

PR-1770 Class B high strength fuel tank sealant

Description

PR-1770 Class B is a high strength, aircraft integral fuel tank sealant. It has a service temperature range from -65°F (-54°C) to 250°F (121°C), with intermittent excursions up to 360°F (182°C). This material is designed for fillet sealing of fuel tanks and other aircraft fuselage sealing applications. The cured sealant maintains excellent elastomeric properties after prolonged exposure to both jet fuel and aviation gas.

PR-1770 Class B is a two-part, manganese dioxide cured Permapol® P-5 polysulfide compound. The uncured material is a low sag, thixotropic paste suitable for application by extrusion gun or spatula. It cures at room temperature to form a resilient sealant having excellent adhesion to common aircraft substrates.

The following tests are in accordance with AMS 3269 Class B specification test methods.

Application properties (typical)

Color			
Part A	Black		
Part B	Light gray		
Mixed	Dark gray		
Mixing ratio			
By weight	10:100		
Base viscosity			
(Brookfield #7 @ 2 rpm),			
Poise (Pa-s)	12,000 (1200)		
Slump, inches (mm)			
	Initial	50 Minutes	90 Minutes
B-1/2	0.15 (3.81)	—	—
B-2	0.10 (2.54)	0.20 (5.08)	0.30 (7.62)
Application life and cure time @ 77°F (25°C), 50% RH			
	Application life (hours)	Tack free time (hours)	Cure time to 30 A Durometer (hours)
B-1/2	1/2	<10	24
B-2	2	<24	48

Performance properties (typical)

Cured 14 days @ 77°F (25°C), 50% RH	
Cured specific gravity	1.59
Nonvolatile content, %	98
Ultimate cure hardness,	
Durometer A	55
Peel strength, pli (N/25 mm), 100% cohesion	
AMS 2629 JRF immersion, 7 days @ 140°F (60°C)	
AMS 2471 (Anodized aluminum)	48 (214)
AMS 4901 (Titanium)*	50 (222)
AMS 5516 (Stainless steel)*	45 (200)
MIL-C-5541 (Alodine aluminum)	50 (222)
MIL-C-27725 (IFT coating)	49 (218)
AMS 2629 JRF/NaCl-H ₂ O immersion, 7 days @ 140°F (60°C)	
AMS 2471 (Anodized aluminum)	55 (245)
AMS 4901 (Titanium)*	58 (258)
AMS 5516 (Stainless steel)*	56 (249)
MIL-C-5541 (Alodine aluminum)	53 (236)
MIL-C-27725 (IFT coating)	60 (267)
*Primed with PR-148 Adhesion Promoter	
Tensile strength, psi (KPa)	
Standard cure, 14 days	
@ 77°F (25°C), 50% RH	537 (3703)
12 days immersion in AMS 2629 JRF	
@ 140°F (60°C)	360 (2482)
8 hours @ 360°F (182°C)	
72 hours immersion in AMS 2629 JRF	
@ 140°F (60°C), + 72 hours	465 (3206)
@ 120°F (49°C), + 7 days	
@ 250°F (121°C)	500 (3448)
Elongation, %	
Standard cure, 14 days	
@ 77°F (25°C), 50% RH	300
12 days immersion in AMS 2629 JRF	
@ 140°F (60°C)	340
8 hours @ 360°F (182°C)	
72 hours immersion in AMS 2629 JRF	
@ 140°F (60°C), + 72 hours @ 120°F (49°C),	
+ 7 days @ 250°F (121°C)	200
Thermal rupture resistance - Retains pressure of 10 psi with only negligible deformation, both before and after immersion in AMS 2629 JRF.	
Low temperature flexibility @ -65°F (-54°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 salt water/AMS 2629 JRF after 12 days @ 140°F (60°C) + 60 hours @ 160°F (71°C) + 6 hours @ 180°F (82°C).

Resistance to hydrocarbons - 7 days @ 140°F (60°C) immersed in AMS 2629 JRF.

Weight loss, %	4.6
Swell, %	12

Flexibility - No cracks after bending 180 degrees over 0.125 inch (3.18 mm) mandrel.

Repairability to itself - Excellent to both fresh cured as well as fuel aged and abraded fillets.

Resistance to other fluids - Excellent resistance to water, alcohols, petroleum-base and synthetic lubricating oils, and petroleum-base hydraulic fluids.

Fungus resistance Non-nutrient

Shaving and sanding - No rolling or tearing

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 the appropriate solvents and 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 re-deposition of contaminants on the substrate.

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.

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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.

Mixing instructions

PR-1770 Class B is supplied in a two-part kit. Mix according to the ratios indicated in the application properties section. Mix Part A and Part B separately to uniformity, then thoroughly mix entire contents of both parts of kit together taking care to avoid leaving unmixed areas around the sides or bottom of the mixing container.

Storage life

The storage life of PR-1770 Class B is at least 9 months when stored at temperatures below 80°F (27°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.