

CHO-SHIELD® 4994

ELECTRICALLY CONDUCTIVE SILVER POLYURETHANE COATING FOR AIRFRAMES



Customer Value Proposition

CHO-SHIELD® 4994 is a smooth, highly conductive flexible silver-filled polyurethane coating designed for military/aerospace airframe applications.

The coating provides superior adhesion, excellent solvent rub and wear resistance, and is resistant to numerous operational and environmental fluids.

CHO-SHIELD 4994 can be applied to aluminum as well as non-conductive substrates and is designed to be used with primers and with external topcoat systems.

Application

Clean the substrate:

The substrate should be clean, dry and free of oils, release agents, dirt and lint. Clean aluminum surfaces with methyl ethyl ketone (MEK) or isopropyl alcohol / ethanol for solvent sensitive substrates. Let the substrate air dry for 15 minutes

Mix the material:

Mix the CHO-SHIELD 4994 coating in this order: Combine Part C and Part D to Part A using the weight ratios given in Table 1 and mix. Shake on a paint shaker until uniformly dispersed. Do not shake the paint so much that it gets warm or hot. Check for the homogeneity of the mixture by feeling the sides and bottom of the container with a spatula to assure all the filler and resin are well dispersed.

Add the Part B using the weight ratios given in Table 1 and shake / mix for an additional 3 minutes.



Product Features:

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

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CHO-SHIELD 4994 - Product Information

Table 1

Typical Properties	Method**	CHO-SHIELD® 4994 Typical Values
Resin	-	Polyurethane
Filler	-	Silver
Color	-	Metallic Light Brown
Shielding Effectiveness	Modified Chomerics TP-08 (Q)	> 85 dB (200 - 10,000 MHz)
Surface Resistance (max.) at 3 mil	CEPS-0002 (Q/C)	< .075 ohms / square
Adhesion	ASTM D3359 (Q/C)	5B
Specific Gravity	(ASTM D792)	2.3 g/mL
Mix Ratio by Weight	-	(Part A : Part B : Part C : Part D) 100 : 18.3 : 1.4 : 20.9
Recommended Cure Schedules	-	Cure Cycle Option 1: 2 Hours @ Standard Conditions + 2 hrs @ 54°C (130°F) Cure Cycle Option 2: 7 Days @ Standard Conditions 16-21°C (60-70°F) 40-60% RH
Recommended Dry Film Thickness (DFT)	-	3.00 - 4.00 mil
Continuous Use Temperature	(Q)	-40°C to 85°C (-40°F to + 185°F)
Shelf Life at 70°F (21°C)	(Q)	6 Months From Date of Manufacture
Theoretical coverage , 3 mils	ASTM D2697 (Q)	0.030 ft²/gram; 0.0028m²/gram; 259 ft²/gallon
Calculated VOC (Less H ₂ O and Exempt Solvents)	USEPA Method 24 (Q)	596 g/L
Wet Density	ASTM D1475 (Q/C)	2.1 (g/cc)
Pot Life	ASTM D4212 (Q/C)	3.0 Hours
Solvent Rub Resistance	CHO-TM 95-40-6013 (Q/C)	Pass
Wear Resistance (Taber)	ASTM D4060 (Q)	Wear Index: 0.160 (mg/cycle); Wear Cycles per mil: 1000
Pencil Hardness	ASTM D3363 (Q)	Scratch : 4H; Gouge: 2H
Impact Testing, Aluminum	ASTM D2794 (Q)	Intrusion: >75 (ft/lb) / Extrusion: >75 (ft/lb)
Mandrel Bend, Aluminum	ASTM D522 - Test Method B (Q)	> 500%
Conical Bend, Aluminum	ASTM D522 - Test Method A (Q)	Elongation: ≥ 32.0% / Cracking: No Evidence
Surface Resistance, Aluminum	CEPS-0002 (Q)	185°F 14 days; -40°F 14 days; 185°F 85%RH 30 Days: < .075 (Ω/Sq.)
Cross Hatch Adhesion, Aluminum	ASTM D3359 (Q)	5B
Visual Inspection, Aluminum	(Q)	Pass
Surface Resistance, Aluminum and Composite	CEPS-0002 (Q)	MIL-T-5624 JP-8 14 Days @ 72°F; MIL-H-5606 Hydraulic Fluid 7 Days @ 160°F; MIL-L-7808 Lubricating Oil 7 Days @ 160°F: < .075 (Ω/Sq.)
Cross Hatch Adhesion, Aluminum and Composite	CHO-TM 95-40-6013 (Q)	Pass
Visual Inspection, Aluminum and Composite	Q	Pass

Notes: N/A – Not Applicable, (Q/C) - Qualification and Conformance Test, (Q) - Qualification Test, the above properties are based on Cure Cycle 1.

Ordering Information

Product	Weight (grams)	Packaging	Chomerics Part No.	Primer Included
CHO-SHIELD® 4994	1802	4 component, 1 quart aluminum can kit	52-04-4994-1000	Not Required
	7210	4 component, 1 gallon aluminum can kit	52-03-4994-1000	Not Required

www.parker.com/chomerics

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