

Organic Vapors  
Filter End-of-Service Life Indicator  
(ESLI)  
(PN: 2521-2000)



Filter is good



Replace filter



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*Specifications*



## 1. Application

The Organic Vapors ESLI (PN: 2521-2000) is qualitative (yes/no) colorimetric indicator for the end-of-service life of filters. The ESLI is designed to provide real-time indication of the end-of-service life of organic vapors filters, organic vapors, include:

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:                   | 5g (0.18oz)  |
| b. Dimensions:               | 21.6mm (0.85in), $\phi$ : 25.0mm (1.0in)   |
| c. Threading:                | 0.75"-20 UNEF-2A male  |
| 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 ESLI, a solution/mixture of 10% solvent in water was bubbled with ambient air at a flow rate of 5cc/min. The ESLI was exposed to the air flow until 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. Cross interferences and limitations

Basic vapors in high concentrations impair the performance of the ESLI. The ESLI 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 ESLI from the packaging pouch.
- Remove red plug to activate ESLI (Figure 1).



- Hold the ESLI from the edges, as shown in Figure 2, and insert it into the ESLI housing (Figure 2).
- Screw the ESLI into the ESLI housing as shown in Figure 3.
- Replace or refill filter when the ESLI changes color red.

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

