

# CHO-SHIELD® 596

## ELECTRICALLY CONDUCTIVE SILVER EPOXY EMI COATING



### Customer Value Proposition:

CHO-SHIELD 596 is a two component, silver filled, conductive epoxy paint formulated to provide EMI shielding and electrical grounding on plastic and composite substrates. It is a great material choice for chemical resistant plastics or other hard to adhere to substrates. In addition, CHO-SHIELD 596 may be used to provide a compatible conductive metal coating for mating silver filled EMI shielding gaskets to aluminum flanges. By forming a barrier over the aluminum substrate this silver epoxy coating reduces the overall galvanic corrosion of the EMI gasket/aluminum flange system. CHO-SHIELD 596 demonstrates exceptional environmental stability, maintaining electrical conductivity, adhesion, and abrasion resistance when subjected to high and low temperature extremes, high humidity, and salt fog corrosion environments. Typical applications include military and commercial electronic enclosures, missile canisters, man portable electronics, radar systems, avionic boxes, engines, and aluminum flanges and structures.

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### Features and Benefits:

- Two component
- Pre-measured kit allows easy mixing of components in one container. Long pot life (8 hours)
- Silver flake filler
- Excellent conductivity and EMI shielding of components.
- Epoxy coating
- Coating maintains electrical and mechanical stability in harsh environments. Good chemical/moisture barrier. Hard abrasion resistant coating. Meets military spec MIL-C-22750.



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## CHO-SHIELD 596 - Application Information

Mix parts A and B in the ratio of 100 parts of A to 37.2 parts of B and the solvent blend. \*\*\*The solvent blend should be added to achieve a spray viscosity of 19 to 25 seconds (using a Zahn #2 cup). Part B and the solvent blend should always be added to the part A to minimize waste. To apply the coating, use a standard HVLP spray gun with approximately 20-40psi (138-276kPa) atomizing air and a fluid nozzle with a minimum orifice diameter of 0.040 inches (1.016mm).

The coating should be ready to use as mixed. NOTE: Overthinning degrades electrical performance and may inhibit spraying. Apply the coating to a 0.6 to 1.0 mil thickness (a wet film of 2 mils is approximately 1 mil when dry). A 30-minute solvent flash is required between coats. The last coat should dry at room temperature for a t least one hour prior to any elevated cure. Consult Parker Chomerics Applications Department for assistance.

**Table 1 Thinning of CS 596 for Application**

Weight of CS 596 Part A (grams)	Weight of CS 596 Part B (grams)	Weight of Solvent Blend (grams)
100	37.2	Refer to Apps Info
336*	125*	Refer to Apps Info

\* Full kit of 52-01-0596-0000

\*\*\* solvent blend is 50/50 by weight (or volume) of Toluene and MIBK (Methyl isobutyl ketone)

**NOTE:**

*Before spraying CHO-SHIELD 596, age the compound for at least 1 hour at room temperature after mixing.*

**Table 1 Typical Properties**

CHO-SHIELD 596		
Typical Properties	Typical Values	Test Method
Polymer	Epoxy	N/A
Filler	Silver	N/A
Mix Ratio (A:B by weight)	100 : 37.2	N/A
Color	Silver	N/A (Q)
Spray Viscosity	19 to 25 seconds	Zahn Cup Number 2 (Q)
Surface Resistance (max.) at 0.001 inches (25 µm, 1 mil)	<= 0.060 ohms / square	CEPS-0002 (Q/C)
Shielding Effectiveness (see Figure 1)	>90 dB	CHO-TM-TP11* (Q)
Recommended Dry Film Thickness	.001" (25 µm)	N/A
Wet Density	1.8	ASTM D792 (Q/C)
Continuous Use Temperature	-40 to 150°C [-40 to 302°F]	N/A (Q)
Pot Life	8.0 hrs	N/A (Q)
Drying Time- Room Temperature Tack Free	1.0 hr @ 21°C (70°F)	N/A
Drying Time- Room Temperature Full Dry**	1 week @ 21°C (70°F)	N/A
Drying Time- Elevated Temperature Full Dry	<b>Cure Cycle Option 1:</b> 1.0 hr @ 21°C (70°F), followed by 1.0 hr @ 121°C (250°F) <b>Cure Cycle Option 2:</b> 1.0 hr @ 21°C (70°F), followed by 6.0 hr @ 66°C (150°F)	N/A
Shelf Life at 21°C (70°F), unopened, from Date of Manufacture	9 months***	N/A (Q)
Calculated VOC	585 g /L	Calculated
Theoretical coverage at recommended dry film thickness	0.098 ft <sup>2</sup> /gram 0.0091 m <sup>2</sup> /gram 663 ft <sup>2</sup> /gallon	N/A

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

\* This test Method is available from Parker Chomerics.

