



## Changing the gas purifiers

### How to know when to change gas purifiers

#### How do I know it's time to change my gas purifiers?

In Gas Chromatography, it is highly recommended to use some kind of purifying trap in the gas lines to prevent impurities from entering and contaminating the GC system or damaging the column. Some traps are single-purpose for the removal of oxygen, moisture, or hydrocarbons. Combination traps remove all those contaminants. While chromatographers realize the need for such traps, one common question is: how often do I need to change the trap?

The best way to know when it is time to change a trap is to use an indicating trap. Indicating traps are made from clear tubes, and show a distinct color change in response to a specific contaminant. This color change tells the analyst it is time to change traps. Indicating traps are placed after a high capacity trap. If no indicating traps are used, it is best to follow the manufacturer's recommendation for replacement frequency. Typically, the manufacturer will state how many gas cylinders can be purified with a given trap. If you choose, you also can estimate when it is time to replace the trap by doing a rough calculation. For example: you have a standard "K" size cylinder with He at 99.995% purity that contains 7,800 L of He. Assuming a worst case scenario in which the remaining 0.005% is all oxygen, you should have 39 mL, or about 56 mg of O<sub>2</sub> in the tank. Agilent's OT3 oxygen trap, for example, has a capacity of 600 mg O<sub>2</sub>. Therefore, you need to replace the OT3 trap every 10 cylinders. This is just a rough estimate, and it is prudent to change traps too early rather than too late.

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GC System



Indicating Trap



High Capacity Trap