



## Potting & Encapsulation Materials

# Design Compromise Not An Option? Ask Us How.

At LORD, we have been developing custom potting and encapsulant solutions for more than 50 years. Whether utilizing epoxy, silicone or urethane polymer systems, we continue to deliver results for demanding applications in a wide variety of industries including automotive, medical, aerospace, telecommunications and industrial electronics based on our customers' design and specification needs.

Our products offer diverse encapsulant application options including use in ignition coils, engine control modules, transmission control modules, sensors, power supplies, transformers and other critical electrical/electronic equipment.

If you need help choosing one of our standard potting and encapsulant products or if they don't quite meet your needs, let us help you achieve an appropriate solution for your application ... Ask Us How.



## EPOXIES

Provide strength, versatility, durability, adhesion, chemical resistance and high temperature tolerance in adhesive and potting and encapsulant applications. These products can be formulated to fit a variety of applications and requirements thanks to the wide availability of raw materials. We offer a wide range of epoxy products from extremely flexible to highly rigid casting materials, either filled or unfilled, that are thermally and/or electrically conductive and flame retardant.

## SILICONES

Are one of the most environmentally friendly chemistries and offer inherent flexibility spanning over a wide temperature range (-75°C to +200°C). Silicone products are widely known to protect fragile electronic components and modules where flame and high temperature resistance and permanent flexibility are top priorities. We offer platinum cured soft silicone and condensation cured silicone rubbers, either unfilled clear or filled.

## URETHANES

Are considered to be a great alternative to silicones when high temperature resistance is not required. For electronic packaging, urethanes are known to work best in low temperature applications. They protect stress sensitive electronic devices and act as a barrier against water. We offer low viscosity urethane products ranging from soft gels to semi-rigid casting materials that are designed to fit various potting application needs.

To learn more, contact us at +1 877 ASK LORD (275 5673) or [LORD.com/electronicmaterials](http://LORD.com/electronicmaterials)

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Product	Circalok™ 6704	Circalok 6712/6730	Circalok 6715/6730	Circalok 6716/6733	Circalok 6717/6731	Circalok 6735
<b>Description</b>	General purpose, fast curing encapsulating material for mechanical shock resistant systems	Two-component, solvent-free silicone for potting and encapsulating densely packed components and making flexible molds	Two-component, solvent-free silicone for potting and encapsulating densely packed components and making flexible molds	Solvent-free silicone for potting and encapsulating low- and high-voltage electrical assemblies	Two-component, condensation curing, solvent-free silicone RTV for potting, encapsulating or coating applications	Transparent, low viscosity, two-component silicone that produces a clear, flexible elastomer that adheres to most substrates without a primer
<b>Appearance</b>	Beige	White	White	Black	Red	Clear
<b>Viscosity (cps @ 25°C)</b>	2,400	7,250	14,000	10,000	17,000	2,000
<b>Mix Ratio by Weight</b>	1:1	10:1	10:1	100:2.5	100:5	10:1
<b>Cure Schedule</b>	10 min @ 25°C	12 hr @ 25°C	24 hr @ 25°C	12-16 hr @ 25°C	12-16 hr @ 25°C	4 hr @ 65°C
<b>Hardness</b>	50 Shore OO	35 Shore A	35 Shore A	45 Shore A	60 Shore A	40 Shore A
<b>Tensile Strength (psi)</b>	N/A	340	250	140	700	750

Product	Circalok 6744	Circalok 6746	Circalok 6750	Circalok 6756	LORD® P-1291	LORD P-1292
<b>Description</b>	Low viscosity, flame retardant, room temperature curing UL 94 V-0 rated silicone	Room temperature curing silicone for casting in-the-ear and customer canal hearing aid molds	Low viscosity, microballoon filled, room temperature curing silicone	Primer for bonding RTV silicones to metal and glass	Electronic grade primer for bonding tin-catalyzed RTV silicone to most metals and glass	Electronic grade primer for bonding platinum-catalyzed RTV silicone to most metals and glass
<b>Appearance</b>	Gray	Beige	Gray	Red	Clear or Red	Blue
<b>Viscosity (cps @ 25°C)</b>	2,700	2,200	6,000	1	5	5
<b>Mix Ratio by Weight</b>	1:1	100:8	1:1	N/A	N/A	N/A
<b>Cure Schedule</b>	45 min @ 65°C	10 min @ 25°C	2 hr @ 65°C	1 hr @ 25°C	30-60 min @ 25°C	30-60 min @ 25°C
<b>Hardness</b>	55 Shore A	70 Shore OO	45 Shore A	N/A	N/A	N/A
<b>Tensile Strength (psi)</b>	400	124	300	N/A	N/A	N/A

