

EpoPro® 110A/C



Two Component Epoxy Adhesive for High Performance Bonding and Laminating

EpoPro® 110A/C is a solvent-free, two component, epoxy adhesive designed for bonding metals, fiberglass, wood, plastics, composites and many other materials. It has a convenient mix ratio and can be mixed 2:1 by weight or volume with excellent results.

EpoPro® 110A/C provides a 30 minute work life at room temperature, and rapidly cures with a short elevated temperature exposure for high productivity. For users desiring a longer work-life, a variation of this system is available as EpoPro® 110A/B.

The cured EpoPro® 110A/C provides a light colored, translucent bond line that doesn't read through most laminates and is often invisible in composite structures. It has been used extensively in manufacturing and repairing laminates and composite structures.

BENEFITS

- Nearly invisible bond-lines
- Outstanding adhesion to most materials including fiberglass, most metals & plastics, and wood
- Rapid cure at elevated temperatures
- Convenient mix ratio

TYPICAL PROPERTIES	Value	Test Method
<u>EpoPro® 110A Properties</u>		
Appearance	Creamy Liquid	Visual
Density	1.16 g/cc	ASTM-D-2393
Viscosity at 25°C	16,500 cP	ASTM-D-792
Flash Point, closed cup	>120°C (>248°F)	ASTM-D-92
<u>EpoPro® 110C Properties</u>		
Appearance	Amber Liquid	Visual
Density	1.01 g/cc	ASTM-D-2393
Viscosity at 25°C	18,000 cP	ASTM-D-792
Flash Point, closed cup	>120°C (>248°F)	ASTM-D-92
<u>Mix Ratio</u>		
Parts by weight (volume)	2A:1B by weight (2A:1B by volume*)	Calculated
<u>Mixed Properties</u>		
Initial Viscosity, 100g	10,400 cP	ASTM-D-792
Pot life (200 g. mass)	30 minutes	OC-WI-001
Handling Strength (time to achieve 1000 psi @ 25C)	4-6 hours	
<u>Recommended Cure Schedules</u>		
24 hrs at 25°C or 60 minutes at 65°C or 30 minutes at 80°C or 10 -15 minutes at 100°C.		
Any cure schedule selected for use should be confirmed through testing with your particular processing methods and your intended application.		

(Not for specification purposes. All tests run at 25°C unless otherwise noted.)
 *Note: 2:1 by volume mix ratio is equal to 100A:40B by weight

Product Datasheet

Cured Properties (cured 30 minutes at 80°C)	<u>Value</u>	<u>Test Method</u>	
Appearance	Amber	Visual	
Cured Density	1.10 g/cc	ASTM-D-792	
Shore Hardness	85D	ASTM-D-2240	
Linear shrinkage	0.005 in/in	ASTM-D-2566	
Coefficient of Thermal Expansion (CTE) (per °C)	67.1 x 10 ⁻⁶	ASTM-E-831	
Thermal Conductivity	0.0005 cal/cm-sec-°C	ASTM D-2214	
Volume Resistivity @ 25°C	1.5 x 10 ¹⁶ ohm-cm	ASTM-D-257	
Dielectric Strength	425 volts/mil	ASTM-D-149	
Dielectric Constant		ASTM-D-150	
@1KHz / @1MHz	3.14 / 2.83		
Dissipation Factor		ASTM-D-150	
@1KHz / @1MHz	0.007 / 0.02		
	2:1 by Weight	2:1 by Volume	
Ultimate Tensile Strength	10,010 psi	9810 psi	ASTM-D-638
Tensile Elongation	5.7%	4.2%	ASTM-D-638
Modulus of Elasticity	360,000 psi	430,000 psi	ASTM-D-638
Lap Shear Strength			ASTM-D-1002
@ -60°C (-76°F)	2840 psi	2420 psi	
@ 25°C (77°F)	3270 psi	3980 psi	
@ 54°C (130°F)	4550 psi	5120 psi	
@ 80°C (176°F)	1990 psi	2560 psi	
Glass Transition Temp (Tg)	92°C (198°F)	97°C (207°F)	ASTM E-1356
Heat Deflection Temp.	85°C (185°F)	89°C (215°F)	ASTM D-648

SUGGESTED PROCESSING GUIDELINES

EpoPro® 110A/C can be applied by brush, roller, squeegee, knife, or spatula. It is also suitable for meter-mix dispensing and can be supplied in dual syringe cartridges.

Weigh Part A and Part B in the recommended ratio as accurately as possible into a clean mixing container. Always use weighing equipment having accuracy in proportion to the amounts being weighted.

Blend 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.

Apply adhesives to all surfaces to be bonded and then join together and lightly clamp or otherwise hold in place until the adhesive is set. Only contact pressure is required - do not use excessive clamping pressure as this may squeeze the adhesive out of the bond-line. Allow to cure at room temperature or use heat to cure as indicated in the recommended cure schedules.

STORAGE GUIDELINES

Product Datasheet



Store this material in a clean, cool and dry environment in its tightly closed original container. Products that crystallize during storage may be reliquified by warming the contents of the shipping containers, loosely covered, to 65°C for 2-4 hours. Allow contents to cool to at least 30°C before continuing. Avoid extended exposure to extreme humidity. 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.

Exotherm Warning: when large masses of epoxy compounds such as EpoPro® 110A/C are mixed they may generate excessive heat if allowed to remain in a large mass for an extended period. When mixing quantities large than 0.5 kilograms (~1.1 lbs.) use material as quickly as possible or spread the adhesive out into thin sections so that the heat generated by the reacting adhesive does not build up. If concerned about your application, please contact SP&S to discuss your application and ways to minimize exotherm.

PERSONAL HYGEINE

EpoPro® 110A

CAUTION! May cause eye irritation. Prolonged or repeated skin contact may cause irritation, may cause allergic skin reaction. 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® 110C

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 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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