



Battery Production- Pouch Cell Conveying Trays

in Semitron® ESd Range of Materials

Challenge

Prevent static electricity build-up in battery production systems by providing conductive, dissipative, and antistatic properties over a long lifetime.

During assembly and conveyance of the battery, static electricity can build up when separate parts rub against each other or when dry air blows over the parts. In order to prevent damage to the batteries, the static charge must be dissipated in a controlled way.

Key Requirements

- Controlled electrostatic dissipation (ESd) by tight range of surface resistivity, also after machining
- Maintain surface resistance after being exposed to high voltage
- Wide range of products (wide portfolio) available for use, in consideration of operating temperature, chemical resistance, and mechanical properties
- Maintain semi-permanent ESd function unlike conventional coating methods

Our Recommendation:

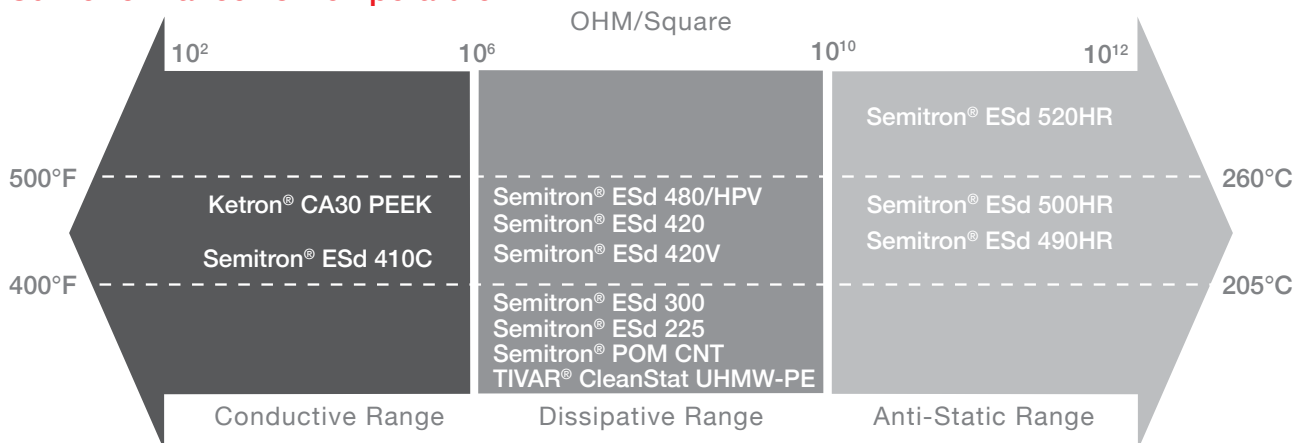
- Semitron® ESd 520HR PAI (A)
- Semitron® ESd 500HR PTFE (A)
- Semitron® ESd 490HR PEEK (A)
- Semitron® ESd 480 PEEK (D)
- Semitron® ESd 420V PEI (D)
- Semitron® ESd 420 PEI (D)
- Semitron® ESd 410C PEI (C)
- Semitron® ESd 300 PET (D)
- Semitron® ESd 225 POM (D)

A = Anti-Static

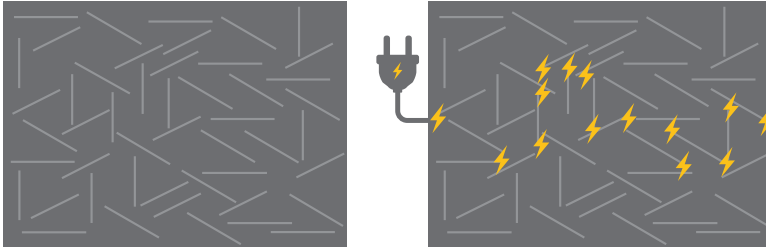
D = Static Dissipative

C = Conductive

ESd Performance vs. Temperature



Effects of High Voltage on Carbon Filled Plastics (Carbon-filled ESD Plate)



Before High Voltage Arcing

After High Voltage Arcing

When a threshold of electrical current is exceeded, the energy will arc across the plate essentially “frying” a path.

Mitsubishi Chemical Advanced Materials technology actually allows for recovery of this path, maintaining properties after the applied voltage shock.

Customer Benefits

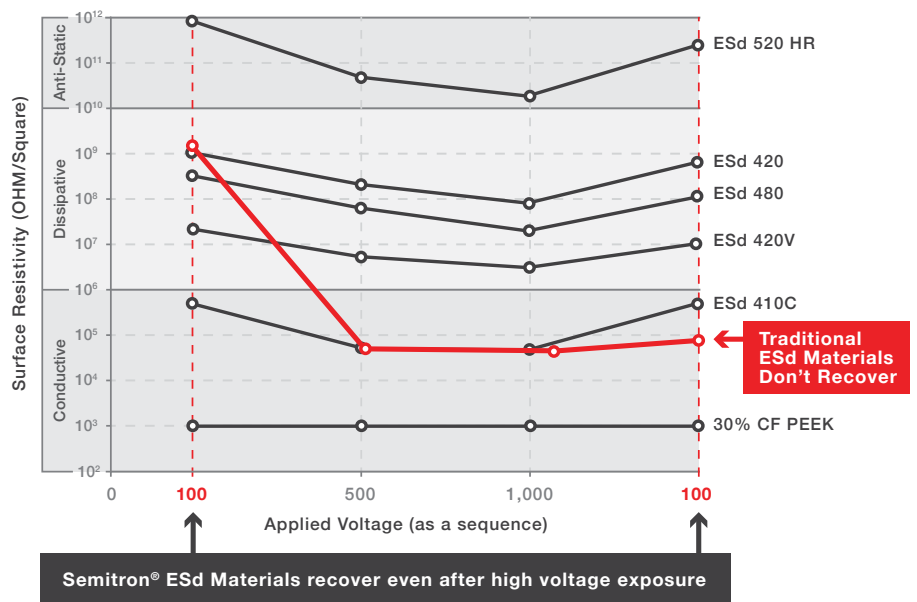
- Damage prevention from uncontrolled discharges
- Increased employee safety during production

Why Semitron® ESD Materials?

Semitron® ESD materials are designed for stable ESD properties. They will not change ESD properties after high voltage exposure.

Semitron® ESD materials are available as a comprehensive portfolio. This allows the designers to optimize the price/performance of their specific applications.

High Voltage Exposure



Semitron® ESD Materials recover even after high voltage exposure

mcam.com | @MCAMconnect | contact@mcam.com

Distributed by:

All statements, technical information and recommendations contained in this publication are presented in good faith and are, as a rule, based upon tests and such tests are believed to be reliable and practical field experience. The reader, however, is cautioned, that Mitsubishi Chemical Advanced Materials does not guarantee the accuracy or completeness of this information and it is the customer's responsibility to determine the suitability of Mitsubishi Chemical Advanced Materials' products in any given application. TIVAR is a registered trademark of the Mitsubishi Chemical Advanced Materials group of companies.

Design and content created by Mitsubishi Chemical Advanced Materials and are protected by copyright law. Copyright © Mitsubishi Chemical Advanced Materials. All rights reserved.

MCM RE 0007A | 10.11.19

**MITSUBISHI CHEMICAL
ADVANCED MATERIALS**