DETECTING BENZENE
IN REFINERY APPLICATIONS

ionscience.com

Unrivalled Gas Detection.

Cub[TAC] personal PID monitor worn to provide continuous detection.

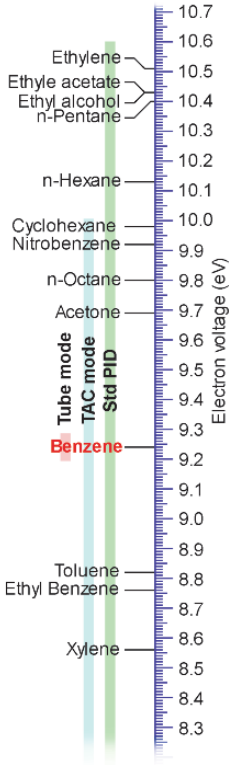
The problem

Benzene is a critical industrial chemical which is commonly found throughout the petrochemical industry. However, it is extremely hazardous and a recognised human carcinogen. To protect individuals, legislation has been put in place across the globe to ensure exposure is kept to a minimum, typically a time weighted average (TWA) of 1 ppm.*

As this exposure limit is so low, its concentration alone usually defines the toxicity of vapours in the petrochemical industry as a whole. Therefore, it is essential that sub ppm benzene concentrations can be measured rapidly in the presence of the hundreds of aromatic and aliphatic compounds encountered throughout the industry.

The solution: Cub[TAC] + Tiger Select

Traditionally, it has not been possible to collect accurate real-time measurements due to a lack of available technology. However, the combination of the Ion Science Cub[TAC] personal PID monitor plus the Tiger Select handheld screening device now make this a reality....



How Cub[TAC] + Tiger Select detect benzene

Photoionisation detection (PID) allows the detection of benzene at ppb levels however, it is also sensitive to all the other aromatic and aliphatic compounds present.

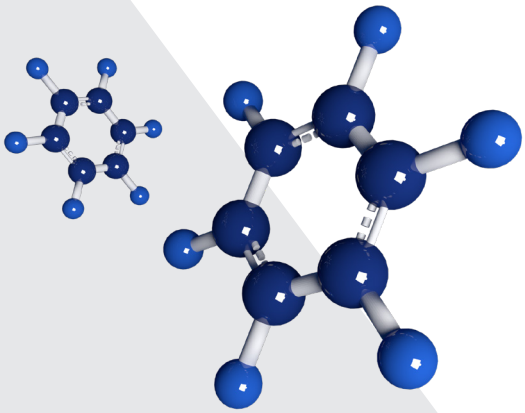
Monitoring specifically for benzene is a 3 stage process:

1) A 10.0 eV lamp is used in the Cub[TAC] and Tiger Select to screen out the aliphatics, leaving the Total Aromatic Compounds = TAC mode.

2) If concentration exceeds 1 ppm (or the predetermined limit value) with TAC mode, the Tiger Select is fitted with a filter tube that only allows benzene to pass through. The user can then assess the actual levels of benzene = Tube mode.

3) If benzene concentration exceeds 1 ppm (or the predetermined limit value) in Tube mode, the user can then make an assessment of the short term exposure limit = STEL mode.

Cub^{TAC} + Tiger Select; the ultimate tools for monitoring benzene



The revolutionary Tiger Select and Cub^{TAC} utilise the Ion Science patented Fence Electrode Technology and Anti-contamination design that deliver incomparable sensing performance over the range of environmental conditions experienced on site.

Cub^{TAC}

Cub^{TAC} is the smallest, lightest personal PID monitor available with market leading parts per-billion (ppb) sensitivity.

Robust yet small, comfortable and unobtrusive to wear Cub^{TAC} provides fast, accurate detection of total aromatic compounds including benzene, protecting workers within their environment. A Cub variant is also available for detecting a wide range of volatile organic compounds (VOCs).

Tiger Select

The Tiger Select hand-held gas detector with two mode operation rapidly detects benzene and Total Aromatic Compounds providing accurate, reliable data you can count on.

Its unique ability to rapidly switch between TAC mode and Tube mode means Tiger Select offers the most versatile portable benzene specific product on the market.

Ion Science also manufacture Titan; a fixed benzene detector that continuously detects benzene down to 0.1 ppm.

If Cub^{TAC} alarms, TAC exceeds 1 ppm** indicating benzene concentrations may be above safe levels.

To confirm the Cub^{TAC} reading Tiger Select is used in TAC mode.

If 1 ppm is exceeded switch to Tube mode.

If this is below 1 ppm, all is well, if above enter STEL mode.

** user can define alarm levels

Distributed by:

ION Science Ltd
The Hive, Butts lane, Fowlmere,
Cambridgeshire,
SG8 7SL, UK

T +44 (0)1763 208503
E info@ionscience.com

EURO INDEX
Leuvensesteenweg 607
1930 Zaventem
T: 02 - 757 92 44
F: 02 - 757 92 64
info@euro-index.be
www.euro-index.be