

Circalok™ 6708

THERMALLY CONDUCTIVE RTV SILICONE RUBBER

DESCRIPTION:

Lord Circalok™ 6708 is a thermally conductive silicone rubber with good electrical properties. It is supplied as a two part liquid system which cures with minimal shrinkage to a flexible rubber with high temperature stability. Cure is affected at room temperature in 12 to 24 hours and the cure time can be reduced by applying heat up to 65°C (149°F). Use of external heat can result in a shrinkage factor of up to 1.5%. As a stress free encapsulant for electrical units, Lord Circalok™ 6708 provides long lasting environmental protection and maintains a high dielectric strength and good volume resistivity over a wide temperature range. As a mold material, its thermal conductivity helps to dissipate the exotherm of casting resins and to shorten oven cure times. The viscosity of Lord Circalok™ 6708 may be reduced by the addition of up to 5% Lord S-1285 diluent (Circalok™ 6722); and it can be thickened to a paste consistency by the addition of 1 to 3 % Filler T.

TYPICAL APPLICATIONS:

- Stress-free electrical encapsulant
- Repairable, heat conductive adhesive-sealant
- Flexible molds

TYPICAL PROPERTIES:

The values listed below are averages and they are not intended for specification purposes. Contact Lord when establishing specifications. The choice of cure schedule will vary with the application and users must establish their own optimum cure schedules.

The properties listed are typical when cured for 12 hours @ 25°C (77 °F) and 4 hours @ 65 °C (149°F).

Uncured Properties:

Specific Gravity @ 25°C	1.67
Viscosity @ 25°C, cps (Uncatalyzed)	30,000
Standard Color	White (available in Black)
Shelf Life, months (from date of shipment in closed containers)	6

Physical Properties:

Tensile Strength @ 25°C, psi	350
Tensile Elongation, % @ yield	150
Water Absorption, 10 days @ 25°C, %	0.1
Linear Shrinkage, in/in	0.003
Service Temperature, °C	
Continuous	-55 to 205
Intermittent	-100 to 300
Hardness, Shore A	60

Thermal Properties:

Thermal Conductivity	
Cal/sec/cm ² /°C/cm x 10 ⁻⁴	20
BTU/ft ² /hr/°F/in	5.8
Thermal Resistance, °C in/watt	47
Coefficient of Thermal Expansion	
In/in/°C x 10 ⁻⁵	12

Electrical Properties:

Volume Resistivity @ 25°C, ohm-cm	10 ¹⁴
Dielectric Constant @ 25°C, 100KC	4.9
Dissipation Factor @ 25°C, 100KC	0.014
Dielectric Strength, volts/mi	600

HANDLING INSTRUCTIONS

Bonding: To bond Lord Circalok™ 6708 to materials other than itself the surface should be cleaned with solvent and coated with Lord Primer P-1291. Porous surfaces may require two coats. Allow a one hour drying time between coats or before applying the compound. Do not over cure the primer.

Molds:

To obtain the maximum number of reproductions from a mold it should be post cured for at least 4 hours at 125°C (257°F). After six mold cycles wash the mold with isopropyl alcohol and bake it at 150°C (302°F) for 4 hours. This procedure can triple mold life. The initial post cure toughens the system, while the wash down and bake out removes amines and other contaminants.

Mixing:

Mix Lord Circalok™ 6708 in its shipping container to insure a uniform consistency. Weigh out the desired amount in a clean container and add .5 grams (23 drops from a standard medicine dropper) of Lord SC-29(Circalok™ 6731) catalyst for each 100 grams of liquid rubber. Mix the catalyzed rubber for at least 60 seconds, preferably with power equipment. De-aerate as necessary with moderate vacuum. To clean up the uncured rubber use a solvent such as xylene or trichlorethylene.

Cure:

Usable pot life is approximately one half hour at room temperature, after which the mixture starts to thicken. A gel is obtained in 4 to 8 hours and a cure in 12 to 24 hours. At 65°C (149°F) a two hour cure is obtainable. For high temperature applications the RTV rubber must be conditioned. Increase the temperature by 50°C intervals every 60 minutes until the operating temperature is achieved. After the conditioning has been completed the material can be heated directly from ambient.

Handling Instructions:

Mix Lord Circalok™ 6708 thoroughly in its shipping container. Weigh out the required amount in a clean container and catalyze with Lord SC-29, SC-28, or SC-30.

Lord SC-28 is blue-green in color and assures thorough mixing by visual examination.

CATALYST	POT LIFE	TACK FREE TIME	CURE TIME
0.5%Lord SC-29(Circalok™ 6731)	1-2 hours	4-6 hours	12-16 hours
3.0%Lord SC-28(Circalok™ 6730)	2-3 hours	4-6 hours	12-16 hours
5.0%Lord SC-28(Circalok™ 6730)	0.5-1 hour	2-3 hours	8-12 hours
0.5% Lord SC-30(Circalok™ 6732)	<0.5 hour	2-3 hours	6-8 hours

Handling Precautions:

The labels on containers of Lord materials contain current information on the hazards associated with each particular product. Most resins and hardeners are skin and eye irritants, and some may actually be corrosive to the skin and eyes. Other problems, such as skin sensitization or serious health hazards may exist. Further information on each product is contained in the Material Safety Data Sheet, which will be sent upon request.

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IMPORTANT NOTICE TO PURCHASERS: Only those properties identified as "specifications" on Lord technical bulletins are tested by Lord's Quality Control Department prior to shipment. The results of these tests must conform to those "specifications". Other properties are "typical". Tests are not run on the "typical properties" of every batch produced. "Typical property" data is not intended for specification purposes and Lord assumes no responsibility and makes no warranty with respect to it. If any property, other than those designated as Lord "specifications", is important to the purchaser, information as to such property will be supplied only upon the basis of test procedures agreed upon between Lord and the purchaser prior to the acceptance of the purchaser order.

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