CS 3204 Aircraft Integral Fuel Tank Sealant

Chem Seal Class A - B - C

Technical Bulletin
January, 2007

PRODUCT DESCRIPTION meets AMS-S-8802 formerly Mil-S-8802F, Type II

CS 3204 is a fuel resistant sealant 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 3204 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 3204 is designed to withstand the attack of sulfur compounds that are present in jet fuels. When mixed, CS 3204 Class A is a self-leveling liquid. CS 3204 Class B is a thixotropic paste that will not flow or sag on vertical or overhead surfaces. CS 3204 Class C materials are intended for the sealing of faying surfaces.

	Class A	Class B	Class C
Color: Base Compound	off-white	off-white	off-white
Curing Agent	Gray	Gray	Gray
Mixed	Gray	Gray	Gray
Mixing Ratio (by weight)	100:10	100:10	100:10
(by volume)	100:8.3	100:8.3	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 AMSS8802	30	35	30
Shear strength 200 psi minimum 95% cohesive failure Class C only			295
Vertical Flow	N/A	0.30	0.015
Thermal rupture	pass	pass	pass
Chalking	none	none	none
Corrosion	none	none	none
Ultimate Hardness, Shore A	55	55	55
Tensile Strength (minimum 200#)	250	250	250
Flash Point	90° F	> 200° F	90° F

(For a complete description of properties refer to AMS-S-8802 specification) Test procedures AS5127A AS5127/1A. Test results are typical and individual batches may vary within the specification requirements.

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 3204 will adhere tenaciously to most substrates providing the surface to be sealed is clean and sound.

MIXING INSTRUCTIONS

CS 3204 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 3204 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 3204. 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 10 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. Cure may be accelerated by heating up to 120°F. However care must be exercised to avoid the entrapment of solvent when heat is applied.

STORAGE LIFE

The storage life of CS 3204 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 3204 is indicated by the number following the class designation and varies from 1/4 hour to 4 hours for class A-B, 20 hours to 96 hours for class C. Work life is the minimum amount of time the material will maintain its application properties. Squeeze out time (assembly time) class C only

WORK LIFE DESIGNATION AMS-S-8802	APPLICATION TIME Class A-B, 15 gm/m minimum Class C, 30 gm/m minimum	TACK FREE TIME	CURING RATE TO 35 SHORE A STANDARD CURE	SQUEEZE OUT CLASS 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 3204 Class B-1/4 may be fuel immersed within two hours of application when cured at standard conditions of 77^0 F ± 5% Relative Humidity.

Note: I the specifications for Class C material contain no standard cure requirements. Flamemaster cures the mixed material at RT for 48 hours then at 140^0 F for 8 hours a minimum shore A 35 is our requirement.

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CLEAN UP

For surface preparation as well as removing fresh or cured CS 3204, Methylene Chloride can be used. Cured CS 3204 will require a soaking period in Methylene Chloride bases stripper for satisfactory removal.

SAFETY

CS 3204 Class A contains toluene within the limits called out by AMS-S-8802. The maximum allowable concentration in the atmosphere of the work area is 200 ppm. Use CS 3204 Class A with adequate ventilation. Avoid prolonged contact and wash with soap and water prior to eating or smoking. CS 3204 Class A has a flash point of 90°F. The flash point of CS 3204 Class B is over 200°F. The user should refer to the MSDS when determining what if any additional precautions are required. "Flamemaster supplied aviation fuel tank sealants and coating materials are tested for compatibility with reference fluids and fuels as specified by the applicable specification. Fuel tank sealants or coatings subjected to fluids or fuels are not warranted for performance when subjected to fluids 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 3204 is available in the following stock 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 3204 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.

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