Product Datasheet

EpoPro® 116A/B
EpoPro® 116A(black)/B

2 PART TOUGH, SEMI-FLEXIBLE EPOXY ADHESIVE

EpoPro® 116A/B is a two part epoxy system that cures at room temperature or with heat into a tough, semi-flexible adhesive & staking compound. The cured polymer provides excellent mechanical and electrical properties, and is resistant to moisture and many chemicals. The EpoPro 116A/B demonstrates excellent adhesion & peel strength with most materials including metals, wood, rubber, glass, and many plastics.

The EpoPro 116A/B system is supplied in a standard gray color and is also available in Black. Other colors and viscosities are available by request. Please contact us to discuss your application if you'd like to receive samples of a custom color or other variant that would be suitable for your application.

SUGGESTED APPLICATIONS

- Multipurpose adhesive and staking compound – excellent for many uses
- Conforms to Mil-A-82720, and DOD A-82720
- Excellent for semi-flexible, impact resistant, & excellent for cryogenic applications
- Complies with FDA 21 CFR 175.105 &175.300 for use on food contact surfaces

HANDLING PROPERTIES

	VALUE	TEST METHOD
EpoPro 116A (resin)		
Visual Appearance	Gray or Black Paste	Visual
Density, Part A	1.24 g/cm³	ASTM E-201
Viscosity, Part A, @ 25ºC	60,000 cps	ASTM D-2393
Flash Point	>93°C	ASTM D-92
EpoPro 116B (hardener)		
Visual Appearance	White Paste	Visual
Density,	1.36 g/cm³	ASTM E-201
Viscosity, Part B, @ 25ºC	98,000 cps	ASTM D-2393
Flash Point	>93°C	ASTM D-92
Mix Ratio (part by weight)	7A:5B	Calculated
Mix Ratio (part by volume)	3A:2B	Calculated
Viscosity Mixed @ 25ºC	84,000 cps	ASTM D-2393
Pot life (100 grams) @ 25ºC	90 minutes	Gardner
Time to handling Strength	8 – 12 hours	

Cure Schedule: 3-7 days @ 25ºC **or** 2 hours @ 65ºC **or** 30 minutes @ 93ºC

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PHYSICAL PROPERTIES (Tested at 25ºC unless otherwise noted)		**TEST METHOD**
Appearance	Gray or Black	Visual
Hardness, Shore D	50D – 70D	ASTM D-2240
Thermal Shock	Passes >10 cycles	Olyphant
Cycle from 100ºC to -55ºC		Washer
Glass Transition Temperature (Tg)	41ºC	ASTM D-648
Coefficient of Thermal Expansion (CTE)		ASTM E-831
below Tg / above Tg (ppm/ºC)	102 / 134	
Moisture absorption	0.16%	ASTM D-570
(24 hour immersion - % weight gain)		
Thermal Conductivity	0.28 W/mK	ASTM D-2214
Thermal Rating	105ºC-130ºC	EIC 216
Fungus Resistance	Non-Nutrient	ASTM G-21
Surface Resistivity (ohms)	>5.0 x 10^{16}	ASTM D-150
Volume Resistivity @ 25ºC	2.0 x 10^{12} ohm-cm	ASTM D-150
Dielectric Strength	>400 V/mil	ASTM D-149
Dielectric Constant @ 25C		ASTM D-150
@ 1 KHz / 10 KHz / 1 MHz	5.51 / 5.2 / 4.9	
Dissipation Factor @ 25C		ASTM D-150
@ 1 KHz / 10 KHz / 1 MHz	0.11 / 0.28 / 0.24	
Lap Shear Strength @ 25C (psi)		ASTM D-1002

Various Substrates:

Concrete	1100*	Etched Aluminum	3000
FR-4 laminate	3200*	Galvanized Steel	1800
Polyester laminate	1600*	Copper	1050
Wood (maple)	1800*	ABS	990*
PVC	940*	Polycarbonate	1100*

**Indicates substrate failure*

Effects of Temperature: (Aluminum lap shear panels – mix ratio 2A:1B by volume)

-423°F (-253°C)	2400	77°F (25°C)	3200
-100°F (-73°C	3000	105°F (40°C)	1625
-67°F (-53°C)	3000	180°F (82°C)	500
77°F (25°C)	3200	300°F (149°C)	420

Effects of Thermal Aging @ 300F: (Aluminum lap shear panels – mix ratio 2A:1B by volume)

Test Temperature	Initial Value	14 days	30 days
-67°F (-53°C)	3000	3300	3100
77°F (25°C)	3200	5100	4900
180°F (82°C)	500	980	800
300°F (149°C)	420	440	560

T-Peel Strength	25 lbs/linear inch	ASTM D-1876

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

NASA OUTGASSING

(Results after 24 hours @ 125ºC and 10^{-6} torr per ASTM E-595)

Mix ratio	Cure Schedule	Total Mass Loss (TML) %	Collectible Condensable Volatile Materials (CCVM), %	Water Vapor Release (WVR) %
2 :1 by volume	7 days @ 25°C	0.78%	0.04%	0.22%

PROCESSING AND APPLICATION INSTRUCTIONS

To use, weigh (or proportion by volume) Part A and Part B in the suggest mix 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 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. 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 3.3 oz squeeze tube kits, 1/2-pints, pints, quarts, ½-gallons, 1-gallons, and 5-gallon pails

It can also be supplied in dual syringe cartridgesof several sizes.

In addition, pre-mixed and frozen syringes and cartridges are available in a wide variety of sizes (1ml, 3ml, 5ml, 10ml, 20ml, 30ml, 50ml and 55ml syringes, as well as 2.5 oz, 6 oz, and 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 60ºC to re-liquefy the material. Allow to cool to ambient temperature prior to using. Also protect the EpoPro® 116A&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® 116A
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.

EpoPro® 116B
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

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

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