CS 3213 Corrision inhibiting Sealant containing chromate

Chem Seal

Technical Bulletin
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SPECIFICATIONS

Qualified
Lockheed STM-40-111 Class ABC
Note: Lockheed class designation A, B, C equals MIL-PRF-81733 Type I, II, IV

MIL-S-81733 Type III

Meets requirements
MIL-PRF-81733 Class I, Grade A
Types I, II, IV

	Type I	Type II	Type IV
Color: Base Compound	off-white	off-white	off-white
Curing Agent	Black	Black	Black
Mixed	Gray	Gray	Gray
Mixing Ratio (by weight)	100:17	100:17	100:10
(by volume)	100:14	100:14	100:8.3
Non Volatile Content	86%	96%	94%
Viscosity-Base Compound (Brookfield RVF Spindle #6 @10 RPM) 100-500 poises	250 poises		
Viscosity-Base Compound (Brookfield RVF Spindle #7@ 2 RPM) 9000-14000 poises		11,000 poises	
Viscosity-Base Compound (Brookfield RVF Spindle #6 @ 2 RPM) 1000-4000 poises			3,000 poises
Viscosity-Curing Compound (Brookfield RVF Spindle #6 @10 RPM)	1,000 poises	1,000 poises	1,000 poises
Peel strength minimum 7 days at 140° F 100% cohesive failure 15 lbf/inch minimum MIL-PRF-81733	30	35	30
Soluble Chromate	5%	5%	5%
Vertical Flow	N/A	0.30	N/A
Thermal rupture	pass	pass	pass
Chalking	none	none	none
Corrosion	none	none	none
Repairability	pass	pass	pass
Ultimate Hardness, Shore A	55	55	55
Flash Point	90° F	> 200° F	90° F

(For a complete description of properties refer to specifications MIL-PRF-81733, Lockheed STM-40-111). Test results are typical and individual batches may vary within the specification requirements.

PRODUCT DESCRIPTION

CS 3213 is a corrosion Inhibitive fuel resistant sealant, manganese oxide cured containing 5% soluble chromate for use on integral fuel tanks and pressurized cabins as well as other areas subject to contact with aircraft fuels, lubricants, oils, water and/or weathering.

CS 3213 is a two-part polysulfide base compound which cures at room temperature to a flexible, resilient rubber with excellent adhesion to aluminum, magnesium, titanium, steel, and numerous other materials. CS 3213 is designed to withstand the attack of sulfur compounds that are present in jet fuels. When mixed, CS 3213 Type A is a self-leveling liquid. CS 3213 Type B is a thixotropic paste that will not flow or sag on vertical or overhead surfaces. CS 3213 Type C materials are intended for the sealing of faying surfaces.

SURFACE PREPARATION

To obtain good adhesion, the surfaces must be free of all traces of oil, wax, grease, dirt or other contamination. Working in small area segments, wipe the surface using a clean rag doused in an oil free solvent. Before the solvent evaporates, wipe the surface dry with a second clean rag. Maintain a clean solvent supply by pouring the solvent on the washing cloth. CS 3213 will adhere tenaciously to most substrates providing the surface to be sealed is clean and sound.

MIXING INSTRUCTIONS

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CS 3213 Parts A and B are carefully matched at the time of manufacture to provide optimum performance when cured. Care should be taken to assure that Parts A and B are combined as recommended on the container label. When mixing pre-measured kits do not thin CS 3213 with solvents. Prior to combining with the Part A component, stir the Part B component until the contents of the container are uniform. Place the entire B component into the Part A container and continue stirring until a uniform gray color is achieved. There should be no white or black streaks in the properly blended material. Periodically scrape the sides and bottom of the container as well as the mixing tool to assure proper mixing. When using a mechanical mixer, avoid high speeds since the heat generated will reduce the application time of the mixed CS 3213. Violent stirring will also entrap air in the cured sealant.

When mixing materials packaged in bulk or when only a small quantity is required, stir the recommended parts by weight of the Part B component into 100 parts by weight of the Part A component. Be sure to stir the Part B prior to weighing out the required amount.

