



Technical Data Sheet

DOWSIL™ ME-4132 Encapsulant Black

Die coating for wire bond packaging

Features & Benefits

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

Composition

- One-part
- Silicone elastomer coating

Applications

DOWSIL™ ME-4132 Encapsulant Black is suitable for:

- Micro-electronics devices that require encapsulation with good adhesion, like sensors and other wire bonded integrated circuits.

Typical Properties

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

Property	Unit	Result
One or Two Part		One
Color		Black
Viscosity	cP	4869
	mPa-sec	4869
	Pa-sec	5
Specific Gravity		1.0335
Durometer Shore A		33
Tensile Strength	psi	140
	MPa	1.0
Elongation	%	138
Modulus	psi	102
	MPa	0.7
Dielectric Constant at 100 kHz		2.8
Dielectric Strength	volts/mil	525
	kV/mm	20

Typical Properties (Cont.)

Property	Unit	Result
Volume Resistivity	Ohm.*cm	1.5e15
Linear CTE (by TMA)	ppm/°C	325
Impurity - (Na+)	ppm	0.54
Impurity - (K+)	ppm	0.58
Impurity - (Cl-)	ppm	2.8

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 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 automatic or manual dispensed. Full cure to achieve final properties can be achieved in standard forced-air convection ovens or many other oven configurations. A two-step cure process is recommended especially in cases where the coating thickness is rather thick. Cure recipe needs to be optimized for each application.

Cure recipe:
Step 1: 70°C – 1 hour
Step 2: 150°C – 2 hours

How to Apply

- Automatic or manual dispense

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. DOWSIL™ ME-4132 Encapsulant Black needs to be stored between -10 and -25°C. One-part products produced in the United States are shipped using blue ice.

Packaging Information

DOWSIL™ ME-4132 Encapsulant Black is supplied in a 16 oz or 453 g bottle.

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.

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