Product Datasheet

EpoPro 100 A2/B20

Multi-Purpose Industrial & Electronic Adhesive

Typical Properties

(Not for specification purposes. All tests run at 25°C unless otherwise noted)

Resin / A-side Properties:

Appearance	Visual	Thick semi-transparent liquid
Specific Gravity	ASTM D-792	1.17 g/cc
Viscosity	ASTM-D-2393	50,000 cP
Flash point, closed cup	ASTM D-92	>95°C (203°F)

Hardener/ B2-side Properties:

Appearance	Visual	Amber liquid
Specific Gravity	ASTM-D-792	0.92 g/cc
Viscosity	ASTM-D-2393	25.000 cP
Flash Point, closed cup	ASTM D-92	>135°C (275°F)

Mix Ratio:

Parts by weight (volume) 100A : 80B (100A : 100B)

Mixed Properties:

Initial Viscosity @ 25°C	ASTM-D-2393,	35.000 cP
Pot-life @ 25°C	OC-WL-001	20 - 25 minutes

Recommended Cure Schedules / Time to reach handling strength:

Temperature	Handling Strength	Minimum cure time
20 °C (68 °F)	6 - 8 hours	12 hours
25 °C (77 °F)	4 - 5 hours	8 – 10 hours
40 °C (104 °F)	60 – 90 minutes	2 hours
70 °C (158 °F)	15 minutes	30 – 45 minutes
100 °C (212 °F)	4 minutes	8 minutes
150 °C (302 °F)	2 minutes	4 minutes

Please note: any cure schedule selected for use should be confirmed through testing as being appropriate for your particular processing methods and for your intended application.

Cured Properties (cured 7 days at 25°C)

Appearance	Visual	Clear to translucent, light yellow
Specific Gravity	ASTM D-1475	1.4 g/cc
Shore Hardness	ASTM D-2240	80D
Volume Shrinkage	ASTM D-792	1.6%
Tensile Strength at break	ASTM D-638	4800 psi
Roller peel stength	ISO 4578	28 pli
Lap shear strength at break	ASTM D-1002	
At 25°C		4.000
At 82°C		250
Glass Transition Temp (Tg)	DMA	63°C
	DSC	45°C
	TMA	47°C
Coefficient of thermal expansion (CTE) (per °C)	ASTM E-381	
-30 ± 30°C		47×10^{-6}
100 - 130°C		82×10^{-6}
Maxium continuous use temp.		120°C
Volume. Resistivity	ASTM D-257	7.1×10^{14} Ω-cm
Dielectric Constant,	ASTM D-150	
50 Hz		3.4
1 KHz		3.2
10 KHz		3.2
Loss Tangent,	ASTM D-150	
50 Hz		2.6
1 KHz		1.8
10 KHz		1.7

EpoPro 100A2/B20 is a high-performance, 2-component epoxy system designed to be a multi-purpose adhesive. It is ideal for many assembly and repair operations and provides exceptional cured properties. It bonds most metals, glass, ceramic, stone, wood, and many other materials. When cured, it produces strong, tough bonds that resist moisture, chemical, and environmental exposure. It is available in custom colors and in several different viscosities and gel times / cure speed. (Ex. EpoPro 100A/B which has a 90 – 120 minutes gel time and 100A/B45 which has a 45 minute gel time.)

It also provides excellent electrical insulation properties and is suitable for use in many electronic assembly and repair applications. Example of such applications include: winding repair, spot-patching of printed wiring boards and impregnated coils, and encapsulation of small components. It is also excellent for many electronic bonding applications such as ruggediziation of large components, sealing of dip switches/factory settings, and wire tacking.

Features:

- Exceptional bond to metals, ceramics, wood, vulcanized rubber, foams, rigid plastics, and many other materials
- Convenient one-to-one ratio by volume
- Low shrinkage during cure
- High fatigue resistance
- Greater moisture and chemical resistance than cyanoacrylate and most other adhesives types.
- Good resistance to static and dynamic loads

Benefits:

This product is available in pre-weighed kits for convenient manual mixing. Its 1:1 ratio volume and non-corrosive/non-abrasive composition makes it meter-mix friendly. Available in many package sizes including: pints, quarts, gallons, pails, and drums. Custom packaging also available by request. Please contact for pricing or to request custom packaging.

Storage Guidelines:

Store this material in a clean, dry environment in its tightly closed original container. These products are not considered temperature sensitive, but should ideally be stored at 5-40°C (59-104°F). Under these conditions the products will have a minimum shelf-life of 12 months from the date of shipment.

Standard Test Specimens

Unless otherwise stated, the figures given below were all determined by testing standard specimens made up by lap-jointing 4x1x0.06 inch strips of aluminum. The joint area was 0.5 x 1 inch each case.

