

WHO report on diesel fumes puts sharp focus on need for effective monitoring

The World Health Organisation this month reclassified the dangers of diesel exhaust fumes, upgrading the risk from probably carcinogenic to a definite cause of cancer. The WHO report is based on the findings of research on workers in high risk areas, and puts a sharp focus on the need for effective monitoring in industries such as mining, rail, transportation, construction, power generation and others where there is a reliance on diesel as a source of fuel.

To meet this need, Shawcity offers a range of Ion Science instruments, which offer the industry's fastest, most accurate and most reliable detection of hazardous compounds, helping to highlight any risk that might exist in the workplace as part of an effective industrial hygiene programme.

The research into diesel exhaust fumes was conducted by the International Agency for Research on Cancer (IARC), a part of the World Health Organisation. It concluded that diesel exhausts were definitely a cause of lung cancer, and may also cause tumours in the bladder. IARC said the evidence was overwhelming and that the Working Group's conclusion was unanimous. It is reckoned that people working in at-risk industries have about a 40% increased risk of developing lung cancer.

The reclassification moves diesel exhaust fumes up from group 2A of IARC's five-step cancer risk gradation to group 1, the highest level possible, putting it in the same group as compounds such as benzene, ethylene oxide, vinyl chloride and over 100 other chemicals and agents known to cause cancer.

Diesel exhaust fumes have long been thought to be a cancer risk. In addition to lung cancer, long term exposure is thought to pose dangers including asthma and other lung diseases, heart disease and immune system disorders. Even short term exposure may lead to respiratory distress, asthma symptoms and increased sensitivity to other allergens such as dust or pollen, and eye or skin irritation.

Diesel exhaust contains both unburned diesel fuel and particulates or soot from burning the diesel fuel. For workers in high risk industries where there is known to be long term exposure, the need to monitor diesel exhaust effectively has never been more acute. Right now there are no defined legal concentration limits for exposure to diesel exhaust fumes, and there will be many industries where industrial hygiene plans have not yet been defined to take diesel exhaust dangers into account. But the good news is that there are proven, reliable and cost-effective instruments available that can help ensure effective industrial hygiene, so minimising the risk in environments where diesel exhaust could be a health hazard.

Any location where diesel exhaust fumes are thought likely or possible to be a problem can be regularly monitored with either hand-held or fixed-in-place detectors that can send the information directly to a control system. A survey might identify possible sources of high emissions that should be monitored with hand-held instruments. Further, the use of hand-held instruments should be used regularly to sweep for 'hot spots' or high concentrations.

Finally, there are wearable detectors that monitor the breathing space of the individual employee, measuring the levels of harmful compounds that the individual is exposed to as he or she moves around the workplace.

Oxfordshire based supplier, Shawcity, offers a range of hand-held and wearable monitoring instruments based on photo Ionisation detection (PID) technology which was developed by Ion Science. PID has been at the front line of efforts to detect hazardous compounds since the 1970s, and Ion Science has been a leader in its development since its foundation in 1989. Today the company offers a wide range of gas detection products and is the largest PID manufacturer on the market. Shawcity are the UK exclusive supplier for the ion science range of monitoring instruments.

The Ion Science PID sensor technology has been independently verified as best performing for speed, accuracy and humidity resistant operation. Its patented Fence Electrode Technology and Anti-contamination mean instruments are un-affected by humid and challenging environments providing accurate, reliable results and extended run time in the field. Ion Science instruments are capable of detecting hazardous gas concentrations from just a few parts per billion (ppb) right up to 20,000 parts per million (ppm) – a range unmatched by other PID gas detectors on the market.

The Ion Science range of products for detecting diesel exhaust fumes include the recently launched Cub personal PID monitor, along with hand-held PID instruments PhoCheck Tiger and Tiger Select and the fixed TVOC detector. All are characterised by their ease of use, accuracy and reliability.

Industrial (or occupational) hygiene places the emphasis on prevention of ill health from work through recognising, evaluating and controlling the risks. Now that diesel exhaust fumes have finally been defined as posing a genuine risk to health as a definite cause of lung cancer, at-risk industries must surely put a renewed focus on industrial hygiene, and develop effective plans for minimising exposure to this hazard.