

# ELECTROSTATIC RISK RELATED TO EXPLOSIVE VAPORS OR GAS ATMOSPHERE

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The aim of the training is to introduce the electrostatic risk during the handling of liquids, vapours or gases. In order to ensure that all participants have the same knowledge, a quick reminder of the basic notions required for an explosion will be presented with the help of a practical demonstration.

- Flash Point and process temperature
- Upper and lower explosive limits
- Vapour density
- influence of oxygen

Then the course will present in a didactic way the different types of electrostatic charging process, the different electrostatic discharges and some prevention measures during the handling of liquids, vapours or gases.

- The different types of materials
- The different charging process (induction, friction and corona)
- The different types of discharge and the prevention measures

Tests will then be carried out to demonstrate the electrostatic risk during gravity and pneumatic transport of liquids using an electrostatic field meter.

Finally, a vapour explosion will be highlighted using a Kelvin generator. In other words, an inflammation of a diethyl ether atmosphere will be done with the help of liquid displacement (triboelectric charging and the induction of liquid flowing through a pipe).

**Keywords:** *hazards, prevention, electrostatic, industrial explosions*

