

FORMULATED RESINS

CONAP[®] CONASHIELD CS-313

DESCRIPTION

CONAP[®] CONASHIELD CS-313 is a two-component, highly flexible liquid polyurethane molding and encapsulating system suitable for Cytec's new patented Flood Coat technology which is based on the optimization of rheology, reactivity and custom processing, resulting in the lower consumption of potting material as compared to the conventional potting application without compromising the performance.

CONAP CONASHIELD CS-313 is recommended for cable and connector potting and molding - military and commercial, electronic module potting, wire wound device encapsulation, and strain sensitive component potting. The excellent moisture resistance also suggests its use as a 100% solids thick-film coating for printed circuit board. CONAP CONASHIELD CS-313 has also shown exceptional adhesion to a wide variety of substrates. The electrical properties of this system is excellent; the dielectric constant and dissipation factor are exceptionally low and remain relatively unchanged over the recommended operating temperature range of -65°C to 130°C (-95°F -266°F).

CHARACTERISTICS AND PROPERTIES

Table 1 | Product Description.

Property	Prepolymer PART A	Curative PART B
Viscosity @ 25°C (77°F), cps	440	42,000
Specific Gravity @ 25° (77°F)	1.21	1.45
Color	Brown	Black

Table 2 | Cured Properties.

Property	Value
Color	Black
Hardness, Shore A	85
Tensile Strength, psi	840
Ultimate Elongation, %	190
Tear strength, pli	140
Flammability, UL-94, 2.8 mm thickness	V-0
Thermal Conductivity, W/mK	0.60
Glass Transition Temperature (Tg)	- 44°C

Table 3 | Electrical Properties.

Property	Value
Dielectric Constant,	
100 Hz	5.88
1 KHz	4.34
1 MHz	3.66
Dissipation Factor,	
100 Hz	0.165
1 KHz	0.087
1 MHz	0.022
Volume Resistivity ohm-cm	1.1×10^{15}
Surface Resistivity, ohms	4.2×10^{15}

Cytec Solvay Group

1405 Buffalo St., Olean, NY 14760
 Conap.CustSvc@cytec.com
 ConapTechnicalSupport@cytec.com
 Tel: +1.716.376.7816
 Fax: +1.716.372.1594



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Table 4 | Processing Properties.

Property	Value
Mix Ratio by Weight, Prepolymer / Curative	20/100
Mix Ratio by Volume, Prepolymer / Curative	1/4
Initial Mixed viscosity @ 25°C (77°F), cps	8,000
Gel Time @ 25°C (77°F)	4 - 6 mins
Cure Time @ 80°C (176°F)	16 hours

Note: CONAP CONASHIELD CS-313 PART A may crystallize upon storage or during shipment. If this has occurred, heat to 60°C (140°F), mix thoroughly, and cool to room temperature before processing. The Part B of this system should be thoroughly mixed prior to use. Thoroughly mix the Part A and Part B at 25°C (77°F) to 40°C (104°F), using metal, plastic, or glass stirrers and containers. Degas the mixed material at 1-5 mm of mercury and pour into molds at 25°C - 80°C (77°F - 176°F). Containers should be large enough to allow for volume expansion during the degassing cycle. Any material or container that could introduce moisture in the system should be avoided.

HANDLING AND STORAGE INSTRUCTIONS

CONAP CONASHIELD CS-313 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.

AVAILABILITY

CONAP CONASHIELD CS-313 Part A & B are available in quart, gallon, 5-gallon, and 55-gallon containers.

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.

CONTACT INFORMATION

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Conap.CustSvc@cytec.com

ConapTechnicalSuppor@cytec.com

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