

# OPTOELECTRONICS & ELECTRONICS



THE CHEMISTRY  
OF CARE

PRODUCT GUIDE



# POTTING & ENCAPSULATING GELS



## POTTING & ENCAPSULATING GELS

TYPICAL USES	RECOMMENDED NUSIL PRODUCTS	PRODUCT DESCRIPTION (MIX RATIO, CURE SYSTEM, TYPE)	HARDNESS (TYPE A DUROMETER) (*mm PENETRATION)	RHEOLOGY (VISCOSITY, cP) (FLOW, in/5 min) (EXTRUSION RATE, g/min)	PRODUCT ATTRIBUTES
<b>HIGH DIELECTRIC STRENGTH GELS:</b> – SENSORS – INVERTERS – UNDERFILL – GENERAL SOFT GELS FOR LOW MODULUS	GEL1-8155	1:1, PLATINUM, SOFT LOW TACK GEL	0.4 mm	14,500 cP	Viscosity increases – 1.5X in 24 hrs. (¼" diameter foot, 1.5 seconds).
	GEL-8150	1:1, PLATINUM, SOFT HIGH TACK GEL	5 mm	500 cP	Pot life 4 hrs. (* 5 seconds).
	GEL8-8150	1:1, PLATINUM, SOFT HIGH TACK GEL	5 mm	500 cP	Pot life 1.5 hrs. and cures at RT (* 5 seconds).
	GEL-8170	1:1, PLATINUM, SOFT HIGH TACK GEL	9 mm	900 cP	Max viscosity after 6 hrs. is 2,000 cP (* 5 seconds) .
	GEL-8250	1:1, PLATINUM, SOFT MED TACK GEL	5 mm	650 cP	For applications requiring a broader operating temperature range, 2hr pot life (* 5 seconds).
<b>LOW OUTGASSING &amp; LOW VOLATILITY GELS:</b> – MEMs – POTTING FOR LASERS & POWER ELECTRONICS – HERMETIC OR NEAR HERMETIC PACKAGES	EPM-2480	1:1, PLATINUM, SOFT HIGH TACK GEL	4 mm	2,500 cP	Pot life is > 30 hrs. (6.35 mm diameter, * 5 seconds).
	LS-3140	1:1, PLATINUM, SOFT MED TACK GEL	0.4 mm	A: 16,500 cP B: 8,500 cP	Low volatility, 24 hr. minimum potlife based on 2X initial viscosity (¼" diameter, * 5 seconds).
	EPM-2482	1:1, PLATINUM, SOFT HIGH TACK GEL	3 mm	1,800 cP	Used in high power electronics, lower permeability than PDMS, for applications requiring a broader operating temperature range (6.35 mm diameter, * 5 seconds). 30 hr. minimum potlife based on 2X initial viscosity.
<b>OPTICALLY CLEAR GELS:</b> – LCD BONDING – CHIP ENCAPSULATION – PHOSPHOR COATINGS – REFRACTIVE INDEX MATCHING	LS-3238	1:1, PLATINUM, GEL	3 mm	1,800 cP	1.38 RI, Resistant to hydrocarbon solvents. Index matches Magnesium Fluoride. Potlife based on 3,000 cPs maximum mixed viscosity after 6 hrs.
	LS-3441	1:1, PLATINUM, SOFT LOW TACK GEL	0.4 mm	14,500 cP	Tough gel and 24 hr. minimum potlife based on 2X initial viscosity (¼" diameter, * 5 seconds).
	LS-3443	1:1, PLATINUM, SOFT HIGH TACK GEL	5 mm	650 cP	1.43 RI, recommended as an optically robust alterte to index match to 1.46 substrates; will LTV (* 5 seconds). 2hr. minimum potlife based on 2X initial viscosity.
	LS-3246	1:1, PLATINUM, FIRM GEL	10 '00'	1,000 cP	Index Matches 1.46 RI such as fused silica. Will RTV within 24 hrs. 5 hr. minimum potlife based on 2X initial viscosity.
	LS-3249	1:1, PLATINUM, FIRM GEL	60 '000'	400 cP	Index Matches 1.49 RI materials such as acrylates (PMMA). Will RTV in 48 hrs.
	LS-3252	1:1, PLATINUM, FIRM GEL	10 '00'	425 cP	Index Matches 1.52 RI materials such as borosilicate glass (BK7). Will RTV in 24 hrs.
	LS-3351	1:1, PLATINUM, FIRM GEL	55 '000'	6,000 cP	Excellent phosphor chip coating and general high refractive index encapsulant.
	LSX-3354 Series	1:1, PLATINUM, FIRM GEL	15 '00'/55 '000'	5,000 cP	Available in a variety of working times where LS2-3354 and LS3-3354 contain adhesion promoters. Excellent for phosphor coatings.
<b>SOLVENT &amp; FUEL RESISTANT GELS:</b> – FUEL SENSORS – UNDERFILL	GEL-3500	1:1, PLATINUM, FIRM FLUORO GEL	50 '00'	A: 12,000 cP B: 10,500 cP	50% M fluoro. Recommended for short term exposure to fuels and solvent. 12 hrs. pot life.
	FS-3502-1	1:1, PLATINUM, FIRM FLUORO GEL	10 '00'	A: 12,000 cP B: 4,500 cP	100% M fluoro recommended for long term solvent / fuel exposure. 6,000 cP maximum mixed viscosity after 3 hrs.

