

# CHO-BOND® Conductive Caulks and Sealants

**Fill cracks and large gaps with a choice of single-component non-hardening systems, or two-component curing systems.**

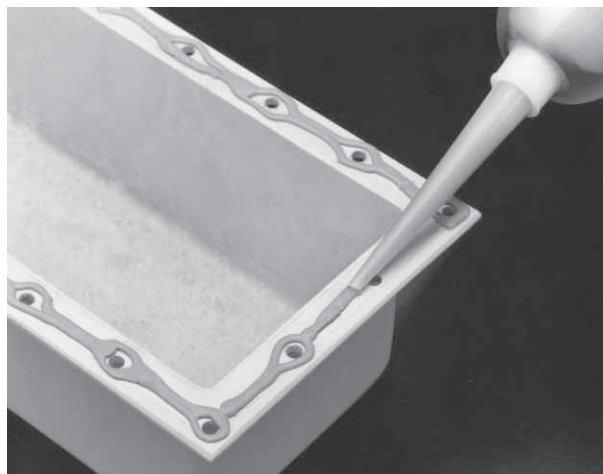
## Rigid Epoxies

Chomerics' two-component conductive epoxy caulks provide excellent adhesion to dissimilar substrates and can be used in lap or butt joint applications. They feature large (>50 micron) silver-plated-copper particles that make them well suited for sealing poorly tolerated surfaces. Bond lines should not be thinner than 10 mils. The gritty filler bites through thin, non-conductive surfaces such as oxide layers and MIL-C-5541 Class 3 irridite. Applications include bonding and shielding of cast aluminum housings, conduit bulkhead passthroughs, filters, and fabricated metal cabinets. Note that these com-

pounds should be used only when the seam will not be broken. Request Technical Bulletin 47.

- **CHO-BOND 360-20** is a low-cost, easy-to-mix adhesive/sealant with high lap shear bond strength. It fills large gaps and offers good thermal shock resistance.

- **CHO-BOND 360-208** adhesive/sealant uses a filler blend of pure silver and silver-plated-copper particles to produce superior shielding performance without requiring



contact pressure. This makes it an ideal fillet seal. Its low flow properties make it the material of choice for vertical and overhead fillets.

**Table 3**

SPECIFICATIONS AND PRODUCT CHARACTERISTICS (Contact Chomerics for complete specifications and test procedures)								
CHO-BOND Caulk or Sealant	360-20	360-208	1035*	1038*	1075***	4660	4669	1086
Binder	epoxy	epoxy	silicone	silicone	silicone	polyiso-butylene	polyiso-butylene	primer for 1035, 1038, 1075
Filler	Ag/Cu	Ag/Cu, Ag	Ag/glass	Ag/Cu	Ag/Al	Ag/Cu	Ag/Cu	
Mix Ratio (by wgt.)	1:1	100:33	1-part	1-part	1-part	1-part	1-part	1-part
Consistency	medium paste	thick paste	thick paste	medium paste	medium paste	gritty paste	gritty paste	thin fluid
Specific Gravity	5.0 ±0.30	4.0 ±0.40	1.9 ±0.10	3.55 ±0.35	2.0 ±0.25	2.0 ±0.30	2.0 ±0.30	0.78 ±0.10
Minimum Lap Shear Strength, psi (MPa)	1600 (11.04)	1400 (9.66)	100 (0.69)	120 (0.83)	100 (0.69)	NA	NA	NA
Maximum DC Volume Resistivity, ohm-cm	0.005	0.01	0.05	0.01	0.01	0.08	0.08	NA
Use Temperature	-80 to 212°F (-62 to 100°C)	-80 to 212°F (-62 to 100°C)	-67 to 392°F (-55 to 200°C)	-67 to 257°F (-55 to 125°C)	-67 to 392°F (-55 to 200°C)	-67 to 212°F (-55 to 100°C)	-67 to 212°F (-55 to 100°C)	-112 to 392°F (-80 to 200°C)
Elevated Temperature Cure Cycle	2.0 hrs. @ 150°F (66°C)	0.75 hrs. @ 212°F (100°C)	NA	NA	NA	NA	NA	NA
Room Temperature Cure Time	24 hrs.	24 hrs.	1 wk.**	1 wk.**	1 wk.**	1 wk.**	1 wk.**	0.5 hr.
Working Life	1.0 hr.	1.0 hr.	0.5 hr.	0.5 hr.	0.25 hr.	0.5 hr.	2.5 hrs.	N/A
Shelf Life, mos.	9	9	6	6	6	6	6	6
Coverage, in. <sup>2</sup> /lb. (cm <sup>2</sup> /g)	500 (7.1)	700 (9.9)	1500 (21.3)	750 (10.6)	1200 (17.0)	900 (12.8)	900 (12.8)	NA
Recommended Thickness, in. (mm)	0.010 min. (0.25)	0.010 min. (0.25)	0.007 min. (0.18)	0.007 min. (0.18)	0.010 min. (0.25)	0.015 min. (0.38)	0.015 min. (0.38)	0.0002 max. (0.005)
VOC, g/liter	0	0	151	117	0	323	361	740

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

\*\*\* Values shown for 1075 reflect typical properties.

