CollTech

Description

N-PU 5103M is a one-part, UV and moisture dual curing conformal coating polyurethane adhesive. It is used for protection and insulation of assembled circuit boards.

Features

- Excellent adhesion to FPC and PCB
- Secondary moisture cure for shadowed areas
- Low odor
- Fluoresces under UV light
- Excellent flexibility
- Excellent electrical properties
- Excellent environment resistance
- Easy to apply via an automatic/a manual process, dipping, spraying or brushing

Uncured Properties

Chemical Type	Modified Polyurethane
Appearance	Transparent
Solids Content	100%
Viscosity @ 25°C [mPa·s] Brookfield LVDV, spindle 21# @ 5rpm	120
Specific Gravity [g/cm^3]	1.05
Shelf Life @ 10-28°C [months]	6

Curing Conditions

UV Curing [mJ/cm^2] UVA at 100mW/cm^2 using high pressure mercury UV Lamp	2,000
Recommend Coating Thickness [mils]	2-6
Moisture Cure @ 10-28°C [days]	2-3

Cured Properties

Adhesion ASTM D3359	5B

Flexibility [mm] ASTM D522-93a	≤1
Flammability UL-94	V1
Surface Resistivity [ohm-cm] ASTM D257	>1.0x10^{13}
Volume Resistivity [ohm-cm] ASTM D257	>1.0x10^{13}
Dielectric Constant @ 1MHz ASTM D150-65T	2.6
Dielectric Strength [kV/mil] ASTM D149	>2.5

Solvent Resistance

Isopropanol 75% isopropanol + 25% water	Passed
Acetic acid 5% acetic acid + 95% water	Passed
Sodium hydroxide solution 10% NaOH + 90% water	Passed
Solvent oil 120#	Passed

Based on IPC-SM-840C,3.3.11

Directions for Use

1. **Surface Treatment**

   Surfaces to be bonded should be free of dust, oil, grease or any other contaminants in order to achieve a reproducible bond. For slightly contaminated surfaces, it is sufficient to wipe with isopropanol or ethanol. Substrates with a low surface energy (e.g. polyethylene, polypropylene, Teflon) need to be pre-treated physically (e.g. atmospheric plasma or corona) in order to achieve sufficient adhesion.

2. **Application**

   Products are supplied ready for use. Depending on package type, they can be sprayed, dipped or brushed manually/automatically. Controlling the film thickness in

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the process of spraying is important, and recommended coating thickness is 2-6 mils.

After applying, the adhesive layer should be dwelled for 3mins for better levelling before UV curing.

Please consult our application engineer for more detailed information on application.

3. Suggested working temperature range is -40 to 130°C.

Storage

Maximum shelf life may be obtained when product is stored in a cool, dry location at a temperature between **10°C to 28°C**.

Allow container to reach room temperature before use. It is best practice to wipe away any moisture on the surface of the package.

TO PREVENT CONTAMINATION OF UNUSED PRODUCT, DO NOT RETURN ANY PRODUCT TO ITS ORIGINAL CONTAINER.

Materials Handling

This product is slight irritant to eye and skin. In case of eye contact, flush with water for fifteen minutes. Wash with plenty of soap and water after skin contact. If feel uncomfortable, discontinue use and consult a physician.

Refer to the Material Safety Data Sheet (MSDS) for this product.

Disclaimer

The information provided here including the recommendations for use and application of the product is based on internal laboratory test conditions and should only be used as a reference. CollTech does not assume responsibility for the test or performance results obtained by the user. It is the responsibility of the user to perform their own evaluations to confirm whether this product is suitable for their application.

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