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## POTTING & ENCAPSULATING ELASTOMERS



### POTTING & ENCAPSULATING ELASTOMERS

TYPICAL USES	RECOMMENDED NUSIL PRODUCTS	PRODUCT DESCRIPTION (MIX RATIO, CURE SYSTEM, TYPE)	HARDNESS (TYPE A DUROMETER) (*mm PENETRATION)	RHEOLOGY (VISCOSITY, cP) (FLOW, in/5 min) (EXTRUSION RATE, g/min)	TENSILE psi (mpA)	% ELONGATION	PRODUCT ATTRIBUTES
OPTICALLY CLEAR ELASTOMERS FOR HARSH ENVIRONMENTS: - SOLAR MODULE ASSEMBLY - LED ENCAPSULANT	LS2-6941	1:1, PLATINUM, ICE ELASTOMER	30	A: 1,200 cP B: 800 cP	120 (0.83)	100	1.41 Refractive Index. General use RTV clear adhesive.
	LS-6941	10:1, PLATINUM, ICE ELASTOMER	50	5,300 cP	1,300 (9)	95	1.41 Refractive Index. General use RTV clear adhesive.
	LS-6140	1:1, PLATINUM, ICE ELASTOMER	50	A: 3,700 cP B: 2,550 cP	850 (5.9)	90	1.41 Refractive Index. Low volatility, 3 hr. pot life and will RTV.
	LS1-6140	1:1, PLATINUM, ICE ELASTOMER	50	3,200 cP	900 (6.2)	90	1.41 Refractive Index. Low volatility and requires heat to cure. Long pot life for dispensing.
	LS2-6140	1:1, PLATINUM, ICE ELASTOMER	50	2,700 cP	1,130 psi (7.2)	150	1.41 Refractive Index. Low volatility with primerless adhesion. Requires heat to cure and long pot life for dispensing or casting. Tested per UL94 and passed VO.
ENCAPSULATING ELECTRONIC COMPONENTS: - CHIP COATINGS - GENERAL ENVIRONMENTAL PROTECTION	R-2614	10:1, PLATINUM, ICE ELASTOMER	50	A: 5,500 cP B: 100 cP	1,240	115	Pourable and self-leveling, general use RTV clear potting compound. Tested per UL-94 and passed VO.
	R-2615	10:1, PLATINUM, ICE ELASTOMER	50	5,300 cP	1,300 (9)	100	Self leveling, low temperature cure, versatile encapsulant.
	R21-2615	1:1, PLATINUM, ICE ELASTOMER	75	A: 30,000 cP B: 20,000 cP	1,200 (8.3)	65	Hard clear elastomer with 2 hr. pot life and LTV cure.
	R-2655	10:1, PLATINUM, ICE ELASTOMER	40	5,400 cP	900 (6.2)	120	For applications requiring a broader operating temperature range.
HIGH DIELECTRIC STRENGTH ELASTOMERS: - POWER ELECTRONICS - INVERTERS AND DRIVERS - RELAYS - GENERAL TOUGH ELASTOMERS	R-2188	1:1, PLATINUM, ICE ELASTOMER	20	A: 13,500 cP B: 9,000 cP	475 (3.3)	350	Excellent dielectric properties, flexible cure with 14 hr. pot life. Tested per UL 94 and passed V1.
	CF19-2186	1:1, PLATINUM, ICE ELASTOMER	25	A: 85,000 cP B: 65,000 cP	1,100 (7.6)	600	Dielectric properties are excellent for actuators and other applications where dielectric properties are critical.
	R-2175	1:1, PLATINUM, ICE ELASTOMER	50	A: 2,500 cP B: 1,500 cP	525 (3.5)	130	0.4 W/mK, pourable, heat resistant, tested per UL94 and passed VO. Will RTV. Fast cure version available (R1-2175).
	R-2165	100:0.5, ALKOXY, RTV ELASTOMER	60	A: 5,400 cP B: 3,400 cP	500 (3.4)	100	0.6 W/mK, versatile, moderate thermally conductive silicone. Will RTV. Fast cure version available (R1-2165).
	R-2550	100:0.5, ALKOXY, RTV ELASTOMER	35	9,000 cP	500 (3.5)	175	Resists breakdown at high temperatures. Translucent and 1 hr. pot life. Not recommended for deep section cures.
	R-2560	10:1, PLATINUM, FLUORO ELASTOMER	55	31,000 cP	700 (4.8)	125	Resists breakdown at high temperatures. Red and 1 hr. pot life. Not recommended for deep section cures.
SOLVENT & FUEL RESISTANT	CF1-3510	10:1, PLATINUM, FLUORO ELASTOMER	20	A: 70,000 cP	185 (1.2)	135	100% Fluorosilicone, flowable mixed viscosity, and 7 hr. pot life.
HARD RESIN FOR POTTING ELECTRONICS & FIBER OPTICS	CF2-4721	1 PART, PEROXIDE, HARD RESIN	75 TYPE D	130 cP	-	-	Contains vinyl-specific peroxide in 1.52 RI resin. Requires heat to cure and oxygen inhibited. Not recommended for general encapsulation. Uncatalyzed version available (CF-4721).

