



Static electricity introduces a broad spectrum of operational problems during manufacturing and handling processes in flammable and combustible atmospheres across a wide-range of industries.

Chemical processing plants and oil refineries are characterised by long lengths of continuously welded pipework connecting mobile and fixed process vessels and installations. Piping is used for moving raw and semi processed materials for refining into more useful products.

In pharmaceutical operations, equipment like powder conveying systems, micronizers, blenders and sieve stacks all make up multiple component assemblies that can accumulate high levels of electrostatic charge, should any of the components be isolated from a true earth.

Eliminating all potential ignition sources in hazardous atmospheres is the obvious starting point for designing plant and machinery. The main areas for concern are what are often termed as “isolated conductors”. These conductors are electrically conductive objects that are either inherently or accidentally insulated from earth. Interconnected plant assemblies, such as powder processing equipment, present more of a challenge compared to standard applications as there are many metal parts that can make up larger assemblies that are electrically isolated from each other.

During day-to-day operations at industrial facilities, such as chemical, pharmaceutical, paints, coatings, food and beverage, isolated conductors are considered the most likely source of static ignition incidents.

The most effective way of ensuring complex equipment used in flammable or combustible atmospheres cannot accumulate static electricity is to provide a dedicated static grounding solution that is capable of monitoring the ground connection to components at risk of isolation. Such a solution should also be able to prevent the flow of product and alert personnel to a potential hazard should a component lose its connection to ground.

[Visit Newson Gale Here](#)