

Technical Data Sheet

Electrical Insulation

CONAP® CE-1170

One-Component Acrylic Conformal Coating



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CONAP® CE-1170

Product Description

CONAP® CE-1170 is a solvent-based, single component, fast curing, acrylic resin solution

Areas of Application

CONAP® CE-1170 provides an excellent electrical and moisture barrier for thin film applications on components and printed circuit boards.

Features and Benefits

- QPL listed for MIL-I-46058C for Type AR
- IPC-CC-830B qualified
- Halogen-free (IEC 61249-2-21)
- Excellent hydrolytic stability
- UL94 V-0 listed
- Flexible coating
- Excellent adhesion to phenolic and epoxy-glass laminates
- Excellent reparability
- Tracer dye added for inspection under UV lighting

Application Methods

- Spray Coating
- Dip Coating
- Brush Applied

Transportation / Storage

Store below 25°C / 77°F in a dry controlled environment out of direct sunlight. This material should be suitable for use stored under these conditions in the original sealed containers for twelve (12) months from the date of shipment.

Failure to store the product as recommended above may lead to deterioration in product performance.

This product is sensitive to moisture and atmospheric humidity. Containers, once opened, should be used immediately or blanketed with dry air or nitrogen (CONAP® Dri-Purge) before resealing.

Health / Safety

Refer to the Safety Data Sheet for additional information.

Typical Properties of Material as Supplied

Property	Conditions	Value	Units
Viscosity	25°C / 77°F	400	cP
Specific Gravity	25°C / 77°F	0.95	
Appearance		Amber, slight haze	
Solids Content	135°C for 45 min	31	%
Flash Point	ASTM D93	13 55	°C °F

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Regulatory Information

Property	Test Method	Value	Units
Volatile Organic Content	ASTM D3960	5.5	pounds / gallon
RoHS Compliance	CONAP® CE-1170 Acrylic Conformal Coating complies with Directive 2011/65/EU of the European Parliament and of the Council of 8 June 2011 (RoHS 2.0) as amended 31 March 2015.		

Application / Curing Schedule

Performance of the CE-1170 cured film is dependent on process controls used in application of the coating. Cleanliness of the substrate is a major factor in promoting adhesion and preventing under-film corrosion. Assemblies must be clean, oil-free, and dry. For specific recommendations, please request the C-115 Technical Bulletin.

CE-1170 can be applied by spraying, dipping, or brushing. If viscosity reduction is desired, dilutions of 10 – 20% by weight with CONAP® S-13 Solvent are recommended for most applications. For some spray applications, dilutions up to 1:1 by volume may be required to avoid cobwebbing.

A minimum of two coats of CE-1170 are recommended for optimal protection. A total cured film thickness of 2 ± 1 mils is recommended. CE-1170 may be recoated after the previous film is tack-free.

Curing of the film is dependent upon the evaporation of the solvents. The coating will typically dry tack-free in 15 minutes and cure in 24 hours at 25°C / 77°F. Alternatively, dry tack-free can be completed in 10 minutes and cure can be completed in 45 minutes at 60°C / 140°F.

The cure schedules above are based on time after the unit reaches the specified temperature and are recommendations only. The user is responsible for determining the optimum cure conditions for his application.

Reparability

CE-1170 has only fair resistance to solvents. Fully cured films of CE-1170 can easily be removed by immersion in solvents such as CONAP® S-8, CONAP® S-13, toluene or ketones. This facilitates repair of the coating and removal of any damaged components.

After removing the coating, follow normal cleaning procedures and recoat.

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Typical Physical Properties

Property	Test Method	Conditions	Value
Color	Visual	25°C / 77°F	Clear
Hydrolytic Stability	MIL-I-46058C	120 days @ 85°C / 95% RH	No discoloration or degradation
Flexibility	MIL-I-46058C	1/8" diameter mandrel	No cracking or crazing
Thermal Shock	MIL-STD-810B	-65°C / -85°F to 125°C / 257°F	No cracking or deformation
Flame Resistance	FED STD-406		Self-extinguishing
Fungus Resistance	ASTM G-21		Non-nutrient
Solderability			Excellent
Inspection		UV Light	Fluorescent

Typical Electrical Properties

Property	Test Method	Conditions	Value	Units
Insulation Resistance	MIL-I-46058C	2 mil @ 25°C / 50% RH 10 d @ 65°C / 95% RH	>1.5 x 10 ¹⁶ 2.5 x 10 ¹²	ohms ohms
Dielectric Strength	ASTM D-149	25°C / 77°F	>3000	volts / mil
Dielectric Withstanding Voltage	MIL-I-46058C	1,500 VAC	No flashover or breakdown	
Dielectric Constant	ASTM D-150	100 Hz @ 25°C / 77°F	2.7	
Dissipation Factor	ASTM D-150	100 Hz @ 25°C / 77°F	0.01	
Volume Resistivity	ASTM D-257	25°C / 77°F	2 x 10 ¹⁵	ohm-cm

The above properties are typical values and are not intended for specification use.

ELANTAS PDG, Inc. warrants the chemical composition of its products within stated tolerances, but does not guarantee that a product will be appropriate for any particular application. Any recommendation, performance of tests or suggestion is offered merely as a guide and is not a substitute for a thorough evaluation by the user. No representative of ELANTAS PDG, Inc. has the authority to offer a warranty that a product will perform satisfactorily in manufacturing a product and no such representation should be relied upon.

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