LEL Sensor Poisoning

The LEL sensors inside gas detectors are intended to be presented to and functional under harmful, destructive, and unstable gases, however that doesn't mean they are resistant. Synthetic concoctions and fumes from ordinary cleaners and ointments and other particular compounds all release chemicals that poison or inhibit the catalytic bead of an LEL sensor. To keep these sensors as functional and efficient as possible, it's crucial for both product users as well as manufacturers to avoid sensor poisons and inhibitors.

What is LEL sensor poisoning?

In general, sensor poisoning is a result of substances and compounds that adhere to the catalytic bead inside LEL sensors which permanently damages the sensor. The most common poisons are silicon-based compounds such as silanes and silicates as well as silicon-based products like lubricants and sulfur compounds. LEL sensors are relatively delicate, which means that contact with any amount of sensor poison would immediately result in the inhibition of the catalytic bead which greatly damages the functionality of the sensor as a whole. The poison melts on contact and encapsulates the catalytic bead inside the sensor which inhibits reactions with the originally intended substances. This leads to semi-permanent sensor damage because the surrounding poison cannot be easily removed.

How do I check for sensor poisoning?

It's essential to routinely calibrate and bump test LEL sensors to decide whether the catalytic beads are working appropriately. In the event that you don't routinely bump test or align your gas indicators, you could wind up in a hazardous situation. With a damaged bead, it's possible to be in a flammable environment and have no detection/readings on the sensor. On the off chance that the LEL sensor may have been harmed, calibrate it quickly to ensure it is working appropriately. If the sensor passes the diagnostic check and can provide a reading during this, that means the sensor is still functional. In the event that the sensor is harmed, it won't be able to react to the calibration gases and would show a failed diagnostic.

Operation Precautions

To provide a healthy environment and safe application for the LEL sensors, it's important to take special precautions when dealing with them. The following guidelines should provide the necessary information when dealing with LEL sensors.

- Always use filters designed for the LEL sensors. Make sure to swap out the filters about once a week as well as whenever the sensor comes in contact with poisons and inhibitors.
- Apply routine maintenance and diagnostics for the pump, filter, and tubing after exposure to poison.
- Minimize exposure with hazardous environments that may damage the sensor/catalytic bead.
- Turn off your LEL gas monitor when not in use.
- In harmful environments filled with poison and inhibitors, make sure to reduce the flow rate of gases over the sensor.