



Technical Data Sheet

DOWSIL™ EA-6124 M Encapsulant

FEATURES & BENEFITS

- One part
- Semi-flowable
- Heat cure
- ATF oil resistance

COMPOSITION

- Polydimethylsiloxane

One-part, translucent, addition-cure, semi-flowable encapsulant with ATF oil resistance

APPLICATIONS

- DOWSIL™ EA-6124 M Encapsulant is suitable for use in automotive and PCB system assembly including terminal sealing and encapsulation for electric motor and protection against mechanical and severe environments.

TYPICAL PROPERTIES

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

Test	Property	Unit	Result
	One or Two-part		One
	Heat cure time at 150°C	min	60
CTM 0176	Appearance		Translucent
CTM 0050	Viscosity	cP	13000
CTM 0137A	Tensile strength	psi	280
CTM 0137A	Elongation	%	150
CTM 0099	Hardness, Shore A		40
CTM 0243	Unprimed adhesion – Lap shear to Al	psi	180
CTM 1421	Oil resistance test – Tensile strength*	psi	260
CTM 1421	Oil resistance test – Elongation*	%	140
CTM 1422	Oil resistance test – Hardness, Shore A*		33
CTM 0114	Dielectric Strength	kV/mm	24
CTM 0249	Volume Resistivity	Ohm*cm	6.09E+15

* Tested after fully cured and immersed in ATF Oil at 150°C for 100hrs

DESCRIPTION

Dow one-part heat cure (addition-curing) encapsulant cure rate is rapidly accelerated with heat (see cure schedules in table) and an optimum cure schedule will balance processing performance and costs. For thicker sections or if voiding is observed the use of a 30-minute pre-cure at 70°C (158°F) or the use of an adhesive with low-void technology

may reduce voids. Addition-cure silicones are formulated with all necessary ingredients for cure and there are no by-products generated during the cure process. Deep-section or confined cures are possible as cure reactions progress evenly throughout the material. These encapsulants generally have long working times so users can enjoy the greatest manufacturing flexibility and reduce

waste. Dow silicone encapsulants retain their original physical and electrical properties over a broad range of operating conditions which enhance the reliability of and service life of PCB system assemblies.

APPLICATION METHODS

- Automated or manual needle dispense

MIXING AND DE-AIRING

Upon standing, some filler may settle to the bottom of the liquid containers after several weeks. To ensure a uniform product mix, the material in the container should be thoroughly mixed prior to use. Automated airless dispense equipment can be used to reduce or avoid the need to de-air. If de-airing is required to reduce voids in the cured elastomer, consider a vacuum de-air schedule of > 28 inches Hg for 10 minutes or until bubbling subsides.

ADHESION

Dow silicone encapsulants are specially formulated to provide unprimed adhesion to many reactive metals, ceramics and glass, as well as to selected laminates, resins and plastics. However, good adhesion cannot be expected on non-reactive metal substrates or non-reactive plastic surfaces such as Teflon®, polyethylene or polypropylene. Special surface treatments such as chemical etching or plasma treatment can sometimes provide a reactive surface and promote adhesion to these types of substrates. Dow Primers can be used to increase the chemical activity on difficult substrates. Poor adhesion may be experienced on plastic or rubber substrates that are highly plasticized, because the mobile plasticizers act as release agents. Small-scale laboratory evaluation of all substrates is recommended before production trials are made. The cured elastomer, consider a vacuum de-air schedule of > 28 inches Hg for 10 minutes or until bubbling subsides.

COMPATIBILITY

Certain materials, chemicals, curing agents and plasticizers can inhibit the cure of addition cure encapsulant. 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. The best techniques for their particular applications.

PREPARING SURFACES

All surfaces should be thoroughly cleaned and/or degreased with Dow OS Fluids, naphtha, mineral spirits, methyl ethyl ketone (MEK) or other suitable solvent. Solvents such as acetone or isopropyl alcohol (IPA) do not tend to remove oils well, and any oils remaining on the surface may interfere with adhesion. Light surface abrasion is recommended whenever possible, because it promotes good cleaning and increases the surface area for bonding. A final surface wipe with acetone or IPA is also useful. Some cleaning techniques may provide better results than others; users should determine

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DATA SHEET IS AVAILABLE ON THE DOW WEBSITE AT WWW.CONSUMER.DOW.COM, OR FROM YOUR DOW SALES APPLICATION ENGINEER, OR DISTRIBUTOR, OR BY CALLING DOW CUSTOMER SERVICE.

USABLE LIFE AND STORAGE

Refer to product label for storage temperature conditions. Containers should be kept tightly closed and kept in cold storage at all times to extend shelf life. The product should be stored in its original packaging with the cover tightly attached to avoid any contamination. Store in accordance with any special instructions listed on the product label. The product should be used by its Use Before date as indicated on the product label.

PACKAGING INFORMATION

Multiple packaging sizes are available for this product.

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, www.consumer.dow.com or consult your local Dow representative.

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