



ST POWDER COATINGS

presents

LIGHTNING-FREE POWDER COATINGS



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Electrostatic discharge (ESD) is the sudden and momentary electric current that flows between two objects at different electrical potentials. The term is usually used in the electronics and other industries to describe momentary unwanted currents that may cause damage to electronic equipment. One of the causes of ESD events is static electricity. Static electricity is often generated through tribocharging, the separation of electric charges that occurs when two materials are brought into contact and then separated. Examples of tribocharging include walking on a rug, descending from a car, or removing some types of plastic packaging. In all these cases, the friction between two materials results in tribocharging, thus creating a difference of electrical potential that can lead to an ESD event.

ESD is a serious issue in solid state electronics. Integrated circuits are made from semiconductor materials such as silicon and insulating materials such as silicon dioxide. Either of these materials can suffer permanent damage when subjected to high voltages.



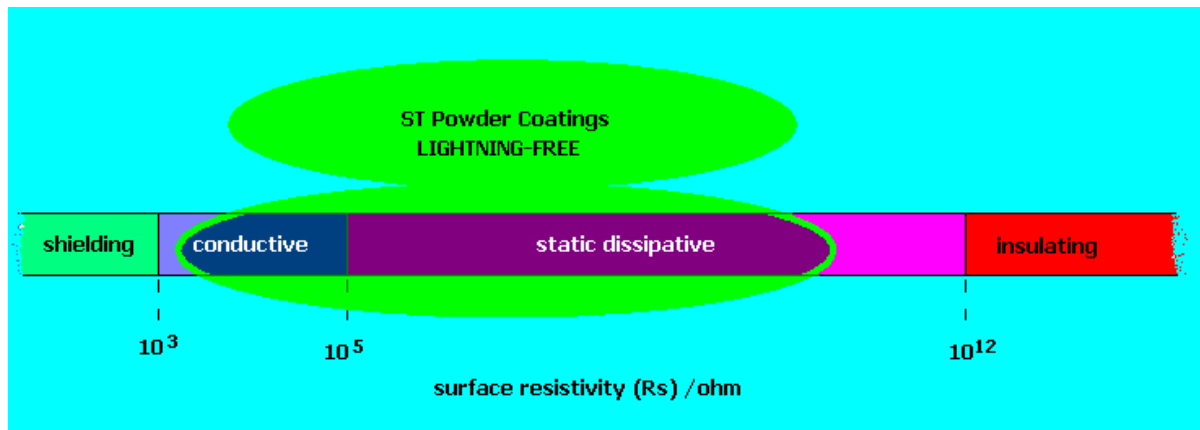
Due to dielectric nature of electronics component and assemblies, electrostatic charging can not be completely prevented during handling of devices. Most of ESD sensitive electronic assemblies and components are also so small that manufacturing and handling is made with automated equipment. After tribocharging people discharge frequently; to feel a discharge, it must be about 3000 volts. But to damage an electronic component, a 100 volts discharge can be enough.

(from <http://www.nationmaster.com/encyclopedia/Electrostatic-discharge>).

ESD prevention activities are therefore important with those processes where component is touching on equipment surfaces. In addition, it is important to prevent ESD when electrostatic discharge sensitive component is connected with other conductive parts of the product itself. An efficient way to prevent ESD is to use materials that are not too conductive but will slowly conduct static charges away. These materials are called static dissipative and have surface resistivity values in the range $10^5 - 10^{12}$ Ohm.

Materials in automated manufacturing which will touch on conductive areas of ESD sensitive electronic should be made of dissipative material, and the dissipative material must be grounded.

A dissipative powder coatings can help to prevent this annoying and dangerous phenomenon. Due to its characteristics, the surface coated with the dissipative powder coating prevents the static build up saving all the electronic devices on it.



Note: Lightning-free powder coatings cannot be overcoated without a negative influence on dissipative properties.



ST Lightning-free powder coatings are available in these versions:

Chemical	Finishes	Brightness	Colours
epoxy	smooth	matt	black and grey
epoxy-polyester	smooth, fine and river texture	matt, half-matt, half-glossy, glossy	black, grey, green, blue, white, red. Available also in metallic version
polyester	smooth	half-glossy and glossy	grey, white, black



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