

Gas Detection Technology Enhances Worker Safety

It's an indisputable fact that one of the primary dangers in many industries, including petroleum, is the existence of a wide variety of potentially flammable, toxic and explosive gases.

Brent Yaschuk, CEO at Uniphos Envirotronic Inc., said that there are virtually hundreds of types of toxic gases, but some of the more common varieties are: benzene, nitrogen oxides, carbon monoxide, formaldehyde, sulfur dioxide, phosphine, mercury, hydrogen sulfide, chlorine and ammonia.

"As we all know, exposure to these types of gases can result in critical health injuries and even fatalities," said Yaschuk, who has built a career on offering safety solutions to industries at risk of these occurrences. "Diligence to safe operating procedures is crucial to prevention."

Also critical to safety is the necessity for accurate measurement, which is where Yaschuk's skills are particularly honed. "In the petroleum industry, it's about safety and proper measurement," said Yaschuk. "Training, knowledge and understanding of the situation are important factors too."

For instance, in the downstream sector, Yaschuk explained that teams would use a benzene detection tube when entering a vessel to detect whether this potentially carcinogenic gas exists, and at what level. "In certain applications, tubes are the only method for detection," said Yaschuk.

In other instances, more so in the pipeline sector, crews may be more reliant on personal electronic monitors for safety checks. "Often times, both are used," said Yaschuk. "Crews would want to pre-check with tube technology before getting ready to enter with personal monitors."

Yaschuk has considerable experience in the oil and gas world, specializing in the distribution of gas detection tubes for the most latter part of his career. Most recently, he took on the challenge of expanding the India-based company, Uniphos, to the United States, with its head office located in Sugar Land, Texas.

When the company expanded to the U.S. earlier this year, Rajju Shroff, Uniphos founder, explained that the intention was to diversify with new instruments based on emerging technologies. According to Shroff, many existing technologies are expensive, and Uniphos was motivated to offer an affordable solution that would also provide superior quality instruments.

Rahul Singh, Vice President (Business), Uniphos Envirotronics (India), commented that additional issues with existing technologies included problems with maintenance, repair and the length of time for calibration. "There were also concerns in relation to sensor failures, limited battery life of six to 15 hours for basic sensors, etc.," said Singh. "Technology has gotten better, and now there is an ability to go two to three months on one charge for the basic sensors like LEL, O₂, H₂S and CO, which are the basic compounds for confined spaces."

Singh went on to say that with tube technology, the pre-calibrated tubes save time and are easy to use, with zero maintenance. "For some gases, this is the only field detection technology," he said. "Tubes allow for the detection of a single gas over a very wide concentration range. For example, for H₂S, tubes are available from 0.5 ppm to 40 percent. The same is true for many different gases. There is no other single technology that allows for the detection of such a wide variety of gases and vapors."

Uniphos distributes gas detection tubes for over 300 gases and vapors, and for the past few months, Yaschuk has been meeting with new clients in an assortment of industries to determine how Uniphos can help bring value to their operations through safety-focused gas detection equipment.

"Gas tube detection technology offers the user a measurement tool that instills confidence in determining whether there are known and unknown target gases present," Yaschuk explained. "This is further enhanced by the fact that there is no need for calibration since all of the tubes are pre-calibrated for the target gas and range."

Yaschuk said the underlying philosophy is that when the tools are simple to use, the training is easier, and operations run smoothly with fewer incidents. This applies to both the detection tubes and hand pumps.

"At the end of the day, the most important thing is ensuring that everyone gets home to their families safely," said Yaschuk. "The tools and technology that Uniphos offers is just one small piece of that elaborate overall safety network, but we're proud to play a part in helping achieve that goal."

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