B-7-619 EPOXY VACUUM PRESSURE IMPREGNATE

RANBAR B-7-619 EPOXY VACCUM PRESSURE IMPREGNATE represents the ultimate in environmental and thermal protection available in a single component epoxy resin. B-7-619 is a true 100% reactive epoxy impregnating resin designed for use in vacuum pressure impregnation (VPI) systems. B-7-619 is shipped at a moderately low viscosity to enhance penetration while proving a complete void-free impregnation and a 2.0 mil film build. Industry, government and the military have recognized B-7-619's quality by numerous acceptances and listings.

Features:

- Included in 180° U.L. Systems
- Listed on Military and Nuclear Navy Specs. (MIL-I-24718/1)
- Approved in radiation and steam exposure in Nuclear power plants
- Cures on bare copper
- Excellent chemical resistance
- Compatible with competitive products
- Hermetic approval

Used in: Nuclear environments, chemical plants, paper mills, steel mills, underground mines

Descriptive Information:

Specific Gravity	1.13 (Typical)
Weight per Gallon	9.4 Pounds
Catalyzed Storage Life @ 20°C	12 Months
Solids Content	100%
Viscosity @ 25°C (20 RPM)	2000 cps (Typical)
Viscosity @ 25°C (2 RPM)	4000 cps (Typical)
Thixotropic Index	2.00 (Typical)
Gel Time (15 gms @ 150°C)	10-20 Minutes, Sunshine
Film Build (rate: 4" per min)	2.0 mil minimum per side
Cure	4-6 Hours @ 150-160°C
Cake Hardness (20 gms - Shore D)	87/84
Cake Hardness (aged 1000 Hours @ 180°C)	94/84
Reducer	B-7-619LV
Flash Point (Seta Flash Method)	>200°F

Dissipation Factor (ASTM D150)
Typical (60 HZ)

@ Room Temperature	0.033
@ 100°C	0.114
@ 150°C	0.437
Dielectric Constant (ASTM D150)	
@ Room Temperature	4.0
@ 100°C	5.5
@ 150°C	12.5
Dielectric Strength, ASTM D-115 (dry)	2760 volts/mil
Dielectric Strength, ASTM D-115 (wet)	2600 volts/mil
Bond Strength (cure: 4 Hours @ 150°C)	
Broke at Room Temperature	67#
Broke at 150°C	6.7#
Resin Retention (Q Panel: 4 Hours @ 150°C)	77%

Packaging Information:
RANBAR B-7-619 EPOXY VACUUM PRESSURE IMPREGNATE is available in 55 gallon drums (500 pounds) and 5 gallon pails (45 pounds).

MIL Spec Comparison:

	MIL Requirement	B-7-619
Catalyzed Storage Life (20°C)	9 months min.	12 months
Vapor Pressure	2 mm Hg max.	----
Loss on Cure	30% max.	2.4%
Flash Point (ASTM 3278)	93°C	>100°C
Viscosity @ 2 RPM	5000 cps max.	400 cps
Viscosity @ 20 RPM	1500 cps max.	2000 cps
Thixotropic Index	1.10 min.	2.00

Build	2 mils min./5 mils max.	2.1 mis
Resin Retention	75% min.	77%
Dielectric Strength @ 96/23/50	1000 volts/mil(min.)	2760 volts/mil
Dielectric Strength @ 96/23/96	25% decrease min.	2650 volts/mil
Dielectric Strength @ 2433water	25% decrease min.	2600 volts/mil
Dissipation Factor (1.2V) (60 HZ) @23°C	3.0%	.025 (2.5%
Dielectric Constant (1.2V) (60HZ) @23°C	5.0 max.	3.40
Bond Strength (ASTM 2519) #18 ML 23*C, MW-16	30# min.	57#
Bond Strength (ASTM 2519) #18 ML 150*C, MW-16	5# min.	5.6#
Bond Strength (ASTM 2519) #18 PTZ 23*C, MW-35	30# min.	60#
Bond Strength (ASTM 2519) #18 PTZ 150*C, MW-35	5# min.	7.6#

Properties Comparison:

Properties	Mil Requirement	B-7-619	Epoxylite 478 (typical)
Catalyzed Storage Life (20°C)	9 months min.	12 months	12 months
Vapor Pressure	2 mm Hg max.		
Weight on Cure	30% mox.	2.4%	3.6%
Flash Point (ASTM 3278)	93°C	>100°C	100°C
Viscosity @ 2 RPM	5000 cps max.	4000 cps	3360 cps
Viscosity @ 20 RPM	1500 cps max.	2000 cps	3020 cps
Thixotripic Index	1.10 min.	2.0	1.11
Build	2 mils min./5 mils max.	2.1 mils	>0.7 mils (not continuous film)
Resin Rentention	75% min.	77%	30%
Dielectric Strength @ 96/23/50	1000 volts/mil min.	2760 volts/mil	2600 volts/mil
Dielectric Strength @ 96/23/96	25% decrease min.	2650 volts/mil (3.9%)	2100 volts/mil (19.3%)
Dielectric Strength @ 24/23/water	25% decrease min.	2600 volts/mil (5.8%)	2000 volts/mil (23%)
Dissipation Factor (1.2V) (60HZ) @ 23°C	3.0% max.	.025 (2.5%)	.021 (2.1%)
Dielectric Constant (1.2V) (60 HZ) @ 23°C	5.0 max.	3.40	3.25

Bond Strength-#18 ML 23*C	30# min. MW 16	57#	55#
Bond Strength-#18 ML 150*C	5# min. MW 16	5.6#	6.2#
Bond Strength -18 PTZ 23*C	30# min. MW 35	60#	61#
Bond Strength -#18 PTZ 150*C	5# min. MW 35	7.6#	6.7#
Thermal Endurance:			
Class 155, 20,000 Hours	105°C	Passed	Passed
Class 130, 20,000 Hours	130°C	Passed	Passed
Class 155, 20,000 Hours	155°C	Passed	Passed
Class 160, 20,000 Hours	180°C	Passed	Passed
Class 200, 20,000 Hours	200°C	Under test	
Salt Water proof	100 hour min.		
Hydrolytic Stability	50% decrease (avg.)	38.5#(32.4%) over ML	30.9# (43.8%) over ML
Chemical Resistance (168 hrs.) (over ML)			
Hydraulic Fluid	25% decrease max.	43.7# (23.3%)	42.9#(22%)
Lubricating Oil	25% decrease max.	49.4# (13.3%)	46.7# (15%)
Cleaning Fluid	25% decrease max.	38.2# (32.9%)	37.5# (31.8%)
Distilled Water	25% decrease max.	35.7# (37.4%)	34.6# (37.1%)
Detergent Solution	25% decrease max.	35.7# (37.4%)	35.4# (35.6%)
Gel Time (10 grams-Sunshine)	----------	13.6 mins.	11.4 mins.