



NEWS ALERT

Cortec® Publishes Informative White Paper Detailing EcoSonic® ESD Paper Applications for EMS and MEAS Industries!



EcoSonic® ESD Paper is opening up new possibilities for expanding Cortec® VpCI® protection in EMS (Electronic Manufacturing Services) and MEAS (Mechanical and Electrical Assembly Services) industries. To provide a better understanding of the many innovative ways this product can be used, Cortec® has published a helpful white paper detailing the characteristics, applications, and availability of the product.

The white paper highlights the numerous applications for EcoSonic® ESD Paper due to its large size, its durability, and its ESD (electrostatic dissipative) and corrosion inhibiting properties. EcoSonic® ESD Paper can be used for:



- Creating a temporary ESD-safe work surface
- Interleaving
- Increasing machine throughput and efficiency
- ESD and corrosion protection during transport
- Direct packaging of parts and equipment
- Disposable jackets for travelers and routing guides
- Protection of critical spares

The white paper explains how EcoSonic® ESD Paper is powered by VpCI® Technology, which creates a monomolecular layer on electronic/electrical metal or alloy components and protects them from corrosion. This layer evaporates when the parts are unwrapped from the paper, leaving behind an unaltered substrate.



Cortec® has the infrastructure in place to distribute EcoSonic® ESD Paper to EMS and MEAS industries in the US and around the world. Cortec® is the industry leader in VpCI® Technology and a globally trusted partner for many multinational companies. Its ISO Certifications seek to ensure Cortec's customers receive products that deliver consistent quality and intended results each time, every time, and all the time.

Please continue to read the full white paper!

Cortec® Corporation is the global leader in innovative, environmentally responsible VpCI® and MCI® corrosion control technologies for the Packaging, Metalworking, Construction, Electronics, Water Treatment, Oil & Gas, and other industries. Headquartered in St. Paul, Minnesota, Cortec® manufactures over 400 products distributed worldwide. ISO 9001, ISO 14001, and ISO 17025 Certified.



Introduction of Cortec's EcoSonic[®] ESD Paper

Key Characteristics of the New Product

Professionals in EMS (Electronic Manufacturing Services) and MEAS (Mechanical and Electrical Assembly Services) will find great use in both their day-to-day manufacturing operations and field service for a new product called EcoSonic[®] ESD Paper.

This new product is developed, manufactured, and marketed by Cortec[®] Corporation, an American company based in St. Paul, Minnesota.

In electronic manufacturing today, ESD (electrostatic dissipative) paper in the same format as copying paper is mostly seen and used in a cleanroom environment for record keeping, travelers in circulation (process routing guides and instructions), displayed Work Instructions (WI), Standard Operating Procedures (SOP), various reports, and filed quality procedures such as equipment PM (Preventative Maintenance) schedules. With the development of Cortec's EcoSonic[®] ESD Paper, ESD qualities are readily available for use in larger applications as well.

In addition to its electrostatic dissipative property (conforming to MIL Spec PRF-81705 D) Cortec's EcoSonic[®] ESD Paper has the following major characteristics:

- Conforms to MIL Spec PRF-3420 H vapor corrosion inhibiting ability due to proprietary Cortec[®] VpCI[®] (Vapor phase Corrosion Inhibitor) Technology
- Calendered surface suitable for use in cleanroom environment
- Durable and tear resistant
- Thermally stable up to high temperature of 200° C
- Available in large, compact, roll, or sheet format
- Customizable dimensions and packaging
- Contains no toxic materials
- Fully recyclable and repulpable
- Pink printing makes ESD-safe use and paper orientation easy to identify

Applications of the New Product

Each application described below uses one or more of the properties and characteristics offered by Cortec® EcoSonic® ESD Paper.

Temporary working surface area/space is often needed inside a cleanroom for various reasons including re-work and touch up of assemblies; additional inspection for raw materials, WIP, or finished assemblies; staging of work orders; quarantine of any questionable materials; etc. EcoSonic® ESD Paper in its roll form can be easily sized to the desired dimension to create the needed temporary surface/space that is ESD-safe, clean, durable, and disposable.

This application can also be implemented at the receiving warehouse and QC Lab where incoming inspections take place on materials that are sometimes ESD-sensitive.

ESD foam is commonly used as interleaf material to protect, segregate, store, and transport subassemblies and finished assemblies in EMS and MEAS manufacturing environments. EcoSonic® ESD Paper, either cut to size on site or custom-sized at the Cortec® plant, can replace ESD foam. When used for interleaving, EcoSonic® ESD Paper prevents items in one layer from being damaged by the items in an adjacent layer, should the items have a protruding profile. Since EcoSonic® ESD Paper is less than 0.004" thick, it takes much less storage room than needed for ESD foam, helping save valuable real estate inside the cleanroom.

Extra waiting time is spent when PCB or FPCB assemblies need to be cooled down before they are taken off SMT assembly lines. As a result, assembly line efficiency decreases. Since EcoSonic® ESD Paper is capable of tolerating high temperatures up to 200° C, manufacturing engineers can incorporate it into a modified process flow so that assemblies coming out of reflow-ovens can be taken off the assembly line sooner, increasing machine throughput and efficiency.

