CHO-BOND® 1018 & CHO-BOND® 1019

Instructions for Painting & Powder Coating

Parker Chomerics electrically conductive polythioether sealants, gap fillers, and caulks are used for their excellent resistance to water, galvanic corrosion, aggressive chemicals, and aircraft fluids (jet fuels, de-icing fluids, hydraulic fluids and Polyalphaolefin [PAO] based coolants).

Painting Procedure

While there is no performance need to overcoat these materials, if your application requires an additional painting step for cosmetic or other reasons, you may overcoat these materials without the use of a primer. The advantage of the polythioether system over more traditional silicone-based electrically conductive sealants is that it provides a readily paintable surface. This eliminates the need for an additional primer step before painting.

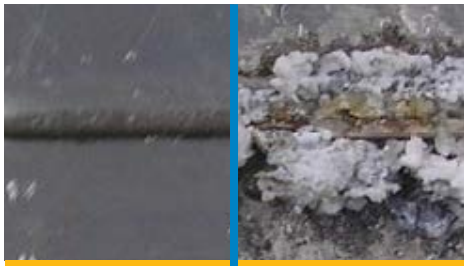
CHO-BOND 1018 and CHO-BOND 1019 electrically conductive polythioether sealants are typically applied to the metal surface of an enclosure or after a finish coating.

After applying the electrically conductive polythioether and waiting the minimum recommended cure time of three (3) days at 77± 20°F (22± 11°C), the material can then be painted. The CHO-BOND material will continue to cure even after painting. Full cure of the CHO-BOND 1018 and CHO-BOND 1019 is typically achieved in one (1) week at room temperature.

Long-term Reliability

Qualified to ASTM B117 on 1000-hour salt fog exposure on aluminum with a chromium finish in accordance with MIL-DTL-5541 hexavalent Type I, Class 1A and trivalent Type II, Class 3. Test conditions include harsh exposure to heat, humidity, and salt fog where the CHO-BOND 1018 and CHO-BOND 1019 maintains stable EMI shielding performance.

CHO-BOND 1018 before (left) and after (right) 1,000 hours salt fog exposure.



Parker Chomerics CHO-BOND 1019 (Silver Aluminum Filled Polythioether)	Competitor Silver Copper Filled Silicone

After 1,000 hours exposure in a ASTM B117 salt fog environment, CHO-BOND 1019 panel (left) shows no change where competitive product shows corrosion (right).

Qualified Topcoat Primers for Painting

The overcoat adhesion has been qualified with MIL-PRF-23377 Type II, Class N and MIL-DTL-53022 Type II epoxy primers.

Powder Coating Procedure

The challenge with powder coating is that while the continuous use temperature for polythioether materials is -80°F to 320°F (-62°C to 160°C), the typical powder coating processes may exceed this temperature for a limited period of time as they are being applied.

The power coating cure temperature may reach up to 375°F (190°C), which exceeds the continuous use temperature of CHO-BOND 1018 and CHO-BOND 1019 electrically conductive polythioether materials by 55°F (30°C).

Qualification of the specific application with time and temperature of the powder coating process is typically evaluated by the end-user for long-term reliability and stability of both the CHO-BOND and the powder coating.

Powder coatings are applied as free-flowing, dry powders. The main difference between a conventional liquid paint and a powder coating is that the powder coating does not require a solvent to keep the binder and filler parts in a liquid suspension form. Instead, the powder coating is typically applied electrostatically and is then cured under heat to allow it to flow and to form a “skin.”

Instructions for Painting & Powder Coating Cont'd.

Testing Protocols for Advanced Curing Temperature

CHO-BOND 1019 material was applied to an aluminum substrate and allowed to fully cure. These fully cured test samples were then placed into a temperature chamber that was set to ramp up to a temperature of 375°F (190°C). The temperature chamber was then held at this condition for a period of 45 minutes.

After removing the samples from the temperature chamber, they were evaluated for electrical and mechanical properties as shown in the table below.

Conclusion

Parker Chomerics CHO-BOND 1018 and CHO-BOND 1019 electrically conductive polythioether sealant materials are excellent choices whether you choose to coat them with traditional paint or powder coatings as they showed no significant deterioration in mechanical or electrical properties after heat aging them at 375°F (190°C) for 45 minutes.

These materials are used for their excellent resistance to water, galvanic corrosion, aggressive chemicals, and aircraft fluids (jet fuels, de-icing fluids, hydraulic fluids and Polyalphaolefin [PAO] based coolants).

CHO-BOND 1019 Time and Temperature Power Coating Exposure

Parameter	Unit	Control	350°F	375°F	Test Method
Visual Check OK?	Y/N	Y	Y	Y	95-40-6081
Hardness	Shore A	65	72	66	ASTM-D2240
Specific Gravity		2.02	2.02	1.93	ASTM-D792
Tensile Strength	PSI(kPa)	218 (1503)	154 (1062)	195 (1324)	ASTM-D412
Percent Elongation	%	11.66	16.87	13.33	ASTM-D412
Volume Resistivity	Ohm-cm	0.0064	0.0037	0.0041	95-40-5555
Lap Shear	PSI (kPa)	94 (648)	164 (1131)	138 (951)	95-40-5300

CHO-BOND 1018 & CHO-BOND 1019 Ordering Information

Product	Weight (grams)	Packaging	Part Number	Primer Included
CHO-BOND 1018	120	2.5 fluid ounce SEMCO cartridge with dasher rod	50-02-1018-0000	Not Required
CHO-BOND 1018	280	6 fluid ounce SEMCO cartridge with dasher rod	50-01-1018-0000	Not Required
CHO-BOND 1019	280	6 fluid ounce SEMCO cartridge with dasher rod	50-01-1019-0000	Not required