

HIPEC® Q1-9239

Semiconductor Protective Coating

FEATURES

- High purity
- Controlled thixotropy and yet flowable as dispensed
- Optimum coating to cover bonding wires
- Flexibility over a wide temperature range
- Excellent dielectric properties
- Excellent adhesion to ceramic, epoxy and polyimide substrates
- Protection from moisture, dirt and other contaminants
- One part elastomer with fast heat cure

One part, high purity silicone elastomer

APPLICATIONS

- For applications where a semiconductor die has been wire bonded to a flat surface.
- Particularly suited to applications where there is a need for a flexible coating. For example with wide extremes of temperature, with the use of a pliable epoxy substrate or where severe thermal shocks are encountered.
- Compatible with most semiconductor devices and provides environmental and physical protection of both the chip and interconnecting wires in a single application.

TYPICAL PROPERTIES

Specification writers: These values are not intended for use in preparing specifications. Please contact your local Dow Corning sales representative prior to writing specifications on this product.

CTM*	ASTM*	Property	Unit	Value
Physical properties, as supplied				
		Color		Black
0050	D1084	Viscosity at 2.5rpm ¹	mPa.s	150,000
0050	D1084	Viscosity at 20rpm ¹	mPa.s	45,000
0088		Sodium content, max.	ppm	5
0088		Potassium content, max.	ppm	5
Physical properties, cured 1 hour at 150°C				
0099	D2240	Durometer hardness, Shore A		28
0022	D792	Relative density at 25°C		1.15
0243		Adhesion to aluminium		Cohesive failure
		Linear coefficient of thermal expansion	ppm/K	320
Electrical properties, cured 1 hour at 150°C				
0249	D257	Volume resistivity	Ohm.cm	6x10 ¹⁴ Ω
0112	D150	Permittivity at 100kHz		3.00

1. Brookfield RTV spindle 7

* CTM: Corporate Test Method, copies of CTMs are available on request.

ASTM: American Society for Testing and Materials.

HOW TO USE

Mixing

During normal storage, there is very little settling of HIPEC Q1-9239 Semiconductor Protective Coating and no mixing is required. After extended periods of storage, mixing is necessary to homogenise the product. Vacuum de-airing is recommended. A

vacuum of 10-20mm mercury applied for 10 minutes will sufficiently de-air the material.

Dispensing

HIPEC Q1-9239 Semiconductor Protective Coating can be dispensed onto the semiconductor using either a manual or semi-automatic syringe dispensing system. Various droplet

sizes can be obtained by adjusting the pressure on the plunger of the syringe and by varying the diameter of the dispensing needle.

Cure

HIPEC Q1-9239 Semiconductor Protective Coating should be cured using one of the recommended schedules below. Temperatures below 125°C are not recommended.

15 minutes at 200°C, or
1 hour at 150°C, or
4 hours at 125°C.

Maximum adhesion and optimal device reliability are obtained using the highest possible curing temperature up to a maximum of 200°C.

The droplet formed after curing has a minimum thickness necessary to encapsulate the bonding wires and this minimises the expansion of the coating under a rigid top coating which may be subsequently applied over the complete circuit. If no additional coating is applied. HIPEC Q1-9239 Semiconductor Protective Coating is opaque to prevent light reaching the device.

HANDLING PRECAUTIONS

PRODUCT SAFETY INFORMATION REQUIRED FOR SAFE USE IS NOT INCLUDED. 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 FROM YOUR LOCAL DOW CORNING SALES REPRESENTATIVE.

USABLE LIFE AND STORAGE

When stored at or below 10°C in the original unopened containers, this product has a usable life of 12 months from the date of production.

Refrigerated storage at temperatures as low as -18°C will extend the shelf life. Products stored under refrigeration should be tightly sealed

and be allowed to warm to room temperature (approximately 8 hours) before use in closed containers to prevent the condensation of water which adversely affects the properties of the material. Long term storage at ambient temperature is not recommended.

PACKAGING

This product is available in 1kg containers.

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 Corning has an extensive Product Stewardship organization and a team of Health, Environment and Regulatory Affairs specialists available in each area.

For further information, please consult your local Dow Corning representative.

WARRANTY INFORMATION - PLEASE READ CAREFULLY

The information contained herein is offered in good faith and is believed to be accurate. However, because conditions and methods of use of our products are beyond our control, this information should not be used in substitution for customer's tests to ensure that Dow Corning's products are safe, effective, and fully satisfactory for the intended end use. Dow Corning's sole warranty is that the product will meet the Dow Corning sales specifications in effect at the time of shipment. Your exclusive remedy for breach of such warranty is limited to refund of purchase price or replacement of any product shown to be other than as warranted. Dow Corning specifically disclaims any other express or implied warranty of fitness for a particular purpose or merchantability. Unless Dow Corning provides you with a specific, duly signed endorsement of

fitness for use, Dow Corning disclaims liability for any incidental or consequential damages. Suggestions of use shall not be taken as inducements to infringe any patent.