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LED THE ENCAPSULATION ADHESIVES WITHIN LED PROCESS

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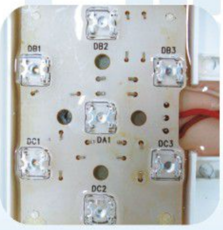
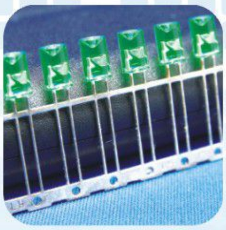
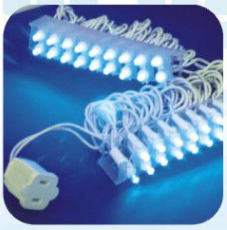
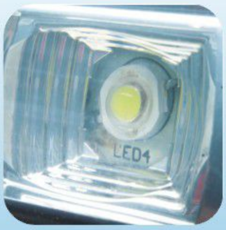










- Active
- Smart
- Efficient
- Creative

LED THE ENCAPSULATION ADHESIVES WITHIN LED PROCESS

LED-Light Emitting Diode Application

LED is an abbreviation of Light Emitting Diode. It is only able to transform electrical energy into light energy efficiently directly, but also has most up to tens of thousands of hours to 100,000 hours life time.

LED is not as fragile as traditional bulb and is more power-saving.

Whatever any types of LED all need a reasonable designed encapsulation module.

This is because only encapsulated LED could be the end products and can be put into practical usage.

LED is known as the 21st century new light source. Looking ahead, the vendor will be dedicated to develop high-power, high-brightness LED.

The encapsulation is part of the LED industrial chain so it needs to greatly concern and attention.

We import raw materials from Europe, America and Japan and do research and development of technology in Taiwan.

We are able to let the Taiwan's major LED plants to have more cost competitive advantage, supply quickly, and good quality.

Everwide has proposed excellent products that have three advantages against the demand of every LED process technology.

*The properties of heat-curable epoxy adhesive are low curing temperature and curing rapidly.

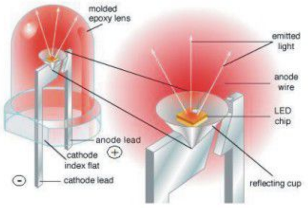
*The packaging is in line with all the needs of the industry.

*The adhesive is in line with the low luminescence decay, especially could pass through the harsh environment test.

LED Die Bonding

Feature

- High thixotropic properties, especially suited for printing process, high adhesion strength when not curing, without skew.
- Low energy curing, fast cure.
- High transparency, high temperature resistance and not yellowing.
- Passed Environment test. ex.Thermal cycle, Thermal shock, High temp.+high humidity, Pressure cook



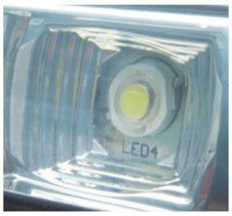
Insulated Type

Product Item.	Appearance	Color	Viscosity ,cps	Pot Life , 25°C	Curing parameter	Hardness ShoreD	Water absorption , %	Water boiling 100°C*24hr,%	Tg,°C, By MDSC	Volume resistivity ,ohm-cm	(TGA 10°C /min) ,°C	Coefficient of thermal expansion <Tg, ppm	Temperature resistance °C
JC585-1	Viscous liquid	Pale Yellow	28,000	3day	150°C , 60min	89	0.92	Pass	117	$4.5 * 10^{15}$	387	70	-40~130
JC729-5	Viscous liquid	White	50,000	3day	150°C , 60min	89	0.78	Pass	112	$4.5 * 10^{15}$	351	73	-40~130

LED Packing Bonding With Phosphor

Feature

- Suited for auto-dispensing equipment.
- Good for phosphor mixing
- Heat curing process
- Passed environment test. ex.Thermal cycle, Thermal shock, High temp.+high humidity, Pressure cook

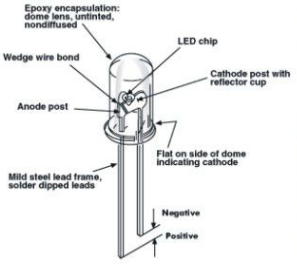


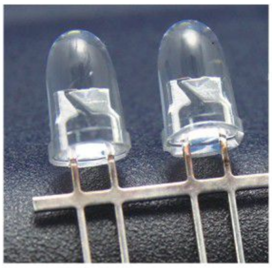
Product Item.	Appearance	Mix ratio	Viscosity ,cps	Curing parameter	Hardness Shore D	Water absorption , %	Water boiling 100°C*24hr,%	Tg, °C , By MDSC	Volume resistivity ,ohm-cm	Degradation Temp.	Tensile Strength , kg/cm²	Coefficient of thermal expansion <Tg, ppm	Temperature resistance °C
JC526-6AB	A:Transparent liquid B:Transparent liquid	1 : 1	A:425 B:100	150°C , 2hr	83	1.2	pass	163	$4.5 * 10^{15}$	302	120	95	-40~100
JC640-1AB	A:Transparent liquid B:Transparent liquid	1 : 1	A:1,800 B:500	150°C , 2hr	86	0.58	pass	159	$4.5 * 10^{15}$	326	123	66	-40~100