NA Not Applicable

## Silicones and Flexible Polyisobutylenes

These single-component, non-hardening sealants are formulated to shield or seal joints and seams that are likely to be disassembled or subject to vibration or warping. A key feature is their capacity to remaining adherent without cracking or pulling away from the surface. Metallic surfaces may require priming with CHO-BOND primer to improve adhesion of the silicone caulks.

• **CHO-BOND 1035** is an RTV\* silicone adhesive/sealant that can provide both environmental sealing and EMI shielding. It is well suited for bonding commercial-grade conductive elastomer gaskets and enclosure flanges, and serves as a conductive caulking material in enclosure seams. Its silver-plated-glass filler gives the material a volume resistivity of 0.05 ohm-cm. It is non-corrosive and forms a skin within minutes. Curing occurs without pressure in the presence of atmospheric moisture. Packaging choices include 2.5 oz (71 g) metal tubes and 10 oz (0.3 kg) tubes for pneumatic dispensers. Request Technical Bulletin **23**.

\* Room Temperature Vulcanization

• **CHO-BOND 1038** is also an RTV silicone adhesive/sealant that can provide both environmental sealing and EMI shielding. Silver-plated-copper filler gives the material a volume resistivity of 0.01 ohm-cm. It is non-corrosive and forms a skin within minutes. Curing occurs without pressure in the presence of atmospheric moisture. Request Technical Bulletin **46**.

• **CHO-BOND 1075** RTV silicone sealant is used for bonding silver-plated-aluminum filled EMI gaskets and for providing EMI shielding and environmental protection as a caulk. Its silver-plated-aluminum filler provides compatibility with CHO-SEAL 1285 conductive elastomer gaskets. Curing occurs without pressure in the presence of atmospheric moisture. Request Technical Bulletin **35**.

• **CHO-BOND 4660 and 4669** polyisobutylene sealants feature a low density that permits considerably greater coverage per pound than experienced with other conductive caulks. They are most effective when applied between metal surfaces prior to assembly, and are especially useful for grounding building conduits

and for shielding bulkhead and feed-through fittings, access panels and temporary structures.

## Corrosion-Resistant Sealants

Chomerics pioneered silver-plated-aluminum particle technology to minimize the galvanic corrosion effects of conductive elastomer gaskets. This highly conductive filler is also used in our CHO-BOND 1075 sealant, because the Ag/Al particle will provide a more compatible system for aluminum flanges.

Extensive testing conducted at Chomerics and by the USAF has shown reduced corrosion at joints while EMI shielding is maximized. Standard specifications have been developed for these Ag/Al silicone sealants. Additional testing includes: corrosion-resistance to MIL-STD-810 salt fog; long-term effects on both physical and electrical properties; paintability; lightning survivability; and NASA outgassing. Technical information is available on request.

**Table 4 Ordering Information**

PRODUCT	ORDERING PART NUMBER	UNIT/SIZE
CHO-BOND 360-20	50-01-0360-0020	1 pound kit (0.5 kg)
CHO-BOND 360-208	50-01-0360-0208	1 pound kit (0.5 kg)
CHO-BOND 360-208	50-00-0360-0208	3 ounce kit (85 g)
CHO-BOND 1035	51-01-1035-0000	10 ounce kit (0.3 kg)
CHO-BOND 1035	51-00-1035-0000	2.5 ounce kit (71 g)
CHO-BOND 1038	50-01-1038-0000	1 pound kit (0.5 kg)
CHO-BOND 1038	50-02-1038-0000	4 ounce kit (113 g)
CHO-BOND 1075	50-01-1075-0000	10 ounce kit (0.3 kg)
CHO-BOND 1075	50-02-1075-0000	2.5 ounce kit (71 g)
CHO-BOND 4660	51-05-4660-0000	1.5 pound cartridge (0.7 kg)
CHO-BOND 4660	51-02-4660-0000	4 ounce tube (113 g)
CHO-BOND 4669	51-05-4669-0000	1.5 pound cartridge (0.7 kg)
CHO-BOND 4669	51-02-4669-0000	4 ounce tube (113 g)
<b>Primer</b>		
CHO-BOND 1086	50-01-1086-0000	1 pint (0.47 liter)

**Note:** Custom packaging can be accommodated. Please inquire.

Every shipment of Chomerics' conductive compounds is accompanied by a *Certificate of Conformance* to Chomerics specifications. Additional test reports can be obtained for a service charge. Quality control procedures conform to MIL-I-45208.

