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3M™ AC-735 Class B Aerospace Sealants

Technical Data Sheet

3M™ AC-735 Class B Aerospace Sealants are low density, non-chromate corrosion inhibitive (NCCI) sealants designed for aircraft fuselage applications. When mixed, these two-part manganese dioxide cured polysulfide sealants form a thixotropic paste that is easily dispensed with a cartridge applicator or spatula. AC-735 Class B Sealants have a service temperature range of -65 °F to 250 °F (-54 °C to 121 °C).

Key Features

- Retain shape and volume during cure
- Optimized mixing, application and tooling characteristics
- Provide an effective barrier against the common causes of corrosion on aluminum and between dissimilar metals
- Maintain flexibility and bond strength on a variety of metal, composite, and coated substrates during service

Application, Physical and Performance Properties[1]

	B-1/2	B-2
Application Time[2]	30 minutes	2 hours
Tack Free Time[3]	5 hours	10 hours
Cure Time to ≥ 30A Hardness	7 hours	12 hours
Color	Base: Off-white / Accelerator: Dark Brown Mixed: Dark Brown	
Mix Ratio, base to accelerator	10 : 1 by weight 14.6 : 1 by volume	
Nonvolatile Content	98%	
Base Viscosity, #7 spindle, 2 rpm, 77 °F (25 °C)	11,000 – 14,000 poise 1,000 – 1,400 Pa·s	
Specific Gravity	1.1	
Ultimate Hardness (Durometer A)	40 - 46	
Low Temperature Flexibility, -65 °F (-54 °C)	No cracking, checking or adhesion loss	
Corrosion - Stressed Aluminum and Mixed Metal[4]	No visible evidence of corrosion	
Tensile Strength & Elongation	209 psi (1.44 MPa), 358%	

180° Peel Strength, lbf/inch (N/25 mm)

Dry and fluid immersed for 48 hours at 140 °F (60 °C), 100% cohesive failure

Substrate[5]	Dry	MIL -PRF- 83282	MIL -PRF- 7808	MIL -PRF- 23699	3% NaCl Aqueous Solution	AMS2629 Type 1 JRF
Aluminum Alloy 7075-T6 + Conversion Coating	34 (150)	24 (110)	32 (140)	26 (110)	25 (110)	22 (100)
Aluminum Alloy 7075-T6 + Chromic Acid Anodize	35 (150)	27 (120)	26 (110)	24 (110)	23 (100)	23 (100)
Cadmium Plated Steel	37 (160)	25 (110)*	28 (120)*	21 (90)*	26 (110)*	28 (120)*
Magnesium Alloy + Conversion Coating	28 (120)	27 (120)	22 (100)	28 (120)	24 (110)	24 (110)
Titanium 6Al4V	35 (150)	31 (140)	31 (140)	32 (140)	35 (150)	25 (110)
Aluminum Alloy 7076-T6 + MIL-PRF-23377 Primer	23 (100)	23 (100)	25 (110)	26 (110)	19 (80)	28 (120)
Carbon Epoxy Composite AS4/3501-6	29 (130)	30 (130)	25 (110)	29 (130)	27 (120)	24 (110)

Repairability - 180° Peel Strength

100% cohesive failure

Initial Sealant	Load lbf/inch (N/25 mm)
AC-735 Class B – Standard Cure	28 (120)
AC-735 Class B – Conditioned[6]	39 (170)
MIL-PRF-81733 Sealant – Standard Cure	24 (110)
MIL-PRF-81733 Sealant – Conditioned[6]	16 (70)

[1] Testing per MIL-PRF-81733.
Standard Conditions: 77 °F (25 °C) and 50 % Relative Humidity.
Sealant Cure for Performance Properties: 14 days at Standard Conditions or 48 hours at Standard Conditions plus 24 hours at 120 °F (49 °C).
[2] Extrusion rate of 40 g/minute, minimum, at Application Time.
[3] No sealant transfer to low density polyethylene film.
[4] Conditions: 4 weeks in hot salt-SO_2 spray. Mixed Metal Assemblies: Aluminum/Titanium and Aluminum/Magnesium.
[5] Conversion Coating per MIL-DTL-81706 Class 1A, Chromic Acid Anodize per MIL-PRF-8625 Type II
[6] Initial sealant layer conditioning: 48 hours at 140 °F (60 °C)
* 3M™ Adhesion Promoter AC-160 applied prior to sealant.

Precautionary Information: Refer to Product Label and Safety Data Sheet for health and safety information before using this product. For additional health and safety information, visit www.3m.com/3M/en_US/company-us/SDS-search/

Shelf Life and Storage

The shelf life of 3M™ AC-735 Class B Aerospace Sealant in 2-part kits is 9 months from Date of Packaging (DOP) when stored below 80 °F (27 °C) in the original unopened containers. Pre-mixed and frozen (PMF) AC-735 Class B sealants will maintain typical application properties for a minimum of 30 days if stored at or below -40 °F (-40 °C).

Note: Industry and/or OEM specifications to which the product is qualified may establish different storage requirements. The information shown on the product label and/or the accompanying Certificate of Analysis (COA) takes precedence over the Technical Data Sheet.

Mixing and Thawing Instructions

2-Part Injection Kits: Hand Mix: 50 - 75 strokes; Machine Mix: 37 strokes (1.5 minutes at 25 strokes/min).

2-Part Can Kits (Bulk): Only base and catalyst compounds with the same lot numbers should be mixed. Stir catalyst before using. Mix entire contents of both containers together or mix in the appropriate base to accelerator ratio until sealant is uniform in color with no streaks.

Pre-Mixed Frozen (PMF): Thaw at ambient temperature until core reaches 50 °F (10 °C), minimum, and/or until condensation no longer forms after wiping the cartridge exterior. Do not refreeze after thawing.

Authorization to Use: Ensure products meet all applicable specifications, standards, and maintenance manual requirements for the platform being worked on and validate all aircraft approvals against current technical documentation.

These products are manufactured under a 3M Quality Management System registered to the AS9100 standard.

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