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Faster, smaller, lighter, easier

The skyrocketing development of today's electronics requires new solutions for significant new problems.

These solutions include an innovative line of 3M Electromagnetic Compatible Products that can control electromagnetic interference from internal sources, limit EMI susceptibility from external sources and help manufacturers meet high certification standards around the world.

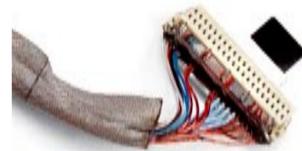
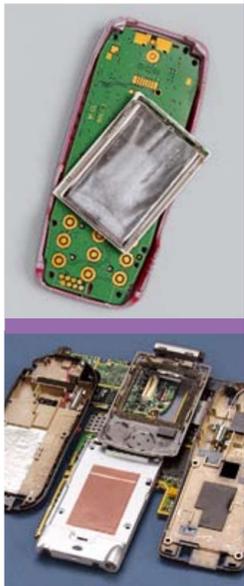
3M EMC Products can protect and enable electronic and electrical components in a wide variety of ways – from the manufacturing process to the final product. They can provide electromagnetic compatibility, shield or absorb electromagnetic and radio frequency interference, ground sensitive electronic components and boards, cushion components, protect cables, provide conductive properties, and add value in other ways. These products can also mask and protect PCBs and other devices during manufacturing while minimizing risk from such factors as static charge.

3M offers a wide range of EMI/RFI shielding tapes and absorbing materials, mesh and sleeving products, gaskets and conductive materials, and antistatic and high temperature tapes.

These innovative products are based on advanced research conducted at 3M laboratories around the world, building on EMI shielding technology that 3M introduced more than 40 years ago. And 3M can be trusted to supply these products on schedule around the world.

3M EMC Products can provide EMI/RFI shielding and absorbing, static charge grounding, anti-static masking, cushioning, mechanical protection, and conductive properties for a wide variety of applications.

3M offers a wide range of EMI/RFI shielding tapes and absorbing materials, mesh and sleeving products, gaskets and conductive materials.



3M™ Electromagnetic Compatible Products

Product	Backing	Adhesive	Total Thickness mils (mm)	Features	Electrical Resistance m ohms	Adhesion to Steel oz/in (N/cm)	Product Certification
3M™ Metallized Cloth							
AG-2300	Silver-coated polyester fabric	Acrylic Conductive	4.3 (0.110)	Lightweight, conformable, oxidation resistant and high strength for EMI shielding and grounding. Easily die cut.	5	31 (3.4)	—
AU-2190	Gold-coated polyester fabric	Acrylic Conductive	4.3 (0.110)	Lightweight, conformable, oxidation resistant and high strength for EMI shielding and grounding. Easily die cut.	5	31 (3.4)	—
CN 3190	Nickel on copper-plated polyester ripstop fabric	Acrylic Conductive	4.3 (0.110)	Lightweight, conformable oxidation resistant and high strength for EMI shielding and grounding.	1	35 (3.8)	—
3M™ Mesh and Sleeving							
DS & FS Series	Braided glass fibers overwound with tin-plated copper foil	None	N/A	EMI mesh sleeves for cables and harnesses. Excellent strain relief and heat stability, flexible, oxidation resistant. Solderable.	N/A	N/A	UL VW-1 (UL FR-1)
VA Series	Sleeves braided with polyester fibers and polyester fibers over-wound with tin-plated copper foil	None	N/A	EMI mesh sleeves for cables and harnesses. Excellent strain relief and heat stability, flexible, oxidation resistant. Solderable, lightweight.	N/A	N/A	—
3M™ EMI Shielding Sheets and Films							
1380	High-metal magnetic sheet between polymer film layers	Rubber Thermo-setting	11.8 (0.300)	Excellent high-μ magnetic shielding at low frequency. Soft magnetic sheet sandwiched between layers of film. Thin, flexible, lightweight and easily die cut.	N/A	N/A	—
AL-10S	Epoxy FR film + aluminum foil	None	7.8 (0.198)	Softened aluminum foil with flame-retardant film on one side. Excellent EMI shielding for PCBs and assemblies. Lightweight, flexible and easily die cut.	N/A	N/A	UL 510
AL-1010S	Double epoxy FR film + aluminum foil	None	13.8 (0.351)	Softened aluminum foil with flame-retardant film on both sides. Excellent EMI shielding for PCBs and assemblies. Lightweight, flexible and easily die cut.	N/A	N/A	UL 510
CU-10S	Epoxy FR film + copper foil	None	6.7 (0.170)	Softened copper foil with flame-retardant film on one side. Excellent EMI shielding for PCBs and assemblies. Lightweight, flexible and easily die cut.	N/A	None	UL 94 V0
CU-1010S	Copper foil + double epoxy film	None	11.8 (0.300)	Softened copper foil with flame-retardant film on both sides. Excellent EMI shielding for PCBs and assemblies. Lightweight, flexible and easily die cut.	N/A	None	—
3M™ Gaskets and Conductive Materials							
eCap 7830N	PET Woven Fabric with Copper-Nickel Plating	Acrylic Conductive	7.8 - 19.7 (0.2 - 0.5)	For EMI / RFI shielding and EMI/RFI gasket to metal surfaces, electrical bonding and grounding. Easily die cut	N/A	—	—
eCap 7810	PET Woven Fabric with Copper-Nickel Plating	Acrylic Conductive on both sides	5.9 - 11.8 (0.15 - 0.3)	For EMI / RFI shielding and EMI/RFI gasket to metal surfaces, electrical bonding and grounding. Easily die cut	N/A	—	—
3245	Reverse embossed copper foil	Acrylic Conductive	5.9 (0.150)	For EMI shielding, static charge draining, grounding. Solderable, easily die cut.	1	46 (5.0)	UL 510
3M™ Absorbing Materials							
AB-2000 Series	Silicone rubber with magnetic filler	Acrylic Adhesive	10.6 - 62.2 (0.27-1.58)	EMI absorbing: can suppress radiated noise in broadband frequency. Thin, flexible and easily die cut. In 7 standard thicknesses.	N/A	35 (3.8)	—
AB-5000 Series	Polymer resin with metal flake filler	Acrylic Adhesive	3.9 - 39.4 (0.10-1.0)	EMI Absorbing: can suppress radiated noise in broadband frequency. Thin, flexible and easily die cut. In 5 standard thicknesses	N/A	—	—