Product	LORD SC-300M	LORD SC-316	LORD SC-318	LORD SC-319	LORD SC-323	LORD STO
<b>Description</b>	Electronic grade silicone gel encapsulant	Electronic grade silicone gel encapsulant	One-component, rapid cure silicone designed for use as an encapsulant or coating to protect electronic devices	Two-component, room temperature curing silicone encapsulant	One-component, heat cure silicone conformal coating	Silicone catalyst
<b>Appearance</b>	Clear	White	Clear, Green	Clear	Clear	Light Yellow
<b>Viscosity (cps @ 25°C)</b>	200	200	45,000	1,000	230	250
<b>Mix Ratio by Weight</b>	1:1	1:1	N/A	1:1	N/A	Variable
<b>Cure Schedule</b>	24 hr @ 25°C	1 hr @ 25°C	30-60 min @ 150°C	2 hr @ 25°C	20 min @ 125°C	4 hr @ 25°C
<b>Hardness</b>	Gel	Gel	40 Shore OO	70 Shore OO	40 Shore A	30-60 Shore A
<b>Tensile Strength (psi)</b>	N/A	N/A	200	N/A	50	200-600

Product	Circalok 6008	Circalok 6009	Circalok 6013	Circalok 6015	Circalok 6021	Circalok 6022	Circalok 6028A/6029B	Circalok 6031
<b>Description</b>	Filled, low viscosity, general purpose potting and encapsulating epoxy	Two-component, UL 94 V-0 rated epoxy	High density, fast curing, sound deadening, radiation-opaque high lead content filled epoxy	High density, fast curing, sound deadening, radiation-opaque lead filled epoxy	Two-component, room temperature curing epoxy with long working life, good peel strength and adhesion to metals, plastics, fiberglass and wood	Two-component, room temperature curing epoxy with good peel strength and adhesion to metals, plastics, fiberglass and wood	Filled, two component epoxy for potting high voltage transformers, especially for high temperature devices	Two-component epoxy with excellent electrical properties at high temperatures
<b>Appearance</b>	Black	Black	Orange	Orange	Gray	Yellow	Blue	Beige
<b>Viscosity (cps @ 25°C)</b>	8,000	2,600	17,500	17,000	200,000	50,000	15,000	13,000
<b>Mix Ratio by Weight</b>	Hardener Dependant	10:1	100:2.2	100:2.9	100:85	100:87	1:1	3:1
<b>Cure Schedule</b>	24 hr @ 25°C	2-4 hr @ 65°C	24 hr @ 25°C	24 hr @ 25°C	24 hr @ 25°C	24 hr @ 25°C	3-4 hr @ 100°C	1 hr @ 120°C plus 4 hr @ 160°C; or 2 hr @ 85°C plus 12 hr @ 120°C
<b>Hardness</b>	85 Shore D	90 Shore D	90 Shore D	90 Shore D	85 Shore D	67 Shore D	90 Shore D	60 Shore D
<b>Tensile Strength (psi)</b>	7,200	7,000	8,100	8,100	7,400	>3,000	7,200	2,000

