INDUSTRY SOLUTIONS.

Material Solutions.

CHT

SMART CHEMISTRY WITH CHARACTER.

# POTTING & ENCAPSULATING SERIES

IMPROVED SILICONE TECHNOLOGY FOR ENVIRONMENTAL AND THERMAL PROTECTION

## ROLLERS

Liquid silicones from CHT feature enhanced physical properties verses 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 sales team and technologists are all available to consult with you on your unique application. Our expert technologists also accept opportunities to either modify a current product or custom-formulate a new one 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

# 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)

| 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 | 1.25 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 244 | Excellent Thermal Conductivity | 1:1 | Addition Cure | Brown | 140,000 cps | 45, Shore A | > 24 hours | 225 psi | 75% | 0.84 W/m-K | 460 V/mil | 2.56 x $10^{15}$ ohm-cm |
| QSil 266 | Thermally Conductive, Heat Cure | 1:1 | Addition Cure | Brown | 100,000 cps | 60, Shore A | > 24 hours | 200 psi | 75% | 0.84 W/m-K | 460 V/mil | 2.56 x $10^{15}$ ohm-cm |
| QSil 440 | Fast Curing, Primerless Adhesion | 100:8 | Condensation Cure | Beige/White | 160,000 cps | 45, Shore A | 6 - 10 min | 275 psi | 171% | 0.30 W/m-K | 500 V/mil | 4.30 x $10^{14}$ 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 550R | Thermally Conductive | 1:1 | Addition Cure | Red | 4,000 cps | 55, Shore A | > 30 min | 500 psi | 120% | 0.37 W/m-K | 500 V/mil | 3.26 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.com/us02.en

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