

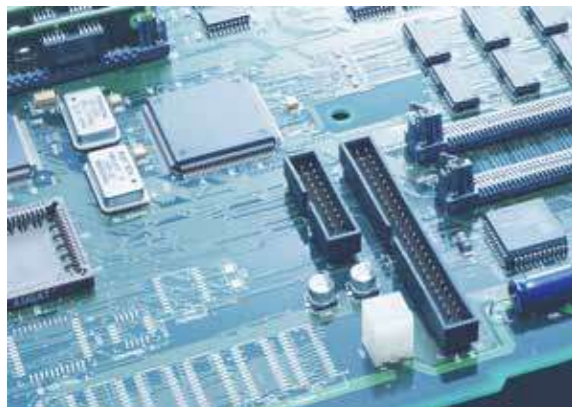
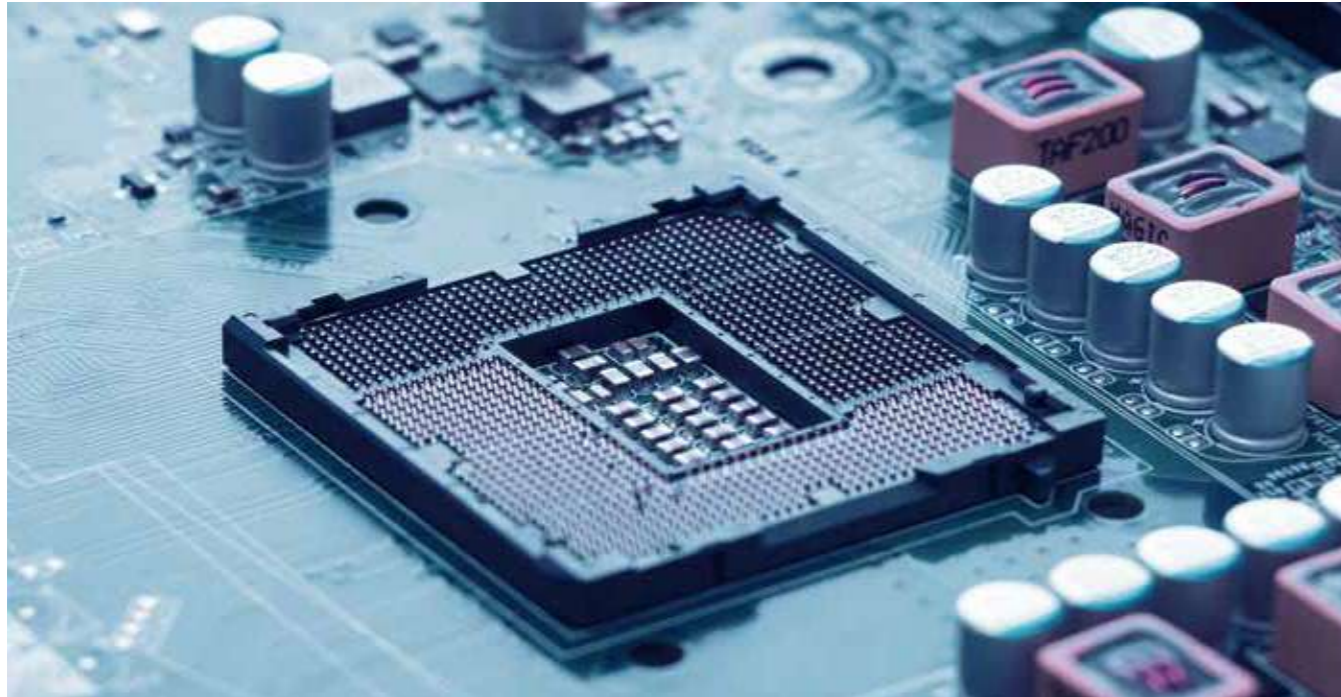
Overview of conformal coating

UL Certification E310258

IPC830B Standard

RoHS Directive, REACH Certification and other environmental indicators

With the progress and development of technology, electronic products have gained increasing applications. The requirements on miniaturization and density of their components have also increased, while the environment they operate in has become more complex and diverse. All these impose higher requirements for the reliability and stability of electronic products. Conformal coating can provide a thin protective layer to protect solder joints, pins, metal lines and other areas and prevent the circuit board against moisture, salt spray, corrosive gas and other factors.