Product	LORD 600	LORD DC-80	LORD DC-946	LORD E-105 Clear	LORD EL-636	LORD EP-20	LORD EP-809
<b>Description</b>	Clear, unfilled, moderate viscosity epoxy for use with various hardeners	Epoxy used in varying mix ratios to provide optimum properties	Two-component, heat curing epoxy with excellent thermal shock resistance	Clear, low viscosity, general purpose epoxy	Ultra-high temperature resistant encapsulating epoxy	Black, unfilled, moderate viscosity epoxy for use with various hardeners	Ignition coil impregnating encapsulating epoxy
<b>Appearance</b>	Clear	Gray	Black	Clear	Gray	Black	Gray
<b>Viscosity (cps @ 25°C)</b>	12,000	Thixotropic Paste	12,000	600	50,000	12,000	2,800
<b>Mix Ratio by Weight</b>	Hardener Dependant	1:1	1:1	Hardener Dependant	100:1	Hardener Dependant	100:32
<b>Cure Schedule</b>	Hardener Dependant	24 hr @ 25°C	2-3 hr @ 95°C	Hardener Dependant	16-24 hr @ 50-65°C plus 2 hr @ 95° C	Hardener Dependant	12-16 hr @ 80-90°C; or 2 hr @ 90-95°C plus 2 hr @ 115-125°C
<b>Hardness</b>	60-90 Shore D	82 Shore D	86 Shore D	80-90 Shore D	95 Shore D	60-90 Shore D	92 Shore D
<b>Tensile Strength (psi)</b>	2,300-10,900	5,000	5,700	4,000-8,000	6,200	2,300-10,900	11,500

Product	LORD ES-100	LORD ES-111	LORD ES-115	LORD ES-121	LORD Hardener No. 18	LORD Hardener No. 25	LORD Hardener No. 65	LORD Hardener No. 66
<b>Description</b>	Two-component epoxy for encapsulating intricate electronic components in automotive, marine and heavy industrial applications	Two-component epoxy for high voltage, automotive ignition coils	Two-component epoxy for high voltage, automotive ignition coils	Two-component epoxy for high voltage, automotive ignition coils	Room temperature hardener	High surface gloss, fast setting, moisture insensitive hardener	High surface gloss, long working life, moisture insensitive hardener	General purpose hardener well suited for a variety of applications
<b>Appearance</b>	Black	Gray	Tan	Black	Clear	Clear Amber	Clear	Clear
<b>Viscosity (cps @ 25°C)</b>	1,200	8,000	85,000	8,000	50	5,000	50	10,000
<b>Mix Ratio by Weight</b>	1:1	100:29	1:1	100:29	100:14 (with 600 Resin)	100:80 to 1:1	100:40	1:1
<b>Cure Schedule</b>	3-4 hr @ 80°C	2 hr @ 90°C plus 2 hr @ 110°C plus 2 hr @ 140°C	2.5 hr @ 85°C plus 1.5 hr @ 125°C	2 hr @ 90°C plus 2 hr @ 110°C plus 2 hr @ 140°C	24 hr @ 25°C	24 hr @ 25°C	24 hr @ 25°C	24 hr @ 25°C
<b>Hardness</b>	70 Shore OO	90 Shore D	90 Shore D	90 Shore D	88 Shore D (with 600 Resin)	80 Shore D	85 Shore D	82 Shore D
<b>Tensile Strength (psi)</b>	70	12,000	10,000	12,000	11,000	8,200	9,000	7,000

	Circalok 6035	Circalok 6037/6252	Circalok 6055	Circalok 6056	Circalok 6059	Circalok 6150	LORD 300	LORD 363	Product
Description	Low viscosity, flame retardant, room temperature curing epoxy	Two-component epoxy for the semiconductor industry	Two-component, room temperature curing epoxy with long working life	Two-component, room temperature curing epoxy	Elastomeric encapsulant with exceptional flexibility to -50°C and superior tensile strength at high temperatures	One-component, thixotropic epoxy for assembling electronic components and devices	Filled, thermal shock resistant epoxy for use with various hardeners	Two-component epoxy for bonding SMCs, wood, FRPs and other plastics	
Appearance	Black	Black or Green	Black	Black	Black	White	Black	Light Amber	
Viscosity (cps @ 25°C)	12,000	100,000	4,000	50,000	10,000	145,000	68,000	10,000	
Mix Ratio by Weight	1:1	100:7.1	1:1	100:29	55:100	N/A	Hardener Dependant	1:1	
Cure Schedule	24 hr @ 25°C	24 hr @ 25°C; or 2 hr @ 65°C	24 hr @ 25°C	24 hr @ 25°C	7 days @ 25°C	30 min @ 121°C; or 10 min @ 177°C	Hardener Dependant	4-6 hr @ >18°C	
Hardness	75 Shore D	92 Shore D	77 Shore D	65 Shore D	40 Shore A	90 Shore D	65-95 Shore D	85 Shore D	
Tensile Strength (psi)	5,000	9,400	3,000	6,000	500	>1,600	2,000-9,000	5,000	

