CHO-BOND® 1075

ONE COMPONENT CORROSION RESISTANT ELECTRICALLY CONDUCTIVE SILICONE SEALANT

Customer Value Proposition:

CHO-BOND 1075 is a silver plated aluminium filled, one-component conductive silicone designed for use as a fillet, gap filler and seam sealant on electrical enclosures for EMI shielding or electrical grounding. Minimum recommended bond line for CHO-BOND 1075 is 0.010 inches (0.25mm). In addition, CHO-BOND 1075 may be used for EMI gasket repair, bonding, and attachment in applications where moderate strength (100 psi) is required. The silver aluminum filler of CHO-BOND 1075 provides excellent galvanic corrosion resistance when applied to aluminum substrates. No volatile organic compounds (VOCs) and minimal shrinkage upon curing make CHO-BOND 1075 a good choice for a variety of commercial and military applications. CHO-BOND 1075's moisture cure silicone polymer system allows it to cure to the touch in 24 hours and provides a robust conductive and environmental seal over a wide range of application temperatures.

For best adhesion results, CHO-BOND 1075 should be used in conjunction with CHO-SHIELD 1086 primer. Typical applications include man portable electronics, radar and communication systems, EMI vents, military ground vehicles, and shelters.

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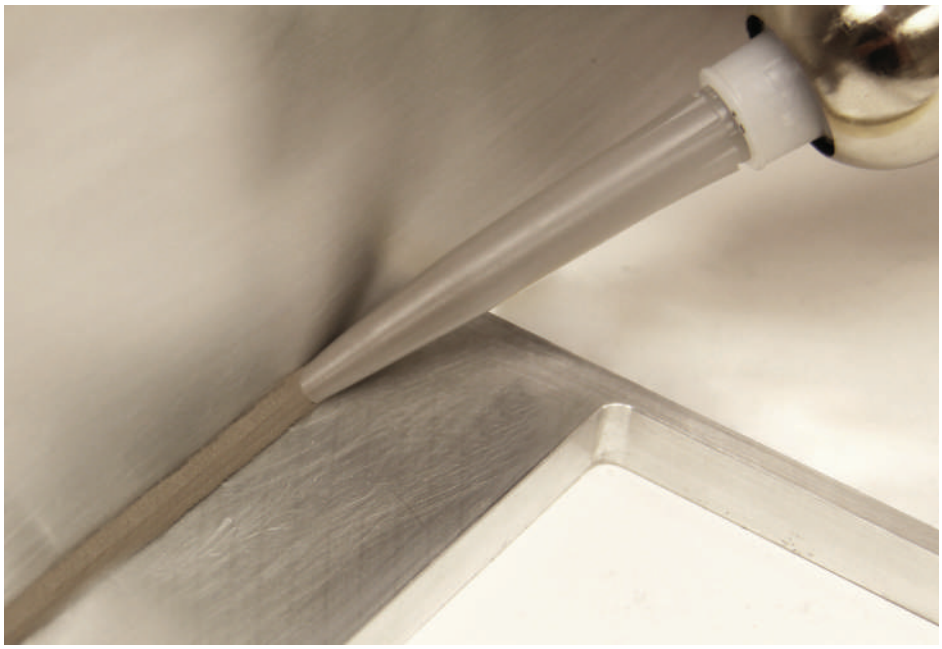

Features and Benefits:

- One component
- Easy to use, no weighing or mixing required.
- Silver plated aluminum filler
- Excellent conductivity 0.010 ohm-cm outstanding galvanic corrosion resistance against aluminum substrates.
- No VOCs
- Minimal shrinkage.
- Moisture cure silicone
- 15 minute working life, rapid skin formation, 24 hr handling time, requires no pressure during curing, wide range of application temperatures. 1 week for full cure.
- Light weight
- More coverage per gram of material, minimal weight added to assembly or vehicle.
- Non corrosive cure mechanism
- No corrosive by-products generated during curing to damage substrate.
- Dry medium paste
- Can be used on overhead or vertical surfaces.

