



PR-1440-F Class B fast curing fuel tank sealant

Description

PR-1440-F Class B is a fast curing 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 275 °F (135 °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-1440-F Class B is a fast curing two-part, manganese dioxide cured 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-S-8802 Type II Class B specification test methods.

Application properties (typical)

Color

Part A	Black
Part B	Beige
Mixed	Dark gray
Mixing ratio by weight	Part A:Part B 12:100
Base viscosity (Brookfield #7 @ 2 rpm), Poise (Pa-s)	13,400 (1340)
Slump, inches (mm)	
	Initial 50 minutes 90 minutes
B-1/2	0.15 (3.81) N/A N/A
B-2	0.15 (3.81) 0.15 (3.81) 0.15 (3.81)

Application life and cure time @ 77°F (25°C), 50% RH

	Application life (hours)	Tack free time (hours)	Cure time to 35 A Durometer (hours)
B-1/2	½	<2.5	5
B-2	2	<5	12

Performance properties (typical)

Standard cure 14 days @ 77°F (25°C), 50% RH

Cured specific gravity	1.41
Nonvolatile content, %	98
Ultimate cure hardness, Durometer A	52
Peel strength, pli (N/25 mm), 100% cohesion	
AMS 2629 JRF immersion, 7 days @ 140°F (60°C)	
MIL-C-5541 (Alodine aluminum)	58 (258)
AMS2471 (Anodized aluminum)	66 (294)
AMS4901 (Titanium)*	65 (289)
AMS 5516 (Stainless steel)*	65 (289)
MIL-PRF-27725 (IFT coating)	68 (303)
AMS 2629 JRF/NaCl-H ₂ O immersion, 7 days@140°F (60°C)	
MIL-C-5541 (Alodine aluminum)	63 (280)
AMS2471 (Anodized aluminum)	76 (338)
AMS4901 (Titanium)*	65 (289)
AMS 5516 (Stainless steel)*	66 (294)
MIL-PRF-27725 (IFT coating)	69 (307)

*Primed with PR-148 Adhesion Promoter

Tensile strength, psi (MPa)

Standard cure, 14 days @ 77°F (25°C), 50% RH	451 (3.1)
14 days immersion in AMS2629 JRF @ 140°F (60°C)	350 (2.4)
7 days @ 250°F (121°C)	440 (3.0)
72 hours immersion in AMS2629 JRF @ 140°F (60°C) + 72 hours @ 120°F (49°C) + 7 days @ 250°F (121°C)	508 (3.5)
24 hours at 250°F (121°C) + 7 days immersion in AMS2629 JRF @ 140°F (60°C)	382 (2.6)
Elongation, %	
Standard cure, 14 days @ 77°F (25°C), 50% RH	414
14 days immersion in AMS2629 JRF @ 140°F (60°C)	395
7 days @ 250°F (121°C)	151
72 hours immersion in AMS2629 JRF @ 140°F (60°C) + 72 hours @ 120°F (49°C) + 7 days @ 250°F (121°C)	244
24 hours at 250°F (121°C) + 7 days immersion in AMS2629 JRF @ 140°F (60°C)	307

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Thermal rupture resistance - retains pressure of 10 psi with only negligible deformation, both before and after immersion in 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 20-day immersion in 2-layer salt water/JRF @ 140°F (60°C).

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

Weight loss, %	2.1
Swell, %	1.7

Flexibility - no cracked after bending 180 degrees over a 0.125 inch (3.18 mm) mandrel.

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-based hydraulic fluids

Fungus resistant non-nutrient

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.

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.

Mixing instructions

Mix according to instructions on the container taking care to avoid leaving unmixed areas around the sides or bottom of the mixing container.

Storage life

The storage life of PR-1440-F Class B stored in two-part can kits and Semco® cartridges is at least 9 months when stored at temperatures below 80°F (27°C) in original, unopened containers.

The storage life of PR-1440-F Class B in pre-mixed and frozen Semco® cartridges is at least 30 days when stored at temperatures below 40°F (4°C).

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 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

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