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Advanced Materials

Araldite® CY 5841 US Resin

Single-component epoxy impregnation resin

Recognized Compound for 180°C Applications

Key properties

- **Low viscosity**
- **Exceptional long-term stability at room temperature**
- **Rapid cure at elevated temperatures**
- **Good adhesion to most substrates including copper**
- **Excellent thermal endurance in applications requiring 180°C continuous service**
- **Thermal Index of 180°C by UL® 1446 by both twisted pair and helical coil tests**

Description

Araldite® CY 5841 US Resin is a latent, heat-curable, one-component, low-viscosity, solvent-free epoxy impregnation system recommended for use in medium- and high-voltage electrical applications. This product offers good mechanical and electrical properties, coupled with excellent thermal endurance for applications requiring 180°C continuous service.

Applications

Vacuum-pressure impregnation of electrical coils

Dip and bake impregnation of electrical coils

Trickle impregnation for random wound motor windings, stators, rotors and armatures

Impregnation of dry-type transformers

Product data*

Araldite® CY 5841 US Resin	
Appearance	Clear to slight haze amber liquid
Specific Gravity	1.15 – 1.20
Viscosity @ 25ºC, cPs	1,500 – 2,200
Flash Point, Closed Cup, °F	280

* Product data is based on Huntsman's test methods. Copies are available upon request.

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Processing Information

Gel time (10 grams)	
@ 120ºC, min	25 – 30
@ 140ºC, min	10 – 15
@ 150ºC, min	6 – 8
@ 160ºC, min	4 – 6
Recommended cure time	
@ 160ºC, hours	6*
@ 170ºC, hours	3*

*Cure schedule results in approximately 90% of final properties. Additional room temperature or elevated temperature curing is required for 100% properties.

Typical Mechanical Properties

Unless otherwise stated, the data were determined with typical production batches using standard testing methods. They are provided solely as technical information and do not constitute a product specification.

Property	Value
Tensile strength, psi	5,000 – 6,500
Tensile modulus, psi	4.1 – 4.3 x 10^5
Tensile elongation, %	1.0 – 1.5
Flexural strength, psi	15,000 – 19,000
Flexural modulus, psi	4.5 – 4.8 x10^5
Bond strength MW-35 wire, lb.	
@ 25°C	93
@ 130°C	18.5
@ 155°C	14.6
@ 180°C	7.5
Glass transition temperature, °C	115 – 120
Hardness, Shore D	84 – 86
Volume Shrinkage, %	1.7 – 1.8
Coefficient thermal expansion, ppm/°C	55 – 60
Water absorption, 23°C/24 hours, %	0.14 – 0.16
Thermal Conductivity, W/m-K	0.22 – 0.24

Typical Electrical Properties

Property	Value
Dielectric strength, V/mil @ 3 mm	500 – 525
Dielectric Constant vs Temperature, 60Hz	See Figure 3
Dissipation Factor vs Temperature, 60 Hz	See Figure 4
Volume Resistivity vs Temperature	See Figure 5