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CHO-BOND 1075 - Product Information

Table 1 Typical Properties

CHO-BOND 1075			
Typical Properties	**Typical Values**	**Test Method**	
Polymer	Silicone	N/A	
Filler	Silver-Plated Aluminum	N/A	
Mix Ratio, A : B (by weight)	1-part	N/A	
Colour	Gray	N/A	(Q)
Consistency	Dry Medium Paste	N/A	(Q)
Maximum DC Volume Resistivity	0.010 ohm-cm	CHO-95-40-5555*	(Q/C)
Minimum Lap Shear Strength**	100 psi (689 kPa)	CHO-95-40-5300*	(Q/C)
Minimum Peel Strength**	4.0 lb./inch (700 N/m)	CHO-95-40-5302*	(Q/C)
Specific Gravity	2.0	ASTM D792	(Q/C)
Hardness	81 Shore A	ASTM-D2240	(Q/C)
Continuous Use Temperature	- 55°C to 200°C (-67 °F to 392 °F)	N/A	(Q)
Elevated Temperature Cure Cycle	None	N/A	
Room Temperature Cure	1 week***	N/A	(Q)
Working Life	0.25 hour	N/A	(Q)
Shelf Life, unopened	6 months @ 25°C (77°F)	N/A	(Q)
Minimum thickness recommended	0.010 in (0.25 mm)	N/A	
Maximum thickness recommended	0.125 in (3.18 mm)	N/A	
Volatile Organic Content (VOC)	0 g/l	Calculated	
Theoretical Coverage Area at 0.010" Thick per Pound (454 grams)	1375 in^2 (8871 cm^2)	N/A	
Theoretical Coverage - Length of an 1/8" Diameter Bead per Pound (454 grams)	90 feet (27.4 m)	N/A	

Notes: N/A – Not Applicable, (Q/C) - Qualification and Conformance Test, (Q) - Qualification Test
* This test Method is available from Parker Chomerics.
** Minimum values listed are based on using the CHO-SHIELD 1086 primer that typically comes bundled with the CHO-BOND.
*** Cure is sufficient for handling in 24 hours. Full specification properties are developed after 1 week (168 hours) at room temperature.

Table 2 Ordering Information

Product	Weight (grams)	Packaging	Part Number	Primer Included
CHO-BOND 1075	71	1.5 fluid ounce foil tube	50-02-1075-0000	1086
	71	1.5 fluid ounce foil tube	50-02-1075-1000	No
	284	6 fluid ounce SEMCO cartridge	50-01-1075-0000	1086

Table 3 Primer Ordering Information

Product	Weight (grams)	Packaging	Part Number
CHO-BOND 1086	10	3 dram glass vial	50-10-1086-0000
	95	4 fluid ounce glass bottle	50-04-1086-0000
	375	1 pint can	50-01-1086-0000

Please refer to Parker Chomerics Surface Preparation and CHO-BOND Application documents for information regarding the proper surface preparation, primer application (if required), and use of these compounds.

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Electrically Conductive Silicone Adhesive and Sealant Application Procedure

1. This application procedure applies to Parker Chomerics electrically conductive, silicone, one part room temperature vulcanizing (RTV) and two part systems. Specifically addressed are CHO-BOND® 1029 and 1030 adhesives; CHO-BOND 1016, 1035, 1038, 1075, 1121 and TECKNIT 0002 sealants; and CHO-BOND 1085 and 1086 primers.

   It is assumed that the substrates to be adhered / sealed are chem filmed aluminum, per MIL-DTL-5541, Type I or II, Class 3. If this is not the case, please contact Parker Chomerics Applications Engineering (781) 935-4850 to review the surface preparation for your particular substrates.

2. Surfaces to be joined must be clean, dry and oil free. In a well-ventilated area, clean the substrates with isopropyl alcohol (IPA) and let the solvent flash off. (Other solvents, such as methyl-ethyl-ketone (MEK), toluene, or acetone can be used to clean difficult to remove contaminants.)

3. The best adhesion is achieved through the use of the CHO-BOND 1086 primer typically supplied with the CHO-BOND materials. (CHO-BOND 1085 Primer is provided exclusive to CHO-BOND 1029). Wet a lint-free cotton cloth with the primer and apply to the surface in horizontal and vertical strokes. Keep the surface wet at all times. After the entire surface is coated, the primed surfaced must cure for 30 minutes minimum at room temperature. A 40% to 70% relative humidity (RH) is optimal. (There is no elevated cure time for the CHO-BOND primer.