Property	Test method	Test Values[1]
Lap Shear Strength	**ASTM D-1002**	**(psi)**
Effects of cure time and temperature		
Cure Temperature	**Time**	
25°C (77°F)	8 hours	710
	15 hours	1990
	24 hours	2130
	72 hours	2280
	5 days	2560
70°C (158°F)	1 hour	3130
	2 hours	3410
	3 hours	3200
100°C (212°F)	10 minutes	3700
	20 minutes	3938
	30 minutes	4120
150°C (302°F)	5 minutes	4270
	10 minutes	4410
	20 minutes	4410

[1]Tested @25°C (77°F)

Property	Test method	Test Values
Lap Shear Strength	**ASTM D-1002**	**(psi)**
Effects of test temperature (Load applied 10 minutes after specimens reach test temperature		
Cure Cycle	**Test temp.**	
5 days @ 25°C (77°F)	-60°C (-76°F)	2840
	-20°C (-4°F)	2840
	20°C (68°F)	2560
	40°C (104°F)	1420
	60°C (140°F)	570
20 min @ 100°C (212°F)	-60°C (-76°F)	3130
	-20°C (-46°F)	3410
	20°C (68°F)	3200
	40°C (104°F)	3700
	60°C (140°F)	3938

Property	
Lap Shear Strength	
Effect of Immersion (Cure cycle 16 hours @ 40°C. Immersion for 90 days in media listed.	
Media	**Test Values[1]**
Standard-As prepared	2560
Acetone (30 days)	570
Acetylene	430
Gasoline	2410
Ethyl Acetate (30 days)	570
Acetic Acid 10%	Degraded
Methanol	Degraded
Lubricating Oil-HD30	2560
Kerosene	Degraded
Trichloroethylene	Degraded
Water @ 20°C (68°F)	1420
Water @ 90°C (194°F)	430

Property	Test method	Test Values[1]
Lap Shear Strength	**ASTM D-1002**	**(psi)**
Effects of tropical Exposure (40°C/92%R.H.)		
Cure Cycle	**Exposure Time**	
16 hours @ 40°C (104°F)	0 days	2560
	10 days	2560
	30 days	1710
	60 days	1560
	90 days	570
720 min. @ 100°C (212°F)	0 days	3980
	10 days	2560
	30 days	1710
	60 days	1560
	90 days	1280

[1]Tested @25°C (77°F)

Property	Test method	Test Values[1]
Lap Shear Strength	**ASTM D-1002**	**(psi)**
Effects of Heat Aging (Cured 16 hours @ 40°C)		
Aging Temperature	**Exposure Time**	
20°C (68°F)	0 days	2560
	1 years	2560
	2 years	2280
	3 years	1710
	4 years	1990
	5 years	1990
60°C (140°F)	3 days	2560
	10 days	2420
	30 days	2130
80°C (176°F)	3 days	2130
	10 days	2130
	30 days	2130
	60 days	2130
	1 year	1280
	2 years	710
	3 years	710
	4 years	430
	5 years	280
120°C (248°F)	3 days	2130
	10 days	2280
	30 days	2280
	60 days	2130

Property	Test method	Test Values[1]
Lap Shear Strength	**ASTM D-1002**	**(psi)**
Tested on Metal Substrates (Cured 20 min @ 100°C)		
Metal	**Substrate Thickness (mm)**	
Carbon Steel	1.0	3840
Stainless Steel	1.0	3270
Galvanized Steel[2]	1.5	1990
Copper	1.5	3270
Brass	1.5	2990

[1]Tested @25°C (77°F)
[2]Surface degreased only, not roughened

Property	Test method	Test Values
Fatigue Strength	**ASTM D-1002**	**(psi)**
Tested using a load frequency of 90 Hz and a 23 mm joint overlap (Cured 20 min @ 100°C)		
Fatigue Limit Load % Static Shear Stength	**Cycles to Failure(1)**	
50	10^3-10^4	
40	10^4-10^5	
30	10^5-10^6	
25	10^5-10^6	
20	10^6-10^7	
15	10^7	

Processing Guidelines:

Mix using Meter-mix dispensing, or manually, as follows. Weigh the desired amount of resin into mixing container whose weight has been tared. If material has been heated, allow to cool to 25 ± 5°C or 77 ± 9°F before continuing. The pot life of mixed material will be shortened considerably if warmed material is used.

Weigh the desired amount of hardener into mixing container with resin. Mix thoroughly by means of mechanical mixer or manual stirring. Check for uniform color as a sign of complete mixing.

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; be certain not to trap air bubbles as viscosity builds.

To reduce the cure time, the casting is often allowed to gel at room temperature and then post-cured 2-6 hours at 60-80°C. Small casting can be processed and directly cured at slightly higher temperatures (40-60°C). In case of humid environments (≥75% relative humidity) it is advisable to effect a full cure in an oven at 40-60°C in order to prevent vapor absorption, leading to speaks on the surface of the casting.

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 100A2

WARNING! May cause eye irritation. Prolonged or repeated skin contact may cause irritation, and may cause skin reaction. Harmful if inhaled, if 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.

EpoPro 100B20

DANGER! Corrosive-Causes eye, skin, and respiratory irritations. May cause allergic skin and respiratory reactions. Avoid breathing vapor or mist. Avoid contact with eyes, skin, and clothing. Keep container closed when not in use. Use with adequate ventilation. Wash thoroughly after handling.

First Aid

In case of contact:

Skin - Wash skin thoroughly with mild soap and water. Remove contaminated clothing and wash before reuse. Discard contaminated shoes and other articles made of leather

Eyes - Flush eyes with plenty of water for 15 minutes and get prompt medical attention.

Inhalation - Remove person to fresh air

Ingestion - Do not induce vomiting. Dilute with plenty of water and contact physician immediately. Never give anything by mouth to an unconscious person.

Other- Referral to a physician is recommended if there is any question about the seriousness of an injury.

Disclaimer:

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