CONATHANE® EN-14

TECHNICAL PRODUCT BRIEF

DESCRIPTION

CONATHANE EN-14 is a two-component, unfilled, low viscosity, fast-gelling, fast-curing, flexible polyurethane elastomer system designed for potting and encapsulation of electrical and electronic assemblies. CONATHANE EN-14 is a non-mercury version of CONATHANE® DPEN-8536. The cured system features excellent water resistance, thermal shock resistance, and electrical properties.

UL Recognized

The initial low viscosity of the system allows good penetration into fine windings. CONATHANE EN-14 is fully transparent and can easily be cut to remove defective components. Repairs can be made by application of more of the liquid system.

CONATHANE EN-14 is particularly recommended for potting and encapsulating strain and heat sensitive devices in modules, connectors, and units required to operate in the temperature range of -65°C to 130°C. It also has shown utility as a conformal coating and can be applied by casting, spraying, or bushing. Airless spray equipment can be used effectively.

Table 1 | Product Description

Property	Prepolymer PART A	Curative PART B
Viscosity @ 25ºC (77ºF)	1500 cps	1000 cps
Specific Gravity @ 25ºC (77ºF)	1.10	0.97
Color	Amber	Amber

Table 2 | Processing Parameters

Property	Value
Mix Ratio by Weight, Prepolymer/Curative (A/B)	100 / 90
Mix Ratio by Volume, Prepolymer/Curative (A/B)	1 / 1
Initial Mixed Viscosity @ 25ºC (77ºF), cps	1200
Work Life @ 25ºC (77ºF), minutes	15
Gel Time @ 25°C (77°F), minutes	20
Cure @ 25ºC (77ºF)	3-4 days
Cure @ 60°C (140°F)	3 hours

Mix the two components together thoroughly, degas at 1-5mm Hg vacuum and pour into molds. The fast setting characteristics of this system make it ideal for automatic mixing and dispensing which eliminates the need for vacuum degassing.

The two components should be mixed thoroughly in metal or glass containers using metal or glass stirrers. Degassing of the mixed system should be accomplished at room temperature at 1-5 mm Hg vacuum. Containers should be large enough to allow for frothing during degassing. To ensure void-free castings, any material or container that could introduce moisture to the system should be avoided. Do not heat the components of the system prior to mixing.

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Table 3 | Cured Properties

Physical Properties	Value
Color	Transparent Lt. Amber
Hardness, Shore A	65
Specific Gravity @ 25°C (77°F)	1.04
Tensile Strength, psi	700
Elongation, %	110
Tear Strength, pli	35
Dielectric Strength, volts/mil	>500
Arc Resistance, sec	>120
Thermal Shock, 10 cycles, 130°C to -65°C	Passes
Linear Shrinkage, in./in.	0.0031
Water Absorption @ 25° (77°F), 24 Hrs./7 Days, %	0.40 / 0.79
Dielectric Constant @ 25° (77°F), (100Hz / 1MHz)	5.71 / 3.42
Dissipation Factor @ 25° (77°F), (100Hz / 1MHz)	0.123 / 0.038
Volume Resistivity @ 25° (77°F), ohm-cm	3×10^{13}
Surface Resistivity @ 25° (77°F), ohms	1×10^{13}
Flammability	UL 94 V-2

HANDLING AND STORAGE INSTRUCTIONS

The shelf life of CONATHANE EN-14 is 18 months from date of manufacture when stored in the original unopened containers at temperatures of 20°C-30°C (68°F-86°F). If containers are opened and the contents only partially used, containers should be flushed with dry nitrogen (see CONAP® Dri-Purge) or dry air before being resealed to prevent waste of material.

CAUTION: FOR INDUSTRIAL USE ONLY ! DO NOT TAKE INTERNALLY.

The Part A component is a toluene diisocyanate (TDI)-based prepolymer. Use only in well-ventilated areas. Avoid breathing of vapors and protect skin and eyes from contact.

Should skin contact occur with either component, wash immediately with soap and water. In case of eye contact, flush immediately with plenty of water and obtain medical attention.

Request the Material Safety Data Sheet for complete details.

COLORING

CONATHANE EN-14 cures to a transparent light amber solid. As a convenience to those who wish to pigment these systems, Cytec supplies color concentrates in four standard colors (see CONAP® DS-1830).

AVAILABILITY

CONATHANE EN-14 is available in quart, gallon, 5-gallon, and 55-gallon units. An evaluation kit is available for a nominal fee.

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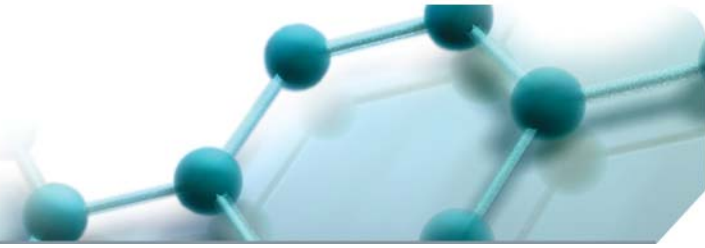

CAUTION: Responsible handling of Cytec Industries Inc. products requires a thorough review of safety, health, and environmental issues prior to use. Review the Material Safety Data Sheets(s) for the specific Cytec Industries Inc. product(s) and container label information before opening containers. Ensure 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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DISCLAIMER: The data and information provided in this document have been obtained from carefully controlled samples and are considered to be representative of the product described. Because the properties of this product can be significantly affected by the fabrication and testing techniques employed and since Cytec Engineered Materials (CEM) does not control the conditions under which its products are tested and used, CEM cannot guarantee that the properties provided will be obtained with other processes and equipment. CEM has the right to change any data or information when deemed appropriate.

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