	LORD EP-830	LORD EP-866	LORD EP-870	LORD ES-21	LORD ES-40	LORD ES-73	LORD ES-95	Product
Description	Coil impregnating, encapsulating epoxy for ignition coil applications	Epoxy used in varying mix ratios to provide optimum properties	One-component, fast curing epoxy	One-component, fast curing epoxy containing a fluorescent dye for detection under UV light	Clear, unfilled, moderate viscosity epoxy for use with various hardeners	Two-component, rapid curing epoxy used as an anchor bond adhesive for car batteries	One-component, fast curing epoxy that provides excellent thermal shock resistance	
Appearance	Tan	Gray	Black	Black	White	Green	Black	
Viscosity (cps @ 25°C)	4,000	Thixotropic Paste	Thixotropic Paste	35,000	12,000	10,000	75,000	
Mix Ratio by Weight	100:28	1:1	N/A	N/A	Hardener Dependant	100:82	N/A	
Cure Schedule	3 hr @ 100°C plus 2 hr @ 150°C	24 hr @ 25°C	60 min @ 120°C	60 min @ 125°C	Hardener Dependant	30 min @ 25°C	60 min @ 125°C	
Hardness	97 Shore D	82 Shore D	88 Shore D	88 Shore D	60-90 Shore D	75 Shore D	88 Shore D	
Tensile Strength (psi)	12,000	5,000	>2,000	7,100	2,300-10,900	3,000	5,900	

	LORD Hardener No. 67	LORD Hardener No. 70	LORD Hardener No. 71	LORD Hardener No. 72	LORD LS 213-9	LORD MP 110-10	LORD RT-8	LORD RT-10	Product
Description	Long working life, heat curing hardener with high Tg	High impact strength hardener	Semi-rigid, low exotherm hardener	Filled, room temperature curing hardener with low exotherm and semi-rigid encapsulation	One-component, impregnating epoxy	Unfilled epoxy with good thermal shock performance and excellent chemical resistance	Low exotherm, semi-rigid hardener	Hardener that produces epoxies with improved flexibility and impact strength	
Appearance	Clear	Clear	Clear	Black	Amber	Black	Amber	Amber	
Viscosity (cps @ 25°C)	18	30	120	7,000	2,800	75,000	900	8,000 @ 75°C	
Mix Ratio by Weight	100:24	100:30	1:1	1:1 (with 300 Resin)	N/A	1:1 by Volume	100:10.5	Variable	
Cure Schedule	2 hr @ 100°C	24 hr @ 25°C	24 hr @ 25°C	24 hr @ 25°C	2 hr @ 121°C	6 hr @ 25°C	24 hr @ 25°C	24 hr @ 25°C	
Hardness	92 Shore D	82 Shore D	60 Shore D	65 Shore D	85 Shore D	45 Shore A	80 Shore D	60-80 Shore D	
Tensile Strength (psi)	10,900	8,600	2,300	2,000	6,000	500	5,000	3,000-3,700	

