

SYLGARD® 184 Silicone Elastomer

FEATURES

- Two-part, 10:1 mixing ratio
- Medium viscosity
- Room temperature cure or rapid heat cure
- Addition cure system: no cure by-products
- Stable and flexible from -50°C to +200°C
- Clear
- Flexible rubber - protects against mechanical shock and thermal cycling stress at components
- Excellent dielectric properties

Optically clear elastomer

APPLICATIONS

- Designed to protect against moisture, environmental attack, mechanical and thermal shock as well as vibration especially when optically clear product is required.
- Typical applications include: encapsulation of amplifiers, coils, connectors, circuit boards, equipment modules, ferrite cores, solar cells and transformers.

TYPICAL PROPERTIES

Specifications 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
As supplied				
0050	D1084	Viscosity at 23°C (Base) ¹	mPa.s	5500
		Mixing ratio by weight (Base:Curing Agent)		10:1
0050	D1084	Viscosity at 23°C, immediately after mixing with Curing Agent	mPa.s	4000
0055	D1824	Pot life at 23°C ²	hours	2
Physical properties, cured 4 hours at 65°C				
0176		Colour		Clear
0099	D2240	Durometer hardness, Shore A		50
0137A	D412	Tensile strength	MPa	7.1
0137A	D412	Elongation at break	%	140
0159A	D624	Tear strength - die B	kN/m	2.6
0022	D0792	Specific gravity at 23°C		1.05
		Volume coefficient of thermal expansion	1/K	9.6x10 ⁻⁴
		Coefficient of thermal conductivity	W/(m.K)	0.17
Electrical properties, cured 4 hours at 65°C				
0114	D149	Dielectric strength	kV/mm	21
0112	D150	Permittivity at 100Hz		2.75
0112	D150	Permittivity at 100kHz		2.75
0112	D150	Dissipation factor at 100Hz		0.001
0112	D150	Dissipation factor at 1kHz		0.001
0249	D257	Volume resistivity	Ohm.cm	5x10 ¹⁴
		Comparative tracking index (IEC112)		600

1. Brookfield LVF, spindle #4 at 60rpm

2. Time required for catalysed viscosity to double at 23°C.

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

ASTM: American Society for Testing and Materials.

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 DOW CORNING® 92-023 Primer or DOW CORNING® 1200 OS Primer, following the instructions and precautions given for use of these products.

Mixing

SYLGARD 184 Silicone Elastomer is supplied in lot matched kits consisting of base and curing agent in separate containers.

The two components should be thoroughly mixed using a weight or volume ratio of 10:1.

The pot life is 2 hours for catalysed SYLGARD 184 Silicone Elastomer at room temperature.

Vacuum de-airing is recommended. A residual pressure of 10-20mm mercury applied for 30 minutes will sufficiently de-air the material.

Lowering the viscosity

The viscosity of SYLGARD 184 Silicone Elastomer may be reduced by addition of up to 10% of DOW CORNING® 200 Fluid 20 cS. Added quantities of less than 5% have little or no effect on either the physical or electrical properties while larger quantities of DOW CORNING 200 Fluid 20 cS will diminish the physical strength and hardness. The addition of DOW CORNING 200 Fluid 20 cS does not alter the amount of curing agent required.

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 contact Dow Corning.

Curing

SYLGARD 184 Silicone Elastomer should be cured using one of the following recommended schedules:

24 hours at 23°C, or
4 hours at 65°C, or
1 hour at 100°C, or
15 minutes at 150°C

Large components and assemblies may require longer times in order to reach the curing temperature.

At 23°C the material will have cured sufficiently in 24 hours to be handled; however full mechanical and electrical properties will only be achieved after 7 days.

Compatibility

In some cases, SYLGARD 184 Silicone Elastomer 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 will normally eliminate the problem.

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

- Organo-tin compounds
- Silicone rubber containing organo-tin 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. 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 32°C in the original unopened containers, this product has a usable life of 24 months from the date of production.

PACKAGING

SYLGARD 184 Silicone Elastomer is available in standard industrial container sizes. For details please refer to your Dow Corning sales office.

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.

LIMITED WARRANTY - PLEASE READ CAREFULLY

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