



Introduction/Benefits

NANOCHEM® purifiers integrated into gas delivery systems can provide: process consistency, increased yields, longer equipment lifetimes, and improved overall equipment efficiency (OEE).

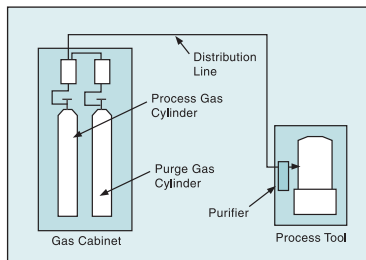
Moisture, oxygen, and other impurities decrease yields by forming haze and oxides in films, react with process gases to form particulates, and increase the corrosiveness of gases such as HCl and HBr. Impurities can result from poor gas quality, gas distribution leaks, virtual leaks and inadequate operation/purge procedures. Impurity concentrations can also vary from cylinder to cylinder, as well as with gas usage from the same cylinder.

NANOCHEM® purifiers have led the semiconductor industry in state-of-the-art gas purification technology since the early 1980's. NANOCHEM® purifiers have proven to remove impurities to the lowest levels in the industry, typically below the lower detection limits of the most sophisticated instrumentation. For many gases, PPT levels of H₂O, O₂, CO₂, and CO are achieved. Purifier end point detection is also available for many applications.

NANOCHEM® purifiers have become the industry standard for UHP welding, and the compound and silicon semiconductor industries. Dominant applications include: Si/SiGe epi, SiN CVD, GaN MOCVD and GaAs MOCVD.



PuriFilter® Gas Purifier



Point Of Use Purification

Ensure gas purity at the process tool by installing a purifier on the gas stick immediately before the MFC or the chamber.

A standard particle filter can be replaced with a NANOCHEM MiniSentry, PuriFilter® (model shown) or BLOC Purifier, to remove both particulates and molecular impurities.

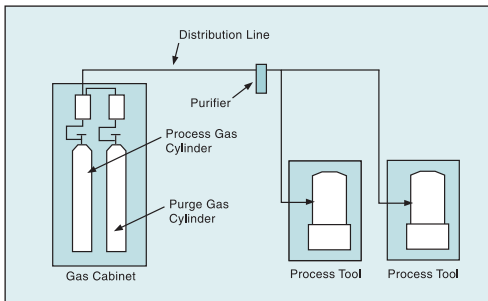
Models are available for flow rates up to 20 slpm (Model shown up to 3 slpm)



BLOC Purifier®



DOC™ Particle Filter



Proximate Purification

The BLOC Purifier® and DOC™ Particle Filter designs (shown) allow for the flexibility to install the particle filter 'only' first, and when needed, add the purifier at a later date. It is typically installed in the VMB, and can be more economical and the preferred model when size constraints don't allow a purifier at the tool.

Models are available for flow rates up to 20 slpm

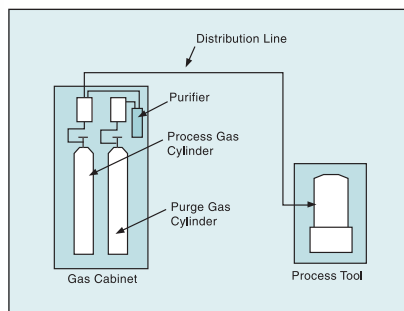
Source And Purge Gas Purification

This is typically installed in the gas cabinet for source and purge gas purification. Purification of moisture from corrosive gases has proven to reduce corrosion and increase component and piping lifetime. Purification of moisture, oxygen and other impurities from purge gas ensures the cleanest gas is available for purging, reducing tool downtime.

Models are available for flow rates up to 150 slpm. The most popular L-series models are shown.



L-Series (L-60, L-500, L-2000)



Bulk Gas Purification

P-series and MS-series model purifiers are available for flow rates up to 1,000 slpm. (not shown)