

## Why LECTRICare<sup>®</sup> doesn't short-circuit components when applied to broad surfaces like a PC board or exposed contacts.

Michael asks, "If your spray is conductive, how do you prevent short circuits?" I get this question quite frequently.

All of our formulas are based on boundary film technology. The technology has been used in industrial applications for many years. Sound Synergies was the first to introduce our unique boundary film products to the music, broadcast, and cine industries about four years ago.

We were well aware of electrical contact grease that has been used in the power industry for over 65 years to prevent corrosion in electrical connectors from low micro-power electronics to high voltage switchgear. The problem with greases, creams and other "conductive lubricants" was that they are too difficult to apply and downright messy for many electronics applications especially when it comes to musical instruments and music electronics. LECTRICare<sup>®</sup> Music Electronics with its micro-filtered dry-to-touch formula was specially compounded to penetrate, clean, condition, and protect extremely close tolerance metal and hybrid contacts. It can be used for AF and RF applications. It works well with similar and dissimilar metals as well as hybrid contacts.

So why doesn't it short-circuit components when applied to broad surfaces like a PC board or exposed contacts? There are two main reasons, one of which is that our LECTRICare<sup>®</sup> product line does not contain any conductive metal particles. LECTRICare's micro boundary film acts as a stable "passive" conductor with no resistance when two conductive surfaces are in close-contact (proximity) to each other. A safe simple test I perform when demonstrating this concept is to plunge both probes of my Simpson test meter into about ½-inch of LECTRICare solution in a glass beaker with meter set to R x 10,000. I slowly move both probes together while not registering any conductivity until the probes come into actual contact with each other.

I also spray it liberally on legacy amp "bread boards" to protect components from oxidation, moisture and humidity with no leakage problems. It's also important to remember to let the aerosol carrier "boil off" for 15-25 seconds in order for the film to set.

**DO NOT APPLY WHEN UNIT IS POWERED UP. POWER CORD DISCONNECTED AND ALL CAPS DISCHARGED!**

The other reason is that LECTRICare has very low salinity (NaCl). Water, as you well know, is a perfect conductor of electricity depending on the concentration of impurities in suspension. Atmospheric impurities and salt from sea air wreak havoc in your part of the world. LECTRICare's barrier film contains rust inhibitors and anti-corrosion components that protect electronics and metals from the harmful effects of salt-laden moisture and humidity.

LECTRICare does not introduce current noise or distortion into the signal path. It has the ability to "fill-in" surface irregularities on contact surfaces promoting maximum contact area. It is also hydrophobic, self-leveling, and very stable and will not migrate under high loads.

We also formulated LECTRICare® Stage Sound and Lighting along with LECTRICare® Broadcast/Cine with additional corrosion and oxidation inhibitors especially for exposed outdoor venues where moisture and humidity constantly plague equipment. It also works well for power and lighting applications; distribution boxes, cable plugs and receptacles, etc.

You can also download our boundary film technology paper directly from our website support page or direct link at: <https://s3-us-west-2.amazonaws.com/sound-synergies/technical-support/Dry-Boundary-Film-Tech.pdf>

Dean K. Hart  
Technical Applications Specialist  
Sound Synergies Group  
[dean@soundsynergies.net](mailto:dean@soundsynergies.net)

