Product Datasheet

EpoPro® 290 A/B

Two part Epoxy System for Dip Coating & Sealing

Typical Properties

(Not for specification purposes. All tests run at 25°C unless otherwise noted)

Resin / A-side Properties:

Appearance	Visual	Buff Soft paste
Specific Gravity	ASTM-D-1475	1.25 g/cc
Viscosity	ASTM-D-2393	115, 000 cP
Flash Point, PMCC		>254°C

Hardener/ B-side Properties:

Appearance	Visual	Light. Amber Liquid
Specific Gravity	ASTM-D-1475	1.02 g/cc
Viscosity	ASTM-D-2393	250 cP
Flash Point, Closed cup		>95°C

Mix Ratio:

Parts by weight (by volume) 100A : 13B (100A : 16B)

Mixed Properties:

Initial Viscosity at 75°F	ASTM-D-2393	75,000cP
Pot life		30 to 40 minutes

Recommended Cure Schedules:

24 hrs at 75°F **or** alternate 2 hours @ 150°F.

Please note: any cure schedule selected for use should be confirmed through testing as being appropriate for your particular processing methods and for your intended application.

Cured Properties (cured 7 days at 25°C)

Appearance	Visual	Off-white to tan*
Specific Gravity	ASTM-D-792	1.23 g/cc
Shore Hardness	ASTM-D-2240	
At 25°C / 95°C / 150°C		74D / 70D / 50D
Water absorption	ASTM-D-570	
24 hours @ 25°C		0.12%
2 hrs @ 100°C		0.73%
IEEE Temperature Class		Class A (105°C) to Class B (130°C)
Thermal Conductivity		0.3 W/mK
Weight Loss,		
48 hrs @ 300°F(150°C)		0.89%
48 hrs @ 400°F(205°C)		3.90%
Compressive strength	ASTM-D-635	13,000 psi
Flexural strength	ASTM-D-790	6,000 psi
Volume resistivity At 25°C	ASTM-D-257	1.2 x 10^{15} Ω-cm
At 100°C		4.0 x 10^{14} Ω-cm
At 150°C		1.0 x 10^{11} Ω-cm
Dielectric Strength	ASTM-D-149	400 volts/mil
Dielectric Constant	ASTM-D-150	
At 60Hz / 1kHz		4.9 / 4.1
At 10kHz / 1MHz		3.6 / 3.4
Dissipitation Factor	ASTM-D-150	
At 60Hz / 10kHz / 1MHz		0.077 / 0.040 / 0.027

*Custom colors are available upon request. They can either be factory mixed or supplied as color pastes for addition as desired. We carry more than 20 standard colors in a variety of package sizes and can color match virtually any solid color.

EpoPro® 290A/B is a tan-colored two-component epoxy dip coating and sealing system. It is a filled, non-running paste which exhibits excellent electrical and physical properties when cured. It is suggested for use as a dip coating for sealing and encapsulating electrical components such as capacitors, resistors, coils and transformers. It can also be used as a "butter-on" sealant or adhesive with exceptional sag resistance on vertical surfaces.

Alternate hardeners are available for applications requiring faster or slower cure schedules or variations in the physical or electrical properties of this system. Contact us with your applications requirements and we would be happy to help you select the system that is ideal for your application.

Suggested Applications:

- Two-component epoxy dip coating for sealing and encapsulating electrical components
- Excellent end capping compound for capacitors
- Transformer dip or brush coat
- Non sag sealant or adhesive

Benefits:

- Excellent moisture protection
- Suitable for automatic production lines
- Fast cure at moderate temperatures
- Exceptional electrical insulation

Storage Guidelines:

Store this material in a clean, dry environment in its tightly closed original container. These products are not considered especially temperature sensitive, but should ideally be stored at temperatures between 18-35°C (64-95°F). Storage at lower temperatures could lead to crystallization and may require the application of heat (ex. 2-4 hours at 140°F - 160°F) to reverse. Avoid extended exposure to high humidity. If the recommended storage conditions are observed the products will have a minimum shelf-life of 12 months from the date of shipment.

Processing Guidelines:

This system can be mixed manually or by using either dynamic or static mixing systems. Whatevermethod is chosen, be sure to accurately weigh both the resin and

the hardener prior to mixing them and ensure the correct mix ratio is used.

If mixing manually, mix for at least 2 minutes and be sure to scrape the walls and bottom of the mixing vessel to be sure that all of the material is thoroughly mixed. To reduce or eliminate air bubbles or voids within the material, vacuum de-air the mixture after thorough mixing. A vacuum of 28 inches of mercury is generally sufficient to remove the vast majority of entrapped air within 5-10 minutes. Large volumes of the mixed system may require longer times under vacuum or vacuum degassing systems that include agitation.

If processing in a humid environment, it may be advisable to use a heat cure such as 2 hours at 150°C in order to prevent moisture vapor absorption which can lead to streaks on the surface of the casting.

Where a thick film build-up is desirable, several coats should be individually applied, allowing the previous film to reach the gel stage before applying the next layer. A smooth coating and the avoidance of a drip line is a function of mechanical manipulation of the unit as the coating is being applied. The rotation of the coated unit during the cure cycle of the resin can give a shell coating of excellent external appearance. Due to the filler incorporated in the resin, only a limited impregnation of underlying structures can be accomplished.

It is also possible to control the thickness of the film applied to a unit by varying the temperature of the unit dipped into the EpoPro 290 or the temperature of the system when it is applied. In general the higher the temperature of the material or the unit, the lower will be the thickness of the coating. However, the heating of the epoxy system will shorten its gel-time and so may affect the number of applications possible from a particular mixed batch.

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.

Exotherm Warning: Like most epoxy systems the EpoPro 290A/B system produces heat during curing. When a large mass of this material is mixed or placed together during curing, large amounts of heat can be produced. In some circumstances, this heat can be enough to cause burns or to lead to a breakdown of the epoxy system. (With the potential - in extreme circumstances - for the production of black acrid smoke and flames.) To prevent problems, we recommend mixing no more than 1 lbs. (about 454 grams) of this system at a time unless it will be quickly used in such a way as to break up the mass (ex. by application to parts, by spreading it out to bond together components, etc.) or unless its temperature is controlled so as to eliminate hazards. (ex. using a cooling system) Please call us to discuss your application if you have any concerns.

Personal Hygiene:

EpoPro 290A

CAUTION! May cause eye irritation, prolonged or repeated skin contact may cause irritation, or skin reaction. Vapors may be harmful if inhaled. Harmful if swallowed. In accordance with good industrial practice, handle with care and avoid unnecessary personal contact. Avoid contact with eyes and prolonged or repeated skin contact. Do not inhale mists. Use with adequate ventilation. For industrial use only.

EpoPro 290B

WARNING! Causes severe eye irritation, causes skin irritation and possible allergic skin reaction. Harmful if inhaled. Harmful if swallowed. Substance is harmful to liver or kidney if inhaled, swallowed, or absorbed through skin. Prolonged or repeated exposure can cause allergic reaction to skin or lung.

First Aid

In case of contact:

Skin - Wash skin thoroughly with mild soap and water. Remove contaminated clothing and wash before reuse. Discard contaminated shoes and other articles made of leather

Eyes - Flush eyes with plenty of water for several minutes and get prompt medical attention.

Inhalation - Remove person to fresh air. If not breathing, give artificial respiration. Get immediate medical attention. If breathing is difficult, transport to medical cars and, if available, give supplement oxygen.

Ingestion – If swallowed dilute with plenty of water and contact physician immediately. Never give anything by mouth to an unconscious person

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