

Low-Cost Conductive Elastomer EMI Gaskets



Chomerics has invented and extended virtually every aspect of conductive elastomer materials technology – from the earliest silver and silver/copper based silicones to the latest and more cost-effective silver/aluminum and nickel/carbon composites.

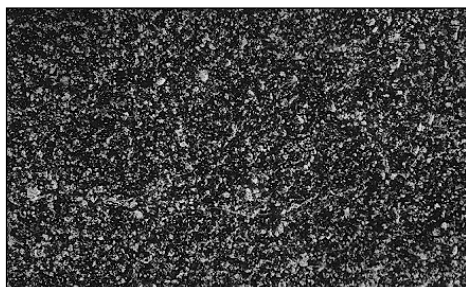
The development of Chomerics' conductive composites is the result of years of research and testing, both in the laboratory and in the field.

Chomerics' CHO-SEAL® and CHO-SIL® materials are electrically conductive elastomers specially formulated to provide shielding against electromagnetic interference (EMI). They offer excellent cost/performance characteristics for commercial EMI gasket applications.

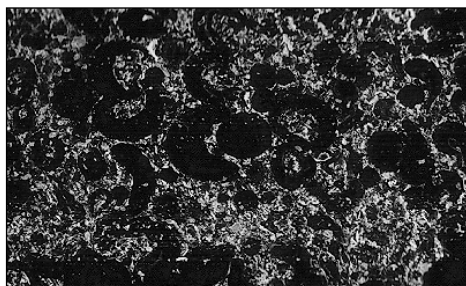
These silicone- and fluorosilicone-based conductive elastomer materials feature excellent resistance to compression set over a wide

temperature range, resulting in years of continuous service.

Chomerics controls all aspects of the manufacturing process, including filler powder plating. Our proprietary filler powder technology, including careful control of composition, size distribution, and morphology, provides excellent conductivity and long-term stability. In addition to EMI shielding, these materials will provide an environmental or pressure seal if required.



Homogeneous Structure: CHO-SEAL materials



Reticulate Structure: CHO-SIL materials

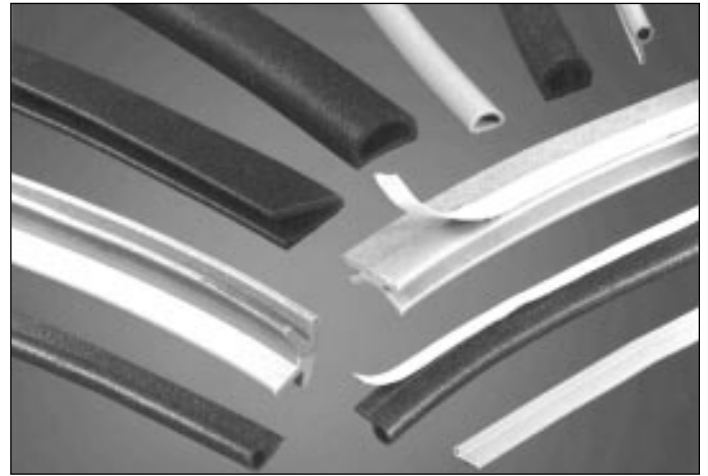
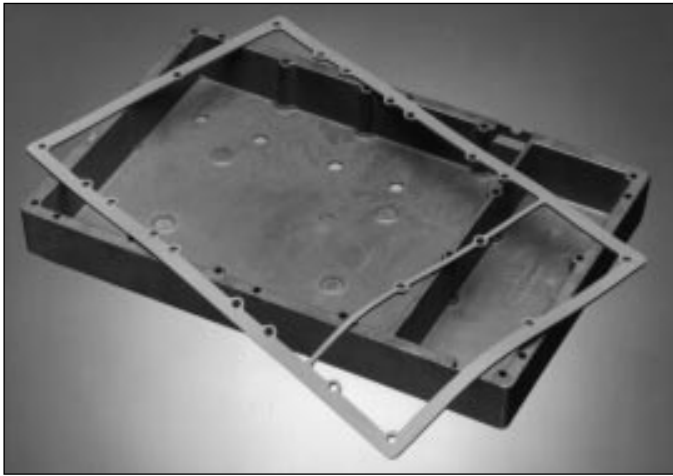
Table 1

