Technical Data Sheet

Electronic & Engineering Materials

# CONAP® CE-1171

## One-Component Acrylic Conformal Coating



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# CONAP® CE-1171

## Product Description

CONAP® CE-1171 is a transparent, solvent-based, fast-curing, single-component acrylic conformal coating.

## Areas of Application

CONAP® CE-1171 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
- Halogen-free (IEC 61249-2-21)
- Excellent hydrolytic stability
- UL94 V-0
- Flexible coating
- Excellent adhesion to phenolic and epoxy-glass laminates; even in harsh environments
- Excellent reparability
- Tracer dye for inspection under UV lighting

## Application Methods

- Spray
- Dip
- Brush

## Transportation / Storage

Store at or 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.

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.

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

## Health / Safety

CAUTION: Material is flammable. Do NOT use in the presence of open flames or sparks.

Refer to the Safety Data Sheet

## Typical Properties of Material as Supplied

| Property | Conditions | Value | Units |
|---|---|---|---|
| Viscosity | 25°C / 77°F | 900 | cP |
| Specific Gravity | 25°C / 77°F | 0.98 | |
| Color | | Amber, slight haze | |
| Solids Content | 135°C for 45 min | 30 | % |
| Flash Point | ASTM D93 | 18<br>65 | °C<br>°F |

# CONAP® CE-1171

## Regulatory Information

| Property | Test Method | Value | Units |
|---|---|---|---|
| Volatile Organic Content | ASTM D3960 | 5.7 | pounds / gallon |
| RoHS Compliance | CONAP® CE-1171 Acrylic 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 CONAP® CE-1171 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, lease request Technical Bulletin TI-4007 *Application Information for CONATHANE® and CONAP® conformal coatings*.

CE-1171 can be applied by spraying, dipping or brushing. If viscosity reduction is desired, dilutions of 10 – 20% by weight with the CONAP® S-22 Solvent are recommended for most applications. CONAP® S-22 Solvent meets Rule 66/3 exemption criteria. For some spray applications, dilutions up to 1:1 by volume may be required to avoid cobwebbing.

A minimum of two coats of CE-1171 is recommended for optimal protection. A total cured film thickness of 2 ± 1 mils is recommended. CE-1171 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 20 minutes and cure in 24 hours at 25°C / 77°F. Alternatively, dry tack-free can be completed in 15 minutes and cure can be completed in 60 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

CONAP® CE-1171 has only fair resistance to solvents. Fully cured films of CE-1171 can easily be removed by immersion in solvents such as CONAP® S-8, CONAP® S-13, CONAP® S-22, 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-1171

## Typical Physical Properties

| Property | Test Method | Conditions | Value |
|---|---|---|---|
| Color | Visual | 25°C / 77°F | Slight haze |
| Solvent Resistance | | | Fair |
| Hydrolytic Stability | MIL-I-46058C | after 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 to 125°C (-85 to 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>after 10 d @ 65°C / 95% RH | $>1.5 \times 10^{16}$<br>$2.5 \times 10^{10}$ | ohms<br>ohms |
| Dielectric Strength | ASTM D-149 | 25°C / 77°F | 3000 min | 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 | $2 \times 10^{15}$ | 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 an article and no such representation should be relied upon.