

Technical Data Sheet

Aerospace Sealants



PR-2001LW Class B lightweight rapid curing fuel tank sealant

Description

PR-2001LW Class B is a light weight, rapid cure, low odor sealant. It has a service temperature range from -80 °F (-62 °C) to 320 °F (160 °C), with intermittent excursions up to 420 °F (216 °C). This material is designed for use in fillet, butt joint and dome sealing of aircraft integral fuel tanks, fuselage and aerodynamic smoothing applications but not recommended for interfay sealing. The cured sealant maintains excellent elastomeric properties after prolonged exposure to both jet fuel and aviation gas.

PR-2001LW Class B is a two-part, epoxy cured PERMAPOL® P-3.1 polythioether compound. The uncured material is a low sag, thixotropic paste, suitable for application by extrusion gun or spatula. Unlike standard polysulfide fuel tank sealants, it can cure at low temperatures and is unaffected by changes in relative humidity. The sealant has excellent adhesion to properly prepared common aircraft substrates, when correctly primed with PR-187 adhesion promoter (AP).

PR-2001LW Class B is also available in preformed parts using PPG's proprietary Ambient Reactive Extrusion (PPG ARE™) additive printing technology.

The following tests are in accordance with AMS 3277 Type I, Class B specification test methods.

Application properties (typical)

Color			
Part A	black		
Part B	beige		
Mixed	gray		
Mixing Ratio	Part A:Part B		
By weight	11.6:100		
Base Viscosity, Poise (Pa-s)			
(Brookfield #7 @ 2 rpm)	10,200 (1,020)		
Slump, inches (mm)			
	Initial	50 minutes	90 minutes
B-1/2	0.05 (1.3)	---	---
B-2	0.30 (7.6)	0.15 (3.8)	0.3 (7.6)
Application life and cure time @ 77 °F (25 °C), 50% RH			
	Application life	Tack free time	Cure time to 30
	(hours)	(hours)	Durometer A
			(hours)
B-1/2	1/2	< 3	5
B-2	2	< 10	12

Performance properties (typical)

Cured 7 days @ 77 °F (25 °C), 50% RH	
Specific Gravity	1.10
Nonvolatile Content, %	98
Ultimate cure hardness, Durometer A	60
Peel strength*, pli (N/25 mm), 100% cohesive failure	
AMS2629 Type I fuel immersion, 7 days @ 140 °F (60 °C)	
AMS4045 (bare aluminum)	45
MIL-DTL-5541 (alodined aluminum)	33
AMS2471 (anodized aluminum)	30
AMS5516 (stainless steel)	27
AMS4901 (titanium)	44
AMS-C-27725 (polyurethane coating)	54
AMS2629 Type I fuel immersion/3% saltwater immersion, 7 days @ 140 °F (60 °C)	
AMS4045 (bare aluminum)	55
MIL-DTL-5541 (alodined aluminum)	54
AMS2471 (anodized aluminum)	42
AMS5516 (stainless steel)	51
AMS4901 (titanium)	57
AMS-C-27725 (polyurethane coating)	50
3% saltwater immersion, 7 days @ 140 °F (60 °C)	
MIL-PRF-85582 (waterborne epoxy)	45
MIL-PRF-85285 (urethane coating)	39
MIL-PRF-85285 (urethane coating)	50
MIL-PRF-23377 (epoxy coating)	59

*Primed with PR-187 AP

Tensile Strength, psi (kPa)	
Standard cure	283 (1950)
Standard cure +	
AMS3277 Standard heat cycle	220 (1520)
Elongation, %	
Standard cure	327
Standard cure +	
AMS3277 Standard heat cycle	131

Thermal rupture resistance – Retains pressure of 10 psi with only negligible deformation, both before and after immersion in AMS2629 Type I fuel.

Low Temperature Flexibility @ -80 °F (-62 °C) – No cracking, checking or loss of adhesion.

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Corrosion resistance – no corrosion, adhesion loss, softening, or blistering after immersion in 2-layer AMS2629 Type I/3% saltwater/vapor after 12 days @ 140 °F (60 °C) + 60 hours @ 160 °F (71 °C) + 6 hours @ 180 °F (82 °C).

Resistance to hydrocarbons – AMS2629 Type I Fuel immersion, 7 days @ 140 °F (60 °C) + 24 hours @ 120 °F (49 °C) in air:

Weight loss, %	0.5
Flexibility – no cracks after bending 180° over 0.125 inch (3.18 mm) mandrel.	

Repairability – Excellent to both freshly-cured and as well as fuel-aged and abraded fillets when properly prepared with PR-187 AP.

Fungus resistance	non-nutrient
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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.

Surface preparation

Immediately before applying sealant to primed substrates, the surfaces should be cleaned with solvents. Contaminants such as dirt, grease and/or processing lubricants must be removed prior to sealant application.

A progressive cleaning procedure should be employed using appropriate solvents and a new lint-free cloth. (Reclaimed solvents or tissue paper should not be used.) Always pour solvent on the cloth to avoid contaminating the solvent supply. Wash one small area at a time.

It is important that the surface is dried with a second clean cloth prior to the solvent evaporating to prevent the redeposition of contaminants on the substrate.

After the surface has been cleaned, apply PR-187 AP with a clean brush or gauze pad. Care must be taken to obtain a uniform coat. At standard temperature, allow the adhesion promoter to dry 30 minutes. It is not recommended to apply adhesion promoter below 45 °F (7 °C). The sealant must be applied within 8 hours of the application of the adhesion promoter. If this time is exceeded, the surface should be recleaned and the adhesion promoter reapplied. Do not use adhesion promoter if it contains particles or precipitate.

Substrate composition can vary greatly. This can affect sealant adhesion. It is recommended that adhesion characteristics to a specific substrate be determined prior to application on production parts or assemblies.

For a more thorough discussion of proper surface preparation, please consult the SAE Aerospace Information Report AIR 4069. This document is available through SAE, 400 Commonwealth Avenue, Warrendale, PA 15096-0001.

Packing options

PR-2001LW Class B is supplied in Semkits® or pre-mixed and frozen Semco® cartridges. PR-187AP is included in a *Semkit*. Please see container for sealant mixing instructions.

PR-2001LW Class B is also available in preformed parts using PPG ARE technology.

Storage life

The storage life of PR-2001LW Class B is at least 6 months when stored at temperatures between 60 °F (15 °C) and 80 °F (27 °C) in original, unopened containers.

Recommended thawing procedure

To thaw pre-mixed and frozen PR-2001LW stored at -80 °F (-62 °C), place the frozen cartridges in a 120 °F (49 °C) water bath for 5 – 7 minutes. The application life for the sealant starts when the thawed cartridges are removed.

Health precautions

This product is safe to use and apply when recommended precautions are followed. Before using this product, read and understand the Safety Data Sheet (SDS) which provides information on health, physical and environmental hazards, handling precautions and first aid recommendations. An SDS is available upon 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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