

**INDUSTRY
SOLUTIONS.**

**Material
Solutions.**

CHT

**SMART CHEMISTRY
WITH CHARACTER.**

POTTING & ENCAPSULATING SERIES

**SILICONE TECHNOLOGY FOR ENVIRONMENTAL
PROTECTION AND THERMAL MANAGEMENT**

POTTING AND ENCAPSULATING APPLICATIONS

AEROSPACE



Aerospace applications require demanding physical properties for all sealants or encapsulants. Potting & encapsulating materials from CHT can perform at either extremely low or high temperatures.

Benefits of CHT's Silicone Technology

- ▶ Moisture protection
- ▶ Excellent shock and vibration resistance
- ▶ Room temperature and heat curing adhesion packages for multiple substrates
- ▶ Products with low temperature capabilities to -110C
- ▶ Low volatile materials are available, ASTM E-595
- ▶ Optically clear technology available
- ▶ Flame retardant, UL listed grades available (See our UL Rating File Number QMFZ2.E205830)

ELECTRONICS



Properties in CHT's potting and encapsulating line provide a protective barrier against moisture and environmental contaminants.

Benefits of CHT's Silicone Technology

- ▶ Low viscosity products allow for easy pouring and potting around complex parts
- ▶ Conductive technology for thermal management
- ▶ High durometer with low modulus technology is available to minimize CTE strain
- ▶ Excellent shock and vibration resistance
- ▶ Variety of both room temperature and heat curing materials
- ▶ Adhesion packages are available to obtain primerless adhesion to many substrates
- ▶ Withstand extreme temperatures from -55C to 204C (Customized temperature ranges are available from -110C to 300C)

FLAT PANEL DISPLAY



CHT offers a series of optically clear silicones to help bond glass and plastics to flat panel and LCD displays.

Benefits of CHT's Silicone Technology

- ▶ UV resistant
- ▶ Non-yellowing catalyst systems are available
- ▶ Pigmentable to provide contrast enhancement
- ▶ Various bonding strengths from removable/repairable to permanent
- ▶ Protects components from harsh environmental factors
- ▶ Gel interlayer for glare reduction

LED VIDEO DISPLAY



Potting and encapsulating products provide a protective barrier against moisture and environmental contaminants. CHT's materials provide contrast enhancement that yields high resolution for your application. Materials range from optically clear to highly filled grades for thermal conductivity.

Benefits of CHT's Silicone Technology

- ▶ Repairable
- ▶ Environmental protection
- ▶ UL listed grades are available (See our UL Rating File Number QMFZ2.E205830)
- ▶ Encapsulants with high refractive indices are available to yield higher light outputs
- ▶ Non-yellowing catalyst systems are available
- ▶ Self-bonding grades available
- ▶ Materials with low viscosity flow easily around complex parts and minimize air entrapment
- ▶ Lower risk for delamination from CTE mismatch
- ▶ Withstand extreme temperatures from -55C to 204C (Customized temperature ranges are available from -110C to 300C)
- ▶ Thermally conductive grades are available

POWER SUPPLIES



Various forms of silicone materials from CHT are designed to protect power supplies from thermal stress and help maintain their original properties in high voltage functions. These flexible compounds from CHT can be used to coat wires, provide insulation for transformers and protect electronic controls.

Benefits of CHT's Silicone Technology

- ▶ Moisture protection
- ▶ High thermal conductivity grades available
- ▶ Repairable
- ▶ UL listed grades are available (See our UL Rating File Number QMFZ2.E205830)
- ▶ Low modulus materials minimize CTE strain
- ▶ Low viscosity for fast dispensing
- ▶ Self-bonding capabilities

LED LIGHTING



Temperature resistant, optically clear silicones can be applied over surface mount LEDs and are designed to be mixed with either diffusants or whitening agents if required. CHT has a wide variety of potting compounds and sealants used in the LED industry that can bond substrates, protect electronics and provide thermal stability.

Benefits of CHT's Silicone Technology

- ▶ Environmental protection
- ▶ Higher refractive indices to facilitate a brighter and longer lasting light
- ▶ Non-yellowing catalyst systems are available
- ▶ Low viscosity to flow around complex parts and minimize air entrapment
- ▶ Excellent thermal stability
- ▶ Self-bonding grades available
- ▶ UL listed grades available (See our UL Rating File Number QMFZ2.E205830)

ROLLERS



Liquid silicones from CHT feature enhanced physical properties versus high consistency rubber and minimize manufacturing interruptions due to roller failure. CHT's materials encompass copiers to large industrial manufacturing.

