

Zebtron Gas Management



Question

Answer

What are the key benefits of Zebron Gas Management filters and traps?

- The high adsorption capacity of the Zebron Gas Management Filters removes contaminants from mobile phase gases, reducing potential column bleed, increasing the lifetime of your column, and protecting sensitive GC detectors from damage.
- The filters contain a color changing indicator which will tell you when it is time to change them (hydrocarbon filter does not contain a color changing indicator).
- The sleek design of the connecting unit makes it easy to customize. Once the connecting unit is installed, it takes only 20 seconds to attach the filter.
- Once the connecting unit is installed, you will be able to change filters as often as needed without interrupting the gas line.

How do the Zebron Gas Management filters and traps extend a GC column's lifetime?

Once gas lines are connected to Zebron Gas management filters, incoming gas will be filtered to ensure that your GC system is receiving ultra-pure gas. Moisture in the carrier gas can condense on the GC column head, resulting in adsorbed analyte peaks and/or a dewetted stationary phase. In addition, if oxygen is present in carrier gas at the 2 ppm level or higher, and if the column is heated above 70 °C, it can cleave the bonded stationary phase and cause excessive column bleeding. Zebron Gas Management filters and traps will provide ultra-pure gas and thus would extend a GC column's lifetime.

How long does it take to connect a Zebron Gas Management filter?

Once the customizable connecting unit is installed to the gas lines, it takes only 20 seconds to connect the Zebron Gas Management filters.

When would I use a Zebron Gas Management inline gas trap?

Zebron Gas Management inline traps will filter gas as it enters your laboratory, extending the lifetime of your cartridge style filters AND your GC column and detector. The Zebron Gas Management inline traps contain an oversized capacity, containing 750 cc of filtering media. Use of inline traps in conjunction with cartridge style filters will provide additional protection against contaminants.

Which gas filter should I choose for GC-MS?

For GC-MS, the carrier gas should be free of oxygen, moisture, and hydrocarbons. So, a Zebron Gas Management universal gas filter is recommended. It is also dependent on the initial gas purity. If the carrier gas is not pure to start with, then we recommend using Zebron Gas Management inline traps in conjunction with the cartridge style universal filter.

What is the purpose of using a hydrocarbon filter?

Hydrocarbon filters remove organic compounds from gas lines. Organic compounds within gas lines can cause baseline disturbance and will provide high baseline noise in GC-FID detectors. Filtering out these compounds can result in fast detector stabilization, improved detection and performance, and better quantitation of analytes.

My FID flame shuts off automatically. What could be the reason?

A flame ionization detector's flame shuts off primarily because of water content in either the carrier gas or detector gases. Filtering out moisture using a Zebron Gas Management moisture filter will ensure a stable flame in a FID.

How frequently should I change the filters?

The Zebron Gas Management filters should be changed once every six months or when the indicator shows a color change, whichever occurs first. If the gas cylinder connected to the Zebron Gas Management filter is relatively impure, the filter indicator can change color earlier than six months.

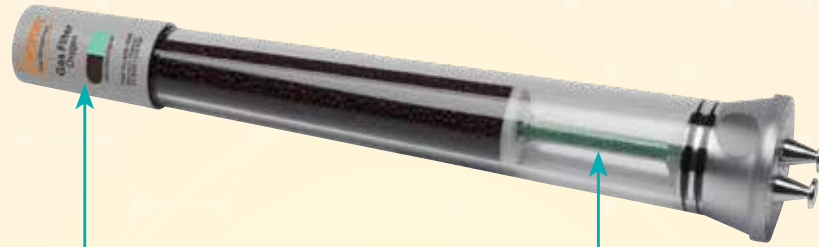
Question

What is a color changing indicator? Do all Zebtron Gas Management filters contain an indicator?

Answer

Gas filter indicators are small chambers within a gas filter that contain sorbent that changes colors as the filter removes contaminants. Zebtron Gas Management filters have a label that serves as a color reference, which shows the original color of the filter and the color that indicates when the filters are saturated. For example, the Zebtron Gas Management oxygen filter is shown below. The original color of the indicator is green, when the filter is saturated with oxygen it would turn to gray.

Oxygen



Color Change

Indicating adsorbent

Please note that all Zebtron Gas Management filters, with the exception of the hydrocarbon filter, contain a color indicator.

What are the color changes that indicate when a Zebtron Gas Management filter is saturated?

The oxygen, moisture, and universal filters indicate saturation with the following color changes:



Moisture Filter

- The original color of the oxygen filter is green and it changes to gray when saturated



Oxygen Filter

- The original color of the moisture filter is green and it changes to pale brown when saturated



Universal Filter

- The universal filter has two indicators, one for oxygen and another for moisture. The original color of the oxygen filter is green and it changes to gray when saturated, and the original color of the moisture filter is green and it changes to pale brown when saturated.

