Technical Data Sheet

DOWSIL™ ME-4131 Encapsulant Clear

Die coating for wire bond packaging.

Features & Benefits

- Low levels of ionic impurities
- One-part formulation
- Clear optical performance
- Addition cure chemistry
- Low modulus of elasticity
- Microelectronics grade material
- Ready to use formulation - no mixing required
- Suited for optical packaging applications
- No byproducts during cure
- Absorbs stress from CTE mismatch for improved reliability performance

Composition

- One-part
- Silicone elastomer coating

Application Methods

- Manual or automated dispense

Typical Properties

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

Property	Unit	Result
One or Two Part		One
Color		Clear
Viscosity	cP	6575
	mPa-sec	6575
	Pa-sec	6.6
Shelf Life @ -25 to -10°C	months	9
Specific Gravity		1.04
Heat Cure Time @ 150°C	minutes	120
Durometer Shore A		31
Refractive Index		1.41
Dielectric Constant at 100 kHz		2.8

Form No. 11-4076-01

Typical Properties (Cont.)

Property	Unit	Result
Dielectric Strength	volts/mil	475
	kV/mm	19
Volume Resistivity	ohm*cm	1.4e15
Linear CTE (by TMA)	ppm/°C	350
Impurity (Na+)	ppm	0.2
Impurity (K+)	ppm	0.4
Impurity (Cl-)	ppm	2.1

Description

Dow silicone encapsulants such as DOWSIL™ ME-4131 Encapsulant Clear are designed to meet the key criteria for the micro- and optoelectronic packaging industry, including excellent adhesion, high purity, moisture resistance and thermal and electrical stability. With their low Young's modulus, these materials can absorb the stress caused by CTE mismatches inside the package, protecting the chip and the bonding wires.

How to Use

Dow encapsulants are compatible with commercially available equipment and industry standard processes. The encapsulants can be dispensed, printed or liquid injection molded. Full cure to achieve final properties can be achieved in standard forced-air convection ovens or many other oven configurations.

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.

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

Shelf life is indicated by the "Use By" date found on the product label. Check the product label for specific storage conditions (one-part products require cold storage). One-part products produced in Japan for export are shipped using dry ice. One-part products produced in the United States are shipped using blue ice.

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.

How Can We Help You Today?

Tell us about your performance, design, and manufacturing challenges. Let us put our silicon-based materials expertise, application knowledge, and processing experience to work for you.

For more information about our materials and capabilities, visit **dow.com**.

To discuss how we could work together to meet your specific needs, go to **dow.com** for a contact close to your location. Dow has customer service teams, science and technology centers, application support teams, sales offices, and manufacturing sites around the globe.

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