It is not uncommon to send semi-finished assemblies to outsourced services for certain processes that are not available in-house or can be more cost effectively done by outsourced vendors with necessary expertise and facilities. Using

EcoSonic® ESD Paper in conjunction with circulating totes and/or specially-designed containers to transport these semi-finished assemblies not only provides ESD protection, but also protects the semi-finished assemblies from rust and corrosion on any exposed metal and alloy surfaces. This protection is accomplished through Cortec's VpCI® Technology, which is explained later in detail.

EcoSonic® ESD Paper can be used to directly package electronic and electrical subassemblies, assemblies, modules, and products for both ESD and corrosion protection during storage, shipment (land, air, and ocean) to downstream customers, or layup of spare parts in a field services program. Large format and durability are two important and beneficial features of EcoSonic® ESD Paper when used to package large-sized electrical assemblies. If and when electronic assemblies must be packed in metalized ESD or EMI shielding bags, a small piece of EcoSonic® ESD Paper can be put inside the bag to provide corrosion protection for the assemblies.

EcoSonic® ESD Paper can be used to make disposable jackets for travelers and routing guides that are circulated along with each work order and with actual parts in production. This will help prevent or eliminate any contamination or cross contamination brought by reusing jackets made by plastic or other materials. EcoSonic® ESD Paper is made of environmentally friendly materials that are totally recyclable and repulpable.

Many things that affect the quality of people's lives—such as transportation (automobiles, trains, vessels, and airplanes), personal services, entertainment, utility generation and supplies, health care, defense and security, emergency response, communications, and so on—have much higher electronic content today than ever before. Having critical spare parts (including both electronic and electrical assemblies) available on site or at service centers at all times for selected installations and infrastructures therefore becomes both strategic and potentially lifesaving. EcoSonic® ESD Paper can be used alone or along with other Cortec® products to protect those spare parts during both short and long term standby. EcoSonic® ESD Paper can also be used to help create an ESD-safe and

clean environment on site when immediate field diagnosis on questionable electronic/electrical components and devices is needed, or it can be used to pack and protect the failed unit while shipping to a qualified and authorized party for failure analysis and root cause identification.

The above applications are only a few examples of where and how Cortec[®] EcoSonic[®] ESD Paper can be used in EMS, MEAS, and service industries. The creative engineering minds and dedicated professionals in these industries will certainly find EcoSonic[®] ESD Paper a useful means to increase operational efficiency, reduce cost, safeguard component and product integrity, and enhance process and product reliability for their companies, their customers, and their stakeholders.

Availability of the New Product

Cortec[®] EcoSonic[®] ESD Paper is available through Cortec's distribution network worldwide. Much of the American EMS and MEAS industries have migrated to various countries in Asia, South America, and even Latin America over the years. Regardless of whether or not any American EMS/MEAS companies will move back to the US in coming years, Cortec[®] has the infrastructure in place to support any companies, domestic or foreign, in these industries at any locations globally, including Europe, North and South America, Latin America, Asia, and more.

Cortec[®] and Its VpCI[®] Technologies

Cortec[®] Corporation was founded by Mr. Boris Miksic* in 1977 in St. Paul, Minnesota, with the sole purpose of helping customers combat corrosion, a universal problem that does not discriminate but affects each individual and household, each organization (private or public), each society, and each government (infrastructure and public assets) on planet earth.

Cortec[®] developed and patented its VpCI[®] (Vapor phase Corrosion Inhibitor) Technology and has designed more than 400 delivery systems to make VpCI[®] work effectively and efficiently in a variety of industrial applications to help customers around the globe resolve their real daily issues related to rust and corrosion.

In principle, corrosion on metal(s) and alloy(s) takes place when four elements are present: an anode, a cathode, an electrolyte, and a path for electrons and ions. When Cortec® products are used, the VpCI “inactivates” both the anode and cathode in a corrosion cell or prevents their formation. This is the most effective method for corrosion control and prevention. Cortec® VpCI® molecules are designed and made to work in contact phase, vapor phase, and at the interface. In the case of EcoSonic® ESD Paper, the embedded VpCI® molecules “leave” the carrier (paper) by sublimating from solid to gas state and forming a monomolecular layer on the metal and alloy surfaces of electronic/electrical parts enclosed in EcoSonic® ESD Paper. This monomolecular layer of VpCI® protects electronic/electrical components and parts against corrosion. When the parts are unwrapped, the VpCI® layer evaporates and leaves behind an unaltered substrate.

Through 40 years of continuous improvement and advancement, Cortec® has become the industry leader in VpCI® Technology and a trusted partner globally for many multinational companies and their operations. Cortec® has been a long term contributing member of NACE INTERNATIONAL (National Association of Corrosion Engineers), the global authority for corrosion control solutions. Cortec® is the only company in the industry that vertically integrates research and development, formulating, synthesizing, manufacturing, and testing of corrosion inhibitors and their delivery systems.

Cortec® has been awarded more than 60 patents and now possesses ten facilities worldwide, with laboratories and testing facilities in major markets. The state-of-the-art Cortec® Laboratories at Cortec® headquarters in St. Paul, Minnesota, is the one and only ISO/IEC 17025 Certified lab in the industry. Cortec® manufacturing facilities are both ISO 9001 and ISO 14001 Certified, helping ensure Cortec’s customers in more than 100 countries receive products that have consistent quality and deliver intended results each time, every time, and all the time.

* To learn more about Boris, his journey to the US, the start of his career in corrosion control and prevention, his business adventures, his leadership, and his passion and vision, obtain a copy of his autobiography: “American Dream: A Guy from Croatia” through www.cortecvci.com.