

## Master Bond EP36AN One Part, Toughened, B-Stage Epoxy

Category : Polymer , Adhesive , Thermoset , Epoxy , Epoxy Adhesive

**Material Notes:**

Description: Master Bond EP36AN is a unique one component, high performance epoxy for bonding, encapsulation, potting and coating featuring thermal conductivity, electrical insulation and high temperature resistance. It differs greatly from other heat resistant epoxies as it has far more toughness and flexibility. Its forgiving nature at high temperatures imparts good thermal and mechanical shock resistance as well as great thermal cycling ability when compared to more standard high temperature resistant epoxies. EP36AN bonds well to a variety of substrates including metals, glass and many plastics. It has good chemical resistance to water, acids, bases, fuels and oils. This one component system is primarily used for potting but can also be used for bonding and sealing. The service temperature range is -100°F to +500°F. Master Bond EP36AN offers the additional convenience of being a one component system together with flexible cure schedules. Also, the thermal conductivity of EP36AN is exceptionally high—over 3 W/m-k. EP36AN has a unique chemistry which allows the product to be both tough and heat resistant without sacrificing mechanical, electrical, or thermal properties. For example at 100°C, EP36AN has a Shore D hardness of 25-30 and yet maintains its integrity and dimensional stability. This lower hardness is indicative of its toughness and flexibility and translates into its enhanced ability to withstand rigorous thermal cycling. These properties—mechanical, thermal and electrical—are sustainable up to 500°F, and as a consequence, EP36AN is particularly well suited for potting and encapsulation applications where thermal conductivity, electrical isolation and the ability to withstand severe thermal cycling over a wide temperature range are needed. While EP36AN is an unconventional epoxy, it is conveniently available in 30 gram cookies as well as pints and quarts. This system is formulated at elevated temperatures and poured into cans or 30 gram cookie molds and solidifies. Since it is a solid; it must be heated in a forced air or convection oven at 150-180°F to transform it to a liquid. As a liquid, it is easy to apply as an encapsulant or an adhesive. To complete the cure, the temperature should be 350°F for 2-3 hours. EP36AN will retain its liquidity as long as the temperature does not exceed 180°F. Liquefied but uncured material can be reused by allowing EP36AN to resolidify at room temperature. Cured material cannot reliquify; resolidified materials can become liquid again. This epoxy is amber in color. EP36AN is a specialty system that is primarily used in electronic and aerospace applications. Product Advantages: One component system. Exceptionally high thermal conductivity and superior electrical insulation properties. Combines flexibility and toughness with high temperature resistance. Ideal for potting and encapsulation. Unused material is easy to reprocess. Available in conveniently prepared 30 gram cookies. Capable of withstanding rigorous thermal cycling and thermal shocks. Information provided by MasterBond®

Order this product through the following link:

[http://www.lookpolymers.com/polymer\\_Master-Bond-EP36AN-One-Part-Toughened-B-Stage-Epoxy.php](http://www.lookpolymers.com/polymer_Master-Bond-EP36AN-One-Part-Toughened-B-Stage-Epoxy.php)

Physical Properties	Metric	English	Comments
Viscosity	90000 - 130000 cP	90000 - 130000 cP	

Mechanical Properties	Metric	English	Comments
Hardness, Shore D	80	80	
Tensile Strength at Break	>= 13.8 MPa	>= 2000 psi	
Elongation at Break	>= 50 %	>= 50 %	

Thermal Properties	Metric	English	Comments
CTE, linear	75.0 - 85.0 $\mu\text{m}/\text{m}\cdot^{\circ}\text{C}$	41.7 - 47.2 $\mu\text{in}/\text{in}\cdot^{\circ}\text{F}$	
Thermal Conductivity	0.432 W/m-K	3.00 BTU-in/hr-ft <sup>2</sup> -°F	
Maximum Service Temperature, Air	260 °C	500 °F	
Minimum Service Temperature, Air	-73.3 °C	-100 °F	
Glass Transition Temp, Tg	30.0 °C	86.0 °F	

Electrical Properties	Metric	English	Comments
Volume Resistivity	$\geq 1.00\text{e}+14$ ohm-cm	$\geq 1.00\text{e}+14$ ohm-cm	
Dielectric Constant	4.3	4.3	
Dielectric Strength	17.3 kV/mm @Thickness 3.17 mm	440 kV/in @Thickness 0.125 in	

Processing Properties	Metric	English	Comments
Cure Time	120 - 180 min @Temperature 177 °C	2.00 - 3.00 hour @Temperature 350 °F	liquefy at 150-180°F then cure
Shelf Life	3.00 - 6.00 Month @Temperature 23.9 °C	3.00 - 6.00 Month @Temperature 75.0 °F	in original unopened container

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