Technical Data Sheet

DOWSIL™ 3-6385 Thermally Conductive Encapsulant

Two-component RTV silicone encapsulant

Features & Benefits

- Two-part, 1:1 mixing ratio
- Room temperature cure or rapid heat cure
- Addition cure system: no cure by-products
- Stable and flexible from -50°C to +200°C
- Flexible rubber - protects against mechanical shock and thermal cycling stress at components
- High thermal conductivity
- Excellent dielectric properties

Applications

- DOWSIL™ 3-6385 Thermally Conductive Encapsulant is designed to protect against moisture, environmental attack, mechanical and thermal shock as well as vibration especially where heat transfer is important and high hardness or high specific gravity of the product is required.
- Typical applications include potting of high voltage transformers and sensors.

Typical Properties

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

CTM[1]	ASTM[2]	Property	Unit	Result
		As supplied		
0176		Color (Part A/Part B)		Red/Light grey
0050	D1084	Viscosity at 23°C (Part A/Part B)[3]	mPa.s	20,000/16,000
		Catalyzed, mixed 1:1 by weight		
		Color		Red
0050	D1084	Viscosity at 23°C, after 2 minutes[3]	mPa.s	18,000
		Working time at 23°C (snap)	minutes	60
		Cure time at 23°C	minutes	80

1. CTM: Corporate Test Method, copies of CTMs are available on request.
2. ASTM: American Society for Testing and Materials.
3. Brookfield RVT, spindle #6, 10 rpm.

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Typical Properties (continued)

CTM	ASTM	Property	Unit	Result
		Physical properties, cured 30 minutes at 70°C		
		Color		Red
0022	D0792	Specific gravity at 23°C		2.4
0099	D2240	Durometer hardness, Shore A		64
0137A	D412	Tensile strength	MPa	2.0
0137A	D412	Elongation at break	%	50
0159A	D624	Tear strength - die B	kN/m	6.0
		Thermal conductivity	W/(m.K)	1.0
0653		Volume coefficient of thermal expansion	1/K	$5.5x10^{-4}$
		Electrical properties, cured 30 minutes at 70°C		
0114	D149	Dielectric strength, 2 mm thickness	kV/mm	16
0249	D257	Volume resistivity	Ohm.cm	$6.0x10^{14}$
		Comparative tracking index (IEC112)		600

How To Use

Substrate preparation

All surfaces should be cleaned and degreased with a suitable solvent prior to potting. Care should be taken to ensure that all solvent is removed.

For best adhesion, coat surfaces with DOWSIL™ 92-023 Primer or DOWSIL™ 1200 OS Primer, following the instructions and precautions given for use of these products.

Mixing

DOWSIL™ 3-6385 Thermally Conductive Encapsulant is supplied in lot matched kits consisting of Part A and Part B in separate containers. During storage, some of the filler may settle at the bottom of the containers and should be individually homogenized prior to use.

The two components should be thoroughly mixed using a weight or volume ratio of 1:1 until the mixture has a uniform color.

Vacuum de-airing is recommended. A residual pressure of 10-20 mm mercury applied for 5 to 10 minutes will sufficiently de-air the material.

How to Apply

Apply the encapsulant, being careful to avoid air entrapment. Vacuum encapsulation is recommended for complex geometries. For information on appropriate dispensing equipment for your application, please visit dow.com.

Curing

DOWSIL™ 3-6385 Thermally Conductive Encapsulant should be cured at room temperature for two hours.

How To Use (continued)

Compatibility

In some cases, DOWSIL™ 3-6385 Thermally Conductive Encapsulant may fail to cure to optimum properties when in contact with certain plastics or rubbers.

Cleaning the substrate with solvent or baking slightly above the cure temperature can eliminate the problem.

Certain chemicals, curing agents and plasticizers can inhibit cure. These include:

- Organotin compounds
- Silicone rubber containing organotin catalysts
- Sulphur, polysulphides, polysulphones and other sulphur containing materials
- Amines, urethanes, amides and azides.

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

When stored at or below 35°C in the original unopened containers this product has a usable life of 12 months from the date of production.

Dow will guarantee the usable life of this product until the date indicated on the packaging. This date is shown by the letters "EXP" (meaning Expiry) followed by 4 digits, which stand for the month (last day) and year. Example: "EXP 03/99" means use by 31 March 1999.

Packaging Information

DOWSIL™ 3-6385 Thermally Conductive Encapsulant is available in standard industrial container sizes. For details visit dow.com.

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.

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