# THERMALLY CONDUCTIVE

Product	Circalok 6006-HS/ 6011B	Circalok 6007/ Circalok 6010B	Circalok 6702	Circalok 6703	Circalok 6703LV	Circalok 6708/ Circalok 6731
<b>Description</b>	Thermally conductive, low shrinkage, two-component epoxy	Thermally conductive, adhesive and potting compound	High density, thermally conductive primerless silicone for encapsulating sensitive electronic modules	Two-component, thermally conductive, UL 94 V-0 rated silicone for encapsulating densely packed power units	Two-component, thermally conductive, low viscosity, UL 94 V-0 rated silicone for encapsulating densely packed power units	Thermally conductive silicone with good electrical properties
<b>Appearance</b>	Black	Black	Red	Light Gray	Light Gray	White
<b>Viscosity (cps @ 25°C)</b>	22,500	15,000	30,000	8,000	5,000	30,000
<b>Mix Ratio by Weight</b>	100:17.5	100:5.5	1:1	1:1	1:1	100:0.5
<b>Cure Schedule</b>	24 hr @ 25°C	12-16 hr @ 25°C	16-24 hr @ 85°C	4 hr @ 65°C	24 hr @ 25°C	12-16 hr @ 25°C
<b>Hardness</b>	85 Shore D	85 Shore D	65 Shore A	60 Shore A	40 Shore A	60 Shore A
<b>Tensile Strength (psi)</b>	9,800	8,400	600	200	30	350
<b>Thermal Conductivity (W/mk)</b>	1.1	1.1	1.4	0.8	0.8	0.8

Product	Circalok 6709	Circalok 6710/ Circalok 6731	Circalok 6711	Circalok 6725	Circalok 6726	LORD E-301AD
<b>Description</b>	Two-component, thermally conductive silicone with outstanding electrical properties	Two-component, low viscosity, thermally conductive RTV silicone for applications requiring low stress, rapid heat transfer, high temperature and repairability	Two-component, thermally conductive silicone with outstanding electrical properties	High density, thermally conductive, primerless silicone	High density, thermally conductive, primerless silicone	Thermally conductive casting epoxy
<b>Appearance</b>	White	Red	White	Red	Red	Black or White
<b>Viscosity (cps @ 25°C)</b>	30,000	20,000	30,000	15,000	56,000	10,000
<b>Mix Ratio by Weight</b>	Hardener Dependent	100:0.5	Hardener Dependent	1:1	1:1	Hardener Dependent
<b>Cure Schedule</b>	Hardener Dependant	12-16 hr @ 25°C	Hardener Dependant	4 hr @ 85°C	4 hr @ 85°C	Hardener Dependent
<b>Hardness</b>	45 Shore A	65 Shore A	60 Shore A	45 Shore A	70 Shore A	85-90 Shore D
<b>Tensile Strength (psi)</b>	310	800	800	550	600	9,890
<b>Thermal Conductivity (W/mk)</b>	1.0	1.0	1.0	1.16	1.46	1.2

Product	LORD E-343	LORD SC-104	LORD SC-303	LORD SC-305	LORD SC-309	LORD SC-320
<b>Description</b>	Two-component, thermally conductive, dielectric epoxy coating	Two-component, thermally conductive, UL 94 V-0 rated silicone	Two-component, thermally conductive silicone for encapsulating applications requiring high heat dissipation	Two-component, thermally conductive silicone for the protection of electrical/ electronic applications where heat dissipation is critical	Two component, thermally conductive silicone for the protection of electrical/ electronic applications where heat dissipation is critical	Two-component, thermally conductive silicone for the protection of electrical/ electronic applications where heat dissipation is critical
<b>Appearance</b>	Black	Gray	Gray	Light Gray	Gray	Light Pink
<b>Viscosity (cps @ 25°C)</b>	50	7,000	6,000	3,500	3,600	22,000
<b>Mix Ratio by Weight</b>	100:3.9	1:1	1:1	1:1	1:1	1:1
<b>Cure Schedule</b>	2 hr @ 125°C	24 hr @ 25°C	24 hr @ 25°C	24 hr @ 25°C	15 min @ 100°C	60 min @ 125°C
<b>Hardness</b>	90 Shore D	65 Shore A	45 Shore A	60 Shore A	45 Shore A	60 Shore A
<b>Tensile Strength (psi)</b>	8,300	480	80	49	100	313
<b>Thermal Conductivity (W/mk)</b>	1.1	0.8	1.0	>0.8	1.0	3.2

