



## PRODUCT TECHNICAL DATA SHEET

# 439S Matrix

### Medium Temperature System

Main description --- A two-component, medium temperature matrix used in our PowerSleeve® composite reinforcement products. The matrix wets out easily and can be easily applied to our PowerSleeve® W-11 and G-03 Fabrics. This derivative of our 439 System allows for higher application temperatures. To achieve its ultimate properties, it requires heat in excess of 200° F during the curing process. It is relatively fast setting, approximately 45 minutes @ 150° F and is used where a maximum service temperature of 300° F is desired. Intermittent excursions to 325° F can also be tolerated. The color will change from a mild yellow to dark amber when temperatures rise above 150° F. This product ships DOT hazardous (corrosive).

ATTENTION: All of the following data are based on laboratory conditions, at room temperature. Field conditions can radically change the characteristics of this product. Higher temperatures will lessen the working life of the product. Allow adequate time for application. Field testing is strongly recommended prior to application.

EPOXY PROPERTIES			
<b>Working (pot) Life:</b>	45 min. at 66°C (150°F)	<b>Mix Ratio:</b>	Factory Ratioed
<b>Application Temps:</b>	66-105°C (150-220°F)	<b>Service Temps:</b>	66-163°C (150 – 325°F)
<b>Cure Time (dry to touch):</b>	2 hours at 66°C (150°F)	<b>Full Cure:</b>	7 days at 25°C (77°F)
<b>Usual Packaging:</b>	Factory Ratioed	<b>Shelf Life:</b>	1 year in sealed jar
<b>Color:</b>	Amber – Darkens with heat exposure	<b>Hardness:</b>	90-95 Shore D - ASTM D-2240
COMPOSITE LAMINATE PROPERTIES			
TEST	W-11 FABRIC	G-03 FABRIC	
<b>Ultimate Tensile Strength:</b>	51,800 psi (warp direction) per ASTM D-3039	50,100 psi (warp direction) per ASTM D-3039	
<b>Ultimate Tensile Strength:</b>	12,600 (fill direction) per ASTM D-3039	26,161 (fill direction) per ASTM D-3039	
<b>Tensile Modulus:</b>	2.7 x 10 <sup>6</sup> psi	2.5 x 10 <sup>6</sup> psi	
<b>Load Per Ply:</b>	1,800 lbs.	868 lbs.	
<b>HDT:</b>	400°F	N/A	
<b>CTE, in/in/°F:</b>	14.3	N/A	

**Storage & Handling** – Store at 60-90° F in a dry place. Keep from freezing. Keep any leftover material in a tightly sealed container. Always use clean, dry tools when mixing and applying the matrix. Mix ratios are pre-determined and packaged accordingly. Normal mixing procedure is to pour the contents of the Part B container into the Part A container and mix thoroughly. Use immediately. Mixtures left in containers can obtain dangerous temperatures during cure and can cause damage to the container and surrounding items.

**Shelf Life** – 12 months from date of sale, in an unopened container, stored in cool warehouse conditions.

**Caution** – Read MSDS prior to use. Some persons may be irritated by this compound. Use caution and PPE. This product is for industrial use by professionally trained personnel only. Please read and understand all application instructions prior to using.

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