

# CONATHANE® CE-1175<sup>RS</sup>

## Qualified to MIL-I-46058-C

CONATHANE® CE-1175 is a single-component water based polyurethane conformal coating that meets the requirements of MIL-I-46058-C Type UR.

CONATHANE® CE-1175 is designed for thin film applications on components and printed circuitry. It was developed specifically to provide the ultimate in humidity resistance and hydrolytic stability, yet retain excellent flexibility to prevent fracturing of fragile components during thermal cycling.

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

### TYPICAL PRODUCT CHARACTERISTICS

Color	Translucent Amber
Brookfield Viscosity @ 25° C, cps	<500
Specific Gravity @ 25° C	1.10
Solids Content, %	32
Boiling Point	212° F (100° C)
Shelf Life @ 25° C, from date of manufacture	15 months

### TYPICAL CURED PROPERTIES

#### Physical Properties

Color	Clear
Tensile Strength	5000 psi
Chemical and Solvent Resistance	Good
Hardness, Pencil	2H
Hydrolytic Stability	No change in hardness observed after 120 days exposure to 85° C and 95% relative humidity.
Appearance	No blistering, wrinkling, cracking, or peeling of film after thermal shock or after moisture resistance cycling when tested per MIL-I-46058-C.
Flexibility	No cracking or crazing of film in bend over 1/8" mandrel per MIL-I-46058-C.

Flame Resistance	Self-extinguishing
Fungus Resistance	Non-nutrient per MIL-E-5272C and MIL-STD-810B.
Inspection	Invisible dye, florescent under U.V. light.

### Electrical Properties

Insulation Resistance, ohms (2.0 mil film)	1.5 x 10 <sup>14</sup>
Initial (25° C - 50% R.H.)	2.9 x 10 <sup>10</sup>
1st Cycle (65° C - 95% R.H.)	4.5 x 10 <sup>10</sup>
4th Cycle (65° C - 95% R.H.)	6.3 x 10 <sup>10</sup>
7th Cycle (65° C - 95% R.H.)	6.5 x 10 <sup>10</sup>
10th Cycle (65° C - 95% R.H.)	3.2 x 10 <sup>12</sup>
24 Hours after 10th Cycle (25 <sup>N</sup> C - 50% R.H.)	
Note: After the 10-day humidity cycling per MIL-STD-202C, the coating retained its original excellent appearance. The adhesion to the panels (epoxy glass laminate) was maintained. No under-film corrosion of the copper conductor was observed.	
Dielectric Withstanding Voltage, 1500 vac for 60 seconds - No flashover or breakdown BEFORE or AFTER thermal shock and moisture resistance cycling.	

### PROCESSING CHARACTERISTICS

CONATHANE® CE-1175 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 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 applications, please contact your local CYTEC INDUSTRIES INC. Sales Engineer or request technical [Bulletin C-115](#).

CE-1175 may be applied by spraying, dipping, or brushing. If viscosity reduction is desired, dilutions of 10-100% by weight with de-ionized or distilled water are recommended for most applications. CE-1175 has excellent dip tank stability, and with proper dilution it can be sprayed with most conventional air spray equipment.

Two coats are recommended for optimum protection. A total cured film thickness of 3 ± 2 mils is recommended. CE-1175 may be re-coated, if desired, after the previous film is tack-free.

Tack-Free Time	Cure Times
25° C, 50% R.H. - 1 Hour	3 hours @ 60° C plus 3-5 Days @ 25° C or, 4 hours at 85° C plus 1-2 days @ 25° C or, 2 hours @ 100° C plus 24 hours at 25° C

**NOTE:** Best results for optimum adhesion of the CE-1175 coating are obtained when the cured film is allowed to stand at 20°-30° C for 7 days after curing at any of the recommended heat-cure schedules.

## STORAGE AND HANDLING

CONATHANE® CE-1175 must be stored in tightly closed containers to prevent evaporation of water and the introduction of foreign matter, which can adversely affect process ability. In order to maintain product uniformity - PROTECT FROM FREEZING.

CONATHANE® CE-1175 has a shelf-life of 15 months from the date of manufacture when stored in 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.

## AVAILABILITY

CONATHANE® CE-1175 is available in quart, gallon, 5-gallon, and 55-gallon containers.

An EVALUATION KIT is available at a nominal fee.