

CHO-THERM® 1641 & 1642 Thermally Conductive Silicone Compounds

CHO-THERM® 1641

CHO-THERM 1641 compound is a one-component thermally conductive electrically insulating (non-acetic acid generating) silicone based RTV adhesive/sealant/potting compound. It is available in 12 oz. (0.34 kg) (6 fl. oz./ 0.18 L) caulking cartridges with nozzle or 2.5 oz. (0.07 kg) evaluation tubes. The material offers high thermal conductivity, flexibility, excellent high and low temperature resistance, as well as electrical insulation.

Components of circuits encapsulated in cured CHO-THERM 1641 compound are accessible by cutting away the compound. After repair, the components can be re-encapsulated with no loss in performance. CHO-THERM 1641 compound will stick, but not permanently bond to most non-silicone surfaces. A permanent bond can be made, if desired, by using Chomerics'

CHO-BOND® 1086 primer. Components potted in CHO-THERM 1641 compound have excellent thermal and mechanical shock resistance, thermal diffusivity and moisture resistance.

CHO-THERM 1641 compound may also be used as a cure-in-place thermal grease. Very low thermal impedance is attainable. Excess material will cure and thereby be resistant to vapor degreasing. Cured CHO-THERM 1641 compound *will not separate or migrate* on the heat sink or circuit board. CHO-THERM 1641 compound will stick to non-silicone materials. If easy removal is needed, the package and heat sink should be brush painted with a mold release prior to application. (A good mold release is a 1% by weight solution of liquid dishwashing detergent in water.) Adhesion to non-silicone surfaces may be improved by using Chomerics CHO-BOND 1086 primer. CHO-THERM 1641

compound is tack-free in 3-4 hours and fully cured in 24-72 hours, depending on the bond line width and humidity. (Requires atmospheric water vapor to cure.)

CHO-THERM® 1642

CHO-THERM 1642 compound is a two-component thermally conductive adhesive/sealant/caulk/potting compound that also combines the features of silicone and ceramics. It is a two-component product that does not require atmospheric water vapor to cure.

CHO-THERM 1642 compound has an easy mix ratio of 100 parts A to 3 parts B by weight, a longer working life, and is recommended for very thick applications and low humidity conditions. A permanent bond can be made using Chomerics' CHO-BOND® 1087 primer.

continued

TYPICAL THERMAL AND ELECTRICAL PROPERTIES			
Property	1641	1642	Test Method
Thermal Conductivity, W/m-K	0.90	0.95	ASTM D5470
Volume Resistivity, ohm-cm	1.0 x 10 ¹³	1.0 x 10 ¹³	ASTM D257
Dielectric Strength, Vac/mil	500	500	ASTM D149
Dielectric Constant, @ 100 Hz	4.1	4.1	ASTM D150
Dielectric Constant, @ 100 kHz	3.9	3.9	ASTM D150

TYPICAL PHYSICAL PROPERTIES			
Property	1641	1642*	Test Method
Hardness (Shore A)	78	85	ASTM D2240
Specific Gravity	2.10	2.3	ASTM D792
Brittle Point	-75°C (-103°F)	-75°C (-103°F)	ASTM D2137
Shelf Life @ Room Temperature, months	6	12	
Pot Life, minutes	30	60	
Extrusion Rate, gm/minute (14 ga needle/60 psi [414 kPa])	1.3	0.7	
Cure Time @ 24°C (75°F), 50% RH, hours	48	**	
Continuous Use Temperature °C (°F)	-70 to 200 (-94 to 392)	-70 to 200 (-94 to 392)	
Thermal Coefficient of Expansion (TCE), RT to +150°C (ppm/°C)	112	180	E&C TP177***
Elongation (%)	30	30	ASTM D412

*Outgassing Data (NASA Ref. GSC 11261): TML 0.40%: CVCM 0.18%

** 1642 Cure Cycle: 1 week @ 25°C (77°F); 4 hours @ 65°C (150°F); 1 hour @ 100°C (212°F); 5 minutes @ 150°C (302°F)

*** GRACE Specialty Polymers

Note: Values represent typical performance expected. For specification values, please contact Chomerics' Applications Engineering Department.

ORDERING INFORMATION		
	Size*	Part Number
CHO-THERM 1641	2.5 oz. (0.07 kg) tube	65-00-1641-000
	12 oz. (0.34 kg) cartridge	65-01-1641-000
CHO-THERM 1642	1 pint (0.47 L) kit**	65-00-1642-000

*Other sizes available upon request.

** 1/2 lb (0.23 kg) material in 1 pint container suitable for proper mixing and handling.

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