



TECHNICAL DATA SHEET

Formulated Resins

CONAP® CE-2280

DESCRIPTION

CONAP® CE-2280 is a single-component transparent fast curing polyurethane conformal coating designed for thin film applications on components and printed circuit boards. CONAP® CE-2280 is based on toluene free urethane chemistry and does not contain any free isocyanate which provides excellent hydrolytic stability without compromising the flexibility to prevent fracturing of fragile components during thermal cycling.

Cured films maintain excellent adhesion to phenolic and epoxy-glass laminates even under adverse environmental conditions. A tracer dye has been incorporated to aid inception under UV light.

CHARACTERISTICS AND PROPERTIES

Table 1 | Product Description

Property	Value
Appearance	Clear Amber
Viscosity @ 25°C (77°F), cps	<500 cPs
Specific Gravity @ 25°C (77°F)	0.92
Solids Content, %	45
Boiling Point range	160°C-198°C/ 320°F-388°F

Table 2 | Cured Properties

Property	Value
Color	Translucent Amber
Hardness, Shore A	30-35
Flammability	UL 94 V-0 (Equivalent)
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
Flame Resistance	Self-extinguishing (per FED STD-406)
Fungus Resistance	Non-nutrient per ASTM G21
Solderability	Excellent
Inspection	Invisible dye, fluorescent under ultraviolet light

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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 x 10 ¹⁶ 2.5 x 10 ¹² 1.0 x 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 x 10 ¹⁵

APPLICATION

CONAP[®] CE-2280 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-2280 may be applied by spraying, dipping, or brushing. IF viscosity reduction is desired, dilutions of 10%-20% by weight with CONAP[®] S-280 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-2280 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. CONAP[®] CE-2280 may be recoated, if desired, after the previous film is tack-free

CURE

Curing 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-2280 will fully cure in 24 hours at 25°C (77°F) or 45 minutes at 60°C (140°F).

REPAIRABILITY

CONAP[®] CE-2280 has only fair resistance to solvents. Fully cured films can easily be removed by immersion in solvents such as CONAP[®] S-8, S-13, S-280, toluene, or ketones. This facilitates repair of the coating and removal of damaged components. After removing the coating, follow normal cleaning procedures and recoat.

HANDLING AND STORAGE INSTRUCTIONS

CONAP[®] CE-2280 has a shelf life of 18 months from date of manufacture when stored in the original unopened containers at 20°C-30°C (68°F-86°F). Containers should be flushed with dry nitrogen or CONAP[®] Dri-Purge each time they are opened unless the contents are used within one day. Cytec Industries Inc. recommends wearing clean, impervious gloves when working with potting compound to reduce skin contact and to avoid contamination of the product. Materials Safety Data Sheets (MSDS) and product labels are available upon request and can be obtained from www.cytec.com or by contacting Global Product Referral (see information below).

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-2280 IS AVAILABLE IN QUART, GALLON, 5-GALLON, 55-GALLON CONTAINERS, AND AEROSOL CANS

CAUTION

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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