ENCAPSULATION SOLUTIONS

HumiSeal®

ENGINEERED ENCAPSULATION SOLUTIONS FOR DEMANDING APPLICATIONS

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POTTING FOR ELECTRONIC APPLICATIONS

Encapsulation solutions for tomorrow's applications

HumiSeal Encapsulation Solutions are engineered liquids for partial or full potting applications employed in today's electronics and other industries. These products complement our prominent conformal coating portfolio. HumiSeal's progressive approach to formulating of encapsulation materials differentiates us in today's market. HumiSeal's global presence, strong technical support, and fast custom formulating capabilities encompass all design engineering requirements for today's and tomorrow's applications.

The formulation of HumiSeal Encapsulation Solutions takes into consideration customer application needs with variety of working life, an assortment of cure cycles, and cure methods, including room temperature, heat, RTV, and UV-light. Engineered from epoxy, urethane, and acrylate chemistries, our portfolio of encapsulating liquids satisfies the majority of applications, while our rapid development process compliments the need for customized formulations.

Today's markets require many varieties of potting materials. HumiSeal Encapsulation Solutions meet thermomechanical, electrical protection, aesthetic characteristics, and chemical resistant requirements. Our Encapsulation Solutions are found in applications, such as photovoltaics, LEDs, all varieties of electronic components, and connectors. Our products possess properties most desired for these applications: non-yellowing, UV stable, water-white clear to opaque black, moisture and chemical resistant, customizable hardness and flexibility, thermal conductivity, and excellent electrical resistance.

While each application is different, our products fit well in today's manufacturing methods and provide a variety of process improvements, which may increase your productivity via UV-gellable encapsulation or complete fast UV cure. The desirability of protection against mechanical shock or thermal excursions may lead you to the use of low modulus and highly flexible urethane materials. Protection against harsh chemicals will create the need to use a highly cross-linked system such as epoxy or acrylated urethane. Whatever your need, HumiSeal Encapsulation Solutions can meet the challenge.

ENCAPSULANTS	
2E11	Formulated to work with 1:2 volume mix-ratio, this potting material provides superior adhesion to variaty of substrates. Medium viscosity with long work life.
2E10-B	Easily mixed at 1:1 ratio. Industrial or electronic epoxy potting compound with extended work life. Provides excellent environmental and chemical resistance with high dielectric strength of 550V/mil.
2E25	Epoxy adhesive or encapsulant with range of mix ratios and hardness resulting in high bond strength to variety of materials. Very good electric insulator, resistant to gasses, water, petroleum products, and acids. FDA compliant.
2E26-G	Two part epoxy potting and bonding material with easy 2:1 mix ratio. Provides good protection against high humidity, mechanical shock, and chemicals. This product is light weight with specific gravity of 0.77 and is sandable.
2E27	Two part epoxy encapsulating material specifically designed for PCB component protection. Can be used as full potting or as individual components encapsulant. Simple 1:1 mix ratio.
2A10	Non-yellowing, UV stable, two part structural adhesive and potting urethane, formulated for LED, photovoltaic, and capacitor sealing. Low viscosity with simple 2:1 mix ratio and water-white clear after full cure.
2A11	Two part with simple 1:1 mix ratio. Soft, flexible, water-white clear, non-yellowing, LED Encapsulation for the use in wide variaty of temperature ranges. Provides good protection against high humidity and mechanical shock
2A13	Low stress elastic encapsulant with low viscity and simple 1:1 mix ratio. Protection to the electronic package when exposed to multiple thermal shocks and high vibration.
2A14-U	High performance potting and encapsulation applications with 1:2 mix ratio. This fast setting potting material and encapsulant cures to a tough, moisture resistant and flexible polymer. Good for multiple thermal cycle requirements or high mechanical shock applications.
2A15-B	Two part 1:2 mix ratio, polyurethane system designed to be used for high performance potting and encapsulation applications. Tough flexible polymer for the protection of electronics when exposed to multiple thermal shocks and high vibration.
2UV10	Two component UV gellable urethane with 1:2 mix ratio. Tack free surface and functional strength is achieved with UV exposure. The secondary reaction ensures shadowed areas are completely polymerized. High elongation and bond strength ensures protection of electronics against thermal shock and mechanical stresses.
UV20HV	One part, high-shear thinning and high viscosity, outstanding wetting properties, designed for high mechanical shock protection and exceptional adhesion to variety of materials. Will cure rapidly with exposure to UV-light and develop high adhesion properties with ambient secondary moisture cure.
UV12	One part, low viscosity and fast curing with exposure to UV light. When cured it is a water-white clear, non-yellowing, rigid encapsulant for LED and other optical applications.
UV13-W	One part with medium viscosity encapsulant. Cures with UV light exposure and has secondary moisture cure for shadow areas. Provides excellent protection against moisture and high mechanical stresses. Designed for high throughput environments.
2UV11	Two part with medium viscosity, UV gelable urethane potting system designed for high end electronic protection. This soft encapsulant will protect components from high impact and vibration in high humidity operating conditions.
2C51	Two component high strength, fast curing silicone suitable for general sealing and encapsulating. Low viscosity 1:1 mix ratio with fast room temperature cure for ease of application.
2C52	Fast curing, two part silicone for applications requiring a soft, high surface tack sealant. Simple 1:1 mixture with limited flowability after dispensing. Adheres and seals most surfaces but can be easily removed and repaired after curing.
THERMALLY CONDUCTIVE	
2E41T-B	Two part, thermally conductive (1.29 W/mK) epoxy system designed for the protection of electronics. Simple 1:1 mix ration with med-high viscosity. Excelent dielectric strength (500V/mil).
2E42T-B	Two part, thermally conductive (0.83 W/mK) epoxy system designed for the protection of electronics. Simple 1:1 mix ration with med-high viscosity. Excelent dielectric strength (500V/mil).

