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Technical Data Sheet

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MAX GPE A/B

General Purpose Epoxy

DESCRIPTION

MAX GPE is a two-component epoxy based resin system designed to provide a very broad range of mechanical and physical properties that is suitable for almost all types of epoxy resin applications. It can be utilized as a structural adhesive demonstrating excellent adhesion to wide selection of substrates, chemical resistant or protective coating, impregnating and laminating for composite applications, potting applications for electronics and as a casting resin for large and small applications.

MAX GPE is mixed two parts resin to one part curing agent by weight or by volume (2:1). The mixed consistency is very low in viscosity, clear and easily poured or applied in to place resulting in bubble free castings. MAX GPE has a 20 minutes gel time that allows fast development of mechanical properties and handling strengths. Compared to other systems MAX GPE offers one of the shortest thin film set time and tack free time allowing faster processing while maintaining durability and high physical impact properties without excessive brittleness typically associated with fast reacting systems.

It performs well as an adhesive for metals, alloys, plastic, wood, stones products, fiberglass, carbon fiber composites and concrete and other substrates. MAX GPE exhibits notable performance at temperatures – 100°C to 145°C and will endure repeated thermal shock. Higher adhesion performance can be achieved after a post cure cycle of 1 hour at 120°C.

MAX GPE coating properties exhibits very high gloss and good color stability, high hardness for sandability and excellent chemical resistance. Optimized amounts UV inhibitors, anti-oxidants and stabilizers are incorporated with the MAX GPE to provide added outdoor durability. An aliphatic polyurethane coating should be applied to further improved resistance to UV degradation. MAX GPE will bond to metals, alloys, plastic, wood, stones products, fiberglass, carbon fiber composites and concrete and other substrates. Higher coating performance can be achieved after a post cure cycle of 1 hour at 120°C. MAX GPE is an excellent choice for composite fabrication using fiberglass, carbon fiber, Aramid, and other hybrid fabrics. Its low viscosity allows fast fabric wet-out with minimal void and porosity. Cured composites fabricated with MAX GPE exhibits exceptional mechanical properties such as impact resistance, compressive and tensile strength. Higher mechanical performance can be achieved after a post cure cycle of 1 hour at 120°C.

As a casting resin and potting compound, MAX GPE demonstrates good dimensional stability excellent electrical insulative performance and low coefficient of expansion and contraction. General mechanical properties are enhanced after a post cure cycle of 1 hour at 120°C.

SAFETY NOTE

This product is for industrial use only. Please review all precautions before using this product. As with all products of the same nature, avoid prolonged inhalation and repeated 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.

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Pre-Mix and Mixing Notes

Prepare all needed tooling and materials before mixing the resin and curing agent together. Pour the desired amount of resin then the curing agent in a clean container and gently mix with a spatula or mixing blade until uniform blend is achieved. Scrape the sides and bottom of the container to insure a thorough mix. Pour or apply the resin directly unto the prepare surface and allow to cure for at least 24 to 36 hours. The mixed resin will set-up in less than 2 hours and can be handled in 3 hours.

PHYSICAL PROPERTIES

Viscosity	1,570 cPs Mixed
Mix Ratio	100 parts A to 50 parts B by weight or volume
Working Time	15 To 25 Minutes at 200 Gram Mass
Peak Exotherm	160°C
Time To Reach Peak	35 Minutes
Density	1.10 g/cc Cusred
Cure Time	1 to 3 days at 25°C
Heat Cure	2 Hours @ 25°C Plus 1 Hour @ 120°C
Set-To-Dry	1.5 Hours
@10 Mil Film	
Surface Dry	3.0 Hours
Handling Time	3 to 4 Hours

MECHANICAL PROPERTIES

Test Criteria	Room Temp Cure	Room Temp + Heat Cure
Hardness	80 D	85 D
Izod Impact ft-lb/in	.82	1.2
Tensile Shear Strength psi	3,100	3,765
Tensile Strength psi	9,600	12,300
Tensile Modulus psi	400,000	449,120
Tensile Elongation	2.1	1.4
Deflection Temperature	84°C	110°C
3 Hours Acetone Boil % Weight Gain	2.3	1.5
24 Hours Water Boil % Weight Gain	2.2	1.8

PACKAGING AND STORAGE

MAX GPE A/B is available in special kit sizes, 5 gallon and 55 gallon Kits. Use size kits and special packaging requests are also available.

The use power mixing equipment is recommended to achieve uniform dispersion of filler.

MAX GPE A/B should be stored in a cool dry place. DO NOT store above 30°C for prolonged period. MAX GPE A/B has a 12-month shelf from the date of shipment when store properly.