

## LED Materials

# *Dow Corning*<sup>®</sup> OE-6630 - Preliminary Data

### FEATURES

- Low Viscosity
- High optical clarity

### POTENTIAL USES

- Seal and protect LEDs
- Discrete lenses for LEDs and optical parts

### APPLICATION METHODS

- Compatible with commercially available equipment
- Dispensed or molded

**2-part, 1:4 mix ratio, soft, clear LED resin for fabricated parts**

### **TYPICAL PROPERTIES**

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

<b>Property</b>	<b>Unit</b>	<b>Value</b>
Viscosity (Part A or Base)	cP	2975
	mPa-sec	2975
	Pa-sec	3
Viscosity (Part B or Catalyst)	cP	2775
	mPa-sec	2775
	Pa-sec	2.8
Viscosity (Mixed)	cP	2500
	mPa-sec	2500
	Pa-sec	2.5
Shelf Life at 25°C	months	12
Heat Cure Time @ 150°C	minutes	120
Working Time at 25°C (Pot Life - hours)	hr	8
Durometer Shore D	-	41
Refractive Index	-	1.53
Transparency at 450 nm, 1 mm thick	%	100
NVC (Non Volatile Content)	%	99.8
Impurity (Na+)	ppm	0.1
Impurity (K+)	ppm	0.2
Impurity (Cl-)	ppm	0.5

## **STORAGE AND SHELF LIFE**

Shelf life is indicated by the “Use Before” date found on the product label. Dow Corning two-part products should be stored at or below 25°C (77°F). Containers should be kept tightly closed at all times to extend shelf life. Check the product label for specific storage conditions.

## **DESCRIPTION**

Dow Corning® brand silicone LED (light emitting diode) encapsulants are designed to meet the challenging needs of the LED market, including high adhesion, 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 plasticizers, 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.

## **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](http://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**

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