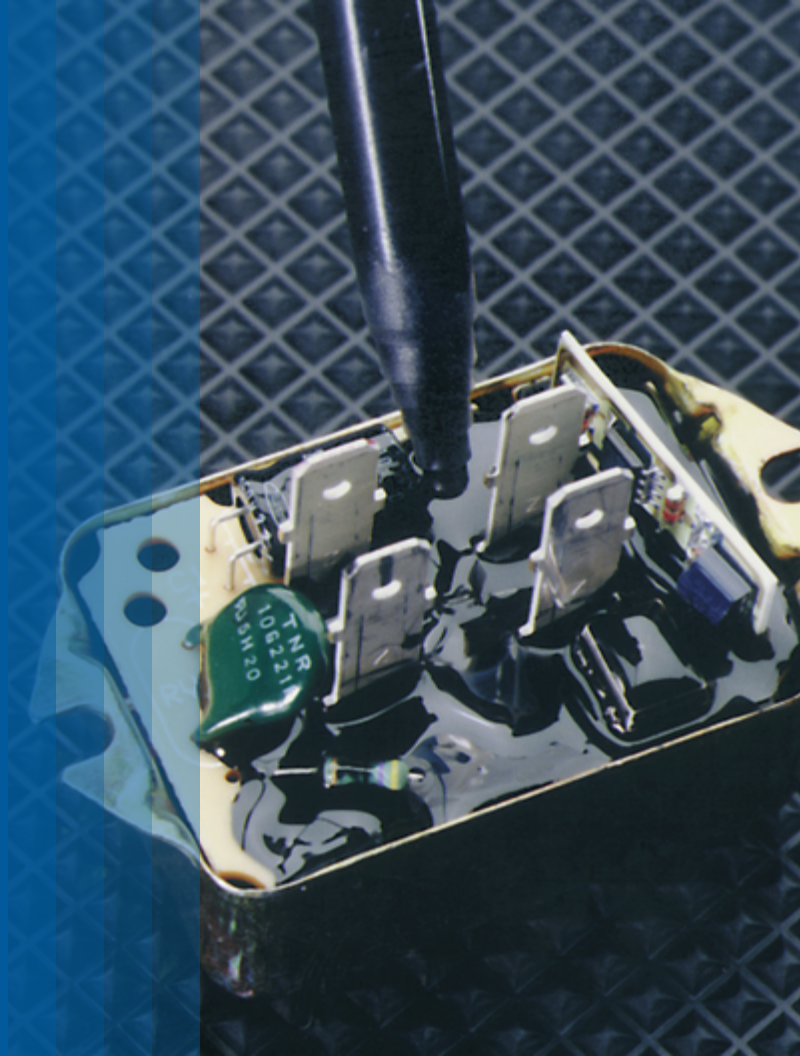




# Resinlab<sup>®</sup>

AN ELLSWORTH ADHESIVES COMPANY 

ADHESIVES & ENCAPSULANTS FOR  
**ELECTRONICS**  
APPLICATIONS



# LEADING MANUFACTURER of ADHESIVES & ENCAPSULANTS

ResinLab® is a leading resin manufacturer with state-of-the-art production equipment, lab capabilities, and technical expertise. Large or small, ResinLab specializes in delivering encapsulants and adhesives to exact specifications.

## ADHESIVES

ResinLab offers a wide variety of adhesive chemistries including anaerobic, cyanoacrylate, epoxy, and polyurethanes. All offer high strength bonds to an array of substrates with several providing thermal and/or electrical conductivity. ResinLab has developed a full line of RoHS-compliant adhesives with several single component, fast, low temperature curing products ideally suited for in-line PCB assembly.

## ENCAPSULANTS

An encapsulant, also known as a potting compound, is designed to electrically insulate and environmentally protect products such as printed circuit boards from moisture, chemicals, mechanical/thermal shock, and vibration. ResinLab specializes in epoxy encapsulants for nearly all electrical or electronic encapsulation applications - including thermally conductive and UL-recognized Flame Retardant varieties. ResinLab also offers a line of urethane encapsulants for a softer alternative to epoxies that work well in low temperature environments with high levels of flexibility.



# SERVICES

## CUSTOM FORMULATIONS

ResinLab® offers custom formulation services; providing an adhesive or encapsulant perfectly suited to a specific application.

## CUSTOM PACKAGING

ResinLab partners with KitPackers to provide custom packaging solutions for a wide variety of materials.

## LAB SERVICES

ResinLab's laboratory is equipped to provide imaging, rheological analysis, thermal analysis, and chemical, mechanical, or electrical property characterization.

## PRODUCT MODIFICATIONS

ResinLab's product development chemists can modify nearly any adhesive or encapsulant property to meet unique requirements.