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# FOAMS, GASKETS, MOLDING ELASTOMERS & MARKING INKS

## FOAMS

TYPICAL USES	RECOMMENDED NUSIL PRODUCTS	PRODUCT DESCRIPTION (MIX RATIO, CURE SYSTEM, TYPE)	DENSITY (LB./FT <sup>3</sup> (G/CM <sup>3</sup> ))	RHEOLOGY (VISCOSITY, cP) (FLOW, in/5 min) (EXTRUSION RATE, g/min)	PRODUCT ATTRIBUTES
SYNTACTIC					
FUEL RESISTANT: - GAP FILLING - GASKETS	CF1-3710-2	1:1, PLATINUM, FLUORO FOAM	50 (0.80)	1 g/min (200 mL SXS KIT)	Cure in place fuel resistant foam for short term fuel exposure. Application life 10 minutes.
OPEN & CLOSED CELL					
LIGHT WEIGHT INSULATION - CASTED/MOLDED GASKETS - VIBRATION DAMPENING FOR SENSORS, PCB BOARDS, ETC.	CV-2391	10:1, PLATINUM, FOAM	14 (0.22)	3,000 cP	Cure in place versatile low outgassing foam. Application life 6 minutes.
	SFM5-2350	1:1, PLATINUM, FOAM	25 (0.40)	50,000 cP	Cure in place versatile tough foam. Application life 6 minutes.
	R-2360	1:1, PLATINUM, FOAM	12 (0.19)	40,000 cP	Flexible cure in place low density foam. Application life 2 minutes.

## MOLDING ELASTOMERS

TYPICAL USES	RECOMMENDED NUSIL PRODUCTS	PRODUCT DESCRIPTION (MIX RATIO, CURE SYSTEM, TYPE)	HARDNESS (TYPE A DUROMETER)	RHEOLOGY (VISCOSITY, cP) (FLOW, in/5 min) (EXTRUSION RATE, g/min)	TENSILE psi (MPa)	% ELONGATION	PRODUCT ATTRIBUTES
OPTICAL COMPONENTS	LS1-6941	1:1, PLATINUM, LCE ELASTOMER	50	A: 75,000 cP B: 50,000 cP	750 (5.2)	305	Versatile and tough 1.41 RI clear elastomer. Work time is >24 hrs. and requires heat to cure.
	LS-8941	1:1, PLATINUM, LCE ELASTOMER	80	21,500 cP	1,250 (8.6)	65	Hard and flexible 1.40 RI elastomer. Can be casted and liquid injection molded. Requires heat to cure. Recommend SP-120 or SP-201 for overmolding.
SOLVENT & FUEL RESISTANT	CF3-3521	1:1, PLATINUM, LCE FLUORO ELASTOMER	30	THRIXOTROPIC & EXTRUDABLE	700 (4.8)	360	Recommend for short term fuel or solvent exposure.
	FS-3511	1:1, PLATINUM, LSR FLUORO ELASTOMER	40	THRIXOTROPIC & EXTRUDABLE	1,150 (7.9)	335	100%M fluoro for long term fuel or solvent exposure. Can be liquid injection molded and requires heat to cure.
	FS-3781	1 PART, PEROXIDE, HCR FLUORO ELASTOMER	30	NON-FLOWING	850 (5.9)	300	Recommend for long term fuel and solvent exposure. Can be compression molded and requires heat to cure. High tear.

## REMOVABLE CURE IN-PLACE GASKETS

TYPICAL USES	RECOMMENDED NUSIL PRODUCTS	PRODUCT DESCRIPTION (MIX RATIO, CURE SYSTEM, TYPE)	HARDNESS (TYPE A DUROMETER)	RHEOLOGY (VISCOSITY, cP) (FLOW, in/5 min) (EXTRUSION RATE, g/min)	TENSILE psi (MPa)	% ELONGATION	PRODUCT ATTRIBUTES
-	EPM-2412	1:1	30	THRIXOTROPIC & EXTRUDABLE	850 (5.8)	450	Applications that require non-slumping material. Cures quickly to form gasket in device & can be easily removed to reduce rework time. Has consistent aspect ratio and black version available.

## SILICONE MARKING INKS

TYPICAL USES	RECOMMENDED NUSIL PRODUCTS	PRODUCT DESCRIPTION (MIX RATIO, CURE SYSTEM, TYPE)	HARDNESS (TYPE A DUROMETER) [*mm PENETRATION]	RHEOLOGY (VISCOSITY, cP) (FLOW, in/5 min) (EXTRUSION RATE, g/min)	PRODUCT ATTRIBUTES
SCREEN OR PAD PRINTING: - RECOMMENDED FOR PRINTING ONTO SILICONE - EXCELLENT FOR HARSH ENVIRONMENTS	R-1008 SERIES	1 PART, OXIME, RTV, INK DISPERSION, XYLENE	1,000 - 1,500 cP	70	Available in clear (R-1008-0), white (R-1008-1), black (R-1008-2), red (R-1008-3), orange (R-1008-4), yellow (R-1008-5), green (R-1008-6), blue (R-1008-7), and violet (R-1008-8).
SCREEN OR PAD PRINTING (HEAT RESISTANT): - RECOMMENDED FOR PRINTING ONTO SILICONE - EXCELLENT FOR HARSH ENVIRONMENTS	R-2100 SERIES	1:1, PLATINUM, INK DISPERSION, XYLENE	<2,000 cP	58-62	Available in white (R-2100-1), black (R-2100-2), red (R-2100-3), and green (R-2100-6). Dispersed in xylene.



