# **CS 3213 CORROSION INHIBITING SEALANT**

# Class B

Technical Bulletin May, 2009

### MIL-PRF-81733 Type-II Class-1 Dash-2 Grade-A

## **Product Description**

Chem Seal

CS 3213 is a corrosion inhibitive sealant; manganese dioxide cured, polysulfide compound containing soluble chromate for use in the sealing and coating of metal components on weapons and aircraft systems for protection against corrosion when subject to contact with water and/or weathering. CS 3213 is exceptionally efficient in combating the common causes of corrosion occurring on aluminum alloys or assemblies consisting of dissimilar metals.

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.

When mixed, CS 3213 Type II (class B) is a thixotropic paste that will not flow or sag on vertical or overhead surfaces. It has an operational temperature range from -65°F (-54°C) to 250°F (121°C), with intermittent excursions up to 275°F (135°C).

# **Application Properties (typical)**

Color						
Part A b	ase compound	off-	off-White			
Part B curing agent		Black				
Mixed		Gray				
Mixing Potio		Part ∧ · Part B				
Ry Woight		100 · 17				
		100.17				
By volume		100.14				
Base viscosity						
Brookfield RVF Spindle		11000 poises				
#7@ 2 RPM		1100 (Pa-s)				
	Slump	, inches (mm)				
	initial	50 minutes	90 minutes			
B 1/2						
B 2	0.20 (5.08)	0.20 (5.08)	0.30 (7.62)			
B 4	. ,	. ,	. ,			
Air content		< 1.5%				
All content			1.070			

Application Properties continued					
Application / cure time @ 77°F (25°C), 50% RH					
	Work-life (hours)	Tack-free (hours)	Cure 35 A (hours)		
B 1/2					
B 2	2	< 24	< 48		
B 4					

# **Performance Properties (typical)**

Cured 14 days @ 77°F (25°C), 50% RH				
Cured specific grav	1.50			
Nonvolatile conten	96%			
Cured hardness		Shore A 44		
Soluble chromate	5%			
Thermal S No blistering max i (+15	tability 48 hrs @ 320 ncrease shore A pts)	°F/Air Pass (+4 pts)		
Low Temp Fle No cracking or loss	xibility -65° ± 2° F (-5 s of adhesion	4° ± 1° C) Pass		
Tensile Strength (std cure)		287 PSI (1990 kPa)		
Elongation (std cur	400%			
Salt-SO <sub>2</sub> spray (Fog) MIL-PRF-81733 (ASTM B117) – No corrosion to base substrate or deterioration of				
Mixed metal assen	nbly (Al – Ti)	Pass		
Mixed metal assem	Pass			
Stressed aluminum cycling		Pass		
	Repairability Adhesive Lbs/in (k/cm <sup>2)</sup>	Cohesive %		
To self	47	100%		
MIL-PRF-81733	42	100%		
Resistance to hydrocarbons - 7 days @ 140°F (60°C) Immersed in type-III JRF				
Weight loss %	6			

#### **Performance Properties Continued**

Peel strength, lb/in (N/25mm), Minimum lb/in (N/25mm)	100% cohesion 15 (66)			
AMS 2629 JRF, immersion 2 days MII -A-8625 (AMS-2471)	s @ 140°F (60°C)			
(Anodized aluminum) MIL-T-9046 (AMS-4911)	28 (125)			
(Titanium)	27(120)			
Peel strength, lb/in (N/25 mm), 100% cohesion Minimum lb/in (N/25 mm) 15 (66)				
3% AMS 2629 JRF/NaCl-H2C 2 days @ 140°F (60	) immersion, °C)			
(Anodized aluminum)	27 (120)			
MIL-1-9046 (AMS-4911) (Titanium)	26 (116)			
Non-nutrient	Pass			
Note: For a complete description of properties refer to specifications MIL-PRF-81733. Test results are typical and				

specifications MIL-PRF-81733. Test results are typical and individual batches may vary within the specification requirements. For design and inspection reference only the specification documents. Variations may exist between individual laboratories are beyond our control or knowledge

# **Surface Preparation**

Clean the substrate immediately before applying sealant. The surfaces should be free from Contaminants. Remove dirt, grease, and/or processing lubricants prior to sealant application. 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 wetted with a solvent conforming to AMS-3819. 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.

For detailed information on sealant applications consult; <u>SAE</u> Aerospace document (AIR 4069) this document is available from SAE, 400 Commonwealth Avenue, Warrendale, PA 15096-0001.

### **Available Packaging**

CS-3213 Class B is supplied in two-part kits, sectional cartridges and pre-mixed-frozen.

#### **Mixing Instructions**

Mix can kits according to the ratios indicated in the application properties section. Mix Part A and Part B separately to uniformity, then thoroughly mix entire contents of both parts of kit together taking care to avoid leaving unmixed areas around the sides or bottom of the mixing container. When provided in sectional plastic kits (Semkits) consult packaging for mixing instructions.

### Safety

#### Industrial use only / keep out of the reach of children

Before using this product, read and understand the Material Safety Data Sheet (MSDS). The MSDS provides information on; health, handling, environmental and physical hazards as well as disposal and first-aid.

# Shelf Life

When stored at temperatures below 80°F (27°C) in original, unopened containers. The shelf life of CS-3213 Class B is at least 9 months.

The basis for all recommendations, statements, and technical data contained herein are tests we believe to be reliable and correct. 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. 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.