

CONAP® CE-1170

— Qualified to MIL-I-46058-C, Type AR —
— and IPC-CC-830B —

CONAP CE-1170 is halogen free based on IEC 61249-2-21

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 repairability, 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 epoxy-glass 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.

TYPICAL PRODUCT CHARACTERISTICS

Appearance	Amber, Slight Haze
Brookfield Viscosity @ 25°C, cps	400
Specific Gravity @ 25°C	0.95
Solids Content, %	31
Flashpoint, (Closed Cup), °F	55
Shelf Life @ 25°C (from date of manufacture when unopened and in the original containers)	18 months

TYPICAL CURED PROPERTIES

Physical Properties

Appearance	Clear, Colorless
Solvent Resistance	Fair (See Repairability section)
Hydrolytic Stability	After aging 120 days at 160°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 (per MIL-STD-810B)
Flame Resistance	Self-extinguishing (per FED STD-406)
Fungus Resistance	Rating 0 (MIL-STD-810B)
Solderability	Excellent
Inspection	Invisible dye, fluorescent under ultraviolet light

Electrical Properties

Insulation Resistance, ohms (2.0 mil films)	
Initially @ 25°C and 50% R.H.	>1.5 x 10 ¹⁶
After 10 days @ 65°C and 95% R.H.	2.5 x 10 ¹²
After conditioning 24 hours @ 25°C and 50% R.H.	1.0 x 10 ¹⁶
Dielectric Withstanding Voltage, 1500 V.A.C.	No flashover or breakdown
Dielectric Constant, 100 Hz @ 25°C	2.5 – 3.0
Dissipation Factor, 100 Hz @ 25°C	0.01
Dielectric Strength, vpm	3000 min
Volume Resistivity @ 25°C, ohm-cm	2 x 10 ¹⁵

APPLICATION AND PROCESSING

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® S-13 solvent are recommended for most applications.

PLEASE NOTE: For spray applications, dilutions up to 1 to 1 by volume may be necessary to avoid cobwebbing.

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 ± 1 mils is recommended. 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 or 10 minutes at 60°C. CONAP CE-1170 will fully cure in 24 hours at 25°C or 45 minutes at 60°C.

REPAIRABILITY

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

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

STORAGE AND HANDLING

Maintain containers at temperatures of 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 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.

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.

CAUTION

Responsible handling of Cytec Industries Inc. products requires a thorough preview 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 (P.E.L.'s). 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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