# COATINGS & LUBRICANTS

## COATINGS

TYPICAL USES	RECOMMENDED NUSIL PRODUCTS	PRODUCT DESCRIPTION (MIX RATIO, CURE SYSTEM, TYPE)	HARDNESS	RHEOLOGY (VISCOSITY, cP) (FLOW, in/5 min) (EXTRUSION RATE, g/min)	TENSILE psi (mpa)	% ELONGATION	PRODUCT ATTRIBUTES
<b>DISPERSION</b>							
ICE RELEASE & GENERAL ALL PURPOSE COATING: - INCREASES DURABILITY - ENVIRONMENTAL PROTECTANT	R-1082	1 PART, ACETOXY, RTV DISPERSION, XYLENE	25	700 cP	1425 (9.8)	950	Great adhesion to a variety of substrates. Not recommended where corrosion is of concern.
	R-3930	1 PART, ACETOXY, RTV DISPERSION, TERT BUTYL ACETATE	30	735 cP	750 (5.2)	400	100%M Fluoro, fuel and hydrocarbon solvent resistant, high strength coating. Not recommended where corrosion is of concern.
ICE RELEASE & GENERAL ALL PURPOSE COATING: - COATING FOR ELECTRONICS - INCREASES DURABILITY - ENVIRONMENTAL PROTECTANT	R-2180	1:1, PLATINUM, DISPERSION, XYLENE	40	3,075 cP	1700 (11.7)	1050	High strength coating and primer is recommended to increase adhesion. Requires heat to cure.
	R-1009	1 PART, OXIME, RTV DISPERSION, NAPHTHA	45	6,150 cP	1150 (7.9)	650	High strength coating recommend for coating PCBs and other electronic assemblies.
<b>SOLVENTLESS</b>							
CONFORMAL COATING FOR ELECTRONICS	EPM-2420	1:1, PLATINUM, LCE ELASTOMER	30	2,600 cP	425 (2.9)	150	100% M fluoro for long term fuel or solvent exposure. Can be liquid injection molded and requires heat to cure.
	CF19-2615	1:1, PLATINUM, RTV ELASTOMER	30	1,300 cP	120 (0.9)	100	100% M fluoro for long term fuel or solvent exposure. Can be liquid injection molded and requires heat to cure.
LOW OUTGASSNG GENERAL ADHESIVE	CV4-2500	1:1, PLATINUM, RTV ADHESIVE	25	1,500 cP	-	-	100% M fluoro for long term fuel or solvent exposure. Can be liquid injection molded and requires heat to cure.
	CV-1152	1 PART, OXIME, RTV ELASTOMER	-	7,300 cP	-	-	100% M fluoro for long term fuel or solvent exposure. Can be liquid injection molded and requires heat to cure.
	CV1-1142	1 PART, OXIME, RTV ADHESIVE	30	13,000 cP	400 (2.8)	200	100% M fluoro for long term fuel or solvent exposure. Can be liquid injection molded and requires heat to cure.
<b>SPECIALTY</b>							
REDUCE TACKINESS ON SILICONE GASKETS, TUBES & SILICONE MATERIAL	R-2182	1:1, PLATINUM, HTV DISPERSION, XYLENE	-	-	-	-	100% M fluoro for long term fuel or solvent exposure. Can be liquid injection molded and requires heat to cure.
	R-1182	1 PART, ACETOXY, RTV DISPERSION, TERT BUTYL ACETATE	-	-	-	-	100% M fluoro for long term fuel or solvent exposure. Can be liquid injection molded and requires heat to cure.

## LUBRICANTS

TYPICAL USES	RECOMMENDED NUSIL PRODUCTS	PRODUCT DESCRIPTION (MIX RATIO, CURE SYSTEM, TYPE)	RHEOLOGY (VISCOSITY, cP) (FLOW, in/5 min) (EXTRUSION RATE, g/min)	PRODUCT ATTRIBUTES
<b>GREASES</b>				
REDUCE FRICTION ON GLASS FITTINGS, METALS & CERAMICS	G-9010	-	1,100,00 cP	A stiff methyl silicone/Teflon® grease. 0.2% Weight loss. For high vacuum and pressure systems.
	G-9020	-	MEDIUM GREASE	A medium consistency methyl silicone grease, 0.3% Weight Loss, for high vacuum and pressure systems.
	G-9030	-	980,000 cP	A stiff methyl grease used for lubricating . 0.3% Weight loss. For high vacuum and pressure systems.
<b>NON-FUNCTIONAL FLUIDS</b>				
REDUCE FRICTION ON PLASTICS, RUBBER, METALS & TEXTILES	S-7200	-	350 cP, 1,000 cP, 12,500 cP	100% Dimethylsiloxane non-reactive polymer. Custom viscosities available.
	S-7400	-	400 cP & 1,000 cP	Recommend for extreme temperature (-100°C to 250°C). Higher and custom viscosities available.
FLUORO FUNCTIONAL LUBRICANTS: - LUBRICATING PDMS SILICONE - RESISTS BREAK DOWN WHEN EXPOSED TO FUELS OR SOLVENTS	FS-3600	-	350 cP, 1,000 cP, 12,500 cP	100% Fluoro polymer.
	FS-3606	-	350 cP, 1,000 cP, 12,500 cP	60% Fluoro polymer.



