3M™ Aerospace Sealant AC-240 Class B

Polysulfide two-component sealant

Product Description

3M™ Aerospace Sealant AC-240 Class B are polysulfide sealants with a long application life suitable for fuel tank and fuselage sealing and repairs. These two- component, manganese dioxide cured sealants are solvent free and have outstanding resistance to aviation gasoline and jet fuel, as well as resistance to chemicals and petroleum products commonly used in the aircraft industry. 3M AC-240 Class B Sealants maintain flexibility and bond strength on most metal substrates such as: aluminium, titanium, steel, stainless steel, glass, and many coatings under extremes of temperature, weathering and stress. The mixed compound has a low-sag consistency and can be readily applied with a spatula or extrusion gun on vertical surfaces.

Key Features

- Long application life
- Less shrinkage due to low solvent formulation
- Easy to tool
- Non-chromate

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	White
Colour Accelerator	Dark Brown
Mix Ratio	100 base / 10 accelerator (by weight and volume)
Non volatile Content	98%
Base viscosity (Brookfield #7 spindle @ 2 rpm, 25°C)	9000 to 14000 poise

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

Grade	Minimum Application Life[1]	Typical Tack-Free Time[2]	Typical Cure Time[3]
B-1/2	30 minutes	4 hours	4 hours
B-2	2 hours	9 hours	10 hours
B-4	4 hours	30 hours	30 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 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-240 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

Typical Values of 3M™ Aerospace Sealant AC-240 Class B to AMS-S-8802

Tensile strength and % Elongation

Conditioning	Requirements	Results
Standard Cure – 14 days	1.4 MPa / 200%	2.1 MPa / 370%
JRF – 14 days @ 60°C	0.35 MPa / 200%	1.7 MPa / 296%
JRF - 7 days @ 120°C	0.9 MPa / 100%	2.9 MPa / 200%
JRF- 72 hrs @ 60°C and 72 hours @ 50°C and 7 days @ 120°C	1.4 MPa / 75%	2.8 MPa / 200%
24 hrs @ 120°C, and JRF – 7 days @ 60°C	0.7 MPa / 150%	1.7 MPa / 360%

Peel Strength *

Substrate	Conditioning	Load /% cohesion
MIL-C-5541	7days@60°C in JRF	285 N/25mm/100%
	7 days @60°C in JRF/SW	263 N/25mm/100%
AMS-2471 Anodized	7days@60°C in JRF	267 N/25mm/100%
	7 days @60°C in JRF/SW	272 N/25mm/100%
MIL-C-27725	7days@ 60°C in JRF	263 N/25mm/100%
	7 days @ 60°C in JRF/SW	267 N/25mm/100%
	70 days @ 60°C in JRF/SW	254 N/25mm/100%
MIL-P-23377	7 days @ 60°C in DI Water	330 N/25mm/100%
	7 days @ 60°C in SW	338 N/25mm/100%
Stainless Steel	7days@60°C in JRF	276 N/25mm/100%
	7 days @60°C in JRF/SW	303 N/25mm/100%
Titanium	7days @ 60°C in JRF	263 N/25mm/100%
AS 4/3501-6 Graphite Epoxy	7days @ 60°C in JRF	236 N/25mm/100%
	7 days @ 60°C in JRF/SW	272 N/25mm/100%

*Specification requirement – 90 N/25 mm/100%, wire mesh

Typical Physical and Performance Properties of Cured compound After 14 Days @ 25°C/50%HR when tested per AMS-S-8802

Mixed Colour	Grey
Specific Gravity	1.61
Hardness	50 Shore “A”
Low Temperature Flexibility	No cracking, checking or adhesion loss when tested at -65°F (-54°C)
Service Temperature	-65°F to 250°F (-54°C to 121°C)
Intermittent Exposure to :	360°F (182°C)
Thermal Rupture Resistance	Does not blister or sponge
Corrosion	None
Repairability (to type I AMS-S-8802)	232 N/25mm/100% Cohesive (standard and conditioned sealant)
Repairability (to Type II AMS-S-8802)	245 N/25mm/100 Cohesive (standard and conditioned sealant)
Weight Loss and Flexibility	No cracking when bent 180°C over 0,3 cm mandrel. No more than 6% loss of the sealant compound after fluid immersion.
Crazing	No effect on acrylic or polycarbonate

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-240 Class B is 9 months from date of packaging, when stored at temperatures below 27°C in its original unopened container.

Mixed 3M AC-240 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.

Important Notice: All statements, technical information and recommendations in this data sheet are based on tests 3M believes to be reliable, but the accuracy or completeness of those tests is not guaranteed. All technical data and information should be considered typical or representative only and should not be used for specific purposes. Given the variety of factors that affect the use and performance of a 3M product, some of which are uniquely within the user's knowledge and control, it is essential that the user evaluate the 3M product before use to determine the suitability of the 3M product for the intended use and method of application. All questions of liability relating to the 3M product are governed by the terms of the sale subject to, where applicable, the prevailing law.

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Reference: 171