JC-CCUV Series Conformal Coating Technical Data

Product Description

JC-CCUV100/150/200/300 are dual-cure (UV + moisture) insulating and moisture-proof products. This one-component coating is synthesized from a visible-light-curing modified acrylate and a moisture-curing modified polyurethane, and delivers good insulation performance over a wide range of temperature and humidity. It has good adhesion and mechanical properties, absorbs shock, dampens vibration and acts as a barrier against contamination. It is mainly used for insulation, moisture protection and general protection of PCBAs, and can also be used to protect and reinforce various devices and integrated circuit boards.

Typical Applications

- Insulation and moisture protection of electronic components on PCBAs.
- Conformal coating and insulation protection of electronic devices in automotive, marine, aerospace and household appliance applications.
- Can also be used for bonding and reinforcing glass, metal hardware and plastics.

Product Features

1. Bonds a wide range of materials, with very high adhesion to circuit board substrates, plastics, glass, metals and more;
2. Fast curing, with excellent resistance to moisture, weak acids, weak alkalis, mineral spirits and sulfurization;
3. Flexible formulation, suitable for coating flexible circuit boards and flexible plastics;
4. Low viscosity with good penetration; can be applied by automated spraying;
5. Excellent moisture protection; resistant to high temperature, high humidity and UV, with stable product performance;
6. High surface and volume resistivity, providing good insulation protection for circuit boards even under humid conditions.

Product Parameters

Item		Unit	JC-CCUV100	JC-CCUV150	JC-CCUV200	JC-CCUV300
Color		—	Transparent	Transparent	Transparent	Transparent
Viscosity		mPa·s	60-200	250-500	600-1,000	1,000-2,000
Specific gravity		25 °C	1.0 ± 0.1	1.0 ± 0.1	1.0 ± 0.1	1.0 ± 0.1
Solid content		%	100	100	100	100
Curing time		s	8-10	10-15	15-20	15-20
Light intensity		mW/cm^2	≥ 800	≥ 800	≥ 800	≥ 800
Wavelength & UV energy		nm / mJ/cm^2	365-395 / 2000	365-395 / 2000	365-395 / 2000	365-395 / 2000
Coating thickness		mm	0.05-0.15	0.15-0.2	0.25-0.3	0.35-0.5
Hardness		Shore D (25 °C)	≥ 40	≥ 40	≥ 40	≥ 40
Moisture vapor transmission		40 °C / 90% RH, 24 h	20	20	18	18
Ionic impurities	Cl^-	ppm	1.0	1.0	1.0	1.0
	Na^+	ppm	< 0.5	< 0.5	< 0.5	< 0.5
Volume resistivity		Ω·cm	≥ 5.0×10^{15}	≥ 5.0×10^{15}	≥ 5.0×10^{15}	≥ 5.0×10^{15}

Item	Unit	JC-CCUV100	JC-CCUV150	JC-CCUV200	JC-CCUV300
Surface insulation resistance	Ω	≥ 5.0×10^{14}	≥ 5.0×10^{14}	≥ 5.0×10^{14}	≥ 5.0×10^{14}
Dielectric strength	kV/mm	≥ 50	≥ 50	≥ 50	≥ 50
DMA storage modulus	-40 °C / MPa	1,600-2,500	1,600-2,500	1,600-2,500	1,600-2,500
	25 °C / MPa	1,000-1,500	1,000-1,500	1,000-1,500	1,000-1,500
	105 °C / MPa	200-600	200-600	200-600	200-600
Shear strength (Cu, Al, PCB)	MPa	≥ 5	≥ 5	≥ 5	≥ 5
Operating temperature	°C	-60 to 125	-60 to 125	-60 to 125	-60 to 125

Note:

This product reaches its optimal bond strength and tensile strength only after full physical cure. Customers are advised to test the final bond strength and tensile strength, and to carry out reliability aging tests, after full physical cure has been achieved. In addition, for black UV conformal coatings we recommend curing with a 365-395 nm LED lamp at an energy of 3000 mJ or more for a more complete cure.

Storage Conditions

The recommended storage temperature is 20-25 °C, ideally 23 °C. Low-temperature storage (refrigeration or freezing) is not required. If the product is stored at low temperature, its viscosity will increase; in addition, air bubbles are easily trapped when transferring the coating from its original container into syringes or other containers. It is best to let the product stand for 4 hours before use.

Close the container lid immediately after use and avoid exposure to light; otherwise the product's properties may change.

Precautions

This data sheet does not contain the safety information required for safe use of this product. Before use, please read the product information and its Material Safety Data Sheet (MSDS) for information on safe use and physical and health hazards.

Disclaimer

All data contained herein are for reference only and are believed to be true and reliable. We accept no responsibility for results obtained by anyone using methods beyond our control. It is the user's own responsibility to determine the suitability of this product for their production method and to take measures to prevent any loss or personal injury that may occur during storage and use of the product.

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