

TCSG-3.0 Thermal Conductive Silicone Gel

Features & Benefits

- Low viscosity
- Low modulus
- Electrically Isolating
- Superior Thermal Performance
- Excellent adhesion

Applications

- OBC
- Inverter
- Converter
- Automotive Electronics
- Industrial Electronic

Introduction

TCLAD TCSG is a thermally conductive silicone gel material that is offered in a two-part material. The purpose of the material is electronic component potting. The material is low viscosity and cures at room temperature or with heat to form elastic, thermally conductive and flame-retardant rubber.

Typical properties of silicone gel materials have the following characteristics: Thermal conductivity, viscosity, hardness, pot life, volume resistivity etc. It is typically offered in cartridges, or containers and can be dispensed through a static mixing nozzle with a handheld dispensing gun or by automated dispensing equipment.

Mixing the two-parts into a single material, the liquid form cures into a solid form depending on the curing time and temperature.

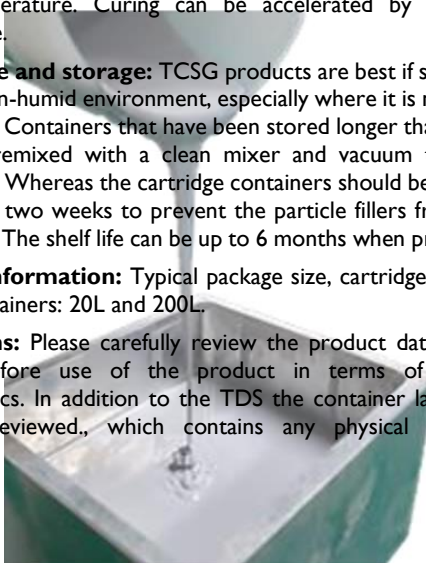
How to use: Depending on storage time the material is stored from the date on manufacture, premixing prior to use may be required. Mix part A and B 1:1 and apply mixture to the surface.

Processing: After the material is exposed to air it will begin to cure. At room temperature. Curing can be accelerated by increasing the temperature.

Useable life and storage: TCSG products are best if stored in a cool and dry / non-humid environment, especially where it is not exposed to any sunlight. Containers that have been stored longer than two months should be remixed with a clean mixer and vacuum to prevent air entrapment. Whereas the cartridge containers should be flipped upside down every two weeks to prevent the particle fillers from settling to the bottom. The shelf life can be up to 6 months when properly stored.

Package Information: Typical package size, cartridges: 25cc, 200cc, 590cc, Containers: 20L and 200L.

Precautions: Please carefully review the product data sheet of the material before use of the product in terms of the material characteristics. In addition to the TDS the container labels for safety must be reviewed, which contains any physical health hazard information.



Item	Condition	Unit	Value	Method
General				
Color	Visual	-	A: White B: Gray	1:1
Continuous Use Temp	-	°C	-50 ~ 150	-
Viscosity (A)	25°C (1rpm, no 40 spindle)	cps	14,000	ASTM D2196
Viscosity (B)	25°C (1rpm, no 40 spindle)	cps	13,000	ASTM D2196
Viscosity (Mix)	25°C (1rpm, no 40 spindle)	cps	13,500	ASTM D2196
Mechanical				
Density	25°C Gravimeter	g/cc	2.9	ASTM D792
Hardness	Shore	00	50	ASTM D2240
Elongation	-	%	50	ASTM D412
Tensile Strength	-	MPa	-	-
Adhesion AI	-	MPa	-	-
Electrical				
Flame Rating	Vertical Burning	-	V-0	-
Withstand Voltage	3KVAC	mA	<0.2	ASTM D149
Volume Resistivity	-	Ω·cm	>1x10 ¹²	-
Thermal				
Thermal Conductivity	-	W/m-K	3.0	ASTM D7984
CTE	TMA	ppm/°C	250	-
Durability				
Heating Stability (Thermal conductivity, Breakdown voltage)	150°C 500hr	%		
Cooling stability (Thermal conductivity, Breakdown voltage)	-40°C 500hr	%		
Temperature Humidity (Thermal conductivity, Breakdown voltage)	500hr (85°C / 85% HUM)	%		
Thermal Shock Test (Thermal conductivity, Breakdown voltage)	500 cycle (-40°C~125°C)	%		
Low molecular siloxane	D ₃ ~D ₆	ppm		
Cure Schedule				
Pot life @ 25°C	2x viscosity	Hours	48	
Cure @ 120°C	Oven	Minutes	60	

