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EGprime A2511/B2511 System

EGprime A2511/B2511 system is a high ultraviolet resistivity transparent liquid type epoxy compound what developed for encapsulation of electronic devices, especially for light emitting diodes (LED).

1. COMPOSITION

Component 1: A2511 (Resin)
Component 2: B2511 (Hardener)

2. FEATURES

⊙ High Ultraviolet Resistivity
⊙ Good Pot Life
⊙ Elevated Temperature Color Stability
⊙ Excellent Electrical Properties
⊙ Exceptional Optical Transmission
⊙ Good Solvent Resistance
⊙ High Reliability

3. PROPERTIES BEFORE CURED

3.1 Appearance & Color

	Resin A2511	Hardener B2511
Appearance	Colorless to slight yellow	Colorless to slight yellow
Color (Gardener)	—	1 max.

3.2 Specific Gravity
Measure at 25±1℃

	Resin A2511	Hardener B2511
Specific gravity	1.16±0.01	1.16±0.01

3.3 Viscosity
Measure condition: Brookfield RV at 25±1℃
A2511: spindle 21/2.5 rpm
B2511: spindle 21/100 rpm

	Resin A2511	Hardener B2511
Viscosity (cps)	8500(TYP.)	200(TYP.)

4. MIXING INSTRUCTION

4.1 Mix Ratio
A2511 (Resin) : B2511 (Hardener) = 100 : 100
☆ Mix ratio of these materials is fixed by their chemistry. Any attempt to increase or decrease the cure rate by adding more or less hardener will result in degraded materials.

4.2 Pot-life
4hrs at 25℃ (500g mass)

Edition 5
2005.4.12

5. PROCESSING SERIES

PreProcessing	Component A to be preheated at 80℃ /30 min.
Mixing	The mixture of resin (A)/hardener (B)/diffuser and colorant Paste may be mixed using standard techniques.
Deform	Use vacuum device; 0～10 mm Hg
Casting	Filling the mixture in to the molds with small nozzles.
Curing	120 ℃ 1～2 hrs depending on the oven device.
Demolding	——
Post cure	130℃ 6hrs～8hrs

6. PROPERTIES OF CURED PRODUCT

CURING CONDITION: method ①: cure at 120 ℃ 1hr + 135 ℃ 7hrs
method ② 20 ℃/min to 250 ℃(depend on the DSC)

6.1 TESTING METHOD

ITEM	TEST METHOD	SAMPLE SIZE
Glass Transition Temperature	DuPont 2910 DSC & DuPont 2940 TMA & DuPont 2100 TA Sy.	① 7±3 mg for DSC ②40±1 mg for DSC 1.9±0.3 ㎜ (thickness) for TMA
Heat Distortion Temperature	ASTM D 648	12.7 ×12.7 ×127 distance of supports 101.6㎜
Flexural Strength	ASTM D 790	12.7(W) ×6.4(H)㎜
Impact Strength	ASTM D 256	2.7 ×12.7 ×63.5㎜
Durometer Hardness	ASTM D 2240	4 ㎜ thickness
Chemical Resistance	ASTM D 543	76.2 ×25.4 ×3.2㎜
Coefficient of linear expansion	DuPont 2940 TMA & DuPont 2100 TA Sy.	2.11 ㎜ (thickness)
Volume & Surface Resistivity (500 V)	ASTM D 257	50 (Φ)×2 ㎜
Boiling water absorption	JIS K 6911	120℃ / 2 atm 100 hrs
Dielectrical Cnostant & Dissipation Factor	ASTM D 150	—

6.2 PHYSICAL PROPERTIES

ITEM	UNITS	MEASURING CONDITION	ANALYTICAL VALUE
Glass Transition Temperature	℃	30～250℃ 20℃/min	Method① 115±8 Method② 105±8
Heat Distortion Temperature	℃	—	113
Flexural Strength	kg/ ㎟	23℃	13.2
Impact Strength		23℃	5.2
Durometer Hardness	—	25℃	>95
Coefficient of linear expansion	μm/m ℃	30～100℃	7.0E-5±2.0E-5
Refractive Index	—	—	1.53±0.01
Boiling water absorption	wt%	120℃/2atm 100hrs	<2.2
Light Transmittance	—	400～700nm	90% (min.)

6.3 ELECTRIC PROPERTIES

ITEM	UNITS	MEASURING CONDITION	ANALYTICAL VALUE
Dielectrical Constant (10 K Hz)	—	25℃ 100℃ 120℃	3.0 3.1 3.1
Dissipation Factor (10 K Hz)	—	25℃ 100℃ 120℃	0.011 0.006 0.006
Surface Resistivity	Ω	25℃	6.3×10^{15}
Volume Resistivity	Ω-㎝	25℃	2.1×10^{15}

7.ITEMS OF Q.C. REPORT

⊙Resin Viscosity
⊙Hardener Viscosity
⊙Weight loss of Resin (TGA)
⊙Weight loss of Hardener (TGA)
⊙Glass Transition Temperature of Cured Product

8.PACKING

A2511 4 kgs in plastic container or can.
B2511 4 kgs in plastic container or can.

Content of Label
⊙DESC ⊙Lot No.
⊙Net weight ⊙Expiry Date ⊙Manufacture Date

9.SHELF LIFE

6 months (from the date of manufacture) @ at 10～30℃, under 70%RH, factory sealed containers.

10.NOTICE OF STORAGE

1. Keep components A and B at 10～30℃, factory sealed containers.
2. Store in cool dry place away from strong oxidizing agents, acids and bases.
3. Crystallization is unlikely to happen with component A, In case of crystallization please heat up the material at 60℃ for 2 hour followed by well agitation.

SAFETY AND HANDLING
Avoid eye and skin contact with resin A and curing agent B. In case of accidental skin contact, wash immediately with soap and water to remove.

Waterless hand cleaners may be used if followed immediately by thoroughly washing with soap and water.

In case any of these materials gets into the eyes, flush eyes thoroughly with low-pressure water for 15 minutes and obtain medical attention.