

# Electrically Conductive Form-In-Place Gaskets

## Selector Guide and Shielding Solutions



### Customer Value Proposition:

This selector guide lists nine EMI shielding Form In Place "FIP" gasket materials. They provide the lowest total cost of ownership for small cross section and complex pattern applications, Chomerics FIP materials can reduce installed cost of an EMI gasket by up to 60%.

A range of conductive particle technologies combined with thermoset and RTV silicone systems provides a unique material selection for any opportunity. Multiple filler grades balance material cost versus performance and can provide low cost alternatives for less demanding applications. Chomerics corrosion resistant materials inherently provide protection against galvanic activity. They may eliminate the need for Ni or Sn plating and or secondary environmental gaskets. Chomerics general purpose materials exhibit excellent electrical and mechanical properties on metallic and shielded plastic housings. Chomerics Ag/Ni and Ag filled materials provide high shielding and conductivity critical for inter-compartmental shielding.

Dispensing a high profile bead in one low cost pass is available. They deliver a greater deflection range, lower deflection forces & improved reliability. FIP materials are available in both uncured bulk form and dispensed onto housings. We can reduce costs by material selection, design, dispense technique and supply chain management. Let us work with you in the design phase to avoid unnecessary manufacturing costs.

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### Product Features:

- Lower costs by integrating EMI shielding gasket and housing
- Eliminate gasket packaging, handling & assembly
- Reduction of final housing assembly time
- No separate procurement or inventory costs
- Supply chain management providing ongoing logistics
- Corrosion resistant materials eliminate plating or secondary environmental gasket
- >75 dB shielding effectiveness 200 MHz to 12 GHz
- Electrical conductivity as low as .006 ohm-cm
- Excellent adhesion to many substrates
- Precise dispensing of gasket beads
- Flange width reduction frees PCB area for components
- EMI shielding, electrical and mechanical stability
- High profile beads
- Lower deflection forces
- Greater deflection range
- Supplied as dispensed gasket or bulk compound
- RoHS compliant and halogen free
- UL 94 V-0 rated materials as tested by Chomerics
- Rapid prototyping

