

CS 3213 Class B

CORROSION INHIBITIVE SEALANT

Technical Data Sheet

Description

CS 3213 Class B aerospace sealant was designed for sealing metal components on aircraft systems for protection against corrosion. It acts as a barrier between dissimilar metals as well as protecting aluminum alloys against corrosion and is typically used for sealing faying surfaces and sealing joints.

- Two-part, manganese dioxide cured polysulfide
- Room temperature cure
- Contains chromate as a corrosion inhibitor
- Excellent adhesion to a wide variety of coated and bare aircraft substrates
- Excellent flexibility and resistance to fuel, water, and other aerospace fluids
- Cured material has a service temperature range of -65°F to 250°F (-54°C to 121°C).
- Uncured CS 3213 Class B is a thixotropic (low sag) material easily applied with an extrusion gun or spatula.
- CS 3213 B-1/2 and B-2 are qualified to MIL-PRF-81733 (Type II-1/2 and II-2), Class 1, Grade A as well as to STM40-111.

For STM40-112 Class B materials, consult the TDS for CS 3213 Class C. 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 MIL-PRF-81733, STM40-111 or AS5127/1.

Typical Performance Properties

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

Specific gravity	1.56
Ultimate hardness	40 - 45A
% Nonvolatile material	95%

Thermal stability – After 48 hours at 320°F (160°C), compare original and final hardness	Pass – final hardness 45 – 60A
Low temperature flexibility at -65°F (-54°C)	No cracking, or loss of adhesion
Corrosion resistance: Aluminum / titanium couple; 4 weeks SO2 salt spray	Pass; no visible sign of corrosion
Corrosion resistance: Aluminum / magnesium couple; 4 weeks SO2 salt spray	Pass; no visible sign of corrosion
Stressed aluminum assembly	Pass; no visible sign of corrosion
Tensile strength, standard cure	265 psi 1.8 MPa
% Elongation, standard cure	395%

Typical Application Properties

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

Color	
Base	Off-white
Curing agent	Black
Mixed	Dark gray
Mix ratio	
By weight	100:17 (base/curing agent)
Base viscosity (Brookfield #7@ 2 rpm)	13,000 Poise (1300 Pa-s)
Slump	< 0.2" (5 mm)

	Minimum application time	Extrusion rate at application time (g/min)	Tack-free time (hours)	Cure time to 35A (hours)
B-1/2	30 minutes	20 - 60	6 – 8	< 30
B-2	2 hours	20 - 60	20 - 30	< 72

Peel strength

First value is pli; second value is N/25 mm All 100% cohesive failure	
Dry (after standard cure)	
Alodine (MIL-DTL-5541)	40 (175)
Anodized aluminum (AMS 2471)	36 (158)
Cad plated steel (AMS 4130)	36 (158)
Titanium (AMS 4911)	38 (166)
Magnesium (AMS 4376)	38 (166)
Epoxy primer (MIL-PRF-23377)	31 (136)
AS4/3501-6, peel side	37 (162)
AS4/3501-6, tool side	41 (180)
After 48 hours in MIL-PRF-83282 at 140°F (60°C)	
Alodine (MIL-DTL-5541)	35 (153)
Anodized aluminum (AMS 2471)	28 (123)
Cad plated steel (AMS 4130)	30 (131)
Titanium (AMS 4911)	33 (144)
Magnesium (AMS 4376)	34 (149)
Epoxy primer (MIL-PRF-23377)	32 (140)
AS4/3501-6, peel side	30 (131)
AS4/3501-6, tool side	34 (149)
After 48 hours in MIL-PRF-7808 at 140°F (60°C)	
Alodine (MIL-DTL-5541)	28 (123)
Anodized aluminum (AMS 2471)	28 (123)
Cad plated steel (AMS 4130)	31 (136)
Titanium (AMS 4911)	32 (140)
Magnesium (AMS 4376)	37 (162)
Epoxy primer (MIL-PRF-23377)	36 (158)
AS4/3501-6, peel side	32 (140)
AS4/3501-6, tool side	32 (140)
Continued	

Peel strength, continued

After 48 hours in MIL-PRF-23699 at 140°F (60°C)	
Alodine (MIL-DTL-5541)	31 (136)
Anodized aluminum (AMS 2471)	29 (127)
Cad plated steel (AMS 4130)	36 (158)
Titanium (AMS 4911)	32 (140)
Magnesium (AMS 4376)	33 (144)
Epoxy primer (MIL-PRF-23377)	38 (166)
AS4/3501-6, peel side	34 (149)
AS4/3501-6, tool side	34 (149)
After 48 hours in 3% salt water at 140°F (60°C)	
Alodine (MIL-DTL-5541)	22 (96)
Anodized aluminum (AMS 2471)	24 (105)
Cad plated steel (AMS 4130)	26 (114)
Titanium (AMS 4911)	26 (114)
Magnesium (AMS 4376)	25 (109)
Epoxy primer (MIL-PRF-23377)	24 (105)
AS4/3501-6, peel side	25 (109)
AS4/3501-6, tool side	28 (123)
After 48 hours in AMS 2629 Type 1 at 140°F (60°C)	
Alodine (MIL-DTL-5541)	23 (101)
Anodized aluminum (AMS 2471)	22 (96)
Cad plated steel (AMS 4130)	25 (109)
Titanium (AMS 4911)	22 (96)
Magnesium (AMS 4376)	24 (105)
Epoxy primer (MIL-PRF-23377)	26 (114)
AS4/3501-6, peel side	22 (96)
AS4/3501-6, tool side	26 (114)
Repairability (48 hours in air at 140°F (60°C))	
CS 3213 Class B to itself	47 (206)
To another MIL-PRF-81733 sealant	41 (180)

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 3213 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 3213 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 3213 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.

The above details have been compiled to the best of our knowledge. They have, however, an indicative value only and we therefore make no warranties and assume no liability in connection with any use of this information, particularly if a third party's rights are affected by the use of our products. The above information has been compiled based upon tests carried out by SOCOMORE. All data is subject to change as SOCOMORE deems appropriate. The data given is not intended to substitute for any testing you must conduct in order to determine the suitability of the product for your particular purposes. Pictures are not contractual. Please check your local legislation applicable to the use of this product. Should you need any further information please contact us.