Advanced Chemistry & Technology

A·C·TECH®

7341 Anaconda Avenue, Garden Grove, California 92841 714/373-2837 Fax 714/373-1913

AC-®275 Class B

Fuel Tank and Fuselage Sealant

SIN #834-100

Description

AC-®275 Class B is a high temperature two-component, manganese dioxide cured, liquid Polysulfide polymer system providing excellent fuel tank and fuselage seals. It has outstanding resistance to aviation gasoline and jet fuel, as well as resistance to chemicals and petroleum products common to the aircraft industry. AC-®275 Class B maintains its flexibility and bond strength on most metal substrates like aluminum, stainless steel, 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. It has excellent tooling properties.

Applications

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

Specifications

FMS 1044 – Qualified
FMS 3055 – Qualified (B-1/2, B-2, B-6)

Typical Physical and Application Properties

Color	
Base:	White
Accelerator:	Black
Mix Ratio	100 base / 10 accelerator (by weight)
Nonvolatile Content	97%
Base Viscosity (RVF Brookfield #7 spindle @ 2rpm, 77°F)	10,000-14,000 poise
Accelerator Viscosity (RVF Brookfield #7 spindle @ 10rpm, 77°F)	700-1600 poise

Application Life and Cure Time
(@ 75°F, 50% Relative Humidity)

	Minimum Application Life[1]	Typical Tack-Free Time[2]	Typical Cure Time[3]
B-1/2	1/2 hour	8 hours	24 hours
B-2	2 hours	24 hours	48 hours
B-6	6 hours	48 hours	120 hours

Typical Physical and Performance Properties of Cured Compound after 14 Days @ 77°F/50% RH when tested per FMS 1044

Color	Gray
Specific Gravity	1.64
Hardness	60 Shore "A"
Low Temperature Flexibility	No checking or adhesion loss when tested at -65°F (-54°C)
Service Temperatures:	-65° to +250°F (-54 to +121°C)
Intermittent Exposure To:	360°F
Thermal Rupture Resistance	Does not blister or sponge
Corrosion	None
Repairability	40 piw to itself and other AMS 3276 qualified sealants
Resistance to Other Fluids	
Flexibility	No cracking when bent 180° over a 1/8 inch mandrel.
Weight Loss	No more than 6% loss of the sealant compound after immersion in accordance with 4.8.18.1 per AMS 3276

[1]*Application 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° rise in temperature, the application life is halved; and for every 20° drop, it is doubled. High humidity levels during the mixing process will shorten application life.*

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

[3]*Cure time is defined as the length of time it takes AC-®275 Class B 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. To accelerate the curing process, apply heat up to (but not more than) 140°F.*

Typical Values of AC-®275 Class B to AMS3276

Tensile Strength and % Elongation

Conditioning	Specification Requirements	Results
Standard Cure--14 days	250 psi/250%	350psi/220%
JRF-12 days @ 140°F 60 hrs @ 160°F 6 hrs @ 180°F	125 psi/100%	215psi/210%
JRF-12 days @ 140°F + 60 hrs @ 160°F + 6 hrs @ 180°F + 24 hours @ 120°F + Std Heat Cycle	125 psi/25%	360psi/155%
Std Heat Cycle	100 psi/25%	240 psi/100%

Peel Strength**

Substrate	Conditioning	Load / % Cohesion
MIL-C-5541	7 days @ 140°F in JRF	52lbs./100%
	7 days @ 140°F in JRF/SW	55lbs./100%
AMS 2471 Anodized	7 days @ 140°F in JRF	48lbs./100%
	7 days @ 140°F in JRF/SW	49lbs./100%
MIL-C-27725	7 days @ 140°F in JRF	55lbs./100%
	7 days @ 140°F in JRF/SW	57lbs./100%
MIL-P-23377	7 days @ 140°F in DI Water	48lbs./100%
	7 days @ 140°F in SW	50lbs./100%
Stainless Steel	7 days @ 140°F in JRF	55lbs./100%
	7 days @ 140°F in JRF/SW	59lbs./100%
Graphite Epoxy AS 4/3501-6	7 days @ 140°F in JRF	44lbs./100%
	7 days @ 140°F in JRF/SW	48lbs./100%

*** Specification requirement - 20-lbs./100%, wire mesh*

Mixing Instructions
Two Part Sealant Cartridges:

1. Holding the cartridge, grasp the dasher rod and pull back approximately one inch.

2. Insert the ramrod into the hollow of the dasher rod, break the piston loose, and inject about 1/3 of the contents into the cartridge.

Note: Do not inject all of catalyst in one location. Distribute evenly throughout base material.

3. Repeat steps 2 and 3 until all the contents of the rod are emptied into the cartridge. Remove the ramrod.

4. Mix for the required number of strokes (hand mixing) or for the required amount of time (machine mixing) indicated in the kit instructions.

5. When mixing is complete, remove bottom cap.

6. Pull the dasher rod back to the neck of the cartridge, grasp the cartridge firmly at the neck, unscrew the dasher rod and remove.

7. Screw the nozzle into the cartridge, insert into the extrusion gun and use as required. For hand extrusion, press the used dasher rod against the plunger to force the material from the cartridge.

Storage

The shelf life of AC-®275 Class B is 9 months from date of packaging, when stored at temperatures below 80°F in its original container.

Mixed AC-®275 Class B may be stored under refrigeration as follows:

15 days at –10°F
30 days at –40°F

It is important to remember that freezing, storing and thawing procedures reduce application life. Also, frozen storage will reduce application life by varying amounts depending on the storage temperature and length of storage time. All aspects of storage, freezing and thawing should be planned carefully and it is not recommended to mix and freeze with less than 1/2-hour application time.

Health and Safety Precautions

AC-®275 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-275B-01/08**