AEROSPACE MATERIAL SPECIFICATION

AMS3281™	REV. G

Issued 1994-11
Revised 2022-06

Superseding AMS3281F

Sealing Compound, Polysulfide (T) Synthetic Rubber for Integral Fuel Tank and Fuel Cell Cavities Low Density for Intermittent Use to 360 °F (182 °C)

RATIONALE

This document is up for its Five-Year review/revision. Changed term “standard cure time” to “cure to hardness.” Added additional verbiage clarification as needed to be consistent with recent specification releases.

1. SCOPE

1.1 Form

This specification covers three types and three classes of fuel-resistant polysulfide sealing compound with low specific gravity, supplied as a two-component system which cures at room temperature.

1.2 Application

This sealing compound has been used typically in sealing aircraft integral fuel tanks, fuel tank fillets and faying surfaces, pressure barriers and moldline surfaces, but usage is not limited to such applications. The sealing compound is resistant to jet fuels and is capable of withstanding long-term exposure from -65 to +250 °F (-54 to +121 °C) and short-term exposures (approximately 6 hours, cumulative) to 360 °F (182 °C), but usage is not limited to such applications. AMS3100 adhesion promoter may be applied prior to application of the sealant in accordance with recommendations from the sealant manufacturer for specific substrates.

1.3 Classification

Sealing compounds covered by this specification are classified as follows:

1.3.1 Types

Type 1 - Sealing compound with a specific gravity of 1.20 to 1.35.
Type 2 - Sealing compound with a specific gravity of 1.06 to 1.19.
Type 3 - Sealing compound with a specific gravity of 1.05 or less.

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For more information on this standard, visit
https://www.sae.org/standards/content/AMS3281G/

1.3.2 Classes

Class A - Suitable for application by brushing, injecting, or spraying. Available with the following application times in hours:
A-1/2
A-2

Class B - Suitable for application by extrusion gun or spatula. Available with the following application times in hours:
B-1/2
B-2

Class C - Suitable for faying surface or shim sealing, brush coating, or wet installation. Available with the following application times in hours:

Notation: ( ) Assembly time in hours.
C-2(2)
C-8(24)
C-12(48)
C-48(168)
C-96(336)

1.4 Safety - Hazardous Materials

Shall be in accordance with AS5502 (1.1).

2. APPLICABLE DOCUMENTS

Shall be in accordance with AS5502 (Section 2).

2.1 SAE Publications

Available from SAE International, 400 Commonwealth Drive, Warrendale, PA 15096-0001, Tel: 877-606-7323 (inside USA and Canada) or +1 724-776-4970 (outside USA), www.sae.org.

AMS2629	Fluid, Jet Reference
AMS3020	Oil, Reference, for “L” Stock Rubber Testing
AMS3021	Fluid, Reference, for Testing Di-Ester (Polyol) Resistant Material
AMS3100	Adhesion Promoter, for Polysulfide Sealing Compounds
AMS4045	Aluminum Alloy Sheet and Plate, 5.6Zn - 2.5Mg - 1.6 Cu - 0.23 Cr, 7075: (-T6 Sheet, -T651 Plate), Solution and Precipitation Heat Treated
AMS4911	Titanium Alloy, Sheet, Strip, and Plate, 6Al - 4V, Annealed
AMS5516	Steel, Corrosion-Resistant, Sheet, Strip, and Plate, 18Cr - 9.0Ni (SAE 30302), Solution Heat Treated
AMS-C-27725	Coating, Corrosion Preventive, for Aircraft Integral Fuel Tanks for Use to 250 °F (121 °C)
AS5127	Aerospace Standard Test Methods for Aerospace Sealants, Methods for Preparing Aerospace Sealants Test Specimens
AS5127/1	Aerospace Standard Test Methods for Aerospace Sealants, Two-Component Synthetic Rubber Compounds
AS5502	Standard Requirements for Aerospace Sealants and Adhesion Promoters

2.2 U.S. Government Publications

Copies of these documents are available online at https://quicksearch.dla.mil.

MIL-PRF-23377 Primer Coatings: Epoxy Polyamide, High Solids

MIL-PRF-85285 Coating, Polyurethane, Aircraft and Support Equipment

MIL-PRF-85582 Primer Coatings, Epoxy, Waterborne

2.3 PRI Publications

Available from Performance Review Institute, 161 Thorn Hill Road, Warrendale, PA 15086-7527, Tel: 724-772-1616, www.pri-network.org.

OP 2007 Appendix G9 Additional Requirements for the Aerospace Sealants and Associated Materials (G9) QPG

PRI-QPL-AMS3281 Products Qualified Under AMS3281

3. TECHNICAL REQUIREMENTS

3.1 Materials

The basic ingredient shall be synthetic rubber, made from liquid polysulfide and derivations thereof. The sealing compound shall cure by the addition of a separate curing agent to the base compound and shall not depend on solvent evaporation for curing. The curing agent shall possess sufficient color contrast to the base compound to permit easy identification of an unmixed or incompletely mixed sealing compound. Neither the base compound nor the cured sealing compound shall be red or pink in color. No glass fillers shall be used.

3.2 Date of Packaging

Shall be in accordance with AS5502 (3.1).

3.3 Toxicological Formulations

Shall be in accordance with AS5502 (3.2).

3.4 Quality

Shall be in accordance with AS5502 (3.3).

3.5 Shelf Life

Shelf life shall be a minimum of 9 months from the date of packaging when stored below 80 °F. Material may be retested for shelf life extension per 4.3.3.

3.5.1 Premixed and Frozen Material

Premixed and frozen material shall have a minimum storage life of 30 days at -40 °F (-40 °C) or lower, or 10 days at -10 to -40 °F (-23 to -40 °C) from date of mix/freeze. Recommendations for longer storage lives at lower temperatures may be provided by the manufacturer. The date of mix/freeze shall be within the shelf life of the unmixed material.

3.6 Properties

The base compound and the curing agent, when mixed in accordance with manufacturers' instructions and cured in accordance with 4.5.4.5, shall conform to the requirements shown in Table 1, when determined in accordance with the specified test methods.