CURE

Specified application and cure schedules are based on the standard conditions of 77°F and 50% relative humidity. Increased temperature and relative humidity will reduce the work life and speed up the cure while reduced temperatures and relative humidity will extend the work life and slow the cure. Heating up to 120°F accelerates cure. However care must be exercised to avoid the entrapment of solvent when heat is applied.

STORAGE LIFE

The storage life of CS 3213 is nine months when stored in the original unopened containers at temperatures below 80°F. Some change in work life, viscosity and curing rate may occur during this period. However, such changes are slight and in no way affect the end performance of the product.

APPLICATION

The work life of CS 3213 is indicated by the number following the type designation and varies from 1/4 hour to 4 hours for type A-B, 20 hours to 96 hours for type C. Work life is the minimum amount of time the material will maintain its application properties. Squeeze out time (assembly time) type C only

WORK LIFE DESIGNATION	APPLICATION TIME Type A-B, 15 gm/m minimum Type C, 30 gm/m minimum	TACK FREE TIME	CURING RATE TO 35 SHORE A STANDARD CURE	SQUEEZE OUT TYPE C ONLY (MINIMUM) ASSEMBLY TIME
** A-B 1/4	1/4 HOUR	6 HOURS	16 HOURS	
A-B 1/2	1/2 HOUR	8 HOURS	30 HOURS	
A-B 1	1 HOUR	15 HOURS	40 HOURS	
A-B 2	2 HOURS	24 HOURS	72 HOURS	
A-B 4	4 HOURS	36 HOURS	90 HOURS	
C 20	8 HOURS	48 HOURS	N/A note: I	20 HOURS

** CS 3213 Type B-1/4 may be fuel immersed within two hours of application when cured at standard conditions of 77^0 F ± 5% Relative Humidity.

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Note: I the specifications for Type C material contain no standard cure requirements. Flamemaster cures the mixed material at RT for 48 hours then at 140° F for 8 hours a minimum shore A 35 is our requirement.

CLEAN UP

For surface preparation as well as removing fresh or cured CS 3213, Methylene Chloride can be used. Cured CS 3213 will require a soaking period in Methylene Chloride bases stripper for satisfactory removal.

SAFETY

CS 3213 Type A and C contain toluene within the limits called out by Mil-S-8802. The maximum allowable concentration in the atmosphere of the work area is 200 ppm. CS 3213 Type A and C should be used with adequate ventilation. For more information refer to Bulletin Number SD-63 of the Manufacturing Chemists Association. Avoid prolonged contact and wash with soap and water prior to eating or smoking. CS 3213 Type A and C have a flash point of 90°F. The flash point of CS 3213 Type B is over 200°F. "Flamemaster supplied aviation fuel tank sealants and coating materials are tested for compatibility with reference fluids and fuels as specified by the applicable specification. Flamemaster does not warranty the performance of fuel tank sealants or coatings subjected to fluids or fuels other than those specified by the applicable specification." "It is the responsibility of the user to determine the suitability for use utilizing the information contained in the applicable specification."

PACKAGING

CS 3213 is packaged in the following stock kit sizes:

24 ea. per case	2 ½ oz. and 6 oz. cartridges
16 ea. per case	Pint Kits
16 ea. per case	Quart Kits
4 ea. per case	Gallon Kits

CS 3213 is available in 5-Gallon Kits and 50-Gallon Drum Kits.
CS-3204 is also available in custom sized packaging or as pre-mixed and frozen.

Refer to the applicable Material Safety Data Sheet prior to using this product.

All recommendations, statements, and technical data contained herein are based on tests we believe to be reliable and correct, but accuracy and completeness of said tests are not guaranteed and are not to be construed as a warranty, either expressed or implied. User shall rely on his own information and tests to determine suitability of the product for the intended use and user assumes all risk and liability resulting from his use of the product. Seller's and manufacturer's sole responsibility shall be to replace that portion of the product of this manufacturer, which proves to be defective. Neither seller nor manufacturer shall be liable to buyer or any third person for any injury, loss, or damage directly or indirectly resulting from use of, or inability to use, the product. Recommendations or statements other than those contained in a written agreement signed by an officer of the manufacturer shall not be binding upon the manufacturer or seller.

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