

Breakthrough Detector

Activated Carbon Bed Air Stream Sampler

For Detecting Organic Breakthrough in Vapor Phase Applications

TIGG's activated carbon bed Breakthrough Detector is designed for use with vapor-phase NIXTOX® up-flow or radial flow modular activated carbon adsorbers.

The vapor phase carbon bed Breakthrough Detector allows for the air stream to be sampled at a point two-thirds of the way through the adsorbent bed.

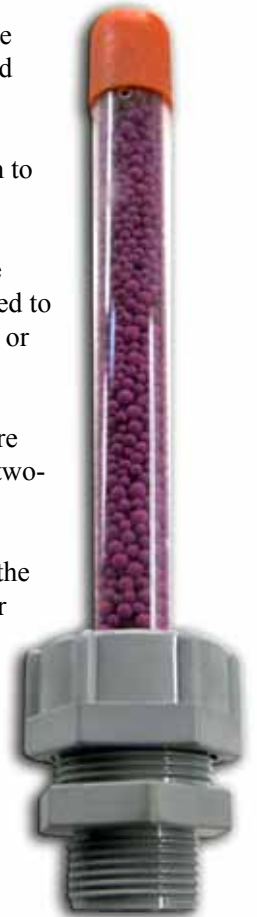
It provides a visual signal that the activated carbon bed condition shows free organic or other oxidizable material at that level. This signal may then be used to increase the frequency of exhaust air analysis, replacement of the adsorbent, or the NIXTOX unit.

Breakthrough Detectors for radial flow units function in a similar way, but are externally mounted with a separate sample probe being used to monitor the two-thirds bed depth penetration.

The functional indicator is an oxidizing granular material suspended within the transparent tube. When an oxidizable substance reaches the indicator, a color change from violet to brown/black is clearly visible. A low humidity level is required in the air or gas being monitored for the oxidation reaction to occur. Most organics and some inorganics will react with the oxidant, irreversibly, at varied rates. Since the indicating material will also react in the presence of ultraviolet radiation, an opaque cover shield is provided. The shield is easily lifted to allow for inspection of the detector.

The activated carbon bed Breakthrough Detector offers a number of operational advantages. During operation, the air stream is constantly being sampled. The indicator is on passive "stand-by" until being contacted by some contaminant in the stream. Other advantages are the early warning breakthrough, plus the minimization or elimination of chemical analyses by trained personnel. The Breakthrough Detector is an economical and effective monitoring system.

The Breakthrough Detector is not selective. If a stream contains two or more oxidizable organics with different adsorption potentials, the indicator will react to the organic with the poorest adsorption characteristics. If there is a mixture of organics, and only the better-adsorbed materials are of interest, the detector will provide a premature or false positive signal of breakthrough.



Call a TIGG Representative Today at 800-925-0011



www.tigg.com/breakthrough-detectors.html

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