

resin

Permafil® 707

- ▶ **Flexible in stressful applications; protects windings in harsh thermal and mechanical shock environments**
- ▶ **Excellent coverage and retention**
- ▶ **Good processing characteristics**
- ▶ **Low weight loss during heat aging**
- ▶ **Exceptional electrical properties**

General description

Permafil® 707 solventless polyester resin is a semi-rigid resin system designated primarily for vacuum-pressure impregnation of both form wound and random wound motors. Its high thermal capability coupled with its excellent electrical properties over a wide temperature range make this resin system suitable for both AC and DC applications.

Application

Developed primarily for use in severe duty applications, Permafil® 707 is very useful treating motors, generators, and transformers that require a high degree of reliability. The 1.5 mil typical build, resistance to cracking under thermal cycling, coupled with excellent chemical resistance provide a level of performance not usually expected with a polyester resin system.

Processing

Permafil® 707 resin can be used in conventional or automated dip and bake process and in VI or VPI equipment. For suggested cycle times and process specifics, please contact Von Roll Isola USA, Inc.

Suggested Cure Cycle: 3-4 hours at 302°F (150°C) or 1-2 hours at 320°F (160°C)

Order Data

Permafil® 707 resin is available pre-catalyzed in totes or 55-gallon drums or un-catalyzed in 5 gallon containers or 55 gallon drums from Von Roll USA, Inc. or from authorized Von Roll distributors. For the name of your distributor or for more information on this product, contact our Customer Service department, (518) 344-7100.

Health and safety

Material Safety Data Sheets defining the known hazards and describing safety precautions appropriate for this product are available upon request from Von Roll USA, Inc., 200 Von Roll Drive, Schenectady, New York 12306 (518) 344-7100. Similar information sheets for solvents and other chemicals used with this product may be obtained from the appropriate supplier and used accordingly.

Storage Conditions

Permafil® 707 resin can be expected to stay within its specified gel time limits when stored pre-catalyzed for up to 8 months or catalyzed for up to 6 months at 77°F (25°C)

Specifications

The properties shown above are typical values only, and should not be used as a basis for preparing specifications. Contact our Customer Service department, (518) 344-7100 for assistance in preparation of specifications for your specific system application.

The product properties set forth in this data sheet are based on the results of testing of typical material produced by the affiliated companies of Von Roll Holding Ltd. (underneath referred as Von Roll). Some variation in product properties is typical. Comments or suggestions relating to any subject other than product properties are offered only to call the end-user's or other person's attention to considerations which may be relevant in the independent determination of the use and/or manner of use of product. Von Roll does not claim or warrant that the use of its product will have the results described in this data sheet or that the information provided is complete, accurate or useful. The user should test the product to determine its properties and its suitability for the intended use. Von Roll expressly disclaims any liability for any damage, harm, injury, cost or expense to any person resulting directly or indirectly from that person's reliance on any information contained in this data sheet. Nothing contained in this data sheet constitutes representation or warranty as to any matter whatsoever. Von Roll makes no warranties whatsoever in this data sheet, expressed or implied, including any implied warranty or fitness for a particular use or purpose. Von Roll shall in no event be liable for incidental, exemplary, punitive or consequential damages.

Average helical coil bond strength after 168 hour immersion

Control		20% Sodium Sulfate		30% Hydrochloric Acid		20% Potassium Chloride		30% Sulfuric Acid		20% Ammonium Nitrate		20% Ammonium Sulfate	
R.T.	155°	R.T.	155°	R.T.	155°	R.T.	155°	R.T.	155°	R.T.	155°	R.T.	155°
54.0	9.0	27.7	6.8	38.3	3.9	32.5	6.0	53.6	9.1	16.1	8.1	43.5	8.1
10% Sodium Chloride		White Liquor		Black Liquor		Green Liquor		20% Muriate of Potash		6% Boric Acid		15% Potassium Sulfate	
R.T.	155°	R.T.	155°	R.T.	155°	R.T.	155°	R.T.	155°	R.T.	155°	R.T.	155°
35.3	7.8	26.3	6.0	50.7	9.1	42.6	9.0	30.9	6.9	29.6	7.7	31.8	6.6

		Value (Default)	Value (1% Dicumyl Peroxide)	Value (After curing)	Test norm
Physical properties					
Flash point	°F (°C)	≥132 (55.6)			Pensky-Martens Closed Cup
Weight					
Solids content	%	100			
Total weight	lbs/gal. (kg)	8.95 (4.06)			
Physical properties					
Gel time (Sunshine) @ 118°C	minutes		19 ± 6		
Volatile content	lbs/gal. (kg)	≤2.45 (1.11)			ASTM D-6053
Viscosity (Brookfield) 77°F (25°C)	cps	1050 ± 150			
Film build on steel (avg.)	mils (mm)	1.5 (0.038)			
Viscosity Reducer		Vinyl Toluene			
Mechanical properties					
Bond Strength (Helical Coil) MW-35 @ 25°C	lbs(N)			41(182)	ASTM D-2519
Bond Strength (Helical Coil) MW-35 @ 180°C	lbs(N)			5 (22.2)	ASTM D-2519
Bond Strength (helical coil) MW-35 @ 100°C	lbs(N)			17 (75.6)	ASTM D-2519
Bond Strength (Helical Coil) MW-35 @ 130°C	lbs(N)			11 (48.9)	ASTM D-2519
Bond Strength (Helical Coil) MW-35 @ 155°C	lbs(N)			9 (40.0)	ASTM D-2519
Heat distortion temperature	°F (°C)	158 (70)			
Electrical properties					
Dielectric strength, Short Time	V/mil(kV/mm)			>2700 (106)	ASTM D-115
Dissipation factor @ 125°C tg delta	%	2.2			ASTM D-150
Dissipation factor @ 155°C tg delta	%	1.9			ASTM D-150
Dissipation factor @ 170°C tg delta	%	2.1			ASTM D-150
Dissipation factor @ 25°C tg delta	%	0.4			ASTM D-150
Dielectric constant; 60Hz, 77°F (25°C)		2.5			ASTM D-150
Thermal properties					
Weight loss ; 1000 hours @ 200°C	%	4.2			
Thermal index	°C	180			IEEE #57