

**Technical Data Sheet**

**Electrical Insulation**

**CONAP<sup>®</sup> CE-1170**

**One-Component Acrylic Conformal Coating**

**ELANTAS PDG, Inc.**

1405 Buffalo Street  
Olean, NY 14760  
USA  
Tel +1 716 372-9650  
Fax +1 716 372-1594  
info.elantas.pdg@altana.com  
[www.elantas.com](http://www.elantas.com)

5200 North Second Street  
St. Louis, MO 63147  
USA  
Tel +1 314 621-5700  
Fax +1 314 436-1030  
info.elantas.pdg@altana.com  
[www.elantas.com](http://www.elantas.com)

## CONAP<sup>®</sup> CE-1170

### Product Description

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

### Areas of Application

CONAP<sup>®</sup> 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<sup>®</sup> Dri-Purge) before resealing.

### Health / Safety

Refer to the Safety Data Sheet for additional information.

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### 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<br>55           | °C<br>°F |



**CONAP® CE-1170**

**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.



**CONAP® CE-1170**

**Typical Physical Properties**

| Property             | Test Method  | Conditions                        | Value                           |
|----------------------|--------------|-----------------------------------|---------------------------------|
| Color                | Visual       | 25°C / 77°F                       | Clear                           |
| Hydrolytic Stability | MIL-I-46058C | 120 days @<br>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<br>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<br>10 d @ 65°C / 95% RH | >1.5 x 10 <sup>16</sup><br>2.5 x 10 <sup>12</sup> | ohms<br>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 <sup>15</sup>                              | 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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