## TOLL BLENDING

ResinLab offers in-house toll blending for custom formulations, including certifications, documentation, formula review, and more.

ADHESIVES & ENCAPSULANTS FOR ELECTRONICS APPLICATIONS



## GENERAL ENCAPSULANTS

### EP1195\*

Fast, room temperature curing encapsulant for small to medium mass potting applications. UL94HB and CTI rated.

### EP1282\*

Medium mass potting. UL94HB and CTI rated. Tough and flexible. Good adhesion to many plastics, excellent thermal shock, and cycle resistance. Low stress and proven for SMT.

### EP1295\*

Very large mass potting (up to 3 gallons) and low stress applications. UL94V-0.

### EP1340\*

Small mass potting. Excellent chemical resistance. UL94V-0.

### EP1390\*

Medium mass potting for printed wire and circuit boards, coils, chargers, and power supplies applications. UL94V-0. Excellent chemical resistance.

### EP1305LV

Small mass potting. Adhesion to difficult-to-bond substrates. Excellent on PVC. Highly rubber toughened, high peel, and impact resistance.

### UR3001HP2

Very low stress applications. Gel-like, re-enterable urethane. Excellent low temperature properties.

### UR6000\*

Lower cost, low viscosity polyurethane with good adhesion to multiple substrates. UL94V-0. Moderate thermal conductivity.

### UR6001\*

Lower cost, low viscosity, low durometer polyurethane. UL94V-0.

### UR6060

High transparency, water white clarity with long term, non-yellowing UV stability for LED applications. Low viscosity.

## GENERAL ADHESIVES SYSTEMS

### EP1305

Excellent for difficult to bond substrates. Excellent on PVC. Highly rubber toughened, high peel, and impact resistance.

### EP1320

One part, small mass potting and adhesive. Fast/low temperature cure and room temperature stable.

### EP1320LV

One part conformal coating and adhesive for small mass potting. Lower viscosity than EP1320. Fast/low temperature cure and room temperature stable.

## THERMALLY CONDUCTIVE ADHESIVES

### EP1121-4

Thixotropic, flexible adhesive with high thermal conductivity and low CTE.

### EP1330

One part, thixotropic, high thermal conductivity adhesive for bonding and staking. Low CTE.

### EP1330LV

Low viscosity version of EP1330. For small mass potting and adhesion. Low CTE and fast/low temperature cure.

### EP1306

High strength, thermally conductive, metal bonding adhesive. Fast cure, aluminum filled.

# PRODUCTS

## ADHESIVES & ENCAPSULANTS FOR ELECTRONICS APPLICATIONS

### THERMALLY CONDUCTIVE ENCAPSULANTS

#### EP1200

Small to large mass potting. Moderate thermal conductivity, low CTE, and flexible/low stress.

#### EP1200LV

Low viscosity version of EP1200. Moderate thermal conductivity.

#### EP1285-HD9

Small mass potting with room temperature cure. High thermal conductivity, high Tg, excellent chemical resistance, and low CTE. Highly rigid product with high tensile and compressive strength.

#### EP1285-HD12

Small to large mass potting with high temperature cure. High thermal conductivity, high Tg, and excellent chemical resistance.

### ELECTRICALLY CONDUCTIVE ADHESIVES

#### SEC1222

Silver filled, general purpose structural adhesive with room temperature cure. High electrical and thermal conductivity. Convenient 1:1 ratio, moderate Tg, and moderate modulus.

