



TECHNICAL DATA SHEET

Formulated Resins

CONATHANE® CE-1171



DESCRIPTION

CONAP CE-1171 is a single-component acrylic conformal coating that has been formulated in Rule 66 exempt solvents and meets the latest requirements of MIL-I-46058-C for Type AR coatings.

CONAP CE-1171 is designed for thin-film applications on components and printed circuitry. It was developed specifically for its fast drying time and reparability and to provide the ultimate in humidity resistance and hydrolytic stability. CONAP CE-1171 retains excellent flexibility to prevent fracturing of fragile components during thermal cycling. Electrical properties are outstanding.

Cured films maintain excellent adhesion to phenolic and epoxy glass laminates even in adverse environmental conditions. Components may be removed by melting through the coating with a soldering iron, or the entire coating may be removed with a suitable solvent. A tracer dye has been incorporated to aid inspection under ultra-violet light.

CHARACTERISTICS AND PROPERTIES

Table 1 | Product Description

Property	Value
Appearance	Amber, Slight Haze
Brookfield Viscosity @ 25°C (77°F), cps	900
Specific Gravity @ 25°C (77°F)	0.98
Solids Content, %	30
Flashpoint, (Closed Cup), °C (°F)	18°C (65°F)
Shelf Life @ 25°C (77°F) from date of manufacture when unopened in the original containers	18 months

Table 2 | Cured Properties

Property	Value
Appearance	Slight haze, low luster
Solvent Resistance	Fair (See Reparability section)
Hydrolytic Stability	After aging 120 days at 85°C (185°F) and 95% R.H. , there was no evidence of discoloration, softening, tackiness, reversion to a liquid state, chalking, blistering, cracking, or loss of adhesion (per MIL-I-46058-C)
Flexibility	No cracking or crazing in bend over 1/8" diameter mandrel (per MIL-I-46058-C)
Thermal Shock	No cracking, blistering, wrinkling, or peeling when cycled from - 65°C to 125°C (149°F-257°F) (per MIL-STD-810B)
Flame Resistance	Self extinguishing (per FED STD-406)
Fungus Resistance	Non-nutrient per ASTM G21

Table 2 | Cured Properties (continued)

Property	Value
Solderability	Excellent
Inspection	Invisible dye, fluorescent under ultraviolet light

Table 3 | Electrical Properties

Property	Value
Insulation Resistance, ohms (2.0 mil films) Initially @ 25°C (77°F) and 50% R.H. After 10 days @ 65°C (149°F) and 95% R.H. After conditioning 24 hours @ 25°C (77°F) and 50% R.H.	$>1.5 \times 10^{13}$ 2.5×10^{10} 1.0×10^{13}
Dielectric Withstanding Voltage, 1500 V.A.C.	No Flashover or breakdown
Dielectric Constant, 100 Hz @ 25°C (77°F)	2.5 – 3.0
Dissipation Factor, 100 Hz @ 25°C (77°F)	0.01
Dielectric Strength, VPM	3000 min
Volume Resistivity @ 25°C (77°F), ohm-cm	2.5×10^{15}

APPLICATION

CONAP CE-1171 is a high-performance conformal coating specifically designed as an electrical insulating coating for printed circuitry and components. The ultimate performance of the cured film is dependent on process controls used in application of coating. Cleanliness of substrate is a major factor in promoting adhesion and preventing under-film corrosion. Assemblies must be clean, oil-free, and dry. For specific information, please contact your local Cytec Industries Inc. Regional Sales Manager or request Technical Bulletin C115 from Cytec's Customer Service Department.

CONAP CE-1171 may be applied by spraying, dipping, or brushing. If viscosity reduction is desired, dilution of 10%20% by weight with CONAP® S22 solvent is recommended for most applications. CONAP S22 Solvent meets Rule 66 exemption criteria.

PLEASE NOTE: For spray applications, dilution up to 1 to 1 by volume may be necessary to avoid cob-webbing. CONAP CE-1171 may be sprayed with most conventional air spray equipment.

Two coats are recommended for optimum protection. A total cured film thickness of 2 ± 1 mil is recommended. CONAP CE-1171 may be recoated, if desired, after the previous film is tack-free.

CURE

Curing of the film is dependent upon evaporation of solvents. The coating will dry tack-free in 20 minutes at 25°C (77°F) or 15 minutes at 60°C (140°F). CONAP CE-1171 will fully cure in 24 hours at 25°C (77°F) or 1 hour at 60°C (140°F).

REPARABILITY

CONAP CE-1171 has only fair resistance to solvents. Immersion in solvents such as CONAP® S-8, S-13, S-22, toluene, or ketones can easily remove fully cured films. This allows for easy reparability of the coating and removal of damaged components.

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

AVAILABILITY

CONAP CE-1171 is available in quart, gallon, 5-gallon and 55-gallon containers.

An EVALUATION KIT is available at a nominal cost.

See **Conformal Coatings Comparison Chart** for other Cytec conformal coatings.

HANDLING AND STORAGE INSTRUCTIONS

Maintain containers at temperatures of 20°C-30°C (65°F-85°F) and keep securely closed when not in use. CONAP CE-1171 has a shelf life of 18 months from date of manufacture when stored in original, unopened containers at 20°C-30°C (65°F-85°F).

CAUTION

Use only in well-ventilated areas. Adequate ventilation should be provided during and immediately after application. Avoid breathing of vapors or spray. Prevent skin contact. If contact occurs, wash with soap and water.

Material is flammable. Do not use in presence of open flames or sparks.

Responsible handling of Cytec Industries Inc. products requires a thorough review of safety, health, and environmental issues prior to use. Review the Material Safety Data Sheets(s) for the specific Cytec Industries Inc. product(s) and container label information before opening containers. Ensure that employee exposure issues are understood, communicated to all workers, and controls are in place to prevent exposures above Permissible Exposure Limits (PELs). Review safety and environmental issues to be certain controls are in place to prevent injury to employees, the community, or the environment, and ensure compliance with all applicable Federal, State, and Local laws and regulations. For assistance in this review process, please call your Cytec Industries Inc. representative or our office noted below.

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