Technical Data Sheet
Aerospace Sealants

PR-1590 potting and molding compound

Description

PR-1590 is a medium hardness potting and molding compound. It has a service temperature range from -80°F (-62°C) to 300°F (149°C). This material is designed for applications where high retention of electrical properties after exposure to high humidity and temperature is required.

PR-1590 is a two-part, diamine curing system based curing polyurethane compound. The product requires elevated temperature for cure to obtain optimal performance properties.

The following tests are in accordance with PRC DeSoto International and MIL-S-8516 specification test methods.

Application properties (typical)

Color	
Part A	Dark amber or Black
Part B	Straw
Mixed	Dark amber or Black
Mixing ratio	Part A:Part B
By weight	47:100
Viscosity	
(Brookfield #5 @ 10 rpm), Poise (Pa-s)	
two-part unit	120 (12)
premixed and frozen (PMF)	400 (40)
Application life to 2500 poise (250 Pa-s) @ 75°F (24°C), hours	
two-part unit	3
premixed and frozen (PMF)	2

	Mold release time (hours)	Cure time to 70 A Durometer (hours)
75°F (24°C)	—	168
180°F (82°C)	3	6

Performance properties (typical)

Cured 16 hours @ 180°F (82°C)	
Cured specific gravity	1.08
Nonvolatile content, %	99
Ultimate cure hardness, Durometer A	75
Volume shrinkage, %	4
Tensile strength, psi (KPa)	2200 (15170)
Ultimate elongation, %	500
Tear strength (Die C), lbs./in.	175
Fungus resistance (MIL-E-5272)	Non-nutrient
Flame resistance overload	No ignition
Ozone resistance (MSFC-SPEC-202B)	Conforms
Peel strength, pli (N/25 mm)	
Aluminum alloy*	68 (304)
Neoprene**	25 (111)
Polyvinyl chloride***	28 (125)

* Primed with PR-425 primer
** Buffed and primed with PR-1523-M Adhesion promoter
*** Tackified with methyl ethyl ketone and primed with PR-1543 Adhesion promoter

Dielectric constant	
1 KHz @ 75°F (24°C)	7.4
1 MHz @ 75°F (24°C)	4.8
Power factor	
1 KHz @ 75°F (24°C)	0.08
1 MHz @ 75°F (24°C)	0.08
Volume resistivity, ohm-cm	
@ 75°F (24°C)	1×10^{12}
@ 250°F (121°C)	1×10^{9}
Surface resistivity, ohms	
@ 75°F (24°C)	1×10^{13}
@ 250°F (121°C)	9×10^{10}
Insulation resistance, megohms	
@ 75°F (24°C)	500,000
@ 250°F (121°C)	100
Dielectric strength, volts/mil	
125 mils	300
Hydrolytic stability,	
Hardness change, 120 days @ 158°F (70°C), 95% RH, %	-15
Moisture absorption, %	2.8

Note: The application and performance property values above are typical for the material, but not intended for use in specifications or for acceptance inspection criteria because of variations in testing methods, conditions and configurations.

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Surface preparation
Prepare surfaces according to the PR-1500 Series Potting/ Molding Application Guide.

Packing options
PR-1590 is supplied as a two-part unit or premixed and frozen Semco® cartridges.

Mixing instructions
Mix according to the PR-1500 Series Potting/Molding Application Guide.

Storage life
The storage life of PR-1590 in a two-part unit is at least 12 months when stored at temperatures below 80°F (27°C) in original, unopened containers. The storage life of PR-1590 in premixed and frozen Semco® cartridges is at least 30 days when stored at temperatures below -40°F (-40°C) in original, unopened containers.

Health precautions
This product is safe to use and apply when recommended precautions are followed. Before using this product, read and understand the Material Safety Data Sheet (MSDS), which provides information on health, physical and environmental hazards, handling precautions and first aid recommendations. An MSDS is available on request. Avoid overexposure. Obtain medical care in case of extreme overexposure.

For industrial use only. Keep away from children.

For emergency medical information call
1-800-228-5635.

Additional information can be found at:
www.ppgaerospace.com

For sales and ordering information call
1-800-AEROMIX (237-6649).

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