

POLYMER COMPOSITES, INC.

1871 Lake Pl., Ontario, CA 91761 • (909) 673-1007 • Fax: (909) 673-1605

MAX CAST A/B

Technical Data Sheet

DESCRIPTION

MAX CAST A/B is a two part epoxy/urethane hybrid system especially formulated to provide impact and thermal stability properties. MAX CAST A/B demonstrates structural bond strengths to a variety of substrates such as plastics, wood, composites, steel, aluminum and other soft metals. MAX CAST A/B is 100 % solids and does not contain Ozone Depleting Chemicals (ODC).

Unlike typical polyurethanes that are moisture sensitive and has a high occurrence of skin allergen, MAX CAST A/B does not contain free isocyanates which makes it more user friendly and produces void and bubble free castings.

MAX CAST A/B performs well in a wide range of service temperature. It demonstrates low exothermic reaction and very little shrinkage during and after cure. MAX CAST A/B is tough, and physical impact resistant casting resin capable of curing in high humidity and or low temperature. MAX CAST A/B is generally room temperature cured but can be snap cured at elevated temperatures for a short period of time. MAX CAST A/B resists cracking and stress mark due extreme bending, flexing and cyclic vibration and movement. It remains impact resistant even at temperatures below -80°C and will not crack at up to 90°C. Its excellent clarity and toughness properties makes MAX CAST A/B an exceptional choice for encapsulation or as a casting resin.

APPLICATION AND USAGE

MAX CAST A/B is clear and easily poured into place. It is self leveling and can bridge a 10 millimeter gap if mixed and cured at room temperature.

- Clean and prepare the tooling mold before mixing the resin and curing agent together. Insure that the a good quality mold release has been applied on every surface to be molded.
- Mix the 100 parts Resin to 33 parts of curing agent by weight in a clean container. Mix thoroughly but gently as to not introduce excessive air bubbles during mixing. To minimize excessive voids vacuum degassing may be required if curing in elevated temperature; void free results are achieved when room temperature cured.
- Transfer the mixed resin into a pour container and continue mixing for another two minutes. This will insure that the casting resin is thoroughly mixed and will avoid any tacky or uncured resin in the casting.
- Pour only from on corner of the mold and allow the resin to slowly fill the mold. Large casting (500 grams or greater) concentrated in a small volume will have a shorter working time than casting of the same size mass spread over a larger area.
- Allow 24 hours at 75°F before demolding or 4 hours at room temperature plus post cure for 2 hour at 175°F, allow to cool for 35 to 60 minutes before demolding.

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PHYSICAL PROPERTIES

Density	1.09
Form and Color	Clear
Viscosity	2000 cPoise At 25 °C Mixed
Mix Ratio	29-33 Parts "B" to 100 Parts "A" By Weight
Working Time	35 Minutes at 25 °C (100 Gram Mass)
Peak Exotherm	67 °C (100 Gram Mass)
Full Cure Time	24 Hours Minimum
	Or
Accelerated Cure	2 hours at room temperature plus 120 Minutes At 175°F

MECHANICAL PROPERTIES

Hardness	60 ± 5 Shore D, 2H Pencil Hardness
Tee-Peel Strength	15 Pounds Per Inch Width
Tear Resistance	125 Lb.
Tensile Shear Strength	1,800 PSI At 25 °C 2,200 PSI At -80°C 450 PSI At 100 °C
Elongation	100 % At 75°F, 52% At 14°F
Tensile Strength	1,600 PSI
Heat Distortion Temperature	60 °C
Impact Resistance	
Two Inch Diameter Ball, 560 grams Dropped At Height of 24 Inches	No Damage

Chemical Resistance Test 8 Hour Soak Test 25°C

	Weight Change
Deionized Water	0.63
Acetone	3.23
Methanol	5.98
Ethanol	4.44
Xylene	74.34
10% Acetic Acid	12.22
Anti-Freeze	No Affect
Motor Oil Soak	No Affect

ELECTRICAL PROPERTIES

Volume Resistivity	4.7 X 10 ¹³ Ohms-CM
Dielectric Strength-60 Cycles	510 V/Mil
Dielectric Constant	4.0 (10 kHz)
Dissipation Factor	.014 (10 kHz)

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PACKAGING AND STORAGE

MAX CAST A/B is available 1 gallon, .5 gallon, and 55 gallon kits. Use size kits and special packaging requests are also available. MAX CAST A/B should be stored in a cool dry place. Do not store above 30 °C for prolonged period. MAX CAST A/B is warranted for six months from the date of shipment.

SAFETY NOTE

This product is for industrial use only. Please review all precautions before using product. As with all chemicals of the same nature, avoid prolonged inhalation and repeated bare skin contact. Always wear safety goggles and impervious rubber gloves when handling this material. Large mass curing of this product is not recommended for it may produce noxious fumes.

IMPORTANT NOTICE

The information contained herein is based on data believed to be accurate at the time of publication. Data and parameters cited have been obtained by Polymer Composites Inc using materials under controlled conditions. Data of this type should not be used for specification for fabrication and design. It is the user's responsibility to determine this product's fitness for use.

Polymer Composites Inc warrants only that this product will only meet the cited parameters within the established conditions. There is no warranty of merchantability or fitness of use, nor any other express implied warranty. The user's exclusive remedy and the manufacturer's liability are limited to refund of the purchase price or replacement of the product within the agreed warranty period.

Polymer Composites Inc **will not be liable for incidental or consequential damages of any kind.**

The user should thoroughly test any proposed use of this product and independently conclude satisfactory performance in the application. Likewise, if the manner in which this product is used requires government approval or clearance, the user must obtain said approval.

Determination of the suitability of any kind of information or product for the use contemplated by the user, the manner of that use and whether there is any infringement of patents is the sole liability of the user.