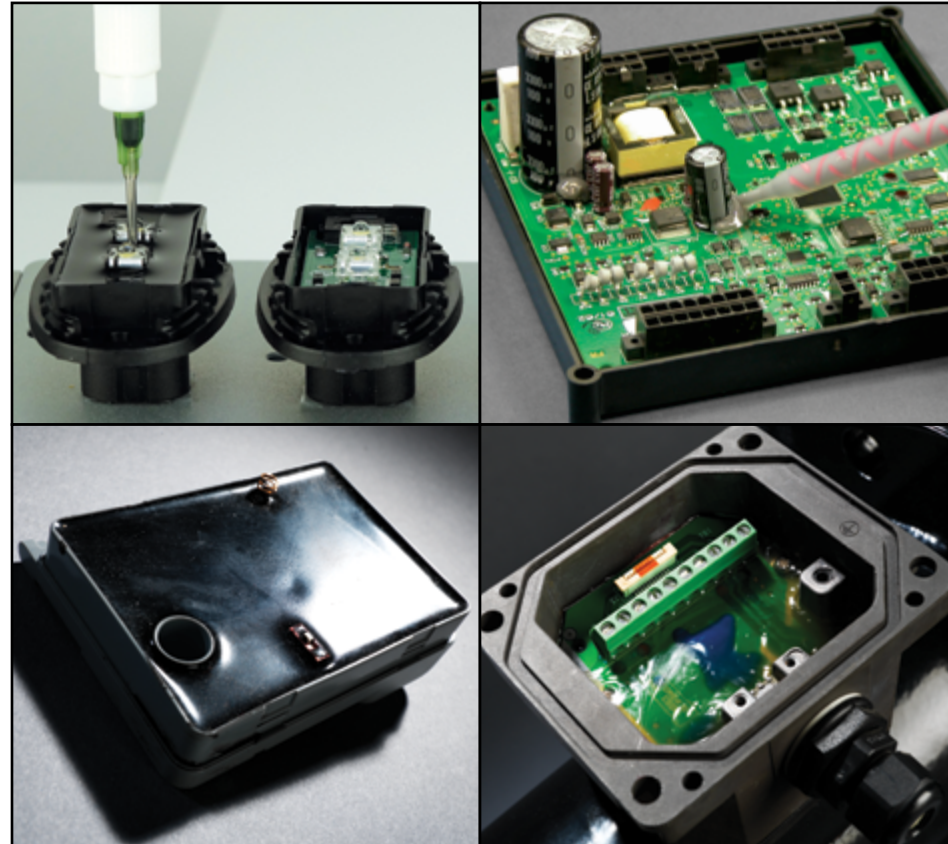
#### SEC1233

Silver filled, general purpose structural adhesive with room temperature cure. High electrical and thermal conductivity. Convenient 1:1 ratio, dual syringe dispensable, flexible, low Tg, and low modulus for flex circuits.

#### SEC1244

Silver filled, general purpose structural adhesive. High electrical and thermal conductivity. Convenient 1:1 ratio, excellent conductivity, high Tg, snap cure, and high modulus.

o. E186034

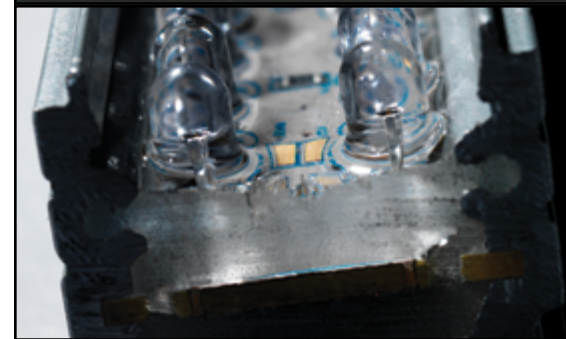
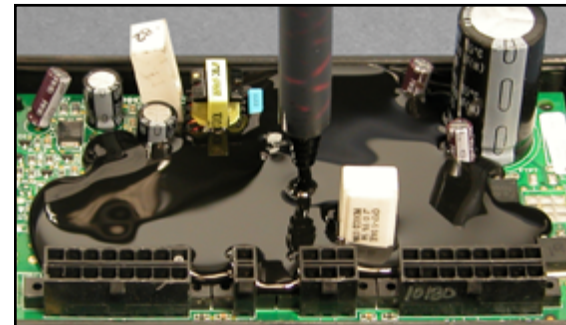




