

TECH TIPS

What is Static?

The word "static" means "stationary." Static electricity is a stationary electrical charge. In an atom, positively charged protons are balanced by negatively charged electrons. Losing or gaining electrons affects the charge. When large numbers of atoms lose or gain electrons, a noticeable electrostatic charge is created.

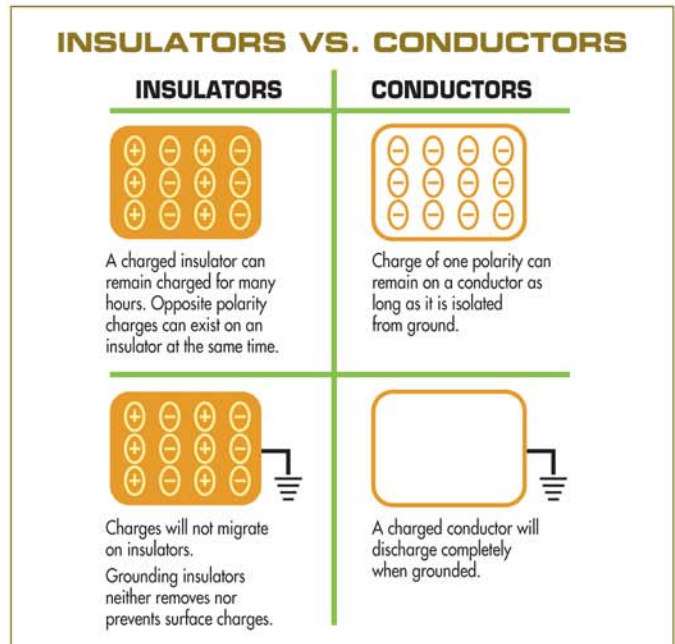
The surfaces of non-conductors and isolated conductors are susceptible to the creation of static charges. Conductors differ from insulators in how easily a static charge moves or is "conducted." When an electrically isolated conductor becomes charged, grounding the conductor can neutralize it by allowing the charge to flow to ground. Insulators do not allow charges to move freely, so grounding is not sufficient to eliminate static. Use of an active ionizer is the only way to reliably eliminate static on insulators.

Many industrial materials are insulators, such as rubber, glass and plastics. Their desirable qualities make them essential to use, however, they are likely to become electrostatically charged during processing.

These processes include:

- Peeling laminate
- Unwinding a roll
- Separating surfaces
- Wind-up operations
- Collecting products in bins

Production jams, quality problems, dirt attraction and rejects are all consequences of uncontrolled static.



Only an ionizing static eliminator can neutralize a non-conductive material. If an ungrounded conductor becomes charged, it can be neutralized by simply connecting it to an earth ground. Electrons do not move freely on insulators, even if they are grounded. Because of this, the only reliable way to neutralize an insulator that has become charged is to use an active static eliminator.