



## Introduction

### Filters

Filters are used to remove particulate matter from the gas stream in which they are employed. The ideal placement of filters is just before the point-of-use of the gas, in order to trap any particles generated in the delivery line or from the source. They utilize various types of filtration media for a specific application to limit travel of particulates by size through them. The size (diameter) of the smallest particles removed is expressed as the performance rating of the filter, generally expressed as "microns."

Matheson Tri-Gas offers high purity "depth" filters that provide 100% filtration efficiency at a 0.2 micron level. Membrane and ceramic type filters have a 100% filtration efficiency rating at a .01 micron level.

The useful lifespan of filters varies by application. Particulate size and density in the supply line, coupled with active time (duty cycle) being used, are the primary factors that determine the useful life of the filter. In general, when the pressure drop across the filter (upstream to downstream) increases by approximately 50%, the filter is becoming clogged with particulates and should be replaced.

### Purifiers

Purifiers are used to remove specific chemical components from a gas stream. They function by either catalytic action or by adsorption. Several types of purifiers are expendable (when saturated, must be replaced) and some can be regenerated (they can be reactivated). Purifiers are generally named by the substance they are designed to remove. It is important to realize that purifiers are not filters, which function differently.

Matheson Tri-Gas offers a wide range of purifiers including oxygen removing, moisture removing and oil removing types.

To improve and support laboratory performance, Matheson Tri-Gas now offers PUR-Gas™, an innovative series of cartridge-type and in-line purifiers for point-of-use applications. These systems allow easy replacement of the exhausted cartridges within seconds without the use of any hand tools, thus minimizing operating downtime. The PUR-Gas™ purifiers are available to remove moisture, oxygen and hydrocarbons. In addition, a PUR-Gas™ System for Nitrogen is also available to enhance LC/MS instrument operation.



PUR-Gas™ Purifier Systems



Model 64-1000 Series Oxygen Removing Hydrogen Purifier



Model 465  
Moisture & Impurity Indicator



Model 6410 Series  
Oxygen Absorbing  
Purifiers



Model 450B  
High Pressure / Low  
Capacity Gas Purifier