PPG Aerospace
PRC-DeSoto

TECHNICAL DATA

PR-1776M Class B Low Weight Fuel Tank Sealant

Description

PR-1776M Class B is a low density, high temperature aircraft integral fuel tank sealant. It has a service temperature range from -65°F (-54°C) to 250°F (121°C), with very limited excursions up to 360°F (182°C). This material is designed for fillet sealing of fuel tanks and other aircraft fuselage sealing applications. It offers as much as a twenty percent weight savings, per unit volume, over traditional sealants used for these purposes. The cured sealant maintains excellent elastomeric properties after prolonged exposure to aircraft fuels both jet fuel and aviation gas, and will resist limited contact to diphosphate ester based hydraulic fluids.

PR-1776M Class B is a two-part, manganese dioxide cured Permapol® P-5 modified polysulfide. 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.

PR-1776M Class B is designed to be a direct replacement for PR-1776 Class B.

The following tests are in accordance with AMS-3281 and BMS 5-45 specification test methods.

Application Properties (Typical)

Color	
Part A	Black
Part B	Off white
Mixed	Dark brown
Mixing ratio, By weight	Part A:Part B
B-1/2	12:100
B-2	10:100
Base viscosity (Brookfield #7 @ 2 rpm), Poise (Pa-s)	11,100 (1,100)

Slump, inches (mm)

	Initial	50 Minutes	90 Minutes
B-1/2	0.20 (5.08)	———	———
B-2	0.15 (3.81)	0.15 (3.81)	0.15 (3.81)
	Initial	3 Hours	5.5 Hours
B-6	.10 (2.54)	.10 (2.54)	.10 (2.54)

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	<8	12
B-2	2	<16	24
B-4	4	<24	48
B-6	6	<30	80

Performance Properties (Typical)

Cured 14 days @ 77°F (25°C), 50% RH

Cured specific gravity	1.29
Nonvolatile content, %	94
Ultimate cure hardness, Durometer A	50

Peel strength, pli (N/25 mm), 100% cohesion
JRF immersion with 0.25 inch (6.35mm) layer of distilled H_2O, 7 days @ 140°F (60°C)

MIL-C-5541 (Alodine Aluminum)	41 (180)
MIL-T-9046 Type I (Titanium Comp 'B')	36 (158)
BMS 10-20 Type II Grade A (Epoxy primer)	42 (184)
BMS 10-20 Type II Grade D (Epoxy primer)	42 (184)
BMS 10-20 Type II (B/A) (Epoxy primer)	35 (154)

3% NaCl-H_2O immersion with 1.0 inch (25.4mm) layer of JRF, 7 days @ 140°F (60°C)

MIL-C-5541 (Alodine Aluminum)	34 (149)
MIL-T-9046 Type I (Titanium Comp 'B')	40 (176)
BMS 10-20 Type II Grade A (Epoxy primer)	36 (158)
BMS 10-20 Type II Grade D (Epoxy primer)	37 (162)
BMS 10-20 Type II (B/A) (Epoxy primer)	34 (149)

AMS 2629 Type I Fuel immersion, 7 days @ 140°F (60°C)

AMS 2471 (Anodized aluminum)	25 (110)
AMS 5516 (Stainless steel*)	26 (114)
MIL-C-27725 (IFT coating)	22 (97)

AMS 2629 Type I Fuel immersion with 3% NaCl-H_2O, 7 days @ 140°F (60°C)

AMS 2471 (Anodized aluminum)	32 (141)
AMS 5516 (Stainless steel*)	33 (145)
MIL-C-27725 (IFT coating)	28 (123)

3% NaCl-H_2O immersion, 7 days @ 140°F (60°C)

MIL-PRF-85582 (Epoxy primer*)	33 (145)
MIL-PRF-85285 (Urethane top coat*)	34 (149)

*Primed with PR-148 adhesion promoter.

Tensile strength, psi (KPa) Standard cure, 14 days @ 77°F (25°C), 50% RH	263 (1812)
7 days immersion in JRF @ 140°F (60°C)	269 (1853)
Elongation, % Standard cure, 14 days @ 77°F (25°C), 50% RH	366
7 days immersion in JRF @ 140°F (60°C)	439

Low temperature flexibility @ -65°F (-54°C) - No cracking, checking or loss of adhesion.

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

Weight loss, %	4.7

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Flexibility - No cracks after bending 180 degrees over 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-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.

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-1776M Class B is supplied in a two-part Semkit® package, two-part can kit and pre-mixed and frozen cartridge.

Mixing Instructions

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 the kit together taking care to avoid leaving unmixed areas around the sides or bottom of the mixing container.

Storage Life

The standard storage life of PR-1776M Class B in a Semkit® package or can kit is at least 9 months when stored at temperatures between 40°F (4.5°C) and 80°F (27°C) in original, unopened containers.

The storage life of PR-1776M Class B pre-mixed and frozen cartridges is 28 days when stored at temperatures of -40°F (-40°C) or below.

Health Precautions

This product is safe to use and apply when recom-mended 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

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

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