\*\* Cure is sufficient for handling in 24 hours. Full specification properties are developed after 1 week (168 hours) at room temperature.

\*\*\* Shelf life may be extended by 3 months. Contact Chomerics for details.

# CHO-SHIELD 596 - Product Information

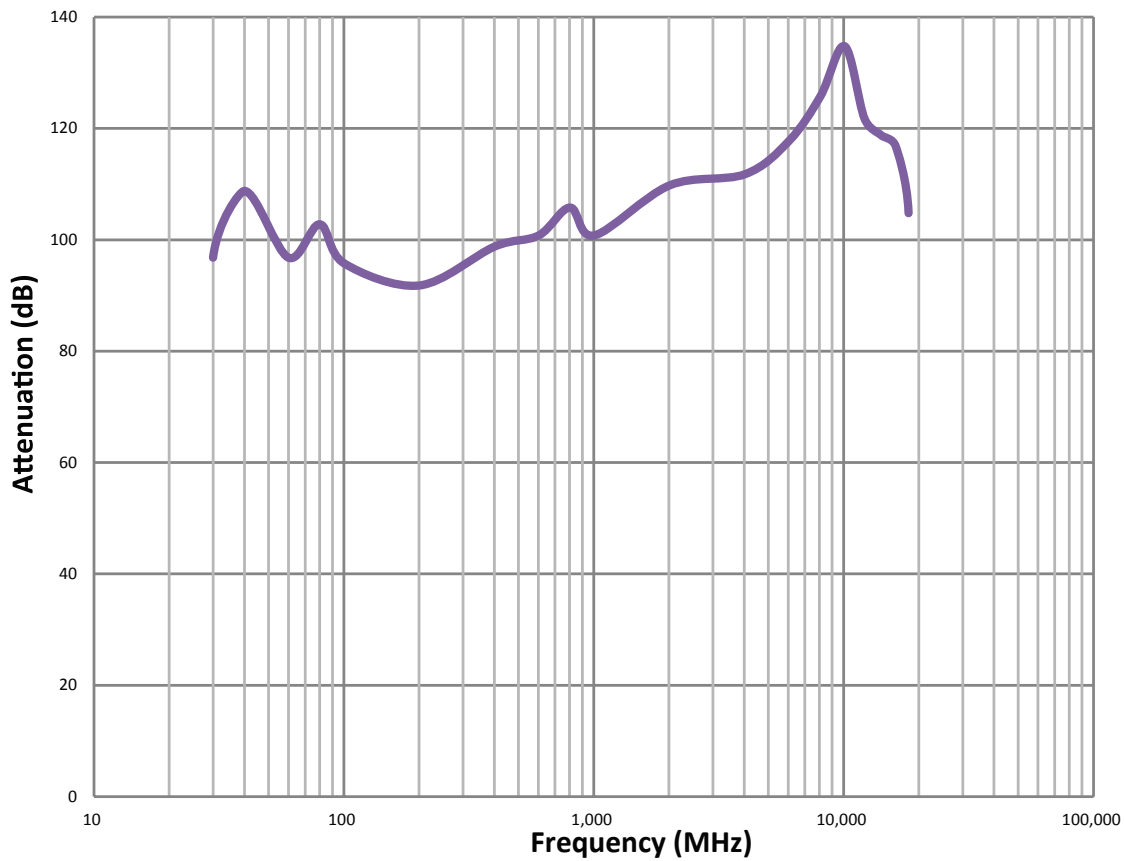
## Ordering Information

Product	Weight (grams)	Packaging	Chomerics Part No.	Primer Included
CHO-SHIELD 596	85	2 component kit A: 1/2 pint aluminum can B: 2 fluid ounce clear glass bottle	52-00-0596-0000	Not Required
	454	2 component kit A: 1 pint aluminum can B: 1/2 pint aluminum can	52-01-0596-0000	Not Required

The user, through its own analysis and testing, is solely responsible for making the final selection of the system and components and assuring that all performance, endurance, maintenance, safety and warning requirements of the application are met. The user must analyze all aspects of the application, follow applicable industry standards, and follow the information concerning the product in the current product catalog and in any other materials provided from Parker or its subsidiaries or authorized distributors.

**Figure 1**

**CHO-SHIELD 596 Shield Effectiveness PER CHO-TM-TP11\***



\* This test Method is available from Parker Chomerics.

[www.chomerics.com](http://www.chomerics.com)  
[www.parker.com/chomerics](http://www.parker.com/chomerics)

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