CONDUCTIVE ELASTOMER SPECIFICATIONS			
	TEST PROCEDURE	CHO-SIL 1356*	CHO-SEAL 1350
Elastomer Binder		Silicone	Silicone
Conductive Filler		Ag/Glass	Ag/Glass
Volume Resistivity (ohm-cm, max.) as supplied (without pressure-sensitive adhesive)	CEPS-0002*	0.05	0.01
Volume Resistivity after Heat Aging, 150°C/48 hrs. (ohm-cm, max.)	CEPS-0002*	N/A	0.01 [†]
Hardness (Shore A)	ASTM D2240	55 ±10	65 ±5
Specific Gravity	ASTM D792	1.70 ±0.25	1.80 ±0.25
Tensile Strength psi, min. (MPa, min.)	ASTM D412	100 (0.69)	150 (1.03)
Elongation (percent, min.)	ASTM D412	50	75
Compression Set, 70 hrs. @ 100°C (percent, max.)	ASTM D395** Method B	35	30
Low Temperature Flex, TR10 (°C, min.)	ASTM D1329	-40	-55
Shielding Effectiveness (dB) 100 MHz (E-Field) 500 MHz (E-Field) 2 GHz (Plane Wave) 10 GHz (Plane Wave)	CHO-TM-TP08*	65 65 70 65	100 100 90 80

* Copies of CEPS-0002 and CHO-TM-TP08 are available from Chomerics. • Not available in sheet or molded form.

[†] 200°C/48 hrs.

** Compression set is expressed as a percentage of deflection per ASTM D395 Method B, at 25% deflection. To determine percent recovery, subtract 1/4 of stated compression set value from 100%. For example, in the case of 30% compression set, recovery is 92.5%.



CHO-SEAL and CHO-SIL materials are produced with a range of EMI shielding properties, allowing for a cost-performance material choice to provide the needed level of attenuation. CHO-SEAL 1273 and CHO-SEAL S6305 materials are also especially suitable for grounding applications in which a flexible electrical contact is needed.

The nickel-graphite-filled materials provide both excellent shielding

effectiveness and good corrosion resistance. Additionally, CHO-SEAL 6370 material has a UL 94V-0 rating for flammability (UL File No. 96ME1704).

Table 1 outlines the properties and specification limits for Chomerics' commercial-grade conductive elastomers. CHO-SEAL elastomers typically provide higher shielding performance, while CHO-SIL

materials are typically lighter in weight and more compressible.

Chomerics produces conductive elastomer EMI gaskets in a tremendous variety of molded, die-cut, and extruded shapes and sizes. For assistance with material selection and gasket design, contact our Applications Engineering Department.

CONDUCTIVE ELASTOMER SPECIFICATIONS *continued*

CHO-SEAL 1310 [■]	CHO-SEAL 1273	CHO-SEAL 1291 [■]	CHO-SIL 1485	CHO-SEAL 6370	CHO-SEAL S6304	CHO-SEAL S6305	CHO-SEAL L6303	CHO-SEAL S6600	CHO-SEAL S6602
Silicone	Silicone	Silicone	Silicone	Silicone	Silicone	Silicone	Fluorosilicone	Silicone	Silicone
Ag/Glass	Ag/Cu	Ag/Cu	Ag/Al	Ni/C	Ni/C	Ni/C	Ni/C	C	C
0.01	0.004	0.004	0.02	0.1	0.1	0.1	0.1	7	8
0.01 [†]	0.01	0.008	0.06 [†]	0.25	0.25	0.25	0.25	7	8
70 ±10	65 ±8	70 ±5	60 ±5	60 ±10	55 ±10	65 ±10	65 ±10	75 ±7	65 ±7
1.8 ±0.25	3.70 ±0.25	3.45 ±0.25	1.7 ±0.25	2.1 ±0.25	1.9 ±0.25	2.0 ±0.25	2.2 ±0.25	1.2 ±0.25	1.2 ±0.25
200 (1.38)	175 (1.21)	175 (1.21)	180 (1.24)	150 (1.03)	150 (1.03)	200 (1.38)	150 (1.03)	650 (4.49)	550 (3.80)
100	75	75	100	100	100	100	100	70	100
35	32	32	30	40	30	30	25	45	45
-40	-65	-45	-40	-45	-45	-45	-45	-45	-45
100	100	100	100	100	100	100	100	80	80
100	100	100	100	100	100	100	100	80	80
90	100	100	90	95	95	95	95	60	60
80	100	100	80	95	95	95	95	50	50

[■] Not available in extruded form. [†] 200°C/48 hrs.

** Compression set is expressed as a percentage of deflection per ASTM D395 Method B, at 25% deflection. To determine percent recovery, subtract 1/4 of stated compression set value from 100%. For example, in the case of 30% compression set, recovery is 92.5%.