



Filter Breakthrough Indicator  
Inline  
Organic Vapors  
(OV BTI Inline)  
(PN: 614)

*Specifications*



600 West 24<sup>th</sup> Street, Suite B  
Norfolk, Virginia 23517, USA

Tel: 757-622-2223

Toll-free: 855-CHEMTEQ (855-243-6837)

sales@chemteq.net

### 1. Application

The Breakthrough Indicator (PN: 614) is qualitative (yes/no) colorimetric indicator for the exhaustion and end-of-service life of filters. The indicator is designed to provide real-time indication of the breakthrough of organic solvents, including:

Acetone, Acetonitrile, Acids (i.e. acetic acid, hydrochloric acid, trifluoroacetic acid trichloroacetic acid), Acrylonitrile, Aliphatic hydrocarbons (i.e. hexane), Aromatic hydrocarbons (i.e. benzene, toluene and xylenes), Chlorinated hydrocarbons (i.e. carbon tetrachloride, chloroform and dichloromethane (methylene chloride)), Ethanol, Ethyl acetate, Ethyl acrylate, Ethyl ether, Gasoline, HFIP (hexafluoroisopropanol), Methanol, Methyl acrylate, Naphtha, Phenol, Sulfolane, THF (Tetrahydrofuran).

### 2. Specifications

#### 2.1. Overall Specification

- |                               |  |
|-------------------------------|--|
| a. Weight:                    | 28g (1.0oz)  |
| b. Dimensions:                | 89.9mm (3.5in), diameter 24.5mm (1.0in)  |
| c. Inlet & outlet dimensions: | ½" MNPT  |
| d. Operating temperature:     | 4°C to 32°C (39°F to 89.6°F)   |
| e. Minimum detectable limit:  | See table below  |
| f. Color change:              | Aliphatic hydrocarbons; orange to light red<br>Other organics; orange to dark red<br>Phenol and acidic vapors; orange to red |
| g. Storage temperature:       | 4°C to 25°C, (39°F to 77°F)  |
| h. Shelf life:                | 1 year at 4°C to 25°C, (39°F to 77°F)  |
| i. Service life:              | 1 year   |

#### 2.2. Performance Specification

To determine the sensitivity of the breakthrough indicator, a solution/mixture of 10% solvent in water was bubbled with ambient air at a flow rate of 5cc/min. The airflow was passed through the breakthrough indicator until a color change was observed. The elapsed time to observe the first noticeable and the final colors for the respective organic solvent is depicted in the table below.

#### 2.3. Limitations

Basic vapors in high concentrations impair the performance of the organic vapors breakthrough indicator. The indicator does not respond to gaseous aliphatic hydrocarbons (i.e. methane, ethane, propane and butane), aldehydes (i.e. formaldehyde) or basic organic vapors (i.e. pyridine and aliphatic amines). No other interferences or limitations are known.

### 3. Instructions

- Ensure that packaging pouch is intact.
- Open packaging pouch by tearing off the top part from one of side notches.
- Remove the BTI Inline from the packaging pouch.
- Remove the protective red plugs to activate the breakthrough indicator.



**Caution: Only hand tighten indicator into tubing**

- Formation of orange or red color indicates the presence of organic vapors.

Solvent (10% in Water)	Breakthrough Indication Time	
	First Noticeable Color (min)	Final Color (min)
Acetone	10	10
Acetonitrile	10	30
Benzene	2	5
Carbon tetrachloride	10	30
Chloroform	12	30
Dichloromethane (methylene chloride)	5	15
Ethanol	10	30
Ethyl Acetate	2	5
Gasoline	14	60
Hexane	7	15
HFIP (Hexafluoroisopropanol)	1	4
Methanol	2	5
Methyl acrylate	4	36
Naphtha	10	30
Phenol	20	6 hours
Sulfolane	8	17
THF (tetrahydrofuran)	10	20
Toluene	2	8
Trifluoroacetic acid	4	30
Xylenes	14	60

**YOU CAN REUSE THE EXHAUSTED OV BTI INLINE BY REPLACING THE CONSUMED OV INDICATOR ASSEMBLY WITH A FRESH INDICATOR ASSEMBLY (PN: 614-1600, Refill Kit PN: 614-5000). PLEASE CONTACT US FOR DETAILS.**