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# ELECTRICALLY & THERMALLY CONDUCTIVE ADHESIVES, SEALANTS & GREASES

## ELECTRICALLY CONDUCTIVE ADHESIVES/SEALANTS

TYPICAL USES	RECOMMENDED NUSIL PRODUCTS	PRODUCT DESCRIPTION (MIX RATIO, CURE SYSTEM, TYPE)	DUROMETER (TYPE A)	RHEOLOGY (VISCOSITY, cP) (FLOW, in/5 min) (EXTRUSION RATE, g/min)	TENSILE psi (mpA)	% ELONGATION	PRODUCT ATTRIBUTES
STATIC DISCHARGE - PRIMERLESS	CV-1500	1 PART, OXIME, RTV ADHESIVE	80	THRIXOTROPIC & EXTRUDABLE	650 (4.5)	20	Carbon filled, 3 ohm-cm, versatile adhesive. Tack Free in 10 minutes.
STATIC DISCHARGE -LOW VOLATILITY & LOW OUTGASSING: - MEMS - HERMETIC & NEAR HERMETIC PACKAGES	CV1-2640	10:1, PLATINUM, CONDUCTIVE ELASTOMER	40	300 g/min	525 (3.6)	225	Carbon filled, 25 ohm-cm. Cures 4hrs at 65°C.
	CV3-2640	1:1, PLATINUM, CONDUCTIVE ELASTOMER	25	10,000 cP	70 (0.48)	120	Carbon filled, 2.2 x 10exp6 ohm-cm. Designed for broad operating temperature.
	EPM-2461	1:1, PLATINUM, CONDUCTIVE ELASTOMER	30	A: 1,250,000 cP B: A: 100,000 cP	500 (3.4)	350	Carbon filled, 500 ohm-cm, 1 hr. pot life.
STATIC DISCHARGE: - GASKETS - ENCAPSULANTS	R-2630	10:1, PLATINUM, CONDUCTIVE ELASTOMER	60	SELF LEVELING	700 (4.8)	95	Carbon filled, 7 ohm-cm. 15 hr. pot life.
	R-2631	1:1, PLATINUM, CONDUCTIVE ELASTOMER	45	100 g/min	300 (2.0) min	125 min	Carbon filled, 70 ohm-cm. 30 minute cure time.
EMI SHIELDING ELECTRICAL GROUND	R-2637	20:1, PLATINUM, CONDUCTIVE ELASTOMER	60	SMOOTH PASTE	210 (2.1)	275	0.006 ohm-cm, 4 hr. pot life, can be screen printed.
	R-2634	100:0.5, ALKOXY, RTV CONDUCTIVE ADHESIVE	80	160 g/min	250 (1.7)	90	0.001 ohm-cm, 3 hr. pot life, 200 psi lap shear primed w/SP-121. Conductive at elevated temperatures.
DIE ATTACH EMI SHIELDING	CV2-2646	100:0.5, ALKOXY, RTV CONDUCTIVE ADHESIVE	75	4 in/5min	300 (2.1)	70	0.003 ohm-cm at 200 C°, 2 hr. pot life.
	EPM-2462	20:1, PLATINUM, CONDUCTIVE ELASTOMER	85	SMOOTH PASTE	525 (3.6)	80	0.005 ohm-cm, 2.75 hr. pot life.
FILM ADHESIVE - UNCURED LOW OUTGASSING	CV-2681-12	TWO-PART FILM ADHESIVE, SHEET & ACTIVATOR, RTV ADHESIVE	-	SHEET	-	-	Carbon Filled, 125 ohm-cm. Controls bond line thickness for adhering silicone elastomers and some metals or plastics. Easy clean-up, and consistent bond thickness. Sheet is 0.013 inches (0.3 mm) and cures on surfaces where the Activator is applied. 70 psi (0.48 MPa) lap shear.

## THERMALLY CONDUCTIVE - ELECTRICALLY INSULATING (ADHESIVE/SEALANT)

TYPICAL USES	RECOMMENDED NUSIL PRODUCTS	PRODUCT DESCRIPTION (MIX RATIO, CURE SYSTEM, TYPE)	HARDNESS	RHEOLOGY (VISCOSITY, cP) (FLOW, in/5 min) (EXTRUSION RATE, g/min)	TENSILE psi (mpA)	% ELONGATION	PRODUCT ATTRIBUTES
LCD BONDING	EPM-2890	1 PART, OXIME, RTV ADHESIVE	65	40 g/min	400 (2.8)	150	0.7 W/mK, Excellent for bonding in thin layers and does not contain Boron Nitride.
THERMAL MANAGEMENT	SCV1-2599	15:1, PLATINUM, CONDUCTIVE ELASTOMER	75	SMOOTH PASTE	200 (1.4)	30	1.6 W/mK, 150 psi lap shear primed w/CF1-135, 2 hr. pot life (Contains Boron Nitride).
	CV-2963	20:1, PLATINUM, CONDUCTIVE ELASTOMER	60	SMOOTH PASTE	425 (2.9)	250	0.64 W/mK, 275 psi lap shear primed w/CF1-135, 2 hr. pot life (Contains Boron Nitride).
	EPM1-2493	1:1, PLATINUM, CONDUCTIVE ELASTOMER	65	36,000 cP	180 (1.2)	50	1 W/mK, Tested per UL 94 and passed V0. Recommended for bondlines 5 micron or greater.
	EPM-2495	20:1, PLATINUM, CONDUCTIVE ELASTOMER	55	140 g/min	400 (2.75)	225	0.6 W/mK, 3 hr. pot life, recommended for bondlines 50 micron or greater (Contains Boron Nitride).
	EPM-2490	15:1, PLATINUM, CONDUCTIVE ELASTOMER	75	SMOOTH PASTE	200 (1.4)	30	1.5 W/mK, 160 psi lap shear primed w/CF1-135, 2 hr. pot life (Contains Boron Nitride).
	R-2939	15:1, PLATINUM, CONDUCTIVE ELASTOMER	70	70,000 cP	300 (2.1)	70	0.75 W/mK, 4 hr. pot life (Contains Boron Nitride).
	R-2949	15:1, PLATINUM, CONDUCTIVE ELASTOMER	75	75,000 cP	275 (1.9)	50	0.75 W/mK, 4 hr. pot life, for applications requiring a broader operating temperature range (Contains Boron Nitride).
	R-2940	20:1, PLATINUM, CONDUCTIVE ELASTOMER	90	SMOOTH PASTE	700 (4.8)	35	0.8 W/mK, 5 hr. pot life.
	R-2930	15:1, PLATINUM, CONDUCTIVE ELASTOMER	80	SMOOTH PASTE	260 (1.72)	20	1.45 W/mK, 3 hr. pot life (Contains Boron Nitride).
	CF1-3800	15:1 PLATINUM, FLUORO CONDUCTIVE ELASTOMER	50	SMOOTH PASTE	125 (0.86)	50	50% M Fluoro, 1.25 W/mK, 1.5 hr. pot life. Recommended for short term exposure to solvents and fuel (Contains Boron Nitride).

