

CS 3810 Low Density Silicone Sealant

Chem Seal

Technical Bulletin
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LOW DENSITY SILICONE COMPOUND THERMAL BARRIER

PRODUCT DESCRIPTION meets General Dynamics Space Systems 5-00099-10
Convair 0-00099-10
Martin Marietta - MMS-K-438
McDonnell Douglas - DMS 1799

CS 3810 is a specialty material originally formulated for use as a thermal barrier coating. Its many outstanding characteristics have resulted in its acceptance by the aircraft, missile and electronics industry for numerous other uses as well. Chem Seal's engineering services are available to discuss these applications with you.

CS 3810 is a low density, room temperature curing, silicone compound designed specifically as an easy to apply, heavy coating in areas where thermal insulation is required. The low density and excellent thermal insulation characteristics of CS 3810 render it very useful in applications where weight reduction is required. CS 3810 can reduce the weight penalty of conventional coatings by 50%. Some of the desirable properties of CS 3810 are as follows:

1. Low density
2. High thermal insulation rating
3. Excellent adhesion
4. High electrical insulation properties
5. Easy to handle, mix and apply
6. Intermittent high temperature exposure to 600°F

SURFACE PREPARATION

Before applying primer or coating surfaces must be thoroughly cleaned and free of dust, oil, grease or other contamination. Thoroughly dry the cleaned surface before applying primer.

Apply CS 9903 Primer to the cleaned surface as soon as possible, insure a thin, even coat. Allow at least one hour drying time, but no more than eight hours before applying the mixed sealant. It is important to apply CS 9903 in uniform thickness (approximately 0.5 to 1.0 mil). Pink color shows proper application of primer. Lack of the pink color indicates it is too thin. A red color indicates it is too thick.

APPLICATION

CAUTION: This product has a limited application life. Do not mix curing agent and base compound together until ready to use. Matching of curing agent and base compound occurs during production. Do not use non-matching base and cure agent.

Proper mixing of all two-part synthetic rubber compounds requires care to obtain a uniform, air free mix. Mechanical mixing achieves the best results. When mixing in the original can, it is advisable to remove the lip to facilitate the mixing operation. Curing agent (Part B) is first thoroughly stirred to assure even dispersion, then transferred into the base compound (Part A). Mix slowly with a paddle or slow speed mixer for several minutes until a thorough blend is

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Application properties	
Color	
Base compound	brown
Curing agent	white
Mixed compound	Light brown
Mix ratio (by weight)	100 : 10
Viscosity #7spindle - 2 RPM	5000 poises
Application time	2 hours
Tack free	< 8 hours
Shore A	24 hours 40
Cured properties after 7 days @ 77 F	
Specific gravity	.94
Shore A	50
Tensile strength	100 psi
Elongation	75%
Thermal conductivity:	
	0.09 BTU ft./ft ² hr - ° F
Volume Resistivity:	
	2.0 X 10 ¹³ ohm cm
Peel strength (cohesive)	> 5 lbs.

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obtained. Scrape the bottom and sides of the container several times during this process. After the first few minutes of mixing, all material adhering to the paddle and sides of the container should be scraped back into the bulk of the mixture.

CS 3810 is produced in consistencies suitable for brushing, troweling or filleting techniques. Layer vertical surfaces 1/8" at a time to prevent sag. The surfaces may be troweled smooth by using silicone oils on the surface of metal or plastic trowels. Assure that the primed surface has been thoroughly wetted with CS 3810.

CURE

To achieve maximum resistance to high temperatures a stepped cure schedule is advisable:

Conditions

For Service up to 350°F

For Service at 450°F

For service at 500°F

For Service at 600°F

Cure Schedule

7 Days at 75°F

7 Days at 75°F plus 24 hours at 350°F

Entire cure for 450°F plus 16 hours at 450°F

Entire cure for 500°F plus 8 hours at 550°F

STORAGE LIFE

Three Months, when stored at temperatures below 50°F in original, unopened container.

CLEANING OF EQUIPMENT

Clean tools and equipment with CS 9900 Cleaner. Remove cured CS 3810 by soaking in CS 9900 Cleaner.

SAFETY

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

PACKAGING

CS 3810 is packaged in the following kit sizes:

16 ea. per case Pint Kits

16 ea. per case Quart Kits

4 ea. per case Gallon Kits

CS 3810 is also available in 5-Gallon Kits

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 test 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 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. Warranty returns accepted only in their original unopened containers no warranty claims accepted for goods repackaged or altered. Neither seller nor manufacturer shall be liable to the 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. Flamemaster does not warranty the performance of sealants and coatings subjected to fluids or fuel 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.