LED Epoxy Encapsulation

Feature

- UL 94V-0, 2002/95/EC RoHS regulations, low Chlorine content.
- Toughness and adhesion strength to avoid the wire off.
- Passed environment test. ex.Thermal cycle, Thermal shock, High temp.+high humidity, Pressure cook





Product Item.	Appearance	Mix ratio	Viscosity,cps	Gel time	Curing parameter	Hardness ShoreD	Water absorption , %	Tg, °C, By MDSC	Volume resistivity ,ohm-cm	Degradation Temp.	Tensile Strength , kg/cm²	Coefficient of thermal expansion <Tg, ppm	Temperature resistance °C
7392AB	A: Pale Yellow Viscous liquid B: Transparent liquid	100 : 70	A: 28,000 B: 50	25℃, 300 min	130℃, 10min	85	0.3	95	$2.1 * 10^{15}$	305	130	87	-40~100
JC518-6AB (Low Halogen)	A: Transparent liquid B: Transparent liquid	1 : 1	A: 37,000 B: 250	150℃, 30min	150℃, 2hr	87	0.43	127	$4.5 * 10^{15}$	337	153	70	-40~100

LED Casting for Light Bar

Feature

- High transparency
- Neutral PH value
- Low shrinkage and good flexibility
- Excellent moisture and water resistance
- Passed environment test. ex.Thermal cycle, Thermal shock, High temp.+high humidity, Pressure cook

Product Item.	Appearance	Mix ratio	Viscosity,cps	25°C	Curing parameter	Hardness ShoreD	Water absorption , %	Tg, °C , By MDSC	Volume resistivity , ohm-cm	Degradation Temp.	Yellow Index	Coefficient of thermal expansion <Tg, ppm	Temperature resistance °C
JB646-2	A: Milky white liquid B: Yellowish liquid	1 : 1	A: 21,000 B: 150	12~24hr	80°C , 3hr	59	0.47	-5	$4.5*10^{15}$	314	1.5	245	-40~100

Thermal Paste, Thermal Adhesive

Feature

- LED plate radiating and bonding
- Excellent thermal conductivity, adhesion strength and insulation
- Passed environment test. ex.Thermal cycle, Thermal shock, High temp.+high humidity, Pressure cook

Thermal Paste

Product Item.	Appearance	Color	Viscosity,cps	Thixotropic index	Maximum Continuous Service Temp , °C	Weight loss ratio 150℃ / 24hr, %	Thermal Conductivity, W/mK	Thermal Resistance , m²K/W	Surface resistance ,ohm	Volume resistivity ,ohm-cm	Dissipation coefficient 25°C, 1KHz	Dielectric Constant, 25°C, 1KHz	Temperature resistance °C
JA447	Viscous liquid	White	750,000	5.0	200	0.3	1.5	$1.37*10^{-3}$	$5*10^{14}$	$5*10^{15}$	0.008	4.0	-40~100
JC753	Viscous liquid	White	280,000	9.5	300	0.3	1.5	$1.37*10^{-3}$	$5*10^{14}$	$5*10^{15}$	0.008	4.0	-40~200
JC922-1	Viscous liquid	White	250,000	4.5	200	0.3	3.2	$1.02*10^{-3}$	$5*10^{13}$	$5*10^{13}$	0.008	4.0	-40~150

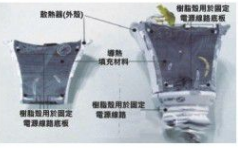
Two Parts of Thermal Epoxy Adhesive

Product Item.	Appearance	Mix ratio	Viscosity,cps	Gel Time ,25°C	Curing parameter	Hardness ShoreD	Water absorption , %	Tg, °C, By MDSC	Volume resistivity ,ohm-cm	Degradation Temp	Tensile Strength , kg/cm²	Coefficient of thermal expansion <Tg, ppm	Temperature resistance °C
JA765AB	A: White viscous liquid B: Yellowish liquid	100 : 20	A: $1.5*10^{5}$ B: 11,000	4~5 min	80℃, 1hr	87	0.93	46	$5*10^{15}$	305	80	131	-40~100
JA766AB	A: White viscous liquid B: Transparent liquid	100 : 7	A: $1.5*10^{5}$ B: 50~90	30 min	80℃, 1hr	88	0.2	40	$5*10^{15}$	348	88	149	-40~100
JA767AB	A: White viscous liquid B: Transparent liquid	100 : 7	A: $1.5*10^{5}$ B: 10~90	90 min	80℃, 1hr	87	0.34	39	$5*10^{15}$	349	91	120	-40~100

