flamemaster
SOCOMORE Aerospace Sealants

SHIMS & SEALANTS

CS 143 Class B

Technical Data Sheet

NON-CHROMATE CORROSION INHIBITIVE SEALANT

Description

CS 143 Class B is a fast curing, medium density aerospace sealant with a non-chromate corrosion inhibitor (NCCI) package typically used in applications requiring contact with air pressure, fuel, and water, such as fillets, sealing seams or joints, and fastener applications. This NCCI-containing sealant helps protect against corrosion on aluminum alloys or between dissimilar metals.

- Two-part, manganese dioxide cured polysulfide
- Room temperature cure
- No hydrogenated terphenyl, alkylphenol ethoxylates (APEOs) or aromatic solvents
- No expandable/compressible fillers
- Excellent adhesion to a wide variety of coated and bare aircraft substrates
- Excellent flexibility and resistance to fuel, water, and other aerospace fluids
- Cured materials has a service temperature range of -65°F to 250°F (-54°C to 121°C) with excursions to 360°F (182°C).
- Uncured CS 143 Class B is a thixotropic (low sag) material easily applied with an extrusion gun or spatula.
- CS 143 B-1/2, B-1, B-2, B-4, and B-6 are qualified to SAE AMS3265.

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 AMS3265

Typical Performance Properties

Specific gravity	1.43
Ultimate hardness	51A
% Nonvolatile material	98%
Thermal rupture resistance (30 min at 250°F (121°C), 10 psi (69 KPa) (Dry or immersed in AMS 2629 Type 1)	Pass, no deformation or sponging
Volume swell in AMS 2629 Type 1	2.0 %
Weight loss after AMS 2629 Type 1	1.9 %
Corrosion testing per AMS3265 cyclic loading and exposure on stressed assemblies	No corrosion
Corrosion testing per AMS3265, mixed metal assemblies: Al/Al; Al/Ti; Al/carbon epoxy	No corrosion

Typical Application Properties

Color	
Base	Off-white
Curing agent	Black
Mixed	Dark gray
Mix ratio	
By weight	100:10 (base/curing agent)
Base viscosity (Brookfield #7@ 2 rpm)	12,000 Poise (1200 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	½ hour	40 - 80	< 5	< 7
B-1	1 hour	30 - 60	< 6	< 10
B-2	2 hours	30 - 60	< 8	< 20
B-4	4 hours	30 - 60	< 14	< 24
B-6	6 hours	30 - 60	< 16	< 30

Tensile strength and elongation

Conditioning	Tensile strength	Elongation
Standard cure	313 psi 2.2 MPa	373 %
Cure + 12 days at 140°F (60°C) + 60 hours at 160°F (72°C) + 6 hours at 180°F (82°C), all in JRF.	210 psi 1.5 MPa	480 %
As above, followed by AMS3265 heat cycle in air	281 psi 1.9 MPa	59 %
Cure + AMS3265 standard heat cycle in air	231 psi 1.6 MPa	54 %

Peel strength

First value is pli; second value is N/25 mm All 100% cohesive failure	
After 7 days in JRF (AMS2629 Type 1) at 140°F (60°C)	
Alodine (MIL-DTL-5541)	45 (197)
Sulfuric acid anodized	46 (201)
Stainless steel (AMS5516)	43 (190)
Titanium (AMS4911)	38 (164)
IFT coating (AMS-C-27725)	47 (204)
AS4/3501-6, tool side	38 (167)
AS4/3501-6, ply side	42 (185)
BMI, tool side	36 (158)
BMI, ply side	44 (190)

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Peel strength continued

After 7 days immersion in 50/50 JRF (AMS2629 Type 1) / 3% salt water (SW) at 140°F (60°C)	
Alodine (MIL-DTL-5541)	JRF: 46 (203); SW: 45 (199)
Sulfuric acid anodized	JRF: 45 (197); SW: 44 (193)
Stainless steel (AMS 5516)	JRF: 55 (240); SW: 44 (191)
Titanium (AMS 4911)	JRF: 43 (190); SW: 47 (204)
IFT coating (AMS-C-27725)	JRF: 43 (189); SW: 41 (177)
AS4/3501-6, tool side	JRF: 41 (179); SW: 36 (159)
AS4/3501-6, ply side	JRF: 40 (175); SW: 47 (204)
BMI, tool side	JRF: 45 (195); SW: 36 (159)
BMI, ply side	JRF: 46 (203); SW: 37 (162)
After 70 days in JRF (AMS2629 Type 1) at 140°F (60°C)	
Titanium (AMS4911)	43 (189)
IFT coating (AMS-C-27725)	37 (163)
After 70 days immersion in 50/50 JRF (AMS2629 Type 1) / 3% salt water (SW) at 140°F (60°C)	
Titanium (AMS 4911)	JRF: 46 (203); SW: 41 (180)
IFT coating (AMS-C-27725)	JRF: 40 (176); SW: 35 (155)
After six (6) JRF/3% salt water heat cycles per AMS3265	
Alodine (MIL-DTL-5541)	JRF: 49 (214); SW: 42 (182)
Sulfuric acid anodized	JRF: 48 (210); SW: 47 (205)
Stainless steel (AMS 5516)	JRF: 46 (203); SW: 49 (215)
Titanium (AMS 4911)	JRF: 48 (211); SW: 41 (180)
IFT coating (AMS-C-27725)	JRF: 33 (146); SW: 34 (149)
AS4/3501-6, tool side	JRF: 44 (193); SW: 42 (183)
AS4/3501-6, ply side	JRF: 36 (158); SW: 39 (171)
BMI, tool side	JRF: 46 (200); SW: 38 (167)
BMI, ply side	JRF: 40 (174); SW: 42 (182)
After 7 days immersion in 3% salt water at 140°F (60°C)	
MIL-PRF-23377, standard cure	43 (190)
MIL-PRF-23377, 200°F (93°C) cure	51 (222)
Polyurethane topcoat, MIL-PRF-85285	42 (184)
Waterborne epoxy topcoat, MIL-PRF-85582	47 (204)
Repairability per AS5127/1, 8.2	
CS 143 to itself	54 (237)
To another AMS 3265 sealant	29 (126)
To AMS 3276 sealants	53 (230)

Surface Preparation

To obtain 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 clothes. 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 143 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 143 Class B 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 143 Class B is available in injection kits and can kits. Bulk packaging and premixed frozen (PMF) may be available; consult 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

March 13th 2025

This technical data sheet replaces and cancels the previous one.