Preliminary Product Datasheet

Please Note: *this system is not yet fully tested and characterized by our laboratory. Some of the data may be estimated or subject to revision.*

SP&S Specialty Polymers and Services

EpoPro® 223A/273C

RoHS 76/769/EEC

TOUGH / SEMI-FLEXIBLE EPOXY ENCAPSULATION SYSTEM

EpoPro® 223A/273C is 2-part epoxy system that cures with heat to form a tough, flexible polymer. It is designed for potting and impregnating pressure sensitive components and provides excellent protection from thermal shock, impact, and environmental conditions. This system demonstrates excellent adhesion to most materials, is solvent free, and has low or no volatile organic content.

The EpoPro 223A/273C system is available in a standard transparent, light yellow color, but many other custom colors and other variations are available including 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:

- Impregrnation and Potting of fragile and Pressure Sensitive Components
- Sensors and modules
- Protection of components from Thermal Shock, vibration & Impact

HANDLING PROPERTIES	VALUE	TEST METHOD
EpoPro 223A		
Visual Appearance	Clear to light yellow liquid	
Density	1.15 g/cm³	ASTM E-201
Viscosity, Part A, @ 25ºC	500 cps	ASTM D-2393
Flash Point	>93°C	ASTM D-92
EpoPro 273C		
Visual Appearance	Clear liquid	
Density	1.00 g/cm³	ASTM E-201
Viscosity, Part A, @ 25ºC	150 cps	ASTM D-2393
Flash Point	>121°C	ASTM D-92
Mix Ratio (part by weight)	75A:100B	
Mix Ratio (part by volume)	65A:100B	
Mixed Viscosity @ 25ºC, initial	250 cps	
Pot life (100 grams) @ 25ºC	>12 hours	
Pot life (100 grams) @ 100ºC	10 - 20 minutes	
Cure Schedules:	1 hour @ 100ºC **or** 2-3 hours at 80C*	

*Note: many other cure schedules are possible. Please contact us for assistance if you'd like to consider an alternate cure schedule.

Preliminary Product Datasheet

Please Note: *this system is not yet fully tested and characterized by our laboratory. Some of the data may be estimated or subject to revision.*

SP&S Specialty Polymers and Services

PHYSICAL PROPERTIES (Tested at 25C unless otherwise noted – cured 2 hours @ 150C)		TEST METHOD
Appearance	Light Yellow, transparent solid	Visual
Hardness, Shore A At 25°C	50A	
Tensile Strength at Break		ASTM D-638
Initial result	>400 psi	
Tensile Elongation at break		ASTM D-638
Initial result	>80%	
Tear Strength		
Initial result	>20 pli	
Glass Transition Temperature (Tg)	-19ºC	ASTM D-648
Thermal Conductivity	0.18 W/mK	ASTM D-2214
Thermal Rating	-55ºC to 125ºC	EIC 216
Surface resistivity (ohms)	1.4×10^{14}	ASTM D-257
Volume Resistivity (ohm-cm)		Mil-I-46058C
@ 25ºC	1.0×10^{14}	
Dielectric Strength (V/mil)	450	ASTM D-149

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

PROCESSING AND APPLICATION INSTRUCTIONS :

Mix using Meter-mix dispensing, or manually, as follows: Weigh the desired amount of Part A into mixing container whose weight has been tared. Then weigh the desired amount of Part B into mixing container with resin. Mix thoroughly by means of mechanical mixer or manual stirring. We suggest mixing for at least 2 minutes, with frequent scrapping of the sides and bottom of the mixing container to ensure a complete mix.

Vacuum deairing is recommended to remove any entrapped air from the mixing procedure. To deair most products, 1-2 minutes under full vacuum is recommended for each quart of volume of mixed material. Quickly dispense potting material into cavity or channel to be sealed. For best adhesion ensure that the surface to be bonded is clean and dry.

This material may be heated to reduce its viscosity to an even lower level to achieve exceptional impregnation of fine wires and gaps. The mass of material being heated and the temperature will determine the usable work-life. For most applications, heating to 40C (104F) will be sufficient to obtain a very low viscosity and exceptional impregnation while still maintaining a work-life of 2 hours or longer.

PACKAGING AVAILABLE:

This product is available in a wide range of package sizes including quarts & 5-gallon pails. It can be supplied pre-mixed and frozen in syringes or in custom kit sizes on request. Please contact us to discuss your preferred packaging if a custom packaging solution would be of interest.

STORAGE GUIDELINES:

Store the EpoPro 223A & EpoPro 273C in a clean, cool and dry environment in its tightly closed original containers. Protect from extended exposure to temperatures below 15ºC (59ºF) to prevent crystallization. If crystallization occurs, heat the entire container for 2-4 hours at 60ºC 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 12 months from the date of shipment.

HANDLING PRECAUTIONS:

Follow all mandatory and recommended industrial hygiene procedures whenever these products are being handled and processed. For additional information please consult the corresponding material safety data sheets.

EpoPro 223A

Warning! May cause skin and eye irritation and possible allergic skin reaction. Do not get in eyes, on skin, on clothing. Avoid prolonged or repeated contact with skin. Avoid breathing vapor or mist. Keep container closed. Use with adequate ventilation. Wash thoroughly after handling.

EpoPro 273C

DANGER! Corrosive, causes skin and eye burns. Harmful if swallowed, or if absorbed through skin. Do not get in eyes, on skin, on clothing. Avoid breathing vapor or mist. Keep container closed. Use with adequate ventilation wash thoroughly after handling.

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 **Tel: 661-294-1790** **Fax: 661-294-0640**
Valencia, CA 91355 **www.spolymers.com** **info@spolymers.com**