

NIXTOX[®] BREAKTHROUGH DETECTOR

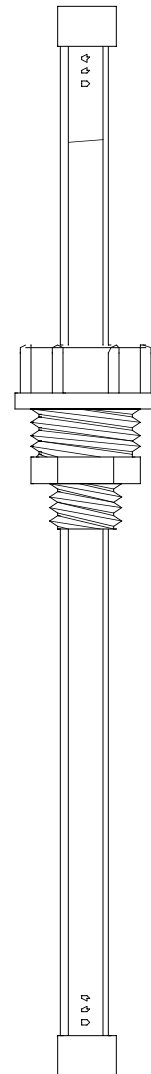
FOR DETECTING INITIAL ORGANIC BREAKTHROUGH

TIGG Corporation's Breakthrough Indicator is designed for use with NIXTOX upflow or radial flow modular adsorbers. The indicator is constructed of a clear acrylic tube, capped and diffusion-vented at both ends. The indicator allows for the air stream to be sampled at a point two-thirds of the way through the adsorbent bed. It provides a signal that the 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. Indicators 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 indicator.

The Breakthrough Indicator offers a number of operational advantages. During operation, the air stream is constantly being sampled. The indicator is on passive "stand-by" until being mobilized 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 Indicator is an economical and effective monitoring system.

The indicator 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 were of interest, the indicator will be providing a premature or false positive signal of breakthrough.



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