Technical Data Sheet

DOWSIL™ TC-5121C LV Thermally Conductive Compound

Greenish yellow, flowable, non-curing thermally conductive compound

Features & Benefits

- Optimized polymer matrix to help reduce pump out
- Flowable
- Good thermal conductivity
- Low thermal resistance
- Non-curing, no need for curing ovens
- Heat removal from PCB systems components
- Can achieve thin Bond Line Thickness (BLT)

Composition

- Filled polydimethylsiloxane

Applications

- DOWSIL™ TC-5121C LV Thermally Conductive Compound is suitable for use as an interface material for a variety of mid to high end PCB system assemblies.

Typical Properties

Specification Writers: These values are not intended for use in preparing specifications.

Test[1]	Property	Unit	Result
	One-part or Two-part		One
	Color		Greenish yellow
CTM 0050	Viscosity	Pa-sec cP	79.0 79000
CTM 0905	Thixotropy		1.69
CTM 0540	Specific Gravity (Uncured)		4.2
	NVC (Non Volatile Content)	%	99.3
CTM 1388	Thermal Conductivity	W/m-K	2.8
	Thermal Resistance at 40 psi	°C-cm^2/W	0.09
CTM 0114	Dielectric Strength	kV/mm Volts/mil	1.89 47.3
CTM 1400	Volume Resistivity	ohm*cm	1.3E+13
CTM 1139	Dielectric Constant @ 1 kHz		14.0
CTM 1139	Dissipation Factor @ 1 kHz		0.073

1. CTM: Corporate Test Method, copies of CTM's are available on request.

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Form No. 11-3719-01-0320 S2D

Description

Dow thermally conductive compounds are grease like silicone materials, heavily filled with heat-conductive metal oxides. This combination promotes high thermal conductivity, low bleed and high-temperature stability. The compounds are designed to maintain a positive heat sink seal to improve heat transfer from the electrical/PCB system assembly to the heat sink or chassis, thereby increasing the overall efficiency of the device. PCB system assemblies are continually designed to deliver higher performance. Especially in the area of consumer devices, there is also a continual trend towards smaller, more compact designs. In combination these factors typically mean that more heat is generated in the device. Thermal management of PCB system assemblies is a primary concern of design engineers. A cooler device allows for more efficient operation and better reliability over the life of the device. As such, thermally conductive compounds play an integral role here. Thermally conductive materials act as a thermal "bridge" to remove heat from a heat source (device) to the ambient via a heat transfer media (i.e. heat sink). These materials have properties such as low thermal resistance, high thermal conductivity, and can achieve thin Bond Line Thicknesses (BLTs) which can help to improve the transfer of heat away from the device.

Application Methods

- Screen print
- Stencil print
- Dispense

Solvent Exposure

In general, the product is resistant to minimal or intermittent solvent exposure, however best practice is to avoid solvent exposure altogether.

Handling Precautions

PRODUCT SAFETY INFORMATION REQUIRED FOR SAFE USE IS NOT INCLUDED IN THIS DOCUMENT. BEFORE HANDLING, READ PRODUCT AND SAFETY DATA SHEETS AND CONTAINER LABELS FOR SAFE USE, PHYSICAL AND HEALTH HAZARD INFORMATION. THE SAFETY DATA SHEET IS AVAILABLE ON THE DOW WEBSITE AT DOW.COM, OR FROM YOUR DOW SALES APPLICATION ENGINEER, OR DISTRIBUTOR, OR BY CALLING DOW CUSTOMER SERVICE.

Usable Life and Storage

The product should be stored in its original packaging with the cover tightly attached to avoid any contamination. Store in accordance with any special instructions listed on the product label. The product should be used by the indicated Exp. Date found on the label.

Limitations

This product is neither tested nor represented as suitable for medical or pharmaceutical uses.

Health and Environmental Information

To support customers in their product safety needs, Dow has an extensive Product Stewardship organization and a team of product safety and regulatory compliance specialists available in each area.

For further information, please see our website, dow.com or consult your local Dow representative.

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Disposal Considerations

Dispose in accordance with all local, state (provincial) and federal regulations. Empty containers may contain hazardous residues. This material and its container must be disposed in a safe and legal manner.

It is the user's responsibility to verify that treatment and disposal procedures comply with local, state (provincial) and federal regulations. Contact your Dow Technical Representative for more information.

Product Stewardship

Dow has a fundamental concern for all who make, distribute, and use its products, and for the environment in which we live. This concern is the basis for our product stewardship philosophy by which we assess the safety, health, and environmental information on our products and then take appropriate steps to protect employee and public health and our environment. The success of our product stewardship program rests with each and every individual involved with Dow products - from the initial concept and research, to manufacture, use, sale, disposal, and recycle of each product.

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