One Parts of Thermal Epoxy Adhesive

Product Item.	Appearance	Viscosity,cps	Curing parameter	Hardness ShoreD	Water absorption , %	Tg,°C , By MDSC	Volume resistivity ,ohm-cm	Degradation Temp.	Tensile Strength , kg/cm²	Thermal Conductivity , W/mK	Thermal Resistance , m²K/W	Coefficient of thermal expansion <Tg, ppm	Temperature resistance °C
JB688-25	White liquid	500,000	150℃, 30min	92	0.04	65	$5*10^{15}$	397	115	3	$9*10^{-4}$	13	-40~150

Corer Glass Bonding With Frame



Feature

- Suited for various materials bonding
- Excellent adhesion strength, insulation and weather resistance
- Passed environment test. ex.Thermal cycle, Thermal shock, High temp. +High humidity, Pressure cook

Bonding-Epoxy series

Product Item.	Appearance	Mix ratio	Viscosity,cps	Gel Time ,25°C	Curing parameter	Hardness ShoreD	Water absorption ,%	Tg,°C , By MDSC	Surface resistance , ohm	Volume resistivity , ohm-cm	Degradation Temp.	Coefficient of thermal expansion <Tg, ppm	Temperature resistance°C
JA484-20AB	A: White viscous liquid B: Yellow viscous liquid	1 : 1	A :10000 B : 9000	5 min	80°C,10min	70	2.46	25	$5*10^{14}$	$5*10^{15}$	324	38	-40~100
JB925-12AB	A: White viscous liquid B: Yellow viscous liquid	2 : 1	A : 51,000 B : 11,500	20 min	80°C,1hr	77	0.28	16	$5*10^{14}$	$5*10^{15}$	269	35	-40~200
JC180-3	White viscous liquid	One part	162,000	3 day	80°C,30min	85	0.03	80	$5*10^{14}$	$4.5*10^{15}$	297	30	-40~100
JC531-3	White viscous liquid	One part	280,000	7day	80°C,30min	85	0.03	80	$5*10^{14}$	$4.5*10^{15}$	295	40	-40~100

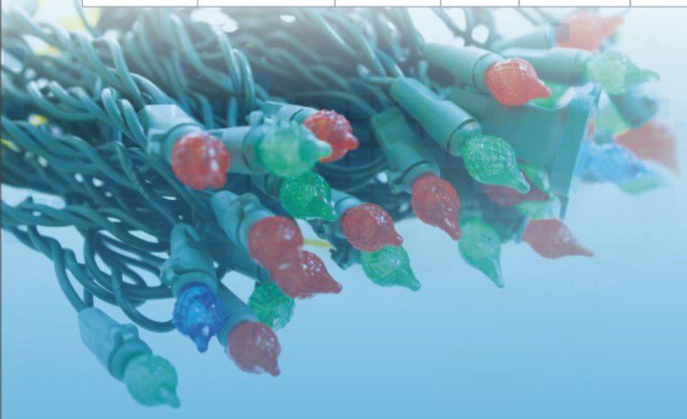
Bonding-MS series

Product Item.	Appearance	Viscosity ,cps	Surface dry ,25°C	Gel Time ,25°C	Curing parameter	Hardness ShoreA	Water absorption , %	Tg, °C , By MDSC	Surface resistance ,ohm	Volume resistivity ,ohm-cm	Shear Strength, kg/cm²	Peel Strength , kg	Temperature resistance °C
FS0354	Clear	25000	8 min	20 min	24hr	23	1.84	-55	$1.7*10^{12}$	$2*10^{11}$	20(PC+PC)	1.6	-40~100
FS035W1	White	120000	8 min	20 min	24hr	40	1.5	-53	$1.7*10^{12}$	$2*10^{11}$	23(PC+PC)	1.6	-40~100

Casting

Product Item.	Appearance	Mix ratio	Viscosity,cps	Gel Time ,25°C	Curing parameter	Hardness ShoreD	Water absorption , %	Tg, °C , By MDSC	Surface resistance ,ohm	Volume resistivity ,ohm-cm	Degradation Temp.	Coefficient of thermal expansion <Tg, ppm	Temperature resistance °C
JA293-2AB	A : Black liquid B : Transparent liquid	100 : 8	A : 45,000 B : 50~100	6hr	80°C,1hr	76	0.3	25	$5*10^{14}$	$4.5*10^{15}$	348	93	-40~100

Product Item.	Appearance	Type	Viscosity ,cps	Surface dry , min	Curing parameter	Hardness Shore 00	Water absorption , %	Tg, °C , By MDSC	Volume resistivity , ohm-cm	Degradation Temp.	Yellow Index	Coefficient of thermal expansion <Tg, ppm	Temperature resistance °C
FX0281	Clear	one part of Silicon	6000	15 min	3~7days	65	0.12	-63	$4.5*10^{13}$	340	<0.1	260	-50~200



LED

The encapsulation adhesives within LED process

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