

EMI Silicones Create Opportunities for Gasket Fabricators

By Dominic Testo, Specialty Silicone Products

Fortune Business Insights predicts that the global market for industrial automation products will experience a compound annual growth rate (CAGR) of nearly 10% through 2028, when the market will surpass the \$350 billion (USD) mark. This represents a tremendous opportunity for suppliers, including gasket fabricators, with solutions that combine environmental sealing with shielding against electromagnetic interference (EMI).

Today, EMI is a growing problem on factory floors – and not just because of Industry 4.0. Arc welders, live wires, generators, and just about any device or machine that generates radio frequency (RF) signals also creates electronic noise. This noise, or crosstalk, interferes with the communications that are supposed to occur and on which factories depend. Internet of things (IoT) sensors, programmable logic controllers (PLCs), and automation-related technologies such as augmented reality (AR) headsets are at risk as well.

In industrial environments, resistance to moisture, dust, and machine oils are also required. Gaskets that are made of particle-filled silicones seal out the environment and combine electrical conductivity with specific levels of shielding. As the base elastomer, silicone provides environmental resistance and is filled with metal or metal-coated particles that impart both electrical conductivity and EMI shielding. For resistance to fuels and oils, fluorosilicone can be used as the base elastomer instead.

Historically, EMI silicones used pure silver particles because of silver's excellent electrical conductivity. Silver is subject to sharp price increases, however, and less expensive fillers can be used instead. For example, nickel-plated graphite particles combine silver-like shielding effectiveness with a lower cost. For gasket fabricators, the ability to recommend these materials to customers and to source them efficiently can create new business opportunities.

Specialty Silicone Products (SSP) of Ballston Spa, New York supplies EMI silicones as continuous rolls, compression-molded sheets, ready-to-mold compounds, and extruded profiles that you can

fabricate into finished gaskets. These materials include nickel-graphite silicones and can be fabricated using a variety of cutting and molding processes. SSP's EMI silicones are also supporting emerging applications in 5G communications and electric vehicles (EV), markets that will continue to grow in 2022 and beyond.

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