   NOTE: If the CHO-BOND primer has been applied for more than 4 hours without the application of the CHO-BOND, steps 2 and 3 must be repeated.

4. The CHO-BOND material can now be applied. Typically, CHO-BOND material is packaged in a 1.5 ounce foil tube container or in a 6 ounce by volume SEMCO® cartridge. Note that the SEMCO cartridge will require an application gun in order to dispense the product. There are manual guns as well as pneumatic guns. A commonly used pneumatic gun is the Semco® 250-A Gun.

   (Application guns are not available from Chomerics).

   A typical illustration of the 250A dispensing gun is shown in Figure 1. To initially select the proper pressure to dispense CHO-BOND proucts from the SEMCO cartridge, set the line pressure at 10 PSI and then activate the dispensing gun. While the gun remains activated, slowly increase the pressure to the gun steadily until the CHO-BOND material flows out of the gun at the desired rate. Avoid having high pressure in the line and then dispensing product as product may be wasted in unexpected excess.

Figure 1

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Electrically Conductive Silicone Adhesive / Sealant Application Procedure

Table 1

MATERIAL RE-CERTIFICATION			
Material	**Thickness Requirement**	**Typical Working Life**	**Cure Time at 21±11°C (70±20°F)**
CHO-BOND 1029	.008" (0.20 mm) Maximum	2.0 hours	7 Days @ 40% to 70% RH (faster heat cure option)
CHO-BOND 1030	.010" (0.25 mm) Maximum	0.5 hours	7 Days @ 40% to 70% RH
CHO-BOND 1016	.010" (0.25 mm) Minimum	0.5 hours	7 Days @ 40% to 70% RH
CHO-BOND 1035	.007" (0.18 mm) Minimum	0.5 hours	7 Days @ 40% to 70% RH
CHO-BOND 1038	.007" (0.18 mm) Minimum	0.5 hours	7 Days @ 40% to 70% RH
CHO-BOND 1075	.010" (0.25 mm) Minimum	0.25 hours	7 Days @ 40% to 70% RH
CHO-BOND 1121	.007" (0.18 mm) Minimum	0.5 hours	7 Days @ 40% to 70% RH
Tecknit 0002	.005" (0.13 mm) Minimum	0.083 hours (5 Minutes)	3 Days (Independent of RH)

Care should be taken during the application of the CHO-BOND material so that any protective coating on the substrate is not damaged. A wooden or plastic applicator is a better choice than a metal one. Bead widths of greater than 0.5 inches should be avoided, as moisture may not reach the center of the bead area for proper curing within the typical full cure time.

5. Assemble the parts together. Be sure to have the CHO-BOND material in place well within the working life of the product, see Table 1 above for the product working life. The CHO-BOND material will skin over when out of its container as it is exposed to humidity and then immediately begins to cure. If the product does skin over it will not bond to the mated surfaces. When possible, some pressure on the assembly of 1 to 2 psi (7 to 14 kPa) during the cure time, will help achieve the best adhesion results.

6. Optimum conditions for full cure are room temperature 21± 11°C (70± 20°F), with a relative humidity (RH) of 40% to 70% for one full week. The lower the relative humidity, the longer it will take for the CHO-BOND to cure. Full cure times for relative humidity (RH) below 40% may be longer than 1 week.

IMPORTANT NOTE: In all cases other than CHO-BOND 1029, attempting to heat cure the product will have no direct effect on the cure time. It is the relative humidity (RH) that is the mechanism for cure, not heat. Dry heat, say from an oven, may actually retard the cure of the moisture cure RTV silicones.

7. Handling time will vary by application. Typically the assembly can be handled after 24 hours of cure time. The assembly will continue to cure as long as access to atmospheric moisture is not cut off, such as the assembly being bagged or packaged.

Technical Bulletins for CHO-BOND and Tecknit materials, along with the Materials Safety Data Sheets (MSDS) and Safety Data Sheets (SDS), are available online.

For additional technical support, please contact HITEK Electronic Materials Ltd

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