



Filters Breakthrough Indicators (BTI, BTI 2, BTI 3, BTI AFT, BTI MV)



why is it important to use filter change indicator?

first let us look at the current filters change practices

1. Do nothing

Continue using filter until it is exhausted, and toxic gases and vapors emit to the surrounding environment. User replaces filter when:

- a. Concentrations of emitted toxic gases and vapors exceed the threshold of the smell. Threshold of smell is always higher than OSHA permissible exposure limits (PEL).
- b. Safety officer or industrial hygienist conducts routine air sampling and finds high levels of toxins in the work environment and identifies the exhausted filter as the source of emission.
- c. OSHA inspector conducts air sampling and finds high levels of toxins in the work environment and identifies the exhausted filter as the source of emission.

This practice defeats the purpose of using filters as safety devices to protect the user and the environment from emitted toxic gases and vapors

2. Change out schedule

Follow filter change schedule depending on the size and capacity of the filter. Two possible scenarios can happen when users follow the change out schedule practice:

- a. A filter is continuously used. This heavily used filter would be exhausted in a relatively short period than anticipated in the change out schedule. The user ends with a situation similar to the do-nothing scenario mentioned above.
- b. A filter is rarely used. This barely used filter would take much longer time to get exhausted than what is recommended in the change out schedule. The scarcely used filter would be replaced prematurely.

Following this practice, either ends with a situation similar to the do-nothing scenario and getting exposed to toxic gases and vapors, or ends with replacing a good filter prematurely.

3. Filter with real-time breakthrough indicator

Continue using filter until breakthrough indicator changes color, alerting user that filter is exhausted and needs to be replaced. Benefits:

- a. User is protected from exposure to toxic gases and vapors.
- b. The workplace and the environment are protected from toxic emissions.
- c. Get the most value from the filter and replace it only when saturated and exhaust

chemteq offers range of filter change indicators with different sizes and configurations to suite your applications

Breakthrough indicators are available for wide range of chemical toxins.

1. Breakthrough Indicator (BTI)

Length 3.5", diameter 1", threading 0.75" male NPT



2. Breakthrough Indicator 2 (BTI 2)

Length 4.5", diameter 2", threading 1.5" male NPT



3. Breakthrough Indicator 3 (BTI 3)

Length 4.5", diameter 3", threading 2.5" male NPT



4. Breakthrough Indicator with Auxiliary Filter Trap

a. Breakthrough indicator (Part A):

Length 3.5", diameter 1", threading 0.75" male, male NPT

b. Auxiliary Filter Trap (Part B):

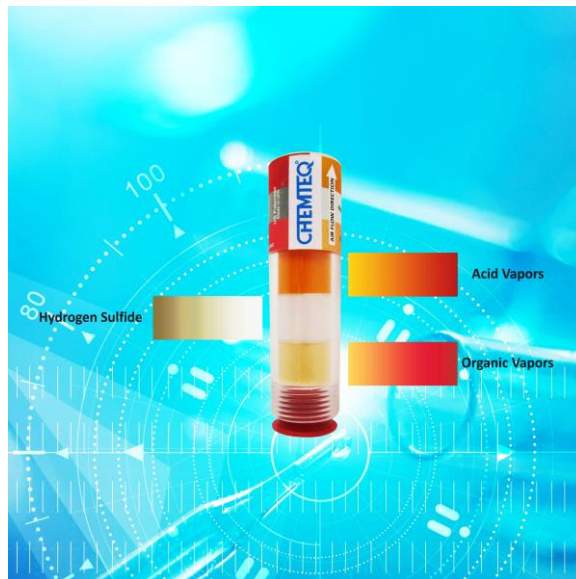
Length 1.6", diameter 3.2", threading 0.75" female NPT