Product	Circalok 6403	Circalok 6404	Circalok 6412	Circalok 9154FR	LORD U-2521	LORD U-2523
<b>Description</b>	General purpose, encapsulating urethane for applications requiring a fast cure, mechanical shock resistant system	General purpose, encapsulating urethane for applications requiring a fast cure, mechanical shock resistant system	Easy handling, encapsulating and casting urethane available in fast and slow cure versions	Two-component, solvent-free, unfilled, casting urethane for potting electrical cables, general marine sealing and caulking	Two-component, easy casting urethane that is optically clear and light stable	Two-component, easy casting urethane that is optically clear and light stable
<b>Appearance</b>	Amber	Amber	Amber or Black	Amber	Clear	Clear
<b>Viscosity (cps @ 25°C)</b>	900	900	700	4,000	600	500
<b>Mix Ratio by Weight</b>	22:10	22:10	38:10	1:2	3:2	1:1
<b>Cure Schedule</b>	30-45 min @ 25°C	30-45 min @ 25°C	4 hr @ 25°C, 7 days full cure	16 hr @ 25°C	6 hr @ 50°C	6 hr @ 50°C
<b>Hardness</b>	80 Shore A	80 Shore A	60 Shore A	90 Shore A	45 Shore D	55 Shore D
<b>Tensile Strength (psi)</b>	1,935	1,935	1,500	2,223	2,900	2,900

Product	LORD U-2524	LORD UR-105	LORD UR-190	LORD UR-312	LORD UR-322	LORD UR-324
<b>Description</b>	Two-component, easy casting urethane that is optically clear and light stable	Two-component, room temperature curing urethane encapsulating compound	Two-component, room temperature curing urethane potting compound	Microelectronic grade, clear, low modulus urethane encapsulating gel	Two-component, room temperature curing urethane encapsulating compound	Microelectronic grade, clear, low modulus urethane encapsulating gel
<b>Appearance</b>	Clear	Black	Clear	Clear	Clear	Clear
<b>Viscosity (cps @ 25°C)</b>	600	1,500	750	1,500	750	750
<b>Mix Ratio by Weight</b>	1:1	100:9	100:108 1:1 by volume	100:55 2:1 by volume	100:107 1:1 by volume	100:108 1:1 by volume
<b>Cure Schedule</b>	6 hr @ 50°C	24 hr @ 25°C	4 days @ 25°C	7 days @ 25°C	30 min @ 25°C	7 days @ 25°C
<b>Hardness</b>	65 Shore D	25 Shore A	30 Shore A	50 Shore OO	12 Shore A	20 Shore A
<b>Tensile Strength (psi)</b>	3,400	120	100	50	100	100

Product	LORD UR-325	LORD UR-340	LORD UR-355	LORD UX-9153	LORD UX-9155	LORD UX-9156
<b>Description</b>	Two-component, room temperature curing, urethane encapsulating compound	Black, low viscosity, flexible urethane encapsulating compound	Low modulus, hydrophobic urethane encapsulating gel	Two-component, fast curing, high strength urethane for casting applications	Two-component, fast curing, high strength urethane for casting applications	Two-component, fast curing, high strength urethane for casting applications
<b>Appearance</b>	Black	Black	Clear	Amber	Amber	Amber
<b>Viscosity (cps @ 25°C)</b>	4,000	450	1,500	1,800	9,000	3,000
<b>Mix Ratio by Weight</b>	4:1	100:104 1:1 by Volume	100:53 2:1 by Volume	10:22	1:3	10:30
<b>Cure Schedule</b>	3-4 days @ 25°C	24 hr @ 25°C	4 hr @ 25°C	3 hr @ 25°C	8 hr @ 25°C	3 hr @ 25°C
<b>Hardness</b>	65 Shore A	30 Shore A	Tough Gel	70 Shore D	40 Shore D	65 Shore D
<b>Tensile Strength (psi)</b>	770	63	100	4,000	3,000	3,600

To learn more, contact us at +1 877 ASK LORD (275 5673) or [LORD.com/electronicmaterials](http://LORD.com/electronicmaterials)

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