Currently there are various systems and products available for conformal coating selection. In terms of compound type, they are mainly divided into polyurethane, silicone, acrylic, epoxy, poly-p-xylylene and other types. In terms of application method, there are spraying, dipping, brushing, etc. In addition, the curing processes include moisture curing, heat curing, light curing and so on. Each product has its unique features and process requirements. To achieve effective protection during use, it is crucial to consider the specific requirements, choose the suitable product, and adopt the correct application process.

With a history of over 40 years, Huitian possesses strong independent R&D, production and sales strength. Its products are widely used in electronics, automotive, transportation, home appliances, new energy and other sectors, committed to providing customers with systematic solutions. In the field of conformal coating, Huitian also offers a diverse range of products and supporting solutions, from polyurethane to silicone, and from heat curing to UV curing, providing customers with professional services and solutions.

Polyurethane system

- ◆ Excellent moisture resistance
- ◆ Excellent electrical insulation
- ◆ Good resistance to solvents, salt spray corrosion and chemicals
- ◆ Good wear resistance and adhesion



UV system

- ◆ Excellent moisture resistance
- ◆ Excellent electrical insulation
- ◆ Good resistance to solvents, salt spray corrosion and chemicals
- ◆ Good wear resistance and adhesion
- ◆ Fast curing
- ◆ 100% solid content, VOC-free, eco-friendly
- ◆ Moisture secondary curing is available for the shadow part



Silicone system

- ◆ Wide temperature range, excellent high temperature resistance
- ◆ Good flexibility and crash resistance
- ◆ Excellent resistance to UV/visible light
- ◆ Excellent dielectric properties and insulation properties
- ◆ Low surface tension, good substrate wettability



Polyurethane conformal coating

UV curing conformal coating

Product features

◆ Low odor, translucent, flexible, high-performance modified polyurethane conformal coating, which is aromatic solvent-free, low-odor, and eco-friendly, and features excellent circuit board protection performance, especially for circuit boards working in high humidity. The product has excellent adhesion to all kinds of boards, wide working temperature range, excellent insulation properties, and good water and moisture resistance. Moreover, it contains fluorescent indicator which facilitates observation and detection.

Typical applications

- ◆ Protection of circuit boards and various electronic components against water, moisture, dust, mold growth and salt spray, insulation protection, etc.
- ◆ Mainly used for inverters, charging piles, frequency converters, automotive electronics, communication base stations, UPS power supply and other fields

- ◆ **Diluent 1040**
Colorless, translucent, fast volatilization
- ◆ **Cleaner 1050**
Colorless, translucent, fast drying type
- ◆ **Reworking agent 1060**
Colorless, translucent, efficient type

Product name	Appearance	Solid content (W%)	Viscosity 25°C (mPa·s)	Tack-free time (25°C)	Curing time (80°C)	Surface resistance (Ohm/cm)	Flexibility	Working temperature (°C)	Reworkability
942201	Brown, translucent	37±2	45	10-15min	8-10min	> 10 ¹³	<2mm	-65~130	Cleaner 1050 can be used to clean the conformal coating during use
942202	Brown, translucent	43±2	100	10-15min	8-10min	> 10 ¹³	<2mm	-65~130	
942203	Brown, translucent	47±2	500	15-20min	10-15min	> 10 ¹³	<2mm	-65~130	
943201	Brown, translucent	37±2	45	10-15min	8-10min	> 10 ¹²	<2mm	-65~140	After curing, the coating film can be removed with effective reworking agent 1060
943202	Brown, translucent	40±2	100	10-15min	8-10min	> 10 ¹²	<2mm	-65~140	
943203	Brown, translucent	47±2	500	15-20min	10-15min	> 10 ¹²	<2mm	-65~140	

