Technical Data Sheet

DOWSIL™ ME-4039 Encapsulant Clear Kit

Die coating for wire bond packaging.

Features & Benefits

- Low levels of ionic impurities
- Two-part formulation
- Clear optical performance
- Addition cure chemistry
- Low modulus of elasticity
- Microelectronics grade material
- Range of hardness possible by adjusting mixing ratio
- Suited for optical packaging applications
- No byproducts during cure
- Absorbs stress from CTE mismatch for improved reliability performance

Applications

- LED
- Optocoupler
- MEMS
- Conventional meter mix equipment

Typical Properties

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

Property	Unit	Result
Viscosity (Part A)	cP	2125
	mPa-sec	2125
	Pa-sec	2.1
Viscosity (Part B)	cP	5400
	mPa-sec	5400
	Pa-sec	5.4
Specific Gravity (Uncured)		1.03
Refractive Index		1.41
Transparency at 450 nm, 1 mm Thick	%	91.5
Heat Cure Time @ 125°C	minutes	26
Durometer Shore A		44

Typical Properties (Cont.)

Property	Unit	Result
Penetration	1/10 mm	40
Impurity (Na+)	ppm	0.6
Impurity (K+)	ppm	0.4
Shelf Life at 25°C	months	24

Description

Die coating/gel Dow silicone encapsulants such as DOWSIL™ ME-4039 Encapsulant Clear Kit 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

Two part, available in a variety of kits from 1:1 to 10:1 mix ratios 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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