



AC-[®]380 Class B

Low Density Fuel Tank and Fuselage Sealant (Quick Cure)

SIN #834-100

Description

AC-[®]380 Class B is a fast cure, 1.1 specific gravity, solvent free, and high temperature integral fuel tank sealant. This material is designed for fillet sealing of fuel tanks and other aircraft fuselage sealing applications. It offers as much as thirty percent weight savings, per unit volume, over traditional sealants with similar purpose. The cured sealant has outstanding resistance to aviation gasoline and jet fuel, as well as resistance to chemicals and petroleum products common to the aircraft industry. The sealant will resist limited contact to diphosphate ester based hydraulic fluid.

AC-[®]380 Class B is a two-part, manganese dioxide cured, polysulfide polymer based sealant that maintains its flexibility and bond strength on most metal substrates such as aluminum, titanium, steel, stainless steel, and many coatings under extremes of temperature, weathering and stress. The mixed compound is a thixotropic paste easily applied by extrusion, injection gun or spatula, and exhibits superb tooling properties.

Applications

- Sealing integral fuel tanks
- Repairing integral fuel tanks
- Sealing fuselages

Specifications

AMS 3281 Type 2 B-2 Qualified
BAMS 552-009 Qualified

Typical Physical and Application Properties

Color	
Base:	Off White
Accelerator:	Black
Mix Ratio (By weight)	100 base/10 catalyst
Non-Volatile Content	97%
Base Viscosity	10,000-14,000 poise
(RVF Brookfield #7 spindle at 2rpm, 77°F)	

Application Life and Cure Time (@ 77°F, 50% Relative Humidity)

	Minimum Application Life ¹	Typical Tack-Free Time ²	Typical Cure Time ³
B-2	2 hours	8 – 10 hours	8 – 10 hours

Typical Physical and Performance Properties of Cured Compound After 14 Days @ 77°F/50% RH (Tested per AMS3281)

Color	Dark Gray
Specific Gravity	1.1
Hardness	45 - 50 Shore "A"
Low Temperature Flexibility	No cracking, checking or adhesion loss when tested at -65°F (-54°C)
Service Temperatures	-65 to +250°F (-54° to +121°C)
Short Term Service Temperature	-65 to +360°F (-54° to +182°C)
Thermal Rupture Resistance	Conforms
Weight Loss	4.2%
Corrosion	None
Repairability	45 piw / 100% cohesive failure

¹Application life refers to the length of time that mixed compound remains at a consistency suitable for application with spatula or caulking gun. Application life is always measured at a standard temperature of 77°F with a relative humidity level of 50%. In general, for every 20°F rise in temperature, the application life is halved; for every 20°F drop, it is doubled.

²Tack-free time is the length of time after which a mixed sealant will no longer tightly adhere to L-LP-690 standard low density polyethylene film.

³Cure time is defined as the length of time it takes AC-380 sealant to reach 30A hardness. It depends on three factors: remaining application life, temperature, and relative humidity. The temperature/humidity factors for application life also apply to curing. High humidity during cure will speed up the cure. To accelerate the curing process, apply heat up to (but not more than) 120°F.



Typical Values of AC-380 Class B Tensile Strength and % Elongation

Conditioning	Specification Requirements	Results
Standard Cure	200 psi/250%	269psi, 500%
+ 12 days at 140°F + 60 hours at 160°F + 6 hours at 180°F in JRF I	125 psi/100%	170 psi, 570%
12 days at 140°F + 60 hours at 160°F + 6 hours at 180°F in JRF I + 24 hours air dry at 120° + standard heat cycle (AMS)	125 psi/25%	300 psi, 190%
Standard Heat cycle (AMS)	100 psi/25%	260 psi, 170%

Typical Values of AC-380 Class B Peel Strength

Substrate	Conditioning	Load / % Cohesion
MIL-C-5541	7 days @ 140°F in JRF	35piw/100%
	7 days @ 140°F in JRF/SW	38piw/100%
	6 temp cycles in JRF/SW	35piw/100%
AMS 2471 Anodized	7 days @ 140°F in JRF	43piw/100%
	7 days @ 140°F in JRF/SW	51piw/100%
	6 temp cycles in JRF/SW	44piw/100%
AMS 4911 Titanium	7 days @ 140°F in JRF	31lbs./100%
	7 days @ 140°F in JRF/SW	43lbs./100%
	*6 temp cycles in JRF/SW	40piw/100%
Stainless Steel	7 days @ 140°F in JRF	39lbs./100%
	7 days @ 140°F in JRF/SW	52lbs./100%
	*6 temp cycles in JRF/SW	35piw/100%
MIL-C-27725	7 days @ 140°F in JRF	39lbs./100%
	7 days @ 140°F in JRF/SW	36lbs./100%
	6 temp cycles in JRF/SW	42piw/100%
MIL-P-23377 RT Cure	7 days @ 140°F in SW	45lbs./100%
MIL-P-23377 200°F Cure	7 days @ 140°F in SW	45lbs./100%
*MIL-PRF-85582	7 days @ 140°F in SW	48lbs./100%

* Required use of AMS3100 adhesion promoter

Peel Strength (cont.)

Substrate	Conditioning	Load / % Cohesion
AS 4/3501-6 (epoxy graphite, peel)	7 days @ 140°F in JRF	41piw/100%
	7 days @ 140°F in JRF/SW	41piw/100%
	6 temp cycles in JRF/SW	35piw/100%
AS 4/3501-6 (epoxy graphite, tool)	7 days @ 140°F in JRF	34piw/100%
	7 days @ 140°F in JRF/SW	48piw/100%
	6 temp cycles in JRF/SW	34piw/100%
IM7/5250-4 (graphite/BMI, peel)	7 days @ 140°F in JRF	43lbs./100%
	7 days @ 140°F in JRF/SW	46lbs./100%
	6 temp cycles in JRF/SW	35piw/100%
IM7/5250-4 (graphite/BMI, tool)	7 days @ 140°F in JRF	42lbs./100%
	7 days @ 140°F in JRF/SW	45lbs./100%
	6 temp cycles in JRF/SW	33piw/100%

Storage

The shelf life of AC-[®]380 Class B is 9 months from date of packaging, when stored at temperatures below 80°F in its original unopened container.

Health and Safety Precautions

AC-[®]380 Class B sealant 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.

All values are typical and are not intended for specification use.

AC-380B-04/10

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