Benefits of CHT's Silicone Technology

- ▶ Liquid silicone systems minimize defects in finished rollers
- ▶ Low viscosity for ease in processing
- ▶ Excellent machinability and grindability
- ▶ Thermally conductive grades available
- ▶ Low compression set
- ▶ Wide selection of durometer specifications from 20 to 80 (Shore A) are available
- ▶ Good chemical resistance
- ▶ High operating temperature materials available up to 260C

SOLAR / RENEWABLE ENERGY



CHT's silicone encapsulants and sealants offer environmental and long-term protection to meet the demands of solar panel applications.

Benefits of CHT's Silicone Technology

- ▶ Optically clear and non-yellowing systems are available
- ▶ UV resistant encapsulating grades can out-perform the durability of organics
- ▶ UL rated, flame retardant potting grades for junction box applications
- ▶ Corrosion resistant
- ▶ Primerless adhesion to a wide variety of plastics
- ▶ Thermally conductive grades for heat management

TRANSPORTATION



Silicone compounds provide long-lasting durability and protection for interior, exterior and underhood mechanisms designed for automotive applications. These silicone compounds from CHT can increase safety as well as improve performance.

Benefits of CHT's Silicone Technology

- ▶ Extreme low and high temperature stability
- ▶ Chemical and flame resistance
- ▶ Thermally conductive grades for heat management
- ▶ Environmental protection
- ▶ Electronic sensor packaging and protection
- ▶ Strong adhesion to a wide variety of substrates with use of a primer

Potting & Encapsulating Series

Potting compounds and encapsulation materials from CHT can endure extreme temperatures while protecting your components from vibrations, moisture, heat and atmospheric contaminants. Application of CHT's potting and encapsulating elastomer products is versatile and can either be machine or hand dispensed.

CHT's team is available to consult with you on your unique application. Our silicone experts accept opportunities to either modify properties in an existing product or will custom formulate a new product to meet your project's exact specifications.

CHT's team is focused on building relationships and carefully listening to your requests, questions and feedback. With this approach, CHT is devoted to providing you with relative and innovative silicone solutions that improve productivity and enhance performance.

CHT's product packaging options include:

- ▶ 275 Gallon Tote Kit
- ▶ 55 Gallon Drum Kit
- ▶ Five Gallon Pail Kit
- ▶ One Gallon or Half Gallon Pail Kit (varies by product)
- ▶ Quart or Pint Kit (varies by product)
- ▶ Customized packaging options available upon request