Product features

◆ Single-component, UV/moisture curing conformal coating. The product features no solvent, low viscosity, easy spraying, fast curing, economy and eco-friendliness, suitability for various spraying processes and very low viscosity. It can be used to coat UV conformal coating film, and is also suitable for water curtain spraying process. It also features excellent resistance to water, moisture and chemical corrosion, and excellent electrical insulation. Moreover, it contains fluorescent indicator which facilitates observation and detection.

Typical applications

- ◆ Protection of circuit boards and various electronic components against water, moisture, dust, mold growth and salt spray, insulation protection, etc., especially for protection of circuit boards working in harsh environments
- ◆ Mainly used for intelligent home appliances, automotive electronics, consumer electronics, 5G communication, industrial control and other fields

- ◆ **Cleaner 1050**
Colorless, translucent, fast drying type
- ◆ **Reworking agent 1060**
Colorless, translucent, efficient type

Product name	Appearance	Curing energy (J/cm ²)	Viscosity 25°C (mPa·s)	Curing method	Flash point (°C)	Surface resistance (Ohm/cm)	Flexibility	Working temperature (°C)	Reworkability
361216	Light yellow, translucent	1-3	100	UV+ moisture auxiliary curing	> 90	> 10 ¹⁴	<2mm	-65~135	Cleaner 1050 can be used to clean the conformal coating during use
3612H3	Light yellow, translucent	1-3	300	UV+ moisture auxiliary curing	> 90	> 10 ¹⁴	<2mm	-65~135	
3612H6	Light yellow, translucent	1-3	700	UV+ moisture auxiliary curing	> 90	> 10 ¹⁴	<2mm	-65~135	After curing, the coating film can be removed with effective reworking agent 1060
3612HV	Light yellow, translucent	1-5	600	UV+ moisture auxiliary curing	> 90	> 10 ¹⁴	<2mm	-65~135	

Product features

◆ Single-component, room temperature curing, elastoplastic silicone conformal coating, with high curing speed (curing can also be facilitated by heating). The product has medium viscosity, and is suitable for a variety of processes such as brushing, spraying and dipping. After curing, a translucent elastic protective film with certain hardness and wear resistance is formed. The product has good adhesion to various circuit boards, and features good high and low temperature resistance and flame retardance. Moreover, it contains fluorescent indicator which facilitates observation and detection.

Typical applications

- ◆ Protection of circuit boards and various electronic components against water, moisture, dust, mold growth and salt spray, insulation protection, etc.
- ◆ Mainly used for automotive electronics, lighting, power supply and other fields.

- ◆ **Diluent 1045**
Colorless, translucent,
good matching process

Product name	Appearance	Solid content (W%)	Viscosity 25°C (mPa·s)	Tack-free time (mins)	Heat curing time (40-60°C)	Dielectric strength (kV/mm)	Volume resistivity (Ohm/cm)	Working temperature (°C)	Flexibility	Reworkability
9415	Transparent, colorless	70	900	< 20	< 15min	≥16	≥10 ¹⁵	-60~200	< 2mm	
9415LV	Transparent, colorless	40	900	< 15	< 10min	≥16	≥10 ¹⁵	-60~200	< 2mm	Difficult/physical cleaning
9415L	Transparent, colorless	55	300	< 15	< 10min	≥16	≥10 ¹⁵	-60~200	< 2mm	
9416	Transparent, colorless	99	500	< 7	< 5min	≥16	≥10 ¹⁵	-60~200	< 2mm	

Conformal coating spraying laboratory



Complete environmental aging evaluation facilities

