flamemaster
SOCOMORE Aerospace Sealants

SHIMS & SEALANTS

CS 247 Class B

AIRCRAFT WINDSHIELD SEALANT

Technical Data Sheet

Description

CS 247 Class B was designed for use in setting or repairing aircraft windshields and canopies made of glass, acrylic or polycarbonate. An adhesion promoter such as CS 900 is recommended for use with acrylics and polycarbonates.

- Two-part, manganese dioxide cured polysulfide
- Room temperature cure
- No hydrogenated terphenyl, alkylphenol ethoxylates (APEOs), or aromatic solvents
- Excellent adhesion to aluminum, steel, and a variety of other aircraft substrates
- Resistant to crazing on acrylic and polycarbonate, both at room temperature and at 160°F (71°C)
- Excellent UV resistance
- Cured material has a service temperature range of -65°F to 250°F (-54°C to 121°C).
- Uncured CS 247 Class B is a thixotropic (low sag) material easily applied with an extrusion gun or spatula.
- CS 247 B-1/2 and B-2 are sold to a Flamemaster specification based on AMS3333 (Type II, high peel strength version).

For information on other qualifications or the availability of modified products, contact Sales.

The following technical information and data are typical for the material but should not be used for specification or acceptance purposes. Testing was performed in accordance with SAE AMS5127/1.

Typical Performance Properties

Cured 14 days at 77°F (25°C) and 50% relative humidity

Specific gravity	1.50, max
Ultimate hardness	52A – 55A
% Nonvolatile material	98%
Low temperature flexibility at -65°F (-54°C)	No defects, cracking or checking
Shear strength	310 psi (2.1 MPa) 100% cohesive failure
Stress crazing on polycarbonate	Pass
Stress crazing on acrylic (both MIL-PRF-5425 and MIL-PRF-25690)	Pass
Resistance to heat	Does not soften, crack, etc.
Heat reversion resistance	Does not revert, become brittle or lose adhesion

Typical Application Properties

At 77°F (25°C) and 50% relative humidity

Color	
Base	Black
Curing agent	Black
Mixed	Black
Mix ratio	
By weight	100:10 (base/curing agent)
Base viscosity (Brookfield #7@ 2 rpm)	14,800 Poise (1,480 Pa·s)
Slump	< 0.2" (5 mm)

	Minimum application time	Extrusion rate at application time (g/min)	Tack-free time (hours)	Cure time to 30A (hours)
B-1/2	30 minutes	20 - 40	< 4	< 10
B-2	2 hours	20 - 50	< 5	< 28

Tensile strength and elongation

Conditioning	Tensile strength	Elongation
Standard cure	350 psi 2.4 MPa	400 %
Standard cure + AMS3333 heat cycle	390 psi 2.7 MPa	190 %
Standard cure + 8 hours at 250°F (121°C) in air	280 psi 1.9 MPa	160 %

Peel strength

First value is pli; second value is N/25 mm All 100% cohesive failure * Indicates the use of adhesion promoter	
After 7 days in distilled water at 140°F (60°C)	
MIL-PRF-23377	31 (136)
MIL-PRF-85285 topcoat	36 (158)
MIL-PRF-85582 primer	34 (149)
Aluminum (AlClad, AMS4049)	49 (215)
Stainless steel (AMS 5516)	56 (246)
Titanium (AMS 4911)	59 (259)
MIL-PRF-5425 acrylic*	52 (226)
MIL-PRF-25690 acrylic*	57 (250)
Polycarbonate*	65 (283)
Repairability per AS5127/1, 8.2	
CS 247 to itself	25 (109)

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Surface Preparation

To ensure good adhesion, surfaces must be free of all traces of oil, wax, grease, dirt or other contaminants. A progressive cleaning process is recommended. Use an appropriate solvent and lint-free AMS 3819 cloths. Pour solvent on the cloth to keep the solvent supply clean. Clean a small area at a time and wipe the surface dry with a second clean cloth. See SAE AIR 4069 for additional information on surface preparation. For Socomore's full line of solvents and wipes used for aerospace sealant preparation, and their customer approvals, visit www.Socomore.com.

Storage

Unmixed CS 247 Class B has a shelf life of at least 9 months from date of packaging when stored below 80°F or below in the original, unopened package. Refrigerated shipping is not required, but storage above this temperature typically affects application properties before performance properties.

Mixing Instructions

CS 247 base and curing agents are matched and tested together; do not mix lots. Mix according to the indicated mix ratios; using the incorrect ratio can affect the sealant properties and voids the warranty. Do not thin the material with solvents. For additional information, see the FAQ on the Flamemaster website (www.flamemaster.com).

Curing

The application, tack-free, and cure times are based on the standard conditions of 77°F (25°C) and 50% relative humidity. For information on the effects of temperature and humidity, as well as information on accelerated curing, see the FAQ on the Flamemaster website (www.flamemaster.com).

Clean up

Cured aerospace sealants are difficult to remove. Cleaning tools and other surfaces is best done when the material has not yet cured. For fresh material and tool cleaning, use an appropriate solvent and lint-free cloth. Once the material has cured, use an approved chemical and/or plastic scraper to remove the sealant. For Socomore's full line of solvents, wipes, chemical sealant removers (SkyRestore), plastic scrapers (SkyScraper), and their customer approvals, visit www.Socomore.com.

Packaging

CS 247 Class B is available in injection kits and can kits. Bulk packaging and premix frozen (PMF) may be available; contact Sales.

Health and Safety

Before using this material, read and understand the Safety Data Sheet (SDS) as it includes information on health, physical, and environmental hazards, as well as handling precautions and first aid recommendations. SDSs are available upon request.

Emergency Contact Chemtrec 800-424-9300
Outside North America 703-527-3887
Keep out of the reach of children
For industrial use only

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This technical data sheet replaces and cancels the previous one.