

CHO-SHIELD® 4994 & 4998

Conductive Flexible Coatings



Customer Value Proposition:

CHO-SHIELD® 4994 and 4998 are smooth, highly conductive flexible silver-filled polyurethane coatings designed for military/aerospace airframe applications. Both coatings provide superior adhesion, excellent solvent rub and wear resistance, and are resistant against numerous operational and environmental fluids. CHO-SHIELD 4994 and 4998 can be applied to aluminum as well as non-conductive substrates and are designed to be used with primers and with external topcoat systems. CHO-SHIELD 1091 can be used as a primer for ensuring improved performance on aluminum substrates.



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Product Features:

- CHO-SHIELD 4994: 3 hour pot life with 7 day full cure under ambient conditions.
- CHO-SHIELD 4998: 1 hour pot life with 24 hour full cure under ambient conditions.
- Both coatings can be cured under heat accelerated conditions within 4 hours.
- Designed for application by standard high volume low pressure spray equipment.
- Superior conductivity, flexibility and fluid resistance.



ENGINEERING YOUR SUCCESS.

Product Information

Table 1 - Typical Physical Properties

Resin		Polyurethane			
Filler		Silver			
Color		Metallic Light Brown			
Mix Ratio	CHO-SHIELD® 4994	A:B:C By Weight: 100.00:17.18:14.54 / By Volume 2.00:1.00:1.00			
	CHO-SHIELD® 4998	A:B:C By Weight: 100.00:17.18:14.51 / By Volume 2.00:1.00:1.00			
Cure Schedule	CHO-SHIELD® 4994	(1) 7 Days @ Standard Conditions (60-70°F 40-60% RH)			
		(2) 2 Hours @ Standard Conditions + 2 hrs @ 130°F			
	CHO-SHIELD® 4998	(1) 24 Hours @ Standard Conditions (60-70°F 40-60% RH)			
		(2) 2 Hours @ Standard Conditions + 2 hrs @ 130°F			
Recommended Dry Film Thickness (DFT)		3.00 - 4.00 mil			
Property		Method**		Typical Properties	
Surface Resistance		CEPS-0002 (Q/C)		< .075 (Ω/Square)	
Wet Density		ASTM D1475 (Q/C)		2.1 (g/cc)	
Pot Life		ASTM D4212 (Q/C)		CHO-SHIELD® 4994	3.00 Hours
				CHO-SHIELD® 4998	1.00 Hour
Solvent Rub Resistance		CHO-TM 95-40-6013 (Q/C)		Pass	
Adhesion		ASTM D3359 (Q/C)		5B	
Wear Resistance (Taber)		ASTM D4060 (Q)		Wear Index: Wear Cycles per Mil:	0.160 (mg/cycle) 1000
Pencil Hardness		ASTM D3363 (Q)		Scratch : Gouge:	4H 2H
Shielding Effectiveness		Modified Chomerics TP-08 (Q)		> 85 dB (200 - 10,000 MHz)	
Continuous Operating Temperature		(Q)		-40°F to + 185°F	
VOC (Less H₂O and Exempt Solvents)		USEPA Method 24 (Q)		596 (g/l)	
Typical Coverage		via ASTM D2697 (Q)		250ft ² /gal @ 3.0 mil Dry Film Thickness	
Shelf Life		(Q)		6 Months From Date of Manufacture	

** Q= Qualification Test
QC= Quality Conformance Test

Product Information (Continued)

Table 2 - Typical Product Specifications

	Property	Method	Specifications		
Flexibility (Aluminum)	Impact Testing	ASTM D2794 (Q)	Intrusion: >75 (ft/lb) / Extrusion: >75 (ft/lb)		
	Mandrel Bend	ASTM D522 - Test Method B (Q)	> 500%		
	Conical Bend	ASTM D522 - Test Method A (Q)	Elongation: ≥ 32.0% / Cracking: No Evidence		
Accelerated Weathering (Aluminum)			185°F 14 days	-40°F 14 days	185°F 85%RH 30 Days
	Surface Resistance	CEPS-0002 (Q)	< .075 (Ω/Sq.)	< .075 (Ω/Sq.)	< .075 (Ω/Sq.)
	Cross Hatch Adhesion	ASTM D3359 (Q)	5B	5B	5B
	Visual Inspection	(Q)	Pass	Pass	Pass
Fluid Resistance (Aluminum and Composite)			MIL-T-5624 JP-8 14 Days @ 72°F		
	Surface Resistance	CEPS-0002 (Q)	< .075 (Ω/Sq.)		
	Solvent Rub Resistance	CHO-TM 95-40-6013 (Q)	Pass		
	Visual Inspection	Q	Pass		
			MIL-H-5606 Hydraulic Fluid 7 Days @ 160°F		
	Surface Resistance	CEPS-0002 (Q)	< .075 (Ω/Sq.)		
	Solvent Rub Resistance	CHO-TM 95-40-6013 (Q)	Pass		
	Visual Inspection	Q	Pass		
			MIL-L-7808 Lubricating Oil 7 Days @ 160°F		
	Surface Resistance	CEPS-0002 (Q)	< .075 (Ω/Sq.)		
	Solvent Rub Resistance	CHO-TM 95-40-6013 (Q)	Pass		
	Visual Inspection	Q	Pass		

Ordering Information

Table 3

Part Numbering System			
WW	XX	XXXX	YYYY
52	03	4994	0000
52	03	4998	0000

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