- Hydrocarbon filters do not contain color changing indicators.

My Zebtron Gas filter changes color from bottom to top. Is that normal?

The indicators in Zebtron Gas Management filters change color from top to bottom. If it is starting to change color from bottom to top, then there is reverse flow of gas with oxygen or moisture. This could also happen when the installation is done aggressively.

Due to reverse flow, there is a color change from bottom to top in my Gas Management trap. Can I still use the cartridge?

The cartridge in Zebtron Gas Management filters are high capacity. If the indicator starts to change color from bottom to top, then there is reverse flow of gas with oxygen or moisture that directly passed through the indicator before going to the actual cartridge. If the cartridge indicator has completely changed color, then it is time to discard the filter. If it had started to change color from bottom to top because of aggressive installation, then the cartridge is good to use until the indicator is completely color changed.

Is there a transition color for the filters when they color change?

The indicators in the Zebtron Gas Management changes color from top to bottom abruptly. They do not show transition colors.

Question

Answer

Why should I purge the inlet side of the trap before installing it for the first time?

During the first installation, the connecting unit is mounted on the benchtop, to the wall, or to the back of GC system. The gas line is connected to the inlet side of the connecting unit. The outlet from the connecting unit is coupled to the GC system. While making these connections, there are chances for atmospheric oxygen and moisture to enter the line. Hence, before installing the cartridge style filter, the inlet line should be purged with the gas in the cylinder for at least 2 minutes to remove trace oxygen and moisture.

What is the resulting purity of gas that is filtered through a Zebron Gas Management filter?

- Oxygen filters provides an outlet concentration of <50 ppb of oxygen
- Moisture filters provide an outlet concentration of <0.1 ppm of water
- Hydrocarbon filters provide an outlet concentration of <0.1 ppm of hydrocarbons
- Universal filters provide an outlet concentration of <50 ppb of oxygen, <0.1 ppm moisture, and <0.1 ppm of hydrocarbons

I am buying ultra-pure gas tanks, should I still use a gas filter?

Despite buying ultra-pure gas tanks, oxygen and moisture can still enter the carrier gas line and detector gas lines during cylinder change. During a gas cylinder change, oxygen and moisture from the atmosphere can enter the gas lines. Hence, as an additional layer of protection, we highly recommend installing Zebron Gas Management filters to protect your GC system.

How do Zebron Gas Management filters and inline traps help GC-MS users?

GC-MS systems require nearly half a day to vent and restart. Whenever a column is changed, atmospheric nitrogen, moisture, and oxygen enter the MSD. After reinstallation of the column, the vacuum pumps are started. During this process, nitrogen and moisture contents are continuously monitored to ensure there are no leaks in the system. In cases where carrier gas is impure, high ion ratio for oxygen and moisture will be noticed. Removing air and moisture with Zebron Gas Management filters and inline traps will reduce the amount of downtime spent restarting your MS system

How do Zebron Gas Management filters help MS/MS analysis?

- Oxygen filter: maximum capacity of 150 mL Oxygen
- Moisture filter: maximum capacity of 7.2 g Water
- Hydrocarbon filter: maximum capacity of ~7 g Organic Compounds
- Universal filter: maximum capacity of 100 mL Oxygen, 1 g Water, and Organic Compound capacity depends on the impurity level in the source

What is the purpose of using an oxygen filter?

- Oxygen filters remove oxygen as well as trace levels of sulfur and chlorinated compounds from carrier gas. It prevents oxidation of
- the GC column's stationary phase
 - consumables such as septum, glass wool, and liners
 - ECD and MS detectors

Question

I am using a gas generator to generate carrier gas and detector gases. Should I use Zebron Gas Management filters?

Answer

- If you are preparing your sample by solid phase extraction (SPE), and are reconstituting your analyte, it is important to make sure you do not oxidize the analyte during GC analysis. Connecting a Zebron Gas Management filter to your utility nitrogen/air will remove oxygen from it. Removal of oxygen from the drying gas will prevent analyte oxidation.
- Positive pressure manifolds, such as the Presston™ 100, require an external gas cylinder or utility nitrogen to create pressure during the sample preparation process. Connecting Zebron Gas Management filters to your utility nitrogen/air will remove oxygen from it. Removal of oxygen will prevent analyte oxidation during processing using a positive pressure manifold.

Increase Your GC Column Lifetime With Zebron Gas Management

Easy to install. Easy to replace.

Oxygen



Moisture



Hydrocarbon



Universal



Replace. Reorder. Relax.

Explore the new product and get the support you need
www.phenomenex.com/GasManagement