / 141	
Moisture absorption (24 hour immersion - % weight gain)	0.16%	ASTM D-570
Thermal Conductivity	0.18 W/mK	ASTM D-2214
Thermal Rating	-55°C to 180°C	EIC 216
Fungus Resistance	Non-Nutrient	Mil-I-46058C
Volume Resistivity (ohm-cm)		Mil-I-46058C
@ 25°C	3.0 x 10 ¹⁶	
Dielectric Strength (V/mil)	400	ASTM D-149
Dielectric Constant @ 25C		ASTM D-150
@ 1 KHz / 1 MHz	3.3 / 3.15	
Dissipation Factor @ 25C		ASTM D-150
@ 1 KHz / 1 MHz	0.004 / 0.003	

NOTE : Values are based on laboratory or average production results – not for specification purposes.

PROCESSING AND APPLICATION INSTRUCTIONS :

Apply to clean, dry components using a Vacuum Pressure Impregnation system. If VPI equipment is not available –first place the components to be impregnated under vacuum to remove any volatiles or other contaminants. For best results heat the components to 60C – 100C prior to vacuum to add in removing any volatile components. Hold at full vacuum for at least 10 minutes. Then immerse the components into a container of the EpoPro 230 and again pull vacuum to pull all of the air out of the components and ensure full impregnation. For best results heat the EpoPro 230 to 60C prior to immersing the components. Hold for 5-10 minutes then remove from vacuum and place the components into an oven to cure the resin.

PACKAGING AVIALABLE:

This product is available in a wide range of package sizes including quarts, gallons, 2.5 gallons, 5-gallons pails, and 55-gallon drums. It can also be supplied in squeeze bottles or syringes.

STORAGE GUIDELINES:

Store the EpoPro 230 in a clean, cool and dry environment in its tightly closed original containers. Protect from extended exposure to temperatures below 15°C (59°F) to prevent crystallization. If crystallization occurs, heat the entire container of 230 for 2- 4 hours at 60°C to re-liquefy the material. Also protect from exposure to extended moisture or high humidity. Tightly re-seal containers after use. If the recommended storage conditions are observed the products will have a minimum shelf-life of 6 months from the date of shipment.

HANDLING PRECAUTIONS:

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 230

CAUTION! May cause eye & skin irritation. Prolonged or repeated skin contact or inhalation of vapors may cause allergic skin or respiratory reactions. 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.

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.

DISCLAIMER:

IMPORTANT: The following supercedes Buyer's documents. **SELLER / MANUFACTURER MAKES NO REPRESENTATION OR WARRANTY, EXPRESS OR IMPLIED, INCLUDING OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.** No statements herein are to be construed as inducements to infringe any relevant patent. Under no circumstances shall Seller / Manufacturer be liable for incidental, consequential or indirect damages for alleged negligence, breach of warranty, strict liability, tort or contract arising in connection with the product(s). Buyer's sole remedy and Seller's sole liability for any claims shall be Buyer's purchase price. Data and results presented are based on controlled or laboratory work and must be confirmed by Buyer by testing for its intended conditions of use. The product(s) has not been tested for, and is therefore not recommended for, uses for which prolonged contact with mucous membranes, abraded skin, or blood is intended; or for uses for which implantation within the human body is intended

Specialty Polymers & Services, Inc. (SP&S)

27822 Fremont Court

Valencia, CA 91355

www.spolymers.com

Tel: 661-294-1790

Fax : 661-294-0640

info@spolymers.com