Product Information

LED Materials

Dow Corning® OE-6351

Two part, 1:1 mix ratio optically transparent, self-priming silicone ecapsulant

FEATURES

- Low Viscosity
- High Transparency
- Self-priming

BENEFITS

- Easy dispensing, high flowability
- No need for priming
- Optically clear

TYPICAL PROPERTIES

Specification Writers: Please contact your local Dow Corning sales office or your Global Dow Corning Connection before writing specifications on this product.

Property	Unit	Value
Viscosity (Part A or Base)	cP mPa-sec Pa-sec	3100 3100 3.1
Viscosity (Part B or Catalyst)	cP mPa-sec Pa-sec	2400 2400 2.4
Viscosity (Mixed)	cP mPa-sec Pa-sec	2800 2800 2.8
Specific Gravity (Uncured Part A or Base)	-	1.02
Specific Gravity (Uncured Part B or Catalyst)	-	1.02
Refractive Index	-	1.41
Working Time at 25ºC (Pot Life - hours)	hr	24
Durometer Shore A (JIS)	-	52
Heat Cure Time @ 150ºC	minutes	180
Unprimed Adhesion - Lap Shear (Glass)	psi MPa N/cm2	360 2.5 25
Dielectric Strength	volts/mil kV/mm	700 28
Dielectric Constant at 1 MHz	-	3.0
Dissipation Factor at 1 MHz	-	0.0012

TYPICAL PROPERTIES continued

Volume Resistivity	ohm*cm	1.4E16
Linear CTE (by TMA)	ppm/ºC	300
Impurity (Na+)	ppm	0.2
Impurity (K+)	ppm	0.2
Impurity (Cl-)	ppm	0.5
Shelf Life @ 35ºC	months	6
Transparency at 450 nm, 1 mm thick	%	98

DESCRIPTION

Dow Corning® brand silicone LED (light emitting diode) encapsulants are designed to meet the challenging needs of the LED market; high purity, moisture resistance, thermal stability and optical transmittance. Silicone materials can absorb stresses caused by thermal cycling inside the package, protecting the chip and the bonding wires. And with the electronics industry quickly moving toward lead-free processing, silicone encapsulants, with their demonstrated, excellent stability at reflow temperatures, are a natural fit for LED applications.

PREPARING SURFACES

Surfaces should be clean and dry. Recommended cleaning methods include Dow Corning® brand OS Fluids, naphtha, mineral spirits, methyl ethyl ketone (MEK) or other suitable solvent. Rougher surfaces tend to promote adhesion of silicones to other surfaces.

PROCESSING/CURING

These products are also compatible with commercially available equipment and industry standard processes. These materials can be dispensed or molded depending on the product and application. Dow Corning OS Fluids are recommended to clean cured or uncured silicone residue from application equipment.

ADHESION

Dow Corning LED materials are specially designed for adhesion to commonly used LED substrates. Surface treatments such as chemical etching or plasma treatment may provide a reactive surface and improve adhesion to these types of substrates. In general, increasing the cure temperature and/or cure time will improve the ultimate adhesion.

USEFUL TEMPERATURE RANGES

For most uses, silicone encapsulants and resins should be operational over a temperature range of -45 to 200°C (-49 to 392°F) for long periods of time. However, at both the low- and high-temperature ends of the spectrum, behavior of the materials and performance in particular applications can become more complex and require additional considerations. For low-temperature performance, thermal cycling to conditions such as -55°C (-67°F) may be possible, but performance should be verified for your parts or assemblies. Factors that may influence performance are configuration and stress sensitivity of components, cooling rates and hold times, and prior temperature history. At the high-temperature end, the durability of the cured silicone encapsulants and resins is time and temperature dependent. As expected, the higher the temperature, the shorter the time the material will remain useable.

COMPATIBILITY

Certain materials, chemicals, curing agents and plasticizers can inhibit the cure of addition cure adhesives. Most notable of these include: Organotin and other organometallic compounds, Silicone rubber containing organotin catalyst, Sulfur, polysulfides, polysulfones or other sulfur containing materials, unsaturated hydrocarbon plasitcizers, and some solder flux residues. If a substrate or material is questionable with respect to potentially causing inhibition of cure, it is recommended that a small scale compatibility test be run to ascertain suitability in a given application. The presence of liquid or uncured product at the interface

between the questionable substrate and the cured gel indicates incompatibility and inhibition of cure.

STORAGE AND SHELF LIFE

Shelf life is indicated by the "Use Before" date found on the product label. Containers should be kept tightly closed at all times to extend shelf life. Check the product label for specific storage conditions.

HEALTH AND ENVIRONMENTAL INFORMATION

To support customers in their product safety needs, Dow Corning has an extensive Product Stewardship organization and a team of Product Safety and Regulatory Compliance (PS&RC) specialists available in each area. For further information, please see our website, www.dowcorning.com, or consult your local Dow Corning representative.

LIMITATIONS

These products are neither tested nor represented as suitable for medical or pharmaceutical uses.

LIMITED WARRANTY INFORMATION PLEASE READ CAREFULLY

The information contained herein is offered in good faith and is believed to be accurate. However, because conditions and methods of use of our products are beyond our control, this information should not be used in substitution for customer's tests to ensure that Dow Corning's products are safe, effective, and fully satisfactory for the intended end use. Suggestions of use shall not be taken as inducements to infringe any patent. Dow Corning's sole warranty is that the product will meet the Dow Corning sales specifications in effect at the time of shipment. Your exclusive remedy for breach of such warranty is limited to refund of purchase price or replacement of any product shown to be other than as warranted. DOW CORNING SPECIFICALLY DISCLAIMS ANY OTHER EXPRESS OR IMPLIED WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE OR MERCHANTABILITY. DOW CORNING DISCLAIMS LIABILITY FOR ANY INCIDENTAL OR CONSEQUENTIAL DAMAGES.

SAFE HANDLING INFORMATION

PRODUCT SAFETY INFORMATION REQUIRED FOR SAFE USE IS NOT INCLUDED IN THIS DOCUMENT. BEFORE HANDLING, READ PRODUCT AND MATERIAL SAFETY DATA SHEETS AND CONTAINER LABELS FOR SAFE USE, PHYSICAL AND HEALTH HAZARD INFORMATION. THE MATERIAL SAFETY DATA SHEET IS AVAILABLE ON THE DOW CORNING WEBSITE AT WWW.DOWCORNING.COM, OR FROM YOUR DOW CORNING REPRESENTATIVE, OR DISTRIBUTOR, OR BY CALLING YOUR GLOBAL DOW CORNING CONNECTION.

For More Information

To learn more about these and other products available from Dow Corning, please visit the Dow Corning Electronics website at www.dowcorning.com/ electronics.