



TECHNICAL DATA SHEET

Formulated Resins

# CONAP<sup>®</sup> CE-1170



## DESCRIPTION

CONAP CE-1170 is a single-component air drying room temperature curing acrylic conformal coating that meets the requirements of MIL-I-46058-C for Type AR coatings.

CONAP CE-1170 is a solvent-based coating designed for thin-film applications on components and printed circuitry. It was developed specifically for its fast drying time and reparability, as well as to provide the ultimate in humidity resistance and hydrolytic stability while retaining excellent flexibility to prevent fracturing of fragile components during thermal cycling. Its electrical properties are outstanding.

Cured films maintain excellent adhesion to phenolic and epoxyglass laminates even in adverse environmental conditions. Components may be removed by heating 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 ultraviolet light.

## CHARACTERISTICS AND PROPERTIES

**Table 1 | Product Description**

Property	Value
Appearance	Amber, Slight Haze
Brookfield Viscosity @ 25°C (77°F), cps	400
Specific Gravity @ 25°C (77°F)	0.95
Solids Content, %	31
Flashpoint, (Closed Cup), °C (°F)	13°C (55°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	Clear, colorless
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)

Property	Value
Fungus Resistance	Non-nutrient per ASTM G21
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) After conditioning 24 hours @ 25°C (77°F) and 50% R.H.	 $>1.5 \times 10^{16}$ $2.5 \times 10^{12}$ $1.0 \times 10^{16}$
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	$2 \times 10^{15}$

## APPLICATION

CONAP® CE-1170 is a high-performance 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 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 **Technical Bulletin C-115**.

CONAP CE-1170 may be applied by spraying, dipping, or brushing. If viscosity reduction is desired, dilutions of 10%-20% by weight with CONAP® S13 solvent are recommended for most applications.

**PLEASE NOTE:** For spray applications, dilutions up to 1 to 1 by volume may be necessary to avoid cob-webbing.

CONAP CE-1170 may be sprayed with most conventional air spray equipment.

Two coats are recommended for optimum protection. A total cured film thickness of  $2 \pm 1$  mils is recommended. CONAP CE-1170 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 15 minutes at 25°C (77°F) or 10 minutes at 60°C (140°F). CONAP CE-1170 will fully cure in 24 hours at 25°C (77°F) or 45 minutes at 60°C (140°F).

## REPARABILITY

CONAP CE-1170 has only fair resistance to solvents. Fully cured films can easily be removed by immersion in solvents such as CONAP® S8, S13, toluene, or ketones. This facilitates repair of the coating and removal of damaged components.

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

## AVAILABILITY

CONAP CE-1170 is available in quart, gallon, 5-gallon, 55-gallon containers and aerosol cans.

An EVALUATION KIT is available at a nominal cost.

See the Conformal Coatings Comparison Chart for other similar Cytec products.

## 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. The shelf life of CONAP® CE 1170 is 18 months from date of manufacture when stored in the 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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