Product	Description / Benefits	Mix Ratio	Cure Type	Catalyzed Color	Mixed Viscosity	Durometer	Gel Time	Tensile PSI	Elongation	Thermal Conductivity	Dielectric Strength	Volume Resistivity
QSil 12	Low Viscosity, Room Temperature Cure	20:1	Condensation Cure	Clear to Hazy	1,300 cps	18, Shore A	60 - 180 min	20 psi	35%	0.18 W/m-K	400 V/mil	1.00 x 10 ¹³ ohm-cm
QSil 13	Low Viscosity, Room Temperature Cure	20:1	Condensation Cure	Clear	600 cps	16, Shore A	120 min	20 psi	35%	0.18 W/m-K	400 V/mil	1.00 x 10 ¹³ ohm-cm
QSil 40	Self-Leveling, Good Adhesion with use of Primer	200:1	Condensation Cure	White	11,000 cps	40, Shore A	45 min	200 psi	200%	0.29 W/m-K	460 V/mil	1.45 x 10 ¹⁵ ohm-cm
QSil 58	Excellent Thermal Stability, Low Viscosity	200:1	Condensation Cure	Red	9,000 cps	58, Shore A	49 min	500 psi	120%	0.31 W/m-K	450 V/mil	2.00 x 10 ¹⁴ ohm-cm
QSil 60	Excellent Thermal Stability	10:1	Condensation Cure	Red	55,000 cps	60, Shore A	45 min	600 psi	200%	0.31 W/m-K	450 V/mil	6.67 x 10 ¹⁴ ohm-cm
QSil 209	Long Working Time, Excellent Adhesion with Primer	1:1	Addition Cure	Transparent	6,700 cps	60, Shore A	8-10 hours	800 psi	80%	0.18 W/m-K	500 V/mil	1.50 x 10 ¹⁶ ohm-cm
QSil 210	Very Soft, High Elongation	10:1	Addition Cure	Translucent	38,000 cps	10, Shore A	60 min	330 psi	600%	0.18 W/m-K	500 V/mil	6.61 x 10 ¹⁴ ohm-cm
QSil 212	High Durometer, Excellent Adhesion with Primer	1:1	Addition Cure	Transparent	6,500 cps	60, Shore A	60 min	1,250 psi	120%	0.18 W/m-K	500 V/mil	1.50 x 10 ¹⁶ ohm-cm
QSil 213	Excellent Adhesion with use of Primer	10:1	Addition Cure	Clear	3,700 cps	40, Shore A	4 hours	750 psi	100%	0.18 W/m-K	500 V/mil	1.70 x 10 ¹⁵ ohm-cm
QSil 214	Fast Room Temperature Cure	1:1	Addition Cure	Transparent	4,900 cps	40, Shore A	28 min	650 psi	150%	0.18 W/m-K	500 V/mil	5.58 x 10 ¹⁵ ohm-cm
QSil 216	Optically Clear	10:1	Addition Cure	Transparent	3,700 cps	40, Shore A	4 hours	750 psi	100%	0.18 W/m-K	500 V/mil	1.70 x 10 ¹⁵ ohm-cm
QSil 217	Low Viscosity	1:1	Addition Cure	Clear	330 cps	35, Shore A	20 min	58 psi	41%	0.18 W/m-K	480 V/mil	1.00 x 10 ¹⁵ ohm-cm
QSil 218	High Durometer, Optically Clear	10:1	Addition Cure	Clear	3,500 cps	59, Shore A	~ 6 hours	968 psi	107%	0.18 W/m-K	500 V/mil	1.70 x 10 ¹⁵ ohm-cm
QSil 219	Meets Mil Spec (Mil-I-81550C, Type II) Standard	10:1	Addition Cure	Clear	3,700 cps	40, Shore A	5 - 8 hours	750 psi	100%	0.18 W/m-K	500 V/mil	1.70 x 10 ¹⁵ ohm-cm
QSil 220	UL 94 HB, Heat Cure	10:1	Addition Cure	Clear	4,100 cps	29, Shore A	> 24 hours	450 psi	200%	0.18 W/m-K	500 V/mil	2.57 x 10 ¹⁴ ohm-cm
QSil 222	Heat Cure	10:1	Addition Cure	Clear	2,200 cps	40, Shore A	> 24 hours	332 psi	128%	0.18 W/m-K	500 V/mil	1.70 x 10 ¹⁵ ohm-cm
QSil 223	UL 94 HB	1:1	Addition Cure	Clear	2,800 cps	51, Shore A	~ 2 hours	716 psi	89%	0.18 W/m-K	500 V/mil	1.70 x 10 ¹⁵ ohm-cm
QSil 229	Primerless Adhesion	1:1	Addition Cure	Clear to Cloudy	5,300 cps	65, Shore A	Heat Cure Only	400 psi	100%	0.18 W/m-K	500 V/mil	1.70 x 10 ¹⁵ ohm-cm
QSil 229LV	Primerless Adhesion, Low Viscosity	1:1	Addition Cure	Clear to Cloudy	2,900 cps	65, Shore A	Heat Cure Only	300 psi	100%	0.18 W/m-K	500 V/mil	1.70 x 10 ¹⁵ ohm-cm
QSil 550	UL 94 V-0, Thermally Conductive	1:1	Addition Cure	Gray	4,000 cps	55, Shore A	130 min	510 psi	150%	0.37 W/m-K	500 V/mil	1.47 x 10 ¹⁵ ohm-cm
QSil 550F	UL 94 V-0, Fast Curing	1:1	Addition Cure	Gray	4,000 cps	55, Shore A	2.5 - 4.5 min	500 psi	150%	0.37 W/m-K	500 V/mil	1.47 x 10 ¹⁵ ohm-cm
QSil 550LV	UL 94 V-0, Low Viscosity, Heat Cure	1:1	Addition Cure	Gray	1,400 cps	58, Shore A	> 24 hours	430 psi	85%	0.37 W/m-K	539 V/mil	1.46 x 10 ¹⁵ ohm-cm
QSil 550LV A&C	UL 94 V-0, Room Temperature Cure	1:1	Addition Cure	Gray	1,300 cps	62, Shore A	110 min	450 psi	90%	0.37 W/m-K	500 V/mil	1.47 x 10 ¹⁵ ohm-cm
QSil 550SB	Self-Bonding	1:1	Addition Cure	Gray	4,000 cps	55, Shore A	> 8 hours	500 psi	120%	0.37 W/m-K	500 V/mil	1.47 x 10 ¹⁵ ohm-cm
