Qualities that Bond

TECHNICAL BULLETIN

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PRODUCT INFORMATION

ULTIMEG 2004SB
2 PART EPOXIDE
AMBIENT CURED*
CLASS H (180°C)
LOW VISCOSITY
VERY LONG POTLIFE
LOW EXOTHERM
BLACK

ULTIMEG 2004SB TWO PART BLACK EPOXY RESIN

GENERAL DESCRIPTION

Ultimeg 2004SB is part of a range of epoxide resins for the electrical industry that have a high thermal ratings combined with excellent thermal shock resistance. 2004SB is a Class H rated two-component, black material that has a low viscosity and long pot life to give maximum penetration into windings and around components. The cured product has good strength at elevated temperature together with excellent thermal shock and electrical properties. The system also features good resistance to atmospheric moisture and chemical attack.

APPLICATION

Encapsulation, sealing and potting of transformers, small electronic and electrical components.
For combined impregnation and potting of motor armature and stators to give improved heat dissipation.

SPECIFICATION

PROPERTIES OF THE BASE -

Viscosity @ 25°C	poise	4 – 7
Specific gravity		1.08 – 1.12
Appearance		clear

PROPERTIES OF THE HARDENER -

Viscosity @ 25°C	poise	0.5
Specific gravity		0.97 – 0.99
Appearance		Clear liquid

PROPERTIES OF THE MIXTURE -

Mix ratio base: hardener		3:1 PBW 2.7:1 PBV
Viscosity @ 25°C	poise	1.5 – 2
Specific gravity		1.05 – 1.08
Usable life 100 grams mass		160 minutes
Gel time 100 gram mass		460 - 510 minutes

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PROPERTIES OF CURED COMPOUND

		Ambient (part)	Full cure
Shore D hardness	DIN 53505	68	85
Thermal Class	ASTM D2307/2000hrs	130°c	180°C
Deflection temperature	IEC1006	40°C	60°C
Tensile strength	ISO 527	12N/mm2	23N/mm2
Elongation at break	ISO 527	8 %	4 %
Thermal Conductivity	ISO 8894-1	0.22W/M/K	0.22W/M/K
Dielectric strength	IEC 243-1	108 Kv/cm.	182 Kv/cm.
Dielectric constant	IEC 250	2.05 @ 50Hz	4.31 @ 50Hz
Volume resistivity	IEC 93	$> 10^{10}$ ohm/cm^3	$> 10^{13}$ ohm/cm^3
CTI	IEC 112	>250V	>550V

CURE SCHEDULE

50 hours @25 °c Touch dry (non tacky)
120 hours @ 25°C to develop B - stage or Partial cure
16 hours @ 80°C for full cure
6 hours @ 120°C for full cure
In order to develop maximum properties ambient is recommended that the U2004S be cured at either 80°c or 120°c as per the schedule above.
* Ambient cure is achievable, however for full properties to develop, a post cure at elevated temperature is recommended.

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WORKSHOP PRACTICE

Most problems occur with 2 part systems due to the failure to mix correctly. The following procedure is recommended: -

The base and hardener can be measure out by weight, volume or by using all of the pre-weighed kit, but is should be noted the usable life of the mixture decreases as the weight of the mix increases. Ensure the base and hardener are mixed thoroughly using the minimal air inclusion method described previously. This mixing process can take up to 4-5 minutes, and it is recommended that, if the usable life allows, extra time is spent mixing at this stage where failure to mix is most frequent.

PACKAGING
1kg, and 5 kg kit
Or for machine application
3x5 kg base and 1x5kg of hardener or multiples in this ratio

STORAGE
24 months shelf life, stored between 10°C and 30°C.

HEALTH & SAFETY
See relevant Material Safety Data Sheet.
AEV Plc Issue no. 1 Date: 04.07

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