Technical Data Sheet

Sealants

PR-1826

Class B Rapid Curing Fuel Tank Sealant

Description

PR-1826 Class B is a rapid cure, aircraft integral fuel tank 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 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-1826 Class B is a two-part, epoxy cured Permapol® P-3 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. This sealant has excellent adhesion to common aircraft substrates when correctly primed with PR-1826AP Adhesion Promoter.

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	White
Mixed	Dark gray

Mixing ratio By weight	Part A:Part B 8.5:100
Base viscosity (Brookfield #7 @ 2 rpm), Poise (Pa-s)	15,700 (1570)

Slump, inches (mm)

	Initial	50 Minutes	90 Minutes
B-1/4	0.25 (6.35)	–––	–––
B-1/2	0.25 (6.35)	–––	–––
B-2	0.20 (5.08)	0.35 (8.89)	0.50 (12.7)

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-1/4	1/4	<1	1.5
B-1/2	1/2	<2	3
B-2	2	<12	16

Performance Properties (Typical)

Cured 7 days @ 77°F (25°C), 50% RH

Cured specific gravity	1.47
Nonvolatile content, %	96
Ultimate cure hardness, Durometer A	47

Peel strength, pli (N/25 mm), 100% cohesion, primed with PR-1826AP Adhesion Promoter

AMS 2629 JRF immersion, 7 days @ 140°F (60°C)	
AMS 2471 (Anodized aluminum)	51 (227)
AMS 4901 (Titanium)	45 (200)
AMS 5516 (Stainless steel)	46 (205)
MIL-C-5541 (Alodine aluminum)	45 (200)
MIL-C-27725 (IFT coating)	39 (174)

AMS 2629 JRF/NaCl-H2O immersion, 7 days @ 140°F (60°C)	
AMS 2471 (Anodized aluminum)	59 (263)
AMS 4901 (Titanium)	58 (258)
AMS 5516 (Stainless steel)	56(249)
MIL-C-5541 (Alodine aluminum)	59 (263)
MIL-C-27725 (IFT coating)	55 (245)

Tensile strength, psi (KPa)
Standard cure, 7 days
@ 77°F (25°C), 50% RH 350 (2413)
Standard heat cycle 230 (1586)

Elongation, % Standard cure, 7 days @ 77°F (25°C), 50% RH	350
Standard heat cycle	225

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.

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, %	2.0
Volume Swell, %	21

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

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Repairability to itself - Excellent to both freshly 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 appropriate solvents and a new lint-free cloth conforming to AMS 3819. (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. 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.

After the surface has been cleaned, apply PR-1826AP Adhesion Promoter with a clean brush or a gauze pad. Care must be taken to obtain a uniform thin 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.

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-1826 Class B is supplied in a Semkit® package. See the container for specific mixing instructions.

Storage Life

The storage life of PR-1826 Class B is at least 9 months when stored at temperatures between 60°F (15°C) and 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.

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

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Issue Date: 02/15
Supersedes: 09/11
Lit: 0308