Figure 1

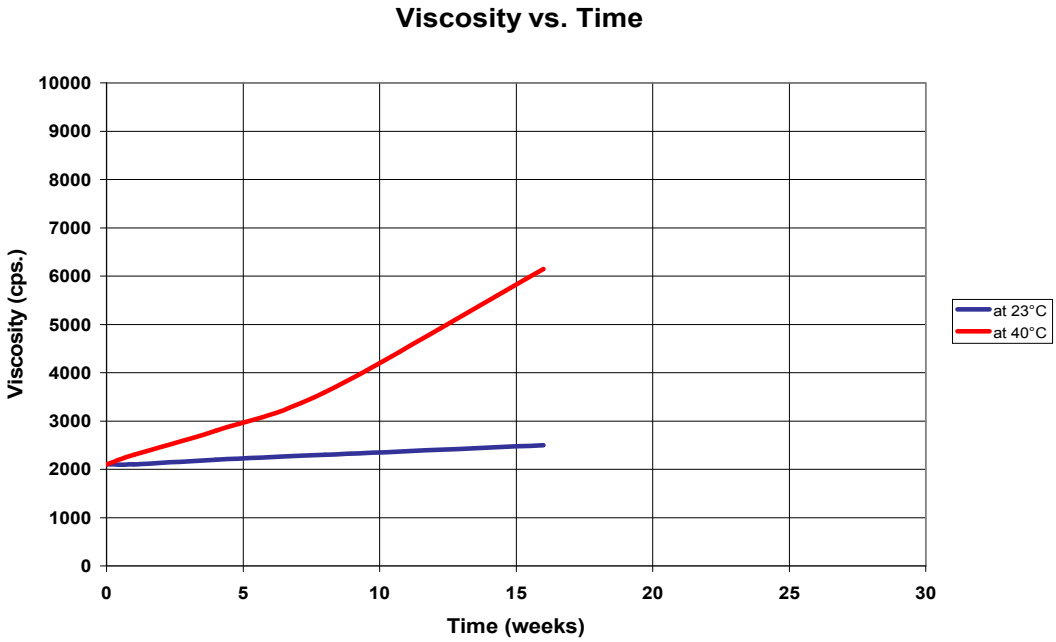


Figure 2

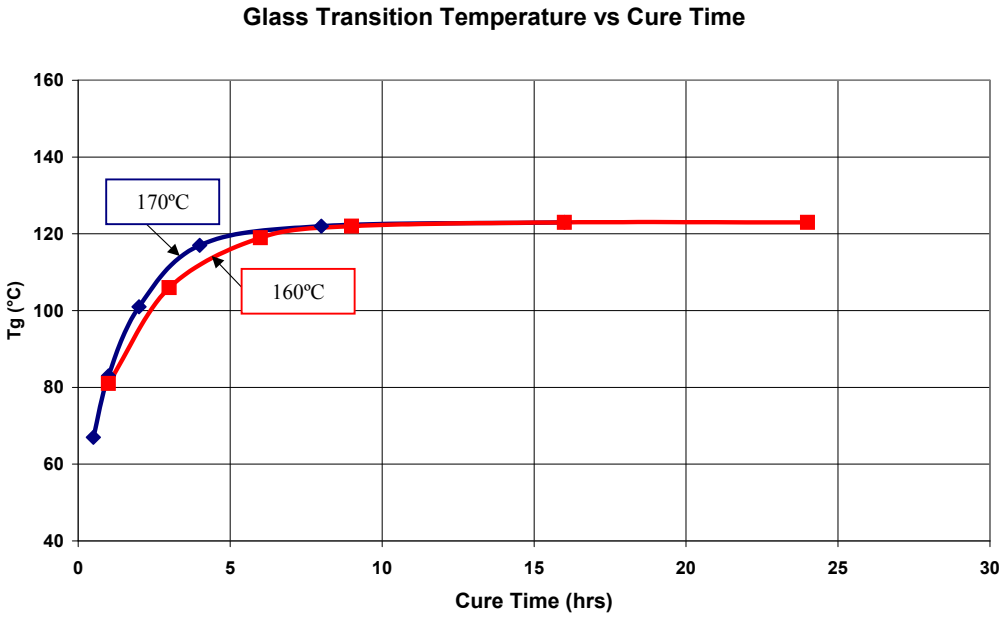


Figure 3

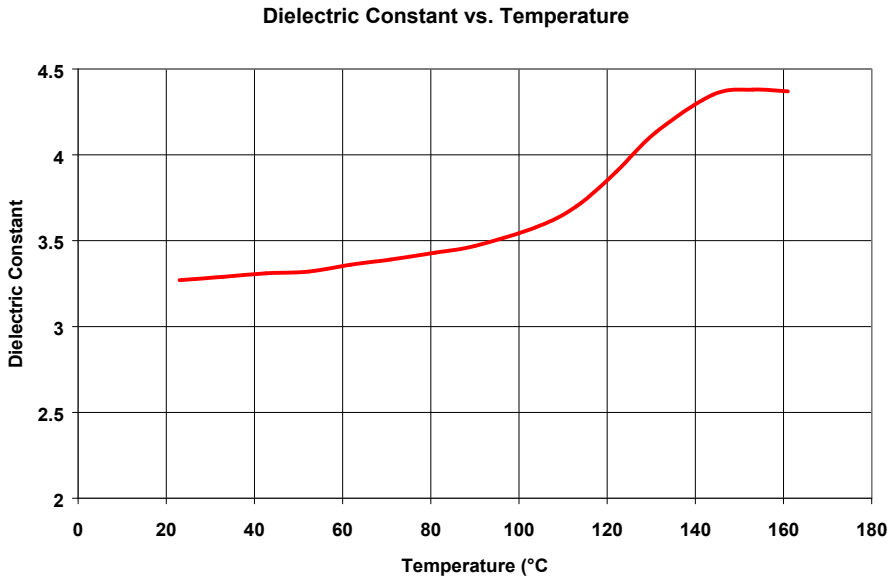


Figure 4

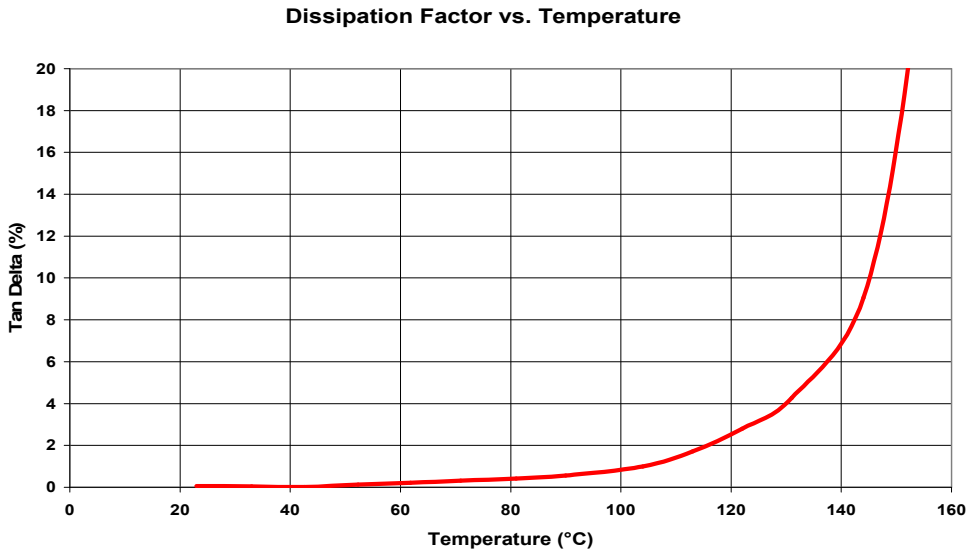
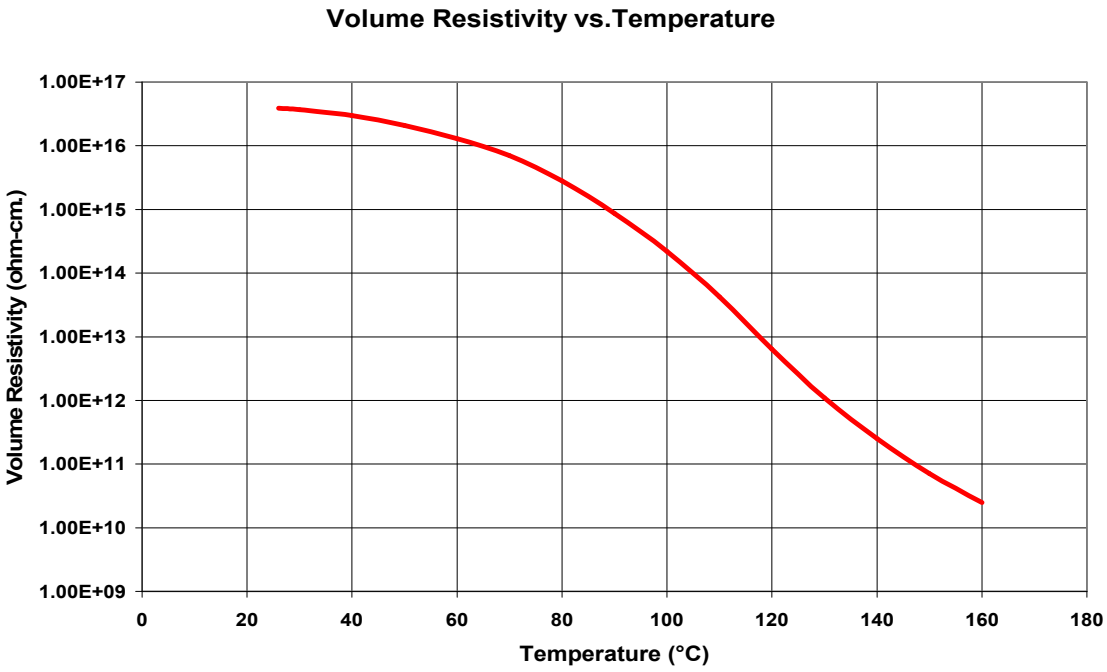


Figure 5



Storage

Araldite® CY 5841 US Resin should be stored in a dry place, in the sealed original container, at temperatures between +2°C and +40°C (+35.6°F and 104°F). Under these storage conditions the shelf life is 1 year. The product should not be exposed to direct sunlight.

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Precautionary Statement

Huntsman Advanced Materials Americas LLC maintains up–to-date Material Safety Data Sheets (MSDS) on all of its products. These sheets contain pertinent information that you may need to protect your employees and customers against any known health or safety hazards associated with our products. Users should review the latest MSDS to determine possible health hazards and appropriate precautions to implement prior to using this material.

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