

# CS 3205 Class B Type I Integral Fuel Tank Sealant

## Chem Seal

Technical Bulletin  
December 2011

### PRODUCT DESCRIPTION

#### Qualified AMSS8802 Type I, Class B-2, B-1/2

CS 3205 Class B is a two-part, dichromate cured polysulfide base compound 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 3205 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, various composites and other materials. CS 3205 withstands the attack of sulfur compounds that are present in jet fuels. When mixed, CS 3205 Class B is a thixotropic paste. Service temperature range from -65°F (-54°C) to 250°F (121°C), with intermittent excursions up to 275°F (135°C).

### 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 3205 will adhere tenaciously to most substrates providing the surface to be sealed is clean and sound.

As the make up of substrates may differ from those contained in AMSS8802 it is recommended that adhesion be determined to the specific substrate prior to beginning production.

### MIXING INSTRUCTIONS

Parts A and B are matched at the time of manufacture to provide optimum performance when cured. Assure that Parts A and B are combined at the recommended ratio printed on the container label. Do not thin CS 3205 prior to combining Parts A and B. Before combining parts A and B stir the Part B component until the contents of the container are uniform. Place all of the 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 3205. Violent stirring will also entrap air in the cured sealant. Mixing instructions for plastic injection kits are provided on the packaging. 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 will reduce the work life and speed up the cure while reduced temperatures will extend the work life and slow the cure. Cure may be accelerated by heating up to 120°F. Exercise care to avoid the entrapment of solvent when heat is applied. (Reference: AMSS8802)

### Application Properties (Typical)

	Class B
Color: Base Compound Part-A	Cream
Curing Agent	Black
Mixed	Dark Gray
Mixing Ratio (by weight)	100:10
Mixing Ratio (by volume)	100:8.3
Non Volatile Content	94%
Air Content	2.3% Max
Viscosity-Base Compound (Brookfield RVF Spindle #7 @ 2 RPM)	13,000 poises

Class	Vertical Flow - Slump inches		
	initial	50 minutes	90 minutes
B 2	0.1	0.15	0.15
B 1/2	0.1	30 minutes 0.15	N / A

### Application life and cure time @ 77°F (25°C), 50% RH

	Application life hours	Tack Free Time hours	Cure to 35 Shore A Durometer
B-2	2 hr 26 gm/mn	< 20	< 48
B 1/2	1/2 hr 34 gm/mn	< 8	< 24
B 1/2	Fluid Immersion Cure B 1/2 only	48 hr Durometer Shore	120 hr 35 A

### Performance Properties are Typical

Cured 14 days @ 77°F (25°C)

Ultimate hardness, Shore A	50
Cured specific gravity	1.46 (max)
Hydrolytic stability (min)	Shore A 30
Chalking	passed
Resistance to thermal rupture < 0.125	passed
Weight Loss	6%
Fungus Resistance	Non-nutrient
Corrosion resistance	passed
Low temperature flexibility	passed
Repairability	passed

### Tensile strength and elongation

	Tensile	Elongation
Standard cure	420 lb.	300%
14 days at 140° F JRF	156 lb.	200%
7 days at 250° F air	375 lb.	180%
72 hrs. at 140° F JRF+72 hrs. at 120° F air+7 days at 250° F air	390 lb.	180%
24 hrs. at 250° F air+7 days at 140° F JRF	185 lb.	180%

### Peel strength lbs. / inch at 100% cohesion

JRF immersion, 7 days @ 140°F (60°C)	
MIL-A-8625 (Anodized) alloy AMS 4045	45
MIL-C-5541 (Alodine) alloy AMS 4045	45
AMS 4045 (anodized) AMS-C-27725	45
AMS 5516 Stainless steel	45
AMS 4911 Titanium alloy	45
AMS 4036 (AlClad)	45
JRF/NaCl-H2O immersion, 7 days @ 140°F (60°C)	
MIL-A-8625 (Anodized) alloy AMS 4045	45
MIL-C-5541 (Alodine) alloy AMS 4045	45
AMS 4045 (anodized) AMS-C-27725	45
AMS 5516 Stainless steel	45
AMS 4911 Titanium alloy	45
AMS 4036 (AlClad)	45

(For full description of properties refer to AMSS8802)  
Test procedures refer to AS5127/1

Chem Seal Products

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### SAFETY

This product contains Hexavalent Chromates and toluene. Read and understand the Material Safety Data Sheet (MSDS), which provides information on health and environmental hazards, handling precautions and first aid recommendations required to safely use this product.

Emergency Contact Chemtrec 800-424-9300  
Outside North America 703-527-3887

Keep out of the reach of children  
For industrial use only

### APPLICATION

The work life of CS 3205 is indicated by the number following the class designation and varies from \*1/4 hour to 4 hours. Work life is the minimum amount of time the material will maintain its application properties.

### STORAGE LIFE

The storage life of CS 3205 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.

### CLEAN UP

For surface preparation as well as removing fresh CS 3205, you may use alcohol or aromatic solvents. Recommended are commercial polysulfide / epoxy strippers for removal of cured CS 3205

### PACKAGING AVAILABILITY

Two component plastic cartridges  
Pre measured can kits ½ Pint – 1 Gallon  
Bulk 5 Gallon pails, 50 Gallon drums  
Pre-mixed and frozen cartridges  
Contact Flamemaster for specialized packaging

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. Flamemaster does not warranty the performance of fuel tank sealants or coatings when subjected to fluids or fuels other than those specified by the applicable specification. 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. Sellers and manufacturers 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.