3M™ Aerospace Sealant AC-770 Class B

Polysulfide two-component sealant

Product Description

3M™ Aerospace Sealant AC-770 Class B are fast curing, low density, two-component, polysulfide sealants. Suitable for fuselage sealing and filling voids, these manganese dioxide cured sealants have outstanding resistance to aviation gasoline and jet fuel, as well as resistance to chemicals, hydraulic fluids and petroleum products commonly used in the aircraft industry. 3M AC-770 Class B Sealants maintain flexibility and bond strength on most metal substrates such as: aluminium, titanium, steel, stainless steel, and many coatings under extremes of temperature, weathering and stress. The mixed compound is a thixotropic paste, easily applied by spatula, extrusion gun or injection gun and exhibits superb tooling properties.

Key Features

- Low density
- Fast curing
- Less shrinkage due to low solvent formulation
- Easy to tool

Product Characterization

Note: The following technical information and data should be considered representative or typical only and should not be used for specification purposes.

General properties	
Colour Base	Off White
Colour Accelerator	Brown
Mix Ratio	100 base / 10 accelerator (by weight)
Non volatile Content	98,5%
Base viscosity (RVF Brookfield #7 spindle @ 2 rpm, 25°C)	9500 to 13000 poise

Application Life and Cure Time (@ 25°C, 50% Relative Humidity)

Extrusion Rate at Application Life 88 gpm

Grade	Minimum Application Life[1]	Typical Tack-Free Time[2]	Typical Cure Time[3]
B-1	1 hour	3-4 hours	5-6 hours
B-2	2 hours	7-8 hours	9-11 hours

[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 25°C with a relative humidity level of 50%. In general, for every 10°C rise in temperature, the application life is halved; for every 10°C drop, it is doubled. High humidity levels, greater than 65%, 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 L-LP-690 standard low density polyethylene film.

[3]Cure time is defined as the length of time it takes 3M™ Aerospace Sealant AC-770 Class B 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, heat may be applied up to (but not more than) 60°C.

Product Performance

Tensile strength and % Elongation (ASTM Fuel B in ASTM D471 Reference Fuel B)

Conditioning	Requirements	Results
Standard Cure – 14 days	1 MPa / 150%	1.7 MPa / 310%
7 days @ 50°C in ASTM Fuel B 48 hours @ 50°C	1 MPa / 150%	1.8 MPa / 330%

Peel Strength *

Substrate	Conditioning	Load /% cohesion
AMS 4049	7 days @ room temperature	151 N/25mm/100%
	7 days @ 50°C in ASTM Fuel B	134 N/25mm/100%
	7 days @ 50°C in 3% NaCl	120 N/25mm/100%
BMS 10-11 TyI	7 days @ room temperature	156 N/25mm/100%
	7 days @ 50°C in ASTM Fuel B	120 N/25mm/100%
	7 days @ 50°C in 3% NaCl	156 N/25mm/100%
BMS 10-20 TyII	7 days @ room temperature	134 N/25mm/100%
	7 days @ 50°C in ASTM Fuel B	143 N/25mm/100%
	7 days @ 50°C in 3% NaCl	129 N/25mm/100%
MIL-C-5541	7 days @ room temperature	196 N/25mm/100%
	7 days @ 50°C in ASTM Fuel B	151 N/25mm/100%
	7 days @ 50°C in 3% NaCl	143 N/25mm/100%
MIL-A-8625	7 days @ room temperature	147 N/25mm/100%
	7 days @ 50°C in ASTM Fuel B	138 N/25mm/100%
	7 days @ 50°C in 3% NaCl	120 N/25mm/100%
MIL-S-5059	7 days @ room temperature	147 N/25mm/100%
	7 days @ 50°C in ASTM Fuel B	134 N/25mm/100%
	7 days @ 50°C in 3% NaCl	116 N/25mm/100%
MIL-T-9046	7 days @ room temperature	165 N/25mm/100%
	7 days @ 50°C in ASTM Fuel B	116 N/25mm/100%
	7 days @ 50°C in 3% NaCl	111 N/25mm/100%
BMS 10-60 TyII	7 days @ room temperature	129 N/25mm/100%
	7 days @ 50°C in ASTM Fuel B	120 N/25mm/100%
	7 days @ 50°C in 3% NaCl	138 N/25mm/100%
BMS 10-103 TyI	7 days @ room temperature	147 N/25mm/100%
	7 days @ 50°C in ASTM Fuel B	134 N/25mm/100%
	7 days @ 50°C in 3% NaCl	147 N/25mm/100%

*Testing per BMS-5-142
ASTM Fuel B is ASTM D471 Reference Fuel B

Typical Physical and Performance Properties of Cured compound After 14 Days @ 25°C/50% RH

Colour (mixed)	Dark Brown
Specific Gravity	1.1
Hardness	42-48 shore “A”
Low Temperature Flexibility	No cracking, checking or adhesion loss when tested at -65°F (-54°C)
Service Temperature	-65° to +250°F (-54° to +121°C)
Corrosion	None
Repairability	151 N/25 mm / 100% cohesive failure

Handling, Application, Storage

Precautionary information

Refer to product label and Material Safety Data Sheet (MSDS) for health and safety information before using this product. For MSDS visit our website: www.3M.com\msds.

Instructions for use

Refer to the 3M Polysulfide Sealant Application Guide and Surface Preparation Guide for instructions for product use. While this information is provided as general application guideline based upon typical conditions, it is recognized that no two applications are identical due to, among other things, different assemblies, methods of heat application, production equipment and other limitations. This document is not intended to substitute for engineering assembly and/or manufacture instructions. It is therefore suggested that experiments be run, within the actual application environment to determine optimum conditions for your specific application and to determine suitability of product for particular intended use.

Storage conditions

The shelf life of 3M™ Aerospace Sealant AC-770 Class B is 9 months from date of packaging, when stored at temperatures below 27°C in its original unopened container.

Mixed 3M AC-770 Class B Sealants may be stored under refrigeration as follows:

- 15 days at –23°C
- 30 days at –40°C

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 of available application time.

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Reference: 184