



Galvanic Compatibility - A Guide to Selecting Conductive Elastomers

Galvanic compatibility is a significant consideration when specifying a conductive elastomer as an EMI shielding or environmental seal gasket. A properly selected gasket will provide excellent shielding effectiveness and environmental protection while exhibiting minimal galvanic corrosion.

Galvanic corrosion is an electrochemical reaction that occurs when two dissimilar materials are in direct contact in a favorable environment (temperature, humidity, salinity, water). The galvanic series offers a general guideline for selecting compatible metallic couples. However, electrically conductive elastomers are composite materials that react differently than metals due to many factors including the composition of the conductive fillers, the permeability of the elastomer, and the presence of unique corrosion inhibitors.

How to Use the Chart

The chart below provides a guide for selecting the least corrosive galvanic couple between your metal chassis and the conductive elastomer. Simply find your chassis material in the first column and follow the line to the right to determine what conductive elastomer is best for your application.

Most Popular TechSIL Formulations

TechSIL Material/Elastomer Type / Filler Material / MIL-DTL-83528						
Chassis Material	LTE-10 Silicone Ag/Cu A	LTE-20 Silicone Ag/Al B	LTE-30 Fluorosilicone Ag/Cu C	LTE-40 Fluorosilicone Ag/Al D	LTE-50 Silicone Ag/G M	LTE-60 Silicone Ni/C ---
Chromated Al	Excessive Corrosion	Moderate to Excessive Corrosion	Excessive Corrosion	Minimal Corrosion	Excessive Corrosion	Moderate to Excessive Corrosion
Tin Plated Steel	Moderate to Excessive Corrosion	Minimal Corrosion	Moderate to Excessive Corrosion	Minimal Corrosion	Moderate Corrosion	Moderate to Excessive Corrosion
Zinc Plated Steel	Moderate to Excessive Corrosion	Minimal Corrosion	Moderate to Excessive Corrosion	Minimal Corrosion	Moderate Corrosion	Moderate Corrosion
Stainless Steel	Minimal Corrosion	Minimal Corrosion	Minimal Corrosion	Minimal Corrosion	Minimal Corrosion	Minimal Corrosion

Silver = Ag, Copper = CU, Aluminum = Al, Nickel = Ni, Glass = G, Nickel Coated Graphite = Ni/C

■ Excessive Corrosion ■ Moderate to Excessive Corrosion ■ Moderate Corrosion ■ Minimal Corrosion

Design Considerations

When choosing a conductive elastomer for a particular application it is important to evaluate your shielding requirements and the type of galvanic interaction that will be created. This is especially important when the gasket will be exposed to a potentially corrosive environment (water, salt, etc.)

TechSIL

CONDUCTIVE ELASTOMERS

Other TechSIL Formulations

Additional material formulations as well as unique profiles, molded shapes and die-cuts are also available. Please contact our engineering department or visit www.leadertechinc.com for a complete listing.

www.LeaderTechInc.com

ISO 9001: 2008
CERTIFIED

RoHS
COMPLIANT