# Form-In-Place Selector Guide

Typical Properties	Test Procedure	Units	5506 (FIP-C)	1117	1122V	5538	5508 (HC-FIP-C)	5541	5550	5526	5545 (FIP-X)
Description	--	--	General Purpose, High Aspect Ratio, Use with Shielded Plastic	High Shielding on Chromate coated Aluminum	High Corrosion Resistance on Aluminum	Corrosion Resistant, Small Bead	General Purpose, High Aspect Ratio	Corrosion Resistant, High Heat & Low Cost	Soft, Corrosion Resistant, Low Cost	High Conductivity, Excellent Gouging and Shielding	Highest Corrosion Resistance
Conductive Filler	--	--	Ag/Cu	Ag/Ni	Ag/Al	Ni/C	Ag/Cu	Ni/C	Ni/C	Ag	WC-Al
Resin System	--	--	Silicone	Silicone	Silicone	Silicone	Silicone	Silicone	Silicone	Silicone	Silicone
Number of Components	--	--	1	1	1	1	1	1	1	1	1
Cure System	--	--	Moisture	Moisture	Moisture	Moisture	Thermal	Thermal	Thermal	Moisture	Moisture
<b>Cure Schedule</b> Tack Free Time Handling time Full Cure	--	--	12 mins at 22°C & 50% RH 2 hours at 22°C & 50% RH 24 hours at 22°C & 50% RH	6 mins at 22°C & 50% RH 50 mins at 22°C & 50% RH 7 hours at 22°C & 50% RH	45 mins @ 22°C & 50% RH 3 hours at 22°C & 50% RH 12 hours at 22°C & 50% RH	18 mins at 22°C & 50% RH 4 hours at 22°C & 50% RH 4 hours at 22°C & 50% RH	60 minutes at 125°C 60 minutes at 125°C 60 minutes at 125°C	30 minutes at 150°C 30 minutes at 150°C 30 minutes at 150°C	30 minutes at 150°C 30 minutes at 150°C 30 minutes at 150°C	18 mins at 22°C & 50% RH 4 hours at 22°C & 50% RH 24 hours at 22°C & 50% RH	12 mins at 22°C & 50% RH 2 hours at 22°C & 50% RH 24 hours at 22°C & 50% RH
Hardness	ASTM D 2240	Shore A	70 ± 8	55 ± 8	50 +10 / -5	65 ± 8	70 ± 8	75 ± 8	43 ± 8	65 ± 8	65 ± 8
Tensile Strength	ASTM D 412	kPa (psi)	1,880 (273)	980 (142)	800 (115)	2,240 (325)	2,700 (392)	3,100 (450)	1,380 (200)	550 (80)	2,180 (315)
Elongation	ASTM D 412	%	50	140	40	75	50	150	200	180	50
Specific Gravity	ASTM D 395	--	2.5	3.2	2.0	2.2	2.9	2.4	2.2	3.8	2.0
<b>Volume Resistivity</b> Initial Aged 1000 hours at max use temperature Aged 1,000 hours @ 85°C & 85% RH Aged 360 Salt Fog	Chomerics MAT-1002 Chomerics MAT-1002 Chomerics MAT-1002 Chomerics MAT-1002	Ω-cm Ω-cm Ω-cm Ω-cm	0.008 0.010 0.010 NR	0.008 0.008 0.008 NR	0.005 0.005 0.005 0.007	0.030 0.050 0.050 0.050	0.008 0.010 0.010 NR	0.030 0.050 0.050 0.050	0.035 0.050 0.050 0.050	0.006 0.006 0.006 NR	0.750 0.750 0.750 0.750
Galvanic Corrosion resistance	Chomerics TM-100	Weight Loss mg	NR	NR	6	10	NR	32	20	NR	2
Compression Set 22 hrs. @ 70°C	ASTM D 395 Method B	%	28	25	40	50	25	50	25	55	25
Maximum Use Temperature	--	°C (°F)	125 (257)	125 (257)	130 (266)	85 (185)	125 (257)	150 (302)	125 (257)	85 (185)	125 (257)
Flammability rating	UL 94	--	V-0	V-0	V-0	V-0	V-0	V-0	V-0	V-0	V-0
Shielding Effectiveness (avg 200 MHz→12 GHz)	Modified IEEE-299	dB	>70	>70	>65	> 60	>70	>65	>65	>100	>65
<b>Adhesion</b> Trivalent Chromate Coating on Aluminum Hexavalent Chromate Coating on Aluminum Nickel plating on aluminum Ag/Cu filled conductive paint Electrically Conductive Plastic (PREMIER®)	Chomerics W1038 Chomerics W1038 Chomerics W1038 Chomerics W1038 Chomerics W1038	N/cm N/cm N/cm N/cm N/cm	14 15 11 12 12	10 12 NR NR 10	7 7 NR NR NR	9 9 NR NR 8	14 16 12 NR NR	18 15 12 NR NR	12 12 10 NR NR	9 9 NR NR NR	11 13 NR NR NR
<b>Force Deflection</b> 10% 10% 30% 30%	ASTM D 575 Modified ASTM D 575 Modified ASTM D 575 Modified ASTM D 575 Modified	N/cm lb-f/in N/cm lb-f/in	12.6 7.2 35.6 20.3	12.2 7.0 50.4 28.8	14.9 8.5 28.2 16.1	15.3 8.7 49.8 28.5	16.7 9.5 57.5 32.8	51.5 29.4 141.8 81.0	23.1 13.2 56.7 32.4	5.4 3.1 26.3 15.0	25.0 14.3 72.2 41.2
<b>Bead Size</b> Smallest Recommended Largest Recommended (Single pass)	Height by Width Height by Width	mm mm	0.41 X 0.50 1.30 X 1.90	0.41 X 0.55 1.30 X 1.90	0.53 x 0.61 1.50 X 1.80	0.38 X 0.50 0.76 X 0.06	0.41 X 0.50 1.50 X 1.80	0.66 X 0.81 1.50 X 1.80	0.96 X 1.14 1.50 X 1.80	0.46 X 0.56 1.07 X 1.24	0.41 X 0.50 1.30 X 1.90
Shelf Life (Bulk Material)	Chomerics	months	4 at 22±5°C	3 at <5°C	4 at <5°C	5 at 22±5°C	4 at 22±5°C	6 at < -10°C	6 at < -10°C	6 at 22±5°C	4 at 22±5°C

NR - Not Recommended, NA - Not Applicable  
See Chomerics for product specifications if needed  
UL 94 V-0 testing performed by Chomerics

The user, through its own analysis and testing, is solely responsible for making the final selection of the system and components and assuring that all performance, endurance, maintenance, safety and warning requirements of the application are met. The user must analyze all aspects of the application, follow applicable industry standards, and follow the information concerning the product in the current product catalog and in any other materials provided from Parker or its subsidiaries or authorized distributors.

# Value-Added Capabilities

## High Aspect Ratio Beads

Using 4-axis dispense equipment Parker-Chomerics can dispense high aspect ratio FIP gasket beads to lower deflection forces and increase deflection range in a single cost effective dispensing pass. The beads can be up to 1.4 times higher than their widths.

## Supply Chain Management

We will coordinate with the housing supplier or can provide in-house injection molding to ensure on-time delivery. We will do secondary assembly of components, labeling, pad printing, painting. Our management will provide one supplier responsible for on time delivery of a quality part.

Bulk Material Ordering Information		
Material	Size	Part Number
5506 (FIP-C)	30 cc (Syringe)	19-26-5506-V030
5506 (FIP-C)	300 cc (Aluminum Cartridge)	19-26-5506-V300
5508 (HC-FIP-C)	300 cc (Aluminum Cartridge)	19-26-5508-V300
5545 (FIP-X)	300 cc (Aluminum Cartridge)	19-26-5545-V300
1117	300 cc (Plastic Cartridge)	19-26-1117-V300
1122V	300 cc (Plastic Cartridge)	19-26-1122-V300
5526	850 gram (Aluminum Cartridge)	19-26-5526-0850
5538	650 gram (Aluminum Cartridge)	19-26-5538-0650
5541	650 gram (Aluminum Cartridge)	19-26-5541-0650
5541	2000 gram (Aluminum Cartridge)	19-26-5541-2000
5550	575 gram (12 fl. oz. Semco® Cartridge)	19-26-5550-0575

SEMCO is a registered trademark of Semco, Inc.

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