## THERMALLY CONDUCTIVE GREASES

TYPICAL USES	RECOMMENDED NUSIL PRODUCTS	PRODUCT DESCRIPTION (MIX RATIO, CURE SYSTEM, TYPE)	DUROMETER (TYPE A)	RHEOLOGY (VISCOSITY, cP) (FLOW, in/5 min) (EXTRUSION RATE, g/min)	TENSILE psi (mpA)	% ELONGATION	PRODUCT ATTRIBUTES
PROCESSORS	EPM-2401	1 PART, NON-CURING	-	SMOOTH PASTE	-	-	0.7 W/mK, versatile, low volatility, thermally conductive grease where thin bondlines or a compressible grease is needed. Non-curing.
	G-9340	1 PART, NON-CURING	-	SMOOTH PASTE	-	-	0.7 W/mK, versatile, thermally conductive grease where thin bondlines or a compressible grease is needed. Non-curing.

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# ADHESIVES, SEALANTS, TAPES & FILMS

## ADHESIVES & SEALANTS

TYPICAL USES	RECOMMENDED NUSIL PRODUCTS	PRODUCT DESCRIPTION (MIX RATIO, CURE SYSTEM, TYPE)	HARDNESS (TYPE A DUROMETER)	RHEOLOGY (VISCOSITY, cP) (FLOW, in/5 min) (EXTRUSION RATE, g/min)	TENSILE psi (mpa)	% ELONGATION	PRODUCT ATTRIBUTES
<b>ONE PART CONDENSATION CURE</b>							
LOW OUTGASSING GENERAL ADHESIVE: - CURE IN PLACE GASKETS - DAM & FILL APPLICATIONS - GENERAL ADHESIVES	CV-1142	1 PART, OXIME, RTV ADHESIVE	45	35 g/min	700 (4.8)	300	For applications requiring a broader operating temperature range. Available in black and white. 200 psi (1.4 MPa), Unprimed lap shear.
	CV2-1142	1 PART, OXIME, RTV ADHESIVE	50	0.1 in/5 min	-	-	Non-slump and excellent for applications where minimal flow is desired. For applications requiring a broader operating temperature range. Available in black and white.
	CV7-1142-1	1 PART, OXIME, RTV ADHESIVE	40	0.7 in/5 min	700 (4.8)	300	Recommended for extended operation at elevated temperatures.
GENERAL ASSEMBLY FOR CONSTRUCTION & INDUSTRIAL APPLICATIONS	R-1130	1 PART, OXIME, RTV ADHESIVE	35	0.5 in/5 min	850 (5.9)	325	Non-slump. Adhesive for a variety of substrates on or near electronic components. 485 psi (3.6 MPa), primed (SP-120) lap shear.
	R-1600	1 PART, OXIME, RTV ADHESIVE	45	THIXOTROPIC	650 (4.5)	300	Non-slump. Adhesive for a variety of substrates on or near electronic components. 200 psi (1.4 MPa), primed (SP-120) lap shear. For applications requiring a broader operating temperature range.
	R4-1140	1 PART, ACETOXY, RTV ADHESIVE	25	2 in/5 min	1400 (9.7)	750	Self-leveling. General all purpose adhesive for a variety of substrates.
	R-1140	1 PART, ACETOXY, RTV ADHESIVE	30	1.5 in/5 min	700 (4.8)	350	Non-slump. General all purpose adhesive for a variety of substrates. 625 psi (4.3 MPa), primed (SP-120) lap shear.
FUEL RESISTANT RTV ADHESIVE	FS-3730	1 PART, ACETOXY, RTV ADHESIVE	33	THIXOTROPIC	900 (6.2)	440	100%M Fluoro general all purpose adhesive for environments exposed to hydrocarbon fuels or solvents. White.
	FS3-3730	1 PART, ACETOXY, RTV ADHESIVE	35	THIXOTROPIC	820 (5.7)	400	100%M Fluoro general all purpose adhesive for environments exposed to hydrocarbon fuels or solvents. Translucent. 200 psi (1.4 MPa) lap shear.
<b>ONE PART - ADDITION CURE, PRIMERLESS</b>							
ENCAPSULATING SEMICONDUCTORS (GLOB TOP): - DAM & FILL ADHESIVE	EPM-2411-2	1 PART, PLATINUM, ADHESIVE	20	300,000 cP	750 (5.2)	700	Low volatility, Thixotropic, dispensable and 0.5 mm maximum slump. Shipped and stored frozen.
	R-1400	1 PART, PLATINUM, ADHESIVE	19	400,000 cP	825 (5.7)	750	Thixotropic, dispensable, and 0.5mm maximum slump. Shipped and stored frozen.

