Product Datasheet

Preliminary Information – still developmental

SP&S Specialty Polymers and Services

EpoPro® 170SC -A/B

2 PART MULTIPURPOSE EPOXY ADHESIVE & POTTING SYSTEM

EpoPro® 170SC – A/B is a two part epoxy system that cures at room temperature or with heat into a tough adhesive and sealant with good bond strength and flexibility. The cured polymer provides excellent mechanical and is semi-conductive for static Dissipitation, grounding, and EMI/RF shielding applications. It is highly resistant to moisture and many chemicals and demonstrates excellent adhesion to most materials including metals, wood, rubber, glass, and many plastics.

Many custom variations are also available to adjust the processing or cured properties to suit your application or production process. Please contact us to discuss your application if you'd like to receive samples or to discuss the development of a custom variant that would be suitable for your application.

SUGGESTED APPLICATIONS:

- Multipurpose Semi-conductive adhesive and Sealant– excellent for many uses
- Excellent for semi-flexible, and impact resistant bonds & sealing applications
- Complies with FDA 21 CFR 175.105 &175.300 for use on food contact surfaces

HANDLING PROPERTIES	VALUE	TEST METHOD
EpoPro 170SC -A (resin)		
Visual Appearance	Clear, light yellow	
Density, Part A	1.4 g/cm³	ASTM E-201
Viscosity, Part A, @ 25ºC	250,000 cps	ASTM D-2393
Flash Point	>93°C	ASTM D-92
EpoPro 170SC-B (hardener)		
Visual Appearance	Amber Liquid	
Density,	0.96 g/cm³	ASTM E-201
Viscosity, Part B, @ 25ºC	40,000 cps	ASTM D-2393
Flash Point	>93°C	ASTM D-92
Mix Ratio:	100A:70B by weight or 1:1 by volume	
Viscosity Mixed @ 25ºC	120,000 cps	ASTM D-2393
Viscosity Mixed @ 65ºC	4,000 cps	ASTM D-2393
Pot life (100 grams) @ 25ºC	100 minutes	
Pot life (100 grams) @ 50ºC	20 minutes	

Cure Schedules: 24 hours @ 25ºC **or** 3 hours @ 60ºC **or** 90 minutes @ 80ºC **or** 15 minutes at 100ºC. Allowing the material to gel prior to curing will reduce shrinkage and increase bond strengths.

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PHYSICAL PROPERTIES (Tested at 25C unless otherwise noted)

Mix Ratio (part by weight)	**100:100**			TEST METHOD
Appearance	Black, opaque solid			Visual
Hardness, Shore D At 25°C	82			ASTM D-2240
Tensile Strength	8000 psi			ASTM D-638
Tensile Elongation	8.0%			ASTM D-638
Tensile Modulus	400,000 psi			ASTM D-638
Flexural Strength	12,000 psi			
Flexural Modulus	350,000 psi			
Compressive Yield Strength	11,000 psi			
Izod Impact Strength, notched (Ft-lb)	1.0			ASTM D-256
Thermal Shock test (Olymphant Washer), cycle from 100ºC to -55ºC	Passes > 5 cycles			
Curing Shrinkage (linear)	0.003%			
Glass Transition Temperature (Tg)	78ºC			ASTM D-648
Coefficient of Thermal Expansion (CTE):				ASTM E-831
below Tg / above Tg (ppm/ºC)	82 / 180			
Weight loss after 48 hrs @ 150ºC	0.02%			
Moisture absorption (24 hour immersion - % weight gain)	0.18%			ASTM D-570
Thermal Conductivity	0.28 W/mK			ASTM D-2214
Thermal Rating	105ºC			EIC 216
Fungus Resistance	Non-Nutrient			Mil-I-46058C
Volume Resistivity (ohm-cm) @ 25ºC	3000			Mil-I-46058C

Lap Shear Strength @ 25C (psi) (Mix ratio 1A:1B by volume)

Concrete	1100*	Aluminum	2000	ASTM D-1002
FR-4 laminate	3200*	Galvanized Steel	1800	
Polyester laminate	2800*	Copper	1650	
Wood (maple)	1800*			

**Indicates substrate failure*

Lap Shear (psi) vs. Temperature (Aluminum lap shear panels – mix ratio 6A:5B by weight or 1A:1B by volume)

-40°F / -40°C	2800	105°F / 40°C	1825	ASTM D-1002
67°F / 20°C	2500	150°F/ 65°C	1300	
77°F / 25°C	2000	180°F / 82°C	1000	

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

PROCESSING AND APPLICATION INSTRUCTIONS :

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. (Stainless steel, aluminum, etc.). Always use weighing equipment having accuracy that is ±1% or less of the smallest quantity that you will be weighing. Blend Part A & B thoroughlyby 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. For best adhesion, abrade the surface with a wire brush, scouring pad, steel wool or coarse sand paper. After abrasion, clean the surface of any loose material and degrease with solvent or detergent to remove any contaminants. The material may then be applied with any suitable application method include brushes, spatulas, trowels, etc.

PACKAGING AVAILABLE:

This product is available in a wide range of kits including 1/2-pints, pints, quarts, ½-gallons, 1-gallons, 2.5 gallons, 5-gallons. and drums.

It can also be supplied in dual syringe cartridges to eliminate the need for hand mixing.

In addition, pre-mixed and frozen syringes and cartridges are available in a wide variety of sizes (1ml -55ml syringes and 2.5 oz – 12 oz cartridges) and styles (manual or air operated, EFD, Techcon, Semco, Iwashita, etc.).

Please call use with any special packaging requests or for information on custom kitting.

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 15ºC (59ºF). Crystallization may occur if the material is exposed to cold for extend periods. If this occurs, heat the entire container for 4 hours at 70ºC to re-liquefy the material. Allow to cool to ambient temperature prior to using. Also protect the EpoPro 104A&B 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 170SC – part A

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 170SC – part B

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 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

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