5. Breakthrough Indicator with Auxiliary Filter Trap

Length 3.5", diameter 1", threading 0.75" male, male NPT

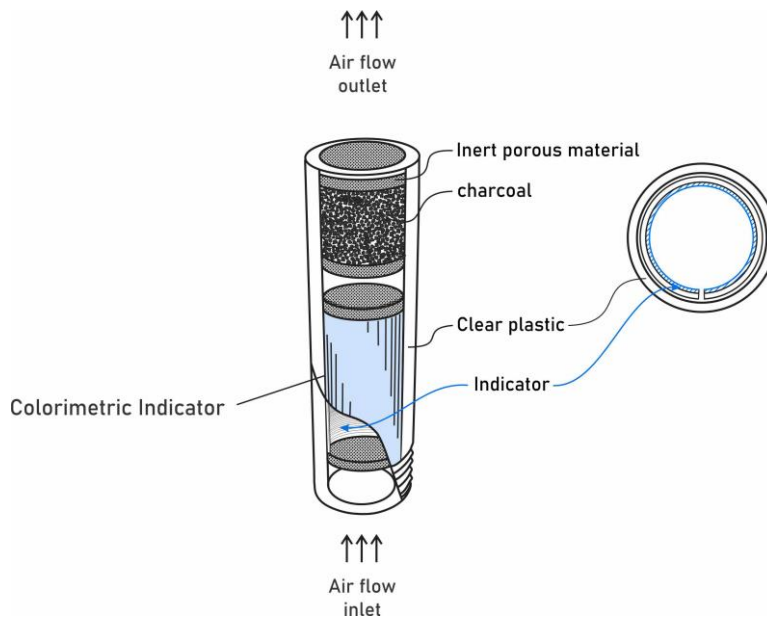
Available in different combinations of gases and vapors



Description of the Breakthrough Indicators (Patented)

The breakthrough indicator is essentially a hollow transparent tube having colorimetric indicator strip inside and a charcoal trap at the top of the tube (Figure 1).

Figure 1



How Does the Breakthrough Indicator Works?

When filter becomes exhausted, toxic gases and vapors breakthrough it. The contaminated air then enters the breakthrough indicator and chemically reacts with the indicating sensor producing vivid color change, alerting the user to change the filter.

While the indicator is changing color, the sorption media on top of the breakthrough indicator traps traces of contaminants from escaping to the outside environment. The sorption media trap also protects the colorimetric indicator from changing color due to exposure to contaminants in the surrounding environment. This unique feature ensures that breakthrough indicator changes color only when filter is exhausted irrespective of the outside environment.

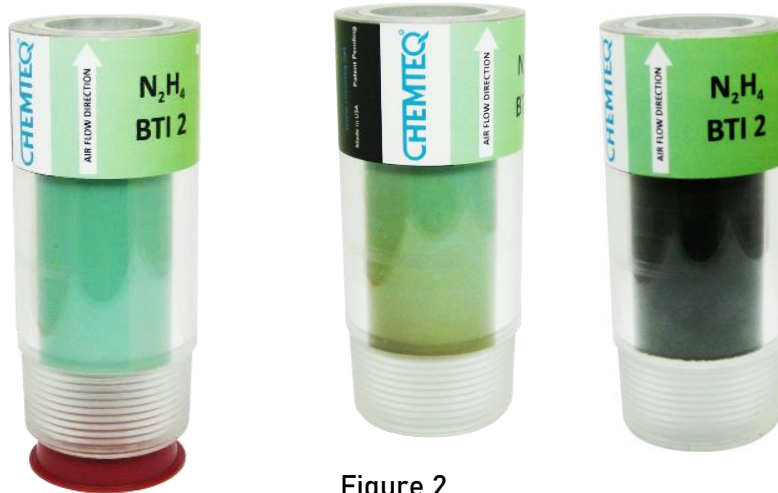


Figure 2

How To Install the Breakthrough Indicator into Filter?

- Remove bottom protective red plug from the bottom of the breakthrough indicator.
- Screw in the male NPT threading at the bottom of the indicator into same female threading at the outlet of your filter.
- Replace filter when the breakthrough indicator changes Color.

PLEASE CALL OR EMAIL US IF YOU HAVE ANY QUESTIONS REGARDING THE BREEAKTHROUGH INDICATORS

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