

## EpoPro<sup>®</sup> 202A/956 (Replaces EpoPro<sup>®</sup> 202A/9816) TOUGH, ROOM TEMP. CURING EPOXY ENCAPSULATING SYSTEM

EpoPro<sup>®</sup> 202A with EpoPro<sup>®</sup> 956 is a low viscosity, room temperature curing encapsulation system which produces a tough, semi-rigid polymer. This system is an excellent general-purpose encapsulating system particularly for capacitors, noise filters, HF and NF chokes and miniature transformers. It also demonstrates high thermal shock and impact resistance and good impregnating and air release characteristics. It has also been used as a binder for silica flour, sand and other fillers to produce low costs electrical insulating system.

The EpoPro 202A/956 system was developed to replace the EpoPro 202A/9816 system when the Hardener 9816 became obsolete. The two systems are chemically similar and have comparable properties and performance. This system is available in custom colors, alternate work-lives, and modified viscosities by request. Please contact us to discuss your application if you think such a variant would be helpful for your application.

### SUGGESTED APPLICATIONS:

- Excellent multipurpose potting material for low voltage devices, especially where impact resistance or thermal shock resistance is required.
- Excellent impregnation and wetting properties. Suitable as a binder for sand and fillers.

<b>HANDLING PROPERTIES</b>	<b>VALUE</b>	<b>TEST METHOD</b>
<u>EpoPro 202A</u>		
Visual Appearance	Clear to light yellow liquid	
Density, Part A	1.10 g/cm <sup>3</sup>	ASTM E-201
Viscosity, Part A, at 25°C	2,200 cps	ASTM D-2393
Flash Point	>182°C (>360°F)	ASTM D-92
<u>Hardener 956</u>		
Visual Appearance	Yellow to Amber liquid	
Density,	1.02 g/cm <sup>3</sup>	ASTM E-201
Viscosity, Part B, at 25°C	180 cps	ASTM D-2393
Flash Point	>93°C (>200°F)	ASTM D-92
Mix Ratio part by weight	100A:20B	Calculated
Mix Ratio by Volume	100A:22B	Calculated
Viscosity Mixed at 25°C / at 40°C	1000 cps / 200 cps	ASTM D-2393
Pot life (100 grams) at 25°C	60 minutes	
Minimum Cure Schedules*: 24 hours at 25°C or 6 hours at 40°C or 3 hours at 60°C		
Note: full cure may require an additional 12 – 24 hours at room temperature, but handling strength and general mechanical and electrical properties will be close to final after the indicated minimum cure times.		

## PHYSICAL PROPERTIES

	<u>VALUE</u>	<u>TEST METHOD</u>
Color	Transparent light yellow	Visual
Density, g/cm <sup>3</sup>	1.11	ASTM E-201
Shore Hardness	75D	ASTM D-2240
Tensile Strength, psi	7000	ASTM D-638
Tensile Elongation at break	17%	ASTM D-638
Water Absorption, % by weight 24 hours at 25°C	0.25%	ASTM D-570
Glass Transition Temp. (T <sub>g</sub> )	50 °C	
Coefficient of Thermal Exp. (CTE)	59 ppm/°C	ASTM E -381
Curing Shrinkage	0.17%	ASTM D-792

## ELECTRICAL PROPERTIES

	<u>VALUE</u>	<u>TEST METHOD</u>
Electrolytic Corrosion	Grade A1	DIN 53489
Dielectric Strength, V/mil	610	ASTM D-149
Surface Resistivity, ohm	2.8 x 10 <sup>14</sup>	ASTM D-257
Volume Resistivity, ohm-cm	2.4 x 10 <sup>13</sup>	ASTM D-257
Dielectric Constant, 60 Hz	4.1	ASTM D-150
Dielectric Constant, 1 MHz	3.5	ASTM D-150
Dissipation Factor, 60 Hz	0.013	ASTM D-150
Dissipation Factor, 1 MHz	0.031	ASTM D-150

**NOTE** : Typical Properties determined using EpoPro 202A/956 cured for 7 days at 25°C. Values are based on laboratory and/or typical production results. This data is not for specification purposes. Please contact us for QC acceptance ranges .

### **SUGGESTED PROCESSING GUIDELINES:**

To use, weigh Part A and Part B in the ratio you have selected into a clean mixing container. Mixing containers should preferably be made of polypropylene, polyethylene, glass, or non-corroding metal (ex. Stainless steel or aluminum). Always use weighing equipment having accuracy that is ±1% or less of the smallest quantity that you will be weighing. Blend Part A & B thoroughly by using a spatula or stirring stick for at least 2-3 minutes using a kneading motion. Scrape the bottom and sides of the mixing container carefully and frequently to produce a uniform mixture. Vacuum de-gassing after mixing may be helpful for best electrical and physical properties.

Apply to clean, dry surfaces. Allow to cure at room temperature for 24 hours minimum or allow to set at 25°C for 2+ hours then heat cure at 60°C cure for 3 hours. For small volume application immediate heat cures may be possible and more rapid cures may be possible at higher temperatures. If you would like recommendation on alternate cures please contact us. However, always evaluate a suggested cure schedule in your application prior to implementing it for full scale production as each application's unique conditions can affect the final results.

### **STORAGE GUIDELINES:**

Store these materials in a clean, cool and dry environment in their tightly closed original containers. Protect from extended exposure to temperatures below 15°C (59°F). Crystallization may occur if the material is exposed to cold temperatures for extended periods. If this occurs, heat the entire container of 202A or 956 for 4 hours at 70°C to re-liquefy the material. Allow to cool to ambient temperature prior to using. Also protect the 202A & 9615 from exposure to 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 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 202A**

**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.

### **EpoPro 956**

**WARNING!** 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 supersedes 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

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