



## DOWSIL™ TC-6040 Thermal Conductive Encapsulant

### Description

4.0 W/m·K flowable silicone encapsulant, two parts material curing at room temperature and heat accelerate cure

### Uses / Applications

- Lighting assembly & protection
- EV controllers
- On-board charger
- Energy conversion
- Electronic module assembly
- Inverter/converter
- Control units
- Power supplies & modules

### Benefits

- Room temperature cure
- High flow (self leveling)
- Minimal filler settling
- Suitable for use to -45°C or lower
- Heat accelerated cure
- Controlled volatility
- Easy to remix
- Suitable for long term use at +150°C and shorter term to +200°C or higher

### Physical Properties

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

Reference	Property	Result	Unit	Comments
	One or Two Part	Two		
	Mix Ratio A:B, Base:Curing Agent or Base:Catalyst	1:1		
CTM0176	Color Part A or Base	White		CTM: Corporate Test Method, copies of CTM's are available on request.
CTM0176	Color Part B or Curing Agent	Pink		
CTM0176	Color as Dispensed	Pink		
CTM0097	Specific Gravity of Part A or Base	3.05		
CTM0097	Specific Gravity of Part B or Curing Agent	3.05		
CTM0097	Specific Gravity as Dispensed	3.05		
CTM0050	Viscosity of Part A or Base at 25°C	26000	cp	shear rate 1/S <sup>-1</sup>
CTM0050	Viscosity of Part B or Curing Agent at 25°C	22000	cp	shear rate 1/S <sup>-1</sup>
CTM0050	Viscosity as Dispensed at 25°C	25000	cp	shear rate 1/S <sup>-1</sup>
CTM0050	Viscosity as Dispensed at 25°C	25000	cp	shear speed 50 rpm
CTM0050	Working Life at 25°C	90	minutes	Time to viscosity double
CTM0099	Cure Time at 25°C	24	hours	Temperature: 25°C
CTM0099	Cure Time at 100°C	60	minutes	Temperature: 100°C
CTM0099	Durometer	32	A	Cure at 100°C for 60 mins
CTM0137	Tensile Strength	0.26	MPa	
CTM0137	Elongation	10	%	
CTM0243	Unprimed Lap Shear Adhesion Strength to AlClad	0.10	MPa	
CTM0114	Dielectric Strength (Non-dried)	15	kV/mm	Thickness 1.0 mm
CTM0249	Volume Resistivity (Non-dried)	≥ 1.0 E+13	ohm-cm	

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## Physical Properties (Cont.)

Reference	Property	Result	Unit	Comments
CTM0543	Dielectric Constant (Permittivity)	4.13		Frequency 100K HZ
CTM0543	Dissipation Factor	0.018		Frequency 100K HZ
CTM0585	Linear Coefficient of Thermal Expansion CTE	100	ppm	Temperature range -40 to 150°C
CTM0625B	Content of Low Molecular Siloxane (D4-D10)	131	ppm	Cured sample
CTM1163	Thermal Conductivity (Hot Disk)	4.0	W/m·K	
	Heat Capacity at 25°C	0.90	J°C/g	
	at 100°C	1.09		
	at 150°C	1.22		

## Certifications

- UL 94 V0

## Processing and Application Guidelines

1. How to use: Two-part materials should be mixed in the proper ratio either by weight or volume. Static Mixer is recommended for manual and automated mixing.

The presence of light-colored streaks or marbling indicates inadequate mixing. 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 > 8 inches Hg (or a residual pressure of 10–0 mm of Hg) for 10 minutes or until bubbling subsides.

Although the formulation design of DOWSIL™ TC-6040 Thermally Conductive Encapsulant is made to minimize the risk of filler settlement, upon standing, in rare occasion some filler may settle to the bottom of the liquid after several weeks. Should that be the case, in order to ensure a uniform product mix, the material in each container should be thoroughly mixed prior to use.

2. Processing/ curing: Addition-cure materials can be cured at room temperature or with heat. The cure rate is rapidly accelerated with heat (see cure times in Typical Properties table). Cure progresses evenly throughout the material. Addition-curing materials contain all the ingredients needed for cure with no by-products from the cure mechanism. Deep-section or confined cures are possible.

3. Pot life and cure rate: Cure reaction begins with the mixing process. Initially, cure is evidenced by a gradual increase in viscosity, followed by gelation and conversion to its final state. Working time is defined as the time required for viscosity to double after Parts A and B are mixed.

## 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.

## 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](http://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.

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