Understanding Gases

Toluene

Toluene becomes a gas when exposed to air at room temperature. Originally it comes in the form of a clear, colourless liquid.

It characteristically evaporates easily, and tends to be mixed with other substances, such as solvents and chemicals, as a part of paint, metal cleaners, adhesives, gasoline, fuels, varnishes, shellac, nail polish, glues and adhesives, rust preventives and printing inks.

It is recognisable by its pungent, overly sweet smell.

It is used within a variety of sectors. It is a naturally occurring substance, found within crude oil, as well as in the tolu tree, however it is normally traced in the environment as a result of human activities.

What are the dangers of Toluene?

Toluene poses many dangers, both environmentally, and to human health and wellbeing.

Those working in the presence of toluene can become exposed to toluene through a range of consumption methods, including inhalation, skin contact, eye contact, or swallowing.

This is dangerous, as health issues can occur both immediately, or over a longer period of time. If there is a lack of fresh air within a working space individuals can suffer toluene poisoning from irritated eyes, nose, and throat, dry or cracked skin, headaches, dizziness, as well as feelings of confusion and anxiety.

Toluene has EH40 exposure limits of 50ppm for 8 hours and 100ppm for 15 minutes.

The longer the exposure, the worse the symptoms. Over a longer time period individuals will experience fatigue, delayed reactions, difficulty sleeping, numbness in the extremities, reproductive issues, and miscarriage. When swallowed, toluene causes liver and kidney damage.

Environmentally, toluene is also extremely hazardous due to its flammability. Toluene vapours are easily ignited by a range of sources, such as flames, sparks or other ignition starting points.

How do you detect Toluene?

As mentioned above, toluene can be traced through its pungent smell, when levels are higher than they should be. However, relying on a human's sense of smell when lives are at risk is not an ideal approach.

Therefore, it is advised to implement a robust way of quantitative monitoring within the relevant environment. Only a toluene gas detector can reliably measure concentrations of this gas, and so health and safety managers, within operations at risk of toluene leaks or explosions, should take the time to implement such a system for the safety of the environment and individuals within it.

What should you do if you are exposed?

If exposed to toluene there are a number of steps to take to ensure the proper treatment is received when required. If toluene comes into contact with the skin, all contaminated clothing should be removed straight away and washed thoroughly with soap and water.

If toluene gets into an individual's eyes, they should be flushed with large amounts of water for a quarter of an hour. When inhaled, individuals should relocate quickly to a space with fresh air. If swallowed, individuals again should exit the area and get medical help right away. In the case of all these aforementioned types of exposure, medical attention should be sought immediately.

Becomes a gas when exposed to air at room temperature.

Consumption methods include inhalation, skin contact, eye contact, or swallowing.

All contaminated clothing should be removed straight away and washed thoroughly with soap and water.