



AC-® 645 Class B Low Density, Hole Filling, Fuselage and Fuel Tank Cavity Sealant

SIN #834-100

Description

AC-645 Class B is a low density, two-component, manganese dioxide cured, liquid polysulfide polymer system. It is suitable for use in fuel tank, fuselage hole filling, cavity filling and fuel tank filleting applications. It has outstanding resistance to jet fuel, as well as resistance to chemicals and petroleum products common to the aircraft industry. AC-645 Class B 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. It has excellent tooling properties.

Applications

- cavity and hole filling
- fuel tank and fuselage filleting

Specifications

STM 40-107 - Qualified
CMS 552-06 - Meets Requirements

Typical Physical and Application Properties

Color	
Base:	Off White
Accelerator:	Black
Mix Ratio	100 base/10 accelerator (by weight)
Non-Volatile Content	97%
Base Viscosity (RVF Brookfield #7 spindle @ 2rpm, 77°F)	8,000-12,000 poise
Accelerator Viscosity (RVF Brookfield #7 spindle @ 10rpm, 77°F)	700-1,600 poise

¹Application life refers to the length of time the 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; and for every 20°F drop, it is doubled. High humidity levels during the mixing process will shorten application life.

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-645 Class B sealant to reach 30A hardness. It depends on three factors: remaining application life, temperature and relative humidity. To a certain extent, the temperature/humidity factors for application life also apply to curing. To accelerate the curing process, apply heat up to (but not more than) 120°F.

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

Product	Minimum Application Life ¹	Nominal Tack-Free Time	Typical Cure Time
B-2	2 hours	6-7 hours	24 hours

Typical Physical and Performance Properties of Cured Compound after 14 Days @ 77°F/55% RH when tested in accordance with STM 40-107

Color	Black
Specific Gravity	1.07
Hardness	55 Shore "A"
Low Temperature Flexibility	No cracking, checking or adhesion loss when tested at -65°F (-54°C)
Service Temperatures	-65°F to +250°F (-55°F to +121°C)
Corrosion	None
Repairability	12 piw / 100% cohesive failure to other STM 40-107 qualified sealants



Typical Values of AC-645 Class B Tested per STM 40-107

Tensile Strength and Percent Elongation

Conditioning	Results
Standard Cure	155 psi/170%
7 days @ 140°F in JRF	120 psi/270%

Peel Strength

Substrate	Condition	Peel Strength and % Cohesion
Alclad	Dry-Std	18 piw / 100%
Alclad	7 day JRF soak at 140°F	12 piw / 100%
Alclad	70 day JRF soak at 140°F	12 piw / 100%

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-645 Class B is 9 months from date of packaging, when stored at temperatures below 80°F in its original container. Storage at lower temperatures increases shelf life.

Mixed AC-645 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 ½ hour of available application time.

Cleaning of Equipment

1. Immediately after use or before the sealant cures, wash equipment and tools with a solvent.
2. For inaccessible areas (such as interior surfaces of extrusion guns), commercially available integral fuel tank stripping compound should be used to remove cured sealant.

Health and Safety Precautions

AC-®645 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-645B-01/09

AC- and AC TECH are trademarks of Advanced Chemistry & Technology, Inc. registered with the US Patent and Trademark Office
US Patent 6,486,268

Seller and manufacturer make no warranty, express or implied, concerning this product, or its merchantability or fitness for any purpose, except that the product conforms to manufacturer's product specifications during its applicable shelf life. User shall determine the suitability of this product for the intended purpose and method of application. Seller and manufacturer's only obligation shall be to replace the quantity of the product proved to be defective. AC TECH shall not be liable for damages in excess of the purchase price of this product.

Advanced Chemistry & Technology, Inc

7341 Anaconda Avenue Garden Grove, CA 92841 T: 714.373.2837 F: 714.373.1913

Page 2 of 2