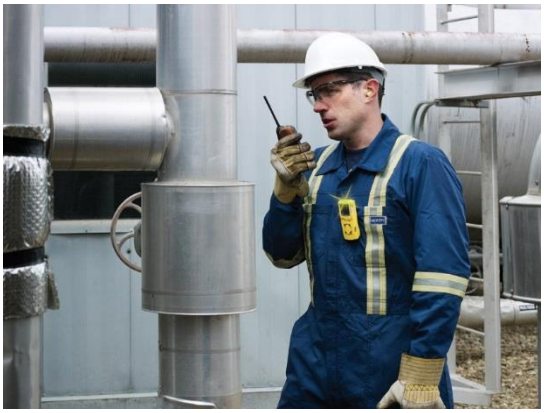

GAS DETECTION MADE SIMPLE

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Gas detection is not as hard to understand as you might think. In this article we will address some common misconceptions about gas detection. let's begin with this question… Have you ever taken the time to read the owner's manual?

Included in the owner's manual you will find the basic operation of the unit and how to make sure your unit is working correctly according to the manufacturer. Always start there to familiarize yourself with your life saving equipment. In addition to this advice, let me tell you about a few of the most important concerns that I am asked daily from those using gas detection.

The Importance of Bump Testing

Bump testing is one of those topics that crops up again and again, but still not everyone gets the point. A gas detector may not respond properly to gas for many reasons. Bump testing is a quick and easy way to ensure yours does. To follow is just one example of what can happen if you don't bump test your equipment.

A crew at a local oil refinery arrive in the morning to carry out their daily tasks. They wear all the PPE required for safe site entry. Their job for that day is to do some heavy cleaning around the site using a jet washer. At the end of the shift, the crew returns to the changing room to clean up. They sanitized their detector using common cleaning agents containing alcohols and silicones. The next day the crew arrives on site and collects the equipment before being briefed on work for the day. Later, the workers are in a low-lying area where someone smells something like rotten eggs, but the smell quickly passes. The gas monitor did not react and they continue working. Not long afterwards, one of them suddenly collapses after being overcome by high levels of hydrogen sulphide (H2S).

What lessons can we learn?
In this example, the crew has impaired their detector by using the wrong cleaning products, an easy mistake to make if you don't know, but one that would have been highlighted by a bump test. Sensors can become poisoned or inhibited with these cleaning agents. Alcohol can damage

electro-chemical sensors and silicone-based products inactivate catalytic bead sensors intended for measuring hydrocarbons such as methane, pentane and propane.

In both cases, the circuitry would still be complete, and so the unit would give a normal output. Without any additional tests, the crew would think it was working normally. However, the unit would not go into alarm if it encountered high gas levels.

What should the crew have done differently?
Ideally, the crew would have avoided this particular issue by checking what products were suitable for cleaning the detector – possibly warm water in this case. The gas detector's manual would be a good place to start. The manufacturer would also provide additional guidance on how best to clean the unit, if required. Regardless, upon arriving on site they should have carried out a bump test. This would not only highlight poisoned or inhibited sensors, but also any blocked filters or faulty sensors. It would also check that the audible and visual alarms are working. In other words, it would confirm that the unit goes into alarm when it needed to.

The crew would have then replaced the non-compliant unit with a functioning one, and so they would have avoided the H2S gas release that caused an injury. Fortunately for the crew, a co-worker saw him fall and raised the alarm. The employee wasn't seriously injured but had to take two weeks off work to recover.

Your Sensor is More Sensitive Than You Think

We all know that pellistor sensors are one of the primary technologies for detecting hydrocarbons. In most circumstances, they're a reliable, cost-effective means of monitoring flammable levels of combustible gases. As with any technology, there are some circumstances in which pellistors shouldn't be relied on, and other sensors, like infrared (IR) technology, should be considered.

Problems with Pellistors
Pellistors are generally extremely reliable at detecting flammable gases. However, every type of technology has its limits, and there are a few occasions where pellistors shouldn't be assumed to be most suitable. Perhaps the biggest drawback of pellistors is that they're susceptible to poisoning (irreversible loss of sensitivity) or inhibition (reversible loss of sensitivity) by many chemicals found in related industries.

What Happens When a Pellistor is Poisoned?
Basically, a poisoned pellistor produces no output when exposed to flammable gas. This means a detector would not go into alarm, giving the impression that the environment was safe. Compounds containing silicon, lead, sulphur, and phosphates at just a few parts per million (ppm) can impair pellistor performance. So whether it's something in your general working environment, or something as innocuous as cleaning equipment or hand cream, you could be compromising your sensor's effectiveness without even realizing it.

What's So Bad About Silicons?
Silicons have their virtues, but they may be more prevalent than you think; including sealants, adhesives, lubricants, and thermal and electrical insulation. They can poison pellistor sensors at extremely low levels. What can I do to avoid poisoning my sensor? Be aware, in essence –bump-test your equipment regularly, and make sure your detectors are suited to the environment you're working in.

Click here to learn more abut the BW Technologies line of easy-to-operate line of gas detectors.

I Could Go On and On…

I could add so much more to this article, but these 2 topics hit home to everyone who uses or will use a gas detector (or Life Saving Device) at one time or another. I urge you to sit down with your employees and do some training and make them aware that if they enjoy going home to their loved ones, take a few minutes to become familiar with their detector and testing the equipment. This will make sure they leave the work place safe every day.

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