

## EpoPro 284LV – A/B

### Thermally Conductive, Semi-Rigid Epoxy Encapsulating System

EpoPro® 284LV–AB is a tough, semi-rigid encapsulation system which produces castings with very good thermal conductivity and excellent thermal shock & impact resistance. This system is designed as an excellent general-purpose casting system, particularly where pressure-sensitive components are to be encapsulated or where thermal shock or crack resistance is required. The EpoPro 284LV-A/B system has low shrinkage and good adhesion to most common materials.

Many variations on this system are available include custom colors, faster or slower cure speeds, adjustments to the viscosity or flow rate or the addition of specialty adhesion promoters to increase the bond strength to particular materials. Please contact us to discuss your application if you think a modified version might be needed for your application.

#### TYPICAL APPLICATIONS

- RoHS & REACH Compliant
- Excellent Impact/Shock Resistance
- Excellent Dielectric Properties

#### **HANDLING PROPERTIES**

	<u>VALUE</u>	<u>TEST METHOD</u>
<u>EpoPro 284LV-A</u>		
Appearance	Black liquid	
Density, g/cm <sup>3</sup>	2.3	ASTM E-201
Viscosity @ 25°C, cps	85,000	ASTM D-2393
<u>EpoPro 284LV-B</u>		
Appearance	Yellow liquid	
Density, g/cm <sup>3</sup>	0.98	ASTM E-201
Viscosity @ 25°C, cps	60	ASTM D-2393
Mix Ratio By Weight	100A:10B	Calculated
Mix Ratio By Volume	100A:25B	Calculated
Viscosity Mixed @ 25°C, cps	15,000	ASTM D-2393
Viscosity Mixed @ 40°C, cps	1,400	
Gel Time @ 25°C, 100g mass	4 – 6 hours	ASTM D-2471
Recommended Cure Schedules:	3-7 days at @ 25°C <b>or</b> allow to gel (12 hrs @ 25°C) then heat cure for 2 hours @ 100°C <b>or</b> 1 hour @ 120°C.	

#### **PHYSICAL PROPERTIES**

	<u>VALUE</u>	<u>TEST METHOD</u>
Color	Black	Visual
Density, g/cm <sup>3</sup>	2.0	ASTM E-201
Shore Hardness	68D	ASTM D-2240
Tensile Strength	2,300 psi	ASTM D-638
Tensile Elongation at break	14%	ASTM D-638

# Product Datasheet



Water Absorption, % by weight After 24 hours @ 25°C	0.3%	ASTM D-638 by DSC
Glass Transition Temp. (Tg)	84°C	
Coefficient of Thermal Expansion Alpha 1 (below Tg)	38 ppm/ °C	DIN 53 752
Alpha 2 (above Tg)	110 ppm/ °C	
Thermal Conductivity	1.1 W/mK	DIN 52 612
Shrinkage, in/in	<0.0002	ASTM D-2566

## ELECTRICAL PROPERTIES

	<u>VALUE</u>	<u>TEST METHOD</u>
Tracking Resistance	CTI > 600	IEC 112
Dielectric Strength, V/mil	≥ 500	ASTM D-149
Volume Resistivity @ 25°C, ohm-cm	1.0x10 <sup>15</sup>	ASTM D-257
Dielectric Constant, @ 60Hz /1MHz	5.2 / 4.1	ASTM D-150
Dissipation Factor @ 60Hz	0.071 / 0.022	ASTM D-150

**NOTE** : Typical Properties determined using EpoPro 284LV-A/B cured for 1 hour @ 120°C. Values are based on laboratory or average production results – not for specification purposes.

## SUGGESTED PROCESSING GUIDELINES:

EpoPro 284LV-A/B can be applied by pouring or dispensing into the parts to be potted. It is suitable for meter-mix dispensing and can be supplied in premixed and frozen syringes for small volume applications. The fillers in the EpoPro 284LV part A may settle during storage or shipment, so the container should be thoroughly re-mixed prior to use. Re-mixing can be accomplished by manual stirring, the use of a drill mixer, or using a paint shaker.

Weigh resin and hardener in the recommended ratio into a clean mixing container. Always use weighing equipment having accuracy in proportion to the amounts being weighted – ideally the accuracy of the scale should be smaller 1% of the mass being weighed. Blend by using a spatula or stirring stick for 2-3 minutes using a kneading motion. Scrape the bottom and sides of the mixing container carefully and frequently to produce a uniform mixture.

For best results, vacuum degas the mixed material prior to applying to your parts. If vacuum is not available, consider using mild heat and/or a vibrating table to help air escape from the system.

## STORAGE GUIDELINES:

Store this material in a clean, cool and dry environment in its tightly closed original container. The EpoPro 284LV Part A may settle or separate slightly during shipment or storage and should be thoroughly re-mixed prior to use. Avoid extended exposure to high humidity. Tightly re-seal after use. If the recommended storage conditions are observed the products will have a minimum shelf-life of 12 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 284LV-A**

**CAUTION!** May cause eye irritation. Prolonged or repeated skin contact may cause irritation, may cause allergic skin reaction. 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 284LV-B**

**WARNING!** Causes skin and eye irritation. May cause allergic skin and respiratory reactions. Harmful if inhaled or swallowed. Do NOT get in eyes, on skin, or clothing. Wear chemical splash goggles and impervious gloves when handling. Wash skin and clothing thoroughly after handling. Avoid breathing vapor or mist. Use only with adequate ventilation. Keep containers closed when not in use. 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](http://www.spolymers.com)

**Tel - 661-294-1790**  
**Fax - 661-294-0640**  
[info@spolymers.com](mailto:info@spolymers.com)