QSil 553	UL 94 V-0, Thermally Conductive	1:1	Addition Cure	Black	6,000 cps	45, Shore A	140 min	250 psi	240%	0.68 W/m-K	500 V/mil	4.02 x 10 ¹⁴ ohm-cm
QSil 553LV	UL 94 V-0, Thermally Conductive, Low Viscosity	1:1	Addition Cure	Black	4,000 cps	45, Shore A	140 min	250 psi	240%	0.65 W/m-K	500 V/mil	4.02 x 10 ¹⁴ ohm-cm
QSil 555	Semi-Thixotropic, Long Pot Life	10:1	Addition Cure	White	73,000 cps	50, Shore A	> 72 hours	450 psi	100%	0.38 W/m-K	500 V/mil	5.51 x 10 ¹⁵ ohm-cm
QSil 556	UL 94 V-0, Low Viscosity, Room Temperature Cure	1:1	Addition Cure	Black	1,750 cps	50, Shore A	72 min	250 psi	90%	0.37 W/m-K	500 V/mil	1.87 x 10 ¹⁵ ohm-cm
QSil 561	Thermally Conductive	1:1	Addition Cure	Gray	8,000 cps	60, Shore A	10 min	250 psi	125%	0.62 W/m-K	460 V/mil	7.17 x 10 ¹⁴ ohm-cm
QSil 562	UL-94 V-0, 150°C RTI	1:1	Addition Cure	Gray	5,000 cps	60, Shore A	4 hours	250 psi	100%	0.62 W/m-K	460 V/mil	1.00 x 10 ¹⁵ ohm-cm
QSil 563	UL 94 V-0, Excellent Thermal Conductivity	1:1	Addition Cure	Yellow	4,600 cps	46, Shore A	140 min	120 psi	55%	0.88 W/m-K	460 V/mil	1.01 x 10 ¹⁵ ohm-cm
QSil 567	Low Viscosity	1:1	Addition Cure	Gray	1,320 cps	58, Shore A	~ 6 hours	310 psi	85%	0.37 W/m-K	500 V/mil	1.47 x 10 ¹⁵ ohm-cm
QSil 568	Semi-Thixotropic	10:1	Addition Cure	Gray	73,000 cps	50, Shore A	60 min	450 psi	200%	0.38 W/m-K	575 V/mil	6.02 x 10 ¹⁵ ohm-cm
QSil 573	Excellent Thermal Conductivity	1:1	Addition Cure	Light Gray	5,500 cps	55, Shore A	155 min	160 psi	40%	0.90 W/m-K	460 V/mil	5.05 x 10 ¹³ ohm-cm
QSil 602	Optically Clear, Excellent Adhesion w/ Primer, Heat Cure	10:1	Addition Cure	Clear	64,000 cps	35, Shore A	~ 16 hours	417 psi	320%	0.18 W/m-K	520 V/mil	5.71 x 10 ¹⁵ ohm-cm
QSil 940	Very Wide Useful Temperature Range	200:1	Condensation Cure	White	12,000 cps	40, Shore A	45 min	189 psi	170%	0.20 W/m-K	500 V/mil	2.69 x 10 ¹⁵ ohm-cm
QSil 960	Very Wide Useful Temperature Range	200:1	Condensation Cure	Red	24,000 cps	60, Shore A	60 min	500 psi	130%	0.31 W/m-K	550 V/mil	2.00 x 10 ¹⁴ ohm-cm
QSil 1000	Self-Bonding, Useful Temperature Range to 300°C	N/A (1 Part)	Addition Cure	Red	37,000 cps	43, Shore A	N/A (1 Part)	425 psi	180%	0.38 W/m-K	500 V/mil	4.72 x 10 ¹⁴ ohm-cm
QSil 6101	UL 94 V-1	100:8	Condensation Cure	Black	6,000 cps	30, Shore A	4 min	108 psi	98%	0.24 W/m-K	460 V/mil	2.95 x 10 ¹⁵ ohm-cm
QSil 6201	UL 94 V-1	100:4	Condensation Cure	Black	6,000 cps	30, Shore A	3 min	108 psi	98%	0.24 W/m-K	460 V/mil	2.95 x 10 ¹⁵ ohm-cm
QSil Beyond X1	Primerless Adhesion, Stable Optics	10:1	Addition	Colorless	4,000 cps	45, Shore A	24 hours	750 psi	100%	0.18 W/m-K	500 V/mil	1.7 x 10 ¹⁵ ohm-cm

QUALITY | SERVICE | INNOVATION


WE TAKE PRIDE IN SERVING YOU

- ▶ Take advantage of consulting one on one with our sales and technology team.
- ▶ CHT demonstrates a distinctive flexibility, whether it's modifying existing product specifications or developing a new product specifically designed for your unique application.
- ▶ Our worldwide distributor network provides local inventory, which means reduced transit times and lower shipping costs for you.
- ▶ Rely on our prompt, product development time.
- ▶ Our team welcomes your feedback because we are always striving to make innovative improvements.

CHT is committed to providing you with superior service and the highest quality silicone products available. Our certification to the ISO 9001 standard ensures that we are always working towards continual improvement in every way.

We also have a stringent product testing protocol that uses ASTM standard test methods. Based on your specifications, products must meet certain criteria throughout production and prior to its release. A Certificate of Analysis will accompany every shipment you receive.



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To view CHT's complete product portfolio or to request product samples, please visit www.cht-silicones.com

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