Chemistry	Viscosity Part A (CPs)	Viscosity Part B (CPs)	Mix Ratio	Pot Life (min)*	Handling Time (min)*	Full Cure**	Cure Type	Color	Hardness	Operating Temp (°C)	Applications	Substrates
Epoxy	12,000	7,000	1:2	60	180	24 hr @ RT or 1 hr @ 65°C	2 component with heat option	Amber	D40	-50 to 125	Electronic sealing, bonding, and encapsulation	Metals, Glass, Ceramics, Plastic
Epoxy	6,000	12,000	1:1	60	180	24 hr @ RT or 1 hr @ 65°C	2 component with heat option	Black	D85	-50 to 125	Industrial sealing, bonding, and encapsulation	Metals, Glass, Ceramics, Plastic
Epoxy	12,000	14,000	2:1 to 1:2	60	120	12 hr @ RT or 2 hrs @ 65°C	2 component with heat option	Amber	D64 to D80	-40 to 155	Electronic sealing, bonding, and encapsulation	Metals, Glass, Ceramics, Plastic
Epoxy	90,000	30,000	2:1	20	160	24 hr @ RT or 30 min @ 65°C	2 component with heat option	Gray	D76	-60 to 125	Electronic sealing and encapsulation	Metals, Wood, Glass, Ceramics, Plastic
Epoxy	5,000	6,000	1:1	15	60	24 hr @ RT or 30 min @ 65°C	2 component with heat option	Clear	D60	-60 to 135	Electronic and industrial sealing and encapsulation	Metals, Wood, Glass, Ceramics, Plastic
Urethane	4,500	600	2:1	3	60	24 hr @ RT	2 component	Clear	D55	-50 to 110	LED and photovoltaic encapsulation, capacitor sealing	Metals, Wood, Glass, Ceramics, Plastic
Urethane	14,000	900	1:1	7	15	24 hr @ RT	2 component	Clear	D27	-50 to 125	LED encapsulation; light arrays	Metals, Glass, Ceramics, Plastic
Urethane	2,700	7,500	1:1	60	120	24 hr @ RT or 1 hr @ 65°C	2 component with heat option	Clear	D31	-50 to 110	Electronic sealing and encapsulation	Metals, Glass, Ceramics, Plastic
Urethane	2,000	2,500	1:2	6	20	24 hr @ RT or 1 hr @ 65°C	2 component with heat option	Blue	D39	-40 to 125	Electronic and industrial sealing and encapsulation	Metals, Glass, Ceramics, Plastic
Urethane	550	1,700	1:2	12	25	24 hr @ RT or 2 hr @ 150°C	2 component with heat option	Black	D39	-50 to 125	Electronic and industrial sealing and encapsulation	Metals, Glass, Ceramics, Plastic
Urethane/ Acrylate	100,000	6,000	1:2	UV exposure or 7 min in shadow	15	24 hrs @ RT	UV-gelable w/ 2 component	Clear	D39	-50 to 125	Electronic and industrial sealing and encapsulation	Plastic, Glass, Metals
Urethane/ Acrylate	75,000			Until exposed to UV	30 sec with UV exposure	1 - 2 J/cm² /w secondary ambient moisture 48hrs	UV/moisture	Translucent	D15	-40 to 125	Electronics and industrial bonding, staking, encapsulation	Metals, Glass, Ceramics, Plastic
Urethane/ Acrylate	2,500			Until exposed to UV	30 sec with UV exposure	1 - 2 J/cm²	UV Cure	Clear	D80	-50 to 125	LED encapsulation; light arrays	Metals, Glass, Ceramics, Plastic
Urethane/ Acrylate	4,000			Until exposed to UV	30 sec with UV exposure	1 - 2 J/cm² /w secondary ambient moisture 48hrs	UV/moisture	White	D30	-50 to 125	Potting, Encapsulation	Metals, Glass, Ceramics, Plastic
Urethane/ Acrylate	8,000	7,000	1:1	UV exposure or 7 min in shadow	15	24 hrs @ RT	UV-gelable w/ 2 component	Clear	A30	-50 to 110	Potting, Encapsulation	Metals, plastic, polycarbonate
Silicone	275	550	1:1	10	20	1 hr @ RT or 30 min @ 70°C	2 component with heat option	Light Green	00-45	-50 to 200	Sealing, Potting, Encapsulation	Metals, plastic, Ceramics, Cable/wire
Silicone	17,500	15,000	1:1	10	20	1 hr @ RT or 2 min @ 125°C	2 component with heat option	Clear	<00 0	-50 to 200	Sealing, Potting, Encapsulation	Metals, plastic, Ceramics, Cable/wire
Epoxy	35,000	27,000	1:1	60	200	24 hr @ RT or 2 hr @ 65°C	2 component with heat option	Black	D60	-50 to 155	Electronic and Industrial encapsulation	Metals, Glass, Ceramics, Plastic
Epoxy	20,000	30,000	1:1	60	180	24 hr @ RT or 2 hr @ 65°C	2 component with heat option	Black	D65	-50 to 155	Electronic and Industrial encapsulation	Metals, Glass, Ceramics, Plastic

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*Typical volume of 100g | **Cure time may shorten or lengthen depending on volume or mix ratio

A GLOBAL SOLUTION

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