

CHO-SEAL® - EMI Gaskets

Extruded Nickel-Plated Graphite Filled Elastomers

DESCRIPTION

The CHO-SEAL family of extruded nickel-plated graphite filled elastomers addresses a range of EMI shielding and environmental needs for both internal and external applications. All of these materials have excellent performance in salt spray corrosion applications and there are options for addressing fluid immersion requirements as well as Underwriters Laboratories flammability requirements. The nickel-plated graphite filler coupled with silicone or fluorosilicone elastomer provides a family of EMI gasket choices to provide a solution to a variety of commercial and military application needs.



AVAILABLE MATERIALS

CHO-SEAL S6305 is the premier nickel-plated graphite filled silicone elastomer providing the highest EMI shielding performance and all around versatility for extrusions, molded sheets, and cross-sections. CHO-SEAL S6305 can be co-extruded or co-molded with non-conductive silicone elastomer so as to provide additional environmental sealing to gasketed joints. This material can also be overmolded onto metal or conductively plated plastic housings and is available in a clip-on gasket configuration.

CHO-SEAL 6370 is an extrudable elastomer with an Underwriters Laboratories UL 94 V-0 rating. This material has equivalent electrical conductivity and comparable shielding effectiveness performance to S6305. CHO-SEAL 6370 is recommended for those applications where UL 94 V-0 flammability is mandatory.

CHO-SEAL L6303 provides a fluid immersion capability with its fluorosilicone elastomer binder system with the capability to resist hydraulic fluids, oil, fuels, and other harsh chemicals. This material is available in extrusions, molded sheets and shapes.

CHO-SEAL 6315 provides a cost efficient EMI extrudable gasketing solution that offers 80 dB shielding effectiveness over a wide range of frequencies and excellent corrosion resistance in salt spray environments.

CHO-SEAL 6372 provides equivalent performance to Cho-Seal 6315 with the additional feature that it meets the Underwriters Laboratories UL 94 V-1 flammability requirements.

APPLICATIONS

The nickel-plated graphite filled elastomer EMI gasket family is ideally suited for both internal and external shielding and grounding applications. Excellent conductivity, high EMI shielding, and long term stability in adverse environments address a wide range of applications in the telecommunications, information technology, medical, and industrial electronic equipment markets.

The nickel-plated graphite filled material available as extrusions, i.e., CHO-SEAL 6315, 6372, 6370, S6305, and L6303, are available in many cross sections, solid and hollow, symmetric and asymmetric, and with or without non-conductive pressure sensitive adhesives for easy mounting. These materials can also be mounted on clips for mechanical attachment or specifically designed for friction fit in rectangular grooves. Material availability also includes kiss-cut parts on release paper, spliced o-rings, bonded 4-corner gaskets, cut-to-length parts, lathe cut parts, or spooled rolls of extrusions.

For applications in extreme environments CHO-SEAL S6305 can be co-extruded with a non-conductive outer gasket and inner conductive elastomer. The entire nickel graphite filled extrusion family performs very well in salt spray environments. The table shows comparative weight loss of aluminum disks that have been in contact with the elastomer material while subjected to 168 hours of a 5% salt spray environment per CHO-TM-100.

December 2004

Extruded Nickel-Plated Graphite Filled Elastomers

| TYPICAL PROPERTIES | | 6315 | 6372 | S6305 | 6370 | L6303 |
|--|-----------------------|----------|----------|-----------|-----------|----------------|
| Properties | Test Method | | | | | |
| Filler | | Ni/C | Ni/C | Ni/C | Ni/C | Ni/C |
| Binder | | Silicone | Silicone | Silicone | Silicone | Fluorosilicone |
| Volume Resistivity (milli-ohms-cm, max.) | CEPS-0002 | | | | | |
| initial | | 750 | 750 | 100 | 100 | 100 |
| aged | | 850 | 850 | 250 | 250 | 250 |
| Hardness (Shore A) | ASTM D2240 | 57+/-7 | 57+/-7 | 65 +/--10 | 60 +/--10 | 65+/--10 |
| Specific Gravity (+/- 0.25) | ASTM D792 | 1.8 | 1.8 | 2.0 | 2.1 | 2.2 |
| Tensile Strength (psi, min.) | ASTM D412 | 140 | 150 | 200 | 150 | 150 |
| Elongation (% , min.) | ASTM D412 | 100 | 100 | 100 | 100 | 60 |
| Tear Strength (lb./in., min.) | ASTM D624 | 35 | 35 | 35 | 35 | 35 |
| Compression Set (70 hrs. at 100°C) (% ,max.) | ASTM D395 Method B | 30 | 30 | 30 | 40 | 25 |
| Low Temperature Flex (TR 10) (°C, min.) | ASTM D1329 | -40 | -40 | -45 | -45 | -45 |
| Maximum Continuous Use Temperature (°C, max.) | | 150 | 150 | 150 | 150 | 150 |
| Shielding Effectiveness (dB) | CHO-TP08 | | | | | |
| 100 MHz | | 80 | 80 | 100 | 100 | 100 |
| 500 MHz | | 80 | 80 | 100 | 100 | 100 |
| 2 GHz | | 80 | 80 | 100 | 95 | 100 |
| 10 GHz | | 80 | 80 | 100 | 95 | 100 |
| Flammability Rating | UL 94 | HB | V-1 | HB | V-0 | HB |
| (Dimensional minimums) | | | > 0.025" | | > 0.014" | |
| | | | > 0.6 mm | | > 0.36 mm | |
| Galvanic Corrosion (grams weight loss) | CHO-TM 100 | 35 | *** | 44 | *** | *** |

* Copies of CEPS-0002, CHO-TM 100 and CHO-TP08 are available from Chomerics Application Engineering Department

**Compression set is expressed as a percentage of deflection per ASTM D395 Method B, at 25% deflection. To determine percent recovery, subtract ¼ of stated compression set from 100%. For example, in the case of 30% compression set, recovery is 92.5%

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