CATEGORY	PRODUCT	CHEMISTRY	APPEARANCE	VOLUME RATIO	SIDE-BY-SIDE CARTRIDGES CAPABLE	MIXED VISCOSITY (cps @ 1/s)	POT LIFE (Measured by rheometer - Time to double initial mixed viscosity)	SHORE HARDNESS	LAP SHEAR ALUMINUM (psi)	Tg (°C)
GENERAL ENCAPSULANTS	EP1195*	epoxy	black liquid	2:1	yes	2,800	10 minutes	85D	3000	42
	EP1282*	epoxy	black or clear	1:1	yes	3,000	60 minutes	65D	1500	25
	EP1295*	epoxy	black liquid	1:1	yes	11,000	10 minutes	55D	850	10
	EP1340*	epoxy	black liquid	1:1	yes	13,500	10-12 minutes	85D	1300	20
	EP1390*	epoxy	black liquid	4:1	yes	8,000	50 minutes	85D	2200	45
	EP1305LV	epoxy	black liquid	1:1	yes	28,000	6-10 minutes	75D	2100	50
	UR3001HP2	urethane	black or clear	1:1	yes	2,100	3 minutes	65OO	20	-71
	UR6000*	urethane	black liquid	4:1	yes	5,000	4 minutes	70D	1200	27
	UR6001*	urethane	black liquid	2:1	yes	6,800	25 minutes	60A	N/A	-26
	UR6060	urethane	clear liquid	1:1	yes	1,050	15 minutes	80A	400	-2
GENERAL ADHESIVES SYSTEMS	EP1305	epoxy	black paste	1:1	yes	109,000	12-15 minutes	70D	1000	35
	EP1320	epoxy	black semi-paste	one part	no	82,000	N/A	85D	1300	95
	EP1320LV	epoxy	black liquid	one part	no	36,400	N/A	85D	1700	86
THERMALLY CONDUCTIVE ADHESIVES	EP1121-4	epoxy	black paste	1:1	yes	287,000	60 minutes	80D	2000	15
	EP1330	epoxy	black paste	one part	no	475,000	N/A	90D	1500	92
	EP1330LV	epoxy	black semi-paste	one part	no	297,000	N/A	90D	1500	98
	EP1306	epoxy	black liquid	2:1	yes	202,000	30 minutes	80D	3300	54
THERMALLY CONDUCTIVE ENCAPSULANTS	EP1200	epoxy	black liquid	1:1	yes	36,000	23 minutes	75D	1600	8
	EP1200LV	epoxy	black liquid	1:1	yes	25,000	15-20 minutes	70D	1100	1
	EP1285-HD9	epoxy	black liquid	11.32:1	no	8,000	35 minutes	90D	900	74
	EP1285-HD12	epoxy	black liquid	6.65:1	no	15,500	50 minutes	90D	1500	98
ELECTRICALLY CONDUCTIVE ADHESIVES	SEC1222	epoxy	silver paste	1:1	no	560,000	45 minutes	70D	850	17
	SEC1233	epoxy	silver paste	1:1	yes	582,000	>4 hours	70D	600	10
	SEC1244	epoxy	silver paste	1:1	no	298,000	>4 hours	90D	500	98

# PRODUCT DATA

CTE BELOW T <sub>g</sub> (ABOVE T <sub>g</sub> ) (ppm/°c)	T <sub>k</sub> (W/m.K)	DIELECTRIC CONSTANT/ DISSIPATION FACTOR @ 100 Hz	DIELECTRIC CONSTANT/ DISSIPATION FACTOR @ 100,000 Hz	VOLUME RESISTIVITY (ohm.cm)	PRODUCT
55 (190)	0.3	3.4/0.01	3.2/0.01	6.5E+15	EP1195*
70 (225)	0.1	4.1/0.07	3.3/0.04	1.3E+14	EP1282*
70 (175)	0.3	6.6/0.2	4.8/0.06	1.2E+12	EP1295*
55 (170)	0.2	3.9/0.07	3.2/0.03	1.5E+14	EP1340*
65 (170)	0.3	3.7/0.008	3.5/0.01	7.1E+15	EP1390*
90 (210)	0.1	3.9/0.04	3.5/0.03	7.8E+14	EP1305LV
N/A (330)	N/A	3.5/0.006	3.4/0.01	3.8E+13	UR3001HP2
65 (160)	0.5	4.0/0.03	3.7/0.02	1.4E+15	UR6000*
120 (220)	0.1	7.9/0.09	5.2/0.08	1.7E+12	UR6001*
95 (210)	N/A	6.3/0.2	4.1/0.05	1.7E+15	UR6060
90 (210)	0.1	4.0/0.05	3.6/0.03	2.1E+15	EP1305
58 (200)	0.3	3.8/0.03	3.4/0.03	3.0E+16	EP1320
59 (205)	0.4	3.4/0.02	3.2/0.02	2.0E+16	EP1320LV
35 (130)	1.1	5.6/0.05	4.9/0.02	3.71E+14	EP1121-4
40 (140)	0.9	4.3/0.006	4.2/0.01	3.6E+16	EP1330
40 (140)	0.9	4.4/0.005	4.2/0.01	3.8E+16	EP1330LV
43 (100)	0.9	9.8/0.005	9.4/0.02	1.1E+16	EP1306
66 (150)	0.6	4.3/0.03	3.8/0.03	3.4E+13	EP1200
90 (171)	0.4	3.5/0.03	3.2/0.02	3.6E+14	EP1200LV
30 (125)	1.2	5.7/0.006	5.4/0.01	1.7E+16	EP1285-HD9
30 (125)	1.1	4.6/0.006	4.5/0.008	3.2E+16	EP1285-HD12
66 (160)	3.9	N/A	N/A	0.003	SEC1222
63 (N/A)	4.6	N/A	N/A	0.0016	SEC1233
40 (N/A)	3.0	N/A	N/A	0.0006	SEC1244





**AN ELLSWORTH ADHESIVES COMPANY** 

1-877-259-1669 | [info@resinlab.com](mailto:info@resinlab.com)  
N109 W13300 Ellsworth Drive, Germantown, WI 53022