## TAPES & FILMS

TYPICAL USES	RECOMMENDED NUSIL PRODUCTS	PRODUCT DESCRIPTION (MIX RATIO, CURE SYSTEM, TYPE)	HARDNESS (TYPE A DUROMETER)	RHEOLOGY (VISCOSITY, cP) (FLOW, in/5 min) (EXTRUSION RATE, g/min)	TENSILE psi (mpa)	ADHESION	PRODUCT ATTRIBUTES
<b>RAW MATERIALS</b>							
LOW OUTGASSING LIQUID PRESSURE SENSITIVE ADHESIVE (PSA)	CV-1161	1 PART, NON-CURING PSA, ETHYL ACETATE	-	3,000 cP	50	**7.5 ppi (1.3 kN/m)	Clear silicone PSA for adhering silicone elastomers, metals, paper, glass, fabric, organic rubbers, some synthetics. Excellent for tapes on films such as polyester or kapton.
	CV2-1161	2 PART, 100:1 (PART A SOLIDS: PART B), PSA ETHYL ACETATE	-	770 cP (PART A)	35 (PART A)	**2.5 ppi (0.44 kN/m)	Same as CV-1161 with peroxide catalyst to reduce flow at higher temperatures.
	CV3-1161	2 PART, 100:1 (PART A SOLIDS: PART B), PSA TERT BUTYL ACETATE	-	1,200 cP (PART A)	37 (PART A)	**1.5 ppi (0.26 kN/m)	Same as CV-1161 with peroxide catalyst to reduce flow at higher temperatures. Recommended where low VOCs are of concern.
LIQUID PRESSURE SENSITIVE ADHESIVE (PSA)	PSA-1170	1 PART, NON-CURING PSA, ETHYL ACETATE	-	250	50	**10 ppi (1.8 kN/m)	Use for tapes and fasteners for temporarily adhering various substrates including metals, glass, silicone, and organic rubbers.
TACKY GEL FOR ADHESIVE TAPES	GEL-8130	1:1, PLATINUM GEL	2.2 mm	22,000 (MIXED)	100	~6 psil (0.04 MPa)	Medium tack, low penetration, for use as adhesive layer on removable tacky films and tapes (5 seconds).
	GEL-8132	1:1, PLATINUM GEL	1.25 mm	8,000 (MIXED)	100	~10 psi (0.07 MPa)	High tack, low penetration, for use as adhesive layer on removable tacky films and tapes (5 seconds).
<b>ADHESIVES</b>							
DOUBLE SIDED TAPE - CURED LOW OUTGASSING	CV4-1161-5	CURED DOUBLE SIDED TAPE	-	-	-	~2.5 pps (0.44 kN/m)	Low outgassing silicone PSA on Kapton® liner, 0.005" total tape thickness.
FILM ADHESIVE	R-2682-12	2 PART (SHEET + ACTIVATOR, PLATINUM, FILM ADHESIVE)	-	-	-	~100 psi MINIMUM (0.7 MPa)	For applications requiring shorter processing times, easy clean-up, and consistent bond thickness. Adheres to silicone, and some metals or plastics. Sheet is 0.013 inches (0.3 mm) and cures on surfaces where the Activator is applied. Cures at room temperature or rapidly with heat.
	CV-2680-12	2 PART (SHEET + ACTIVATOR, PLATINUM, FILM ADHESIVE, LOW OUTGASSING)	-	-	-	~250 psi (1.7 MPa)	Low Outgassing version of R-2682-12.



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## ADHESIVES, SEALANTS & SILICONE PRIMERS