3M™ Electromagnetic Compatible Products

Product	Backing	Adhesive	Total Thickness mils (mm)	Features	Electrical Resistance m ohms	Adhesion to Steel oz/in (N/cm)	Product Certification
3M™ Aluminum Foil							
1170	2 mil aluminum foil	Acrylic Conductive	3.2 (0.081)	For EMI shielding, static charge draining, grounding. Easily die cut.	10	35 (3.8)	UL 510
AL-25BT	1 mil aluminum foil	Acrylic Conductive	2.4 (0.061)	For EMI shielding, static charge draining, grounding. Easily die cut.	10	31 (3.4)	UL 510
AL-25DC	1 mil aluminum foil	Acrylic Conductive Coated on Both Sides	3.3 (0.084)	For EMI shielding, static charge draining, grounding. Easily die cut.	35	31 (3.4)	—
AL-50BT	2 mil aluminum foil	Acrylic Conductive	3.1 (0.079)	For EMI shielding, static charge draining, grounding. Easily die cut.	10	31 (3.4)	UL 510
3M™ Aluminum Foil Laminated with Polyester Film							
AL-36FR	1 mil aluminum foil + polyester film	Acrylic Conductive	2.4 (0.061)	Foil backing laminated with polyester film. Good resistance to oxidation, solvents and oils. Easily die cut.	20	22 (2.4)	UL 510
AL-36NC	1 mil aluminum foil + polyester film	Acrylic Non-Conductive	2.2 (0.055)	Foil backing laminated with polyester film. Good resistance to oxidation, solvents and oils. Easily die cut.	NA	20 (2.2)	—
AL-37BLK	1 mil aluminum foil + black matte polyester film	Acrylic Conductive	2.8 (0.071)	Foil backing laminated with polyester film. Matte surface finish. Good electrical insulation, resistance to oxidation, solvents and oils. Easily die cut.	50	31 (3.4)	UL 510
3M™ Copper Foil							
1181	1.4 mil copper foil	Acrylic Conductive	2.6 (0.066)	For EMI shielding, static charge draining, grounding. Easily die cut.	5	35 (3.8)	UL 510
1182	1.4 mil copper foil	Acrylic Conductive Coated on Both Sides	3.5 (0.089)	Typically used to bond two surfaces, both physically and electrically. Also can provide EMI shielding, static charge draining, grounding. Easily die cut.	10	35 (3.8)	UL 510
1183	1.4 mil tin-plated copper foil	Acrylic Conductive	2.6 (0.066)	Oxidation resistant for long-term EMI shielding, static charge draining, grounding. Solderable and easily die cut.	5	35 (3.8)	UL 510
1194	1.4 mil copper foil	Acrylic Non-conductive	2.6 (0.066)	For EMI shielding, static charge draining, grounding. Easily die cut.	NA	40 (4.4)	UL 510
3M™ Embossed Foil							
1245	Embossed copper foil	Acrylic Non-conductive	4.0 (0.102)	For EMI shielding, static charge draining, grounding. Solderable and easily die cut.	1	35 (3.8)	UL 510
1267	Embossed aluminum foil	Acrylic Non-conductive	5.0 (0.127)	For EMI shielding, static charge draining, grounding. Solderable and easily die cut.	5	35 (3.8)	UL 510
1345	Embossed tin-plated copper foil	Acrylic Non-conductive	4.0 (0.102)	Oxidation resistant for long-term EMI shielding, static charge draining, grounding. Solderable and easily die cut.	1	45 (4.9)	UL 510

These solutions include an innovative line of **3M™ Electromagnetic Compatible Products** that can control electromagnetic interference from internal sources, limit EMI susceptibility from external sources and help manufacturers meet high certification standards around the world.

- Provide electromagnetic compatibility
- Shield or absorb electromagnetic and radio frequency interference
- Ground sensitive electronic components and boards
- Cushion components
- Protect cables
- Provide conductive properties

3M™ EMC Products can provide EMI/RFI shielding and absorbing, static charge grounding, anti-static masking, cushioning, mechanical protection and conductive properties for a wide variety of applications.

