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Technical Data Sheet

DOWSIL™ ME-6820 Microelectronic Encapsulant

Die encapsulant for wire bond packaging

Features & Benefits

- Low levels of ionic impurities
- Addition cure chemistry
- Low modulus of elasticity
- No byproducts during cure
- Absorbs stress from CTE mismatch for improved reliability performance

Composition

- One-part
- Silicone elastomer encapsulant

Applications

- DOWSIL™ ME-6820 Microelectronic Encapsulant can be used for protection of sensitive components

Typical Properties

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

Property	Unit	Result
Color		Black
One or Two Part		One
Viscosity	cP	6000
	mPa-sec	6000
	Pa-sec	6
Heat Cure Time @ 150°C	minutes	60
Specific Gravity		1.3
Durometer Shore A		52
Tensile Strength	psi	565
	MPa	3.9
	kg/cm^2	39
Elongation	%	40
Unprimed Adhesion - Die Shear (Al)	psi	730
	MPa	5.1
	N/cm^2	510

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Typical Properties (Cont.)

Property	Unit	Result
Impurity (Na+)	ppm	0.2
Impurity (K+)	ppm	0.6
Impurity (Cl-)	ppm	1.4
Dielectric Strength	volts/mil kV/mm	475 18
Volume Resistivity	ohm*cm	3.2E+15
Linear CTE (by TMA)	ppm/°C	225

Description

Dow silicone encapsulants 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.

Application Method

- Manual or automated dispensing

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.

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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.

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.

Customer Notice

Dow strongly encourages its customers to review both their manufacturing processes and their applications of Dow products from the standpoint of human health and environmental quality to ensure that Dow products are not used in ways for which they are not intended or tested. Dow personnel are available to answer your questions and to provide reasonable technical support. Dow product literature, including safety data sheets, should be consulted prior to use of Dow products. Current safety data sheets are available from Dow.

How Can We Help You Today?

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

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To discuss how we could work together to address 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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