### ADHESIVES & SEALANTS

TYPICAL USES	RECOMMENDED NUSIL PRODUCTS	PRODUCT DESCRIPTION (MIX RATIO, CURE SYSTEM, TYPE)	HARDNESS (TYPE A DUROMETER)	RHEOLOGY (VISCOSITY, cP) (FLOW, in/5 min) (EXTRUSION RATE, g/min)	TENSILE psi (mpA)	% ELONGATION	PRODUCT ATTRIBUTES
<b>TWO PART ADDITION CURE</b>							
DAM MATERIAL FOR ELECTRONICS APPLICATIONS: - SOLAR MODULE ASSEMBLY - LIGHTING MODULE ASSEMBLY	R32-2186	1:1, PLATINUM, PRIMERLESS ADHESIVE	15	A: 80,000 cP B: 170,000cP	975 (6.7)	850	Heat Cure. Flow 0.5 per 5 minutes. Requires heat to cure. 150 psi (1.0 MPa), unprimed lap shear.
	R33-2186	1:1, PLATINUM, RTV PRIMERLESS ADHESIVE	20	83,500 cP	1,000 (6.9)	725	RTV, Fast cure. 2 hour pot life.
	R31-2186	1:1, PLATINUM, RTV PRIMERLESS ADHESIVE	20	82,000 cP	1,000 (6.9)	775	RTV, Very fast cure. 15 minute pot life. Flow 0.5 in per 5 minutes, 110 psi (0.76 MPa), unprimed lap shear.
GENERAL USE ADHESIVE: - DEEP SECTION CURE - MINIMAL SHRINKAGE - CURE CAN BE ACCELERATED WITH HEAT	R-2186	10:1, PLATINUM, ADHESIVE	30	83,000 cP	1,050 (7.2)	450	Legacy general all purpose adhesive. 475 psi (3.3 MPa), primed (CF1-135) lap shear.
	R1-2145	1:1, PLATINUM, PRIMERLESS ADHESIVE	45	A: 280 g/min B: 290 g/min	1,000 (6.9)	400	Gray tough, fast cure adhesive with 1 hour pot life. Will RTV. 145 psi (1.0 MPa), unprimed and 625 psi (4.3 MPa) primed (CF1-135) lap shear.
	R-2145	1:1, PLATINUM, PRIMERLESS ADHESIVE	45	A: 310 g/min B: 280 g/min	1,050 (7.2)	400	Gray, tough, fast cure adhesive with 15 minute pot life. Will RTV. 145 psi (1.0 MPa), unprimed and 600 psi (4.1 MPa) primed (CF1-135) lap shear.
OPTICALLY CLEAR ADHESIVES: - REFRACTIVE INDEX MATCHING - SENSORS - OPTICAL SWITCHES - GENERAL BONDING FOR LENSES	LS2-6941	1:1, PLATINUM, LCE ELASTOMER	30	A: 1,200 cP B: 800 cP	120 (0.83)	100	1.41 Refractive Index. General use RTV clear adhesive.
	LS2-6140	1:1, PLATINUM, LCE ELASTOMER, PRIMERLESS	50	2,700 cP	1,030 (7.2)	150	Low Volatility, 1.41 Refractive Index at 589nm. Long pot life and requires heat to cure (80 C). Primerless adhesion to ceramic, plastics and metals. Tested per UL94 and passes VO.
	LS-6140	1:1, PLATINUM, LCE ELASTOMER	50	A: 3,700 cP B: 2,550 cP	850 (5.9)	90	Similar to LS2-6140 with 3hr pot life and will RTV. Not recommended for dispensing as one part. 200 psi (1.4 MPa), primed (LS1-3200) lap shear.
	LS-6143	10:1, PLATINUM, LCE ELASTOMER	40	3,600 cP	600 (4.1)	125	Low Volatility, 1.43 Refractive Index at 589nm. For applications requiring a broader operating temperature range. 180 psi (1.2 MPa), primed (LS1-3200) lap shear.
	LS-6943	10:1, PLATINUM, LCE ELASTOMER	40	5,400 cP	900 (6.2)	120	1.43 Refractive Index at 589nm. For applications requiring a broader operating temperature range.
	LS-6946	1:1, PLATINUM, LCE ELASTOMER	30	A: 40,000 cP B: 35,000 cP	675 (4.7)	275	1.46 Refractive Index at 589nm and contains fumed silica.
LOW OUTGASSING & LOW VOLATILITY ADHESIVES: - SURFACE ACOUSTIC WAVEGUIDES - HERMETIC & NEAR-HERMETIC PACKAGES - MEMs	SCV-2585	1:1, PLATINUM, PRIMERLESS ADHESIVE	35	A: 56,000 cP B: 43,000 cP	700 (4.8)	300	Ultralow Outgassing. Recommended for broad temperature applications. 475 psi (3.3 MPa), primed (CF1-135) lap shear.
	CV-2289	1:1, PLATINUM, RTV PRIMERLESS ADHESIVE	30	FLOWABLE	750 (5.2)	350	Tough, self leveling and good adhesion to various metals. Recommended for broad temperature applications. 400 psi (2.8 MPa), primed (CF1-135) lap shear.
	CV1-2289-1	1:1, PLATINUM, RTV PRIMERLESS ADHESIVE	30	A: 65,000 cP B: 40,000 cP	750 (5.2)	350	White, versatile adhesive with 3 hr pot life. Recommended for broad temperature applications. 450 psi (3.1 MPa), primed (CF1-135) lap shear.
	CV2-2289-1	10:1, PLATINUM, ADHESIVE	30	A: 14,000 cP B: 10,500 cP	450 (3.1)	250	White, versatile adhesive with short pot life, tack free in 20 hrs. Recommended for broad temperature applications. 300 psi (2.1 MPa) primed (CF1-135) lap shear.
	CV-2187	1:1, PLATINUM, PRIMERLESS ADHESIVE	35	90,000 cP	925 (6.4)	400	Tough, self-leveling and good adhesion to various metals.
	EPM-2420	1:1, PLATINUM, PRIMERLESS ADHESIVE	30	2,600 cP	425 (2.9)	150	Clear, self-leveling and good adhesion to various plastics.
HIGH TEMPERATURE APPLICATIONS: OIL & GAS SENSORS	R-2160	10:1, PLATINUM, ADHESIVE	20	A: 250,000 cP B: 650 cP	750 (5.2)	625	Iron Red, flowable, legacy high performance elastomer at elevated temperatures.

### SILICONE PRIMERS

TYPICAL USES	RECOMMENDED NUSIL PRODUCTS	PRODUCT DESCRIPTION (MIX RATIO, CURE SYSTEM, TYPE)	% SOLIDS	PRODUCT ATTRIBUTES
PLASTICS SUCH AS PPA / METALS SUCH AS ALUMINUM	SP1-204	1 PART, CONDENSATION	3.3	Use with addition or condensation cure. Contains toluene.
	SP-120	1 PART, CONDENSATION	4.0	Use with addition or condensation cure. Available in Red.
	SP-121	1 PART, CONDENSATION	3.2	Use with addition or condensation cure.
METALS SUCH AS ALUMINUM, TITANIUM & STAINLESS STEEL	SP-124	1 PART, CONDENSATION	10.0	Use with addition or condensation cure.
	CF1-135	1 PART, CONDENSATION	4.5	Use with addition cure silicones.
	CF2-135	1 PART, CONDENSATION	4.5	Use with addition cure silicones.
	CF6-135	1 PART, CONDENSATION	8.7	Recommended where platinum inhibition is of concern.
	SP-142	1 PART, CONDENSATION	15.0	Recommended where platinum inhibition is of concern.
	SP-270	1 PART, CONDENSATION	15.0	Improved adhesion to gold - Recommended where platinum inhibition is of concern such as when bonding on polyphenylsulphone.
	SP-271	1 PART, CONDENSATION	20.0	Recommended where platinum inhibition is of concern.

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