NEW

OMX-Plus™ Purification Medium
NANOCHEM® Inert and Flammable Gas Purifiers

The *Next Generation* Purifier for Inert & Flammable Gases
All the Benefits of NANOCHEM® OMX with Efficient Hydrocarbon Removal

NANOCHEM® OMX purification medium has long been *the industry standard* for purifying inert and flammable gases for a variety of semiconductor applications, including low temperature SiGe Epi. NANOCHEM® OMX-Plus™ offers all the benefits of NANOCHEM® OMX medium — the highest lifetimes and the best efficiencies for impurity removal as well as patented true endpoint detection to give advance warning of purifier depletion. OMX-Plus™ also offers removal of trace non-methane aliphatic and aromatic hydrocarbons from source gases and system component outgassing.

Features and Benefits

- Direct purification of inert and flammable gases used in ultra-high purity applications:

Inert Gases:
N_2 – Nitrogen
Ar – Argon
He – Helium
Xe – Xenon
Kr – Krypton
Ne – Neon
CF_4 – Carbon Tetrafluoride

Flammable Gases:
H_2 – Hydrogen
CH_4 – Methane
D_2 – Deuterium

- **Highest Lifetimes**
- **Best Impurity Removal Efficiencies**
- **Patented Fiber-Optic End-Point Detection available**
- Removes Oxygenated Species (H_2O, O_2, CO, CO_2, NO_x, SO_x, etc.) and non-Methane Hydrocarbons (NMHC)
- Improves and ensures gas purity for process consistency: higher yield / device quality
- No external power source required
- Does not require heating or cooling

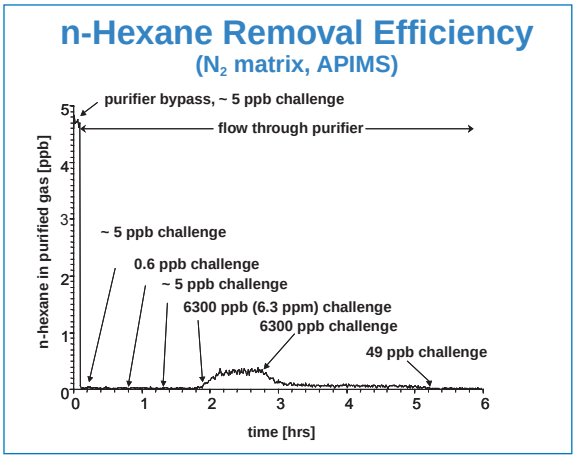
	Specification	Typical Performance
H_2O	< 0.1 ppb	< 0.1 ppb (APIMS)
O_2	< 0.1 ppb	< 0.05 ppb (APIMS)
CO_2	< 0.1 ppb	< 0.05 ppb (APIMS)
CO	< 1 ppb*	< 1 ppb (APIMS)*
NMHC	< 0.1 ppb	< 0.1 ppb (APIMS)#

* < 1 ppb CO is obtained at low flow rates and low CO challenge (< 1 ppm) only.

NMHC – Non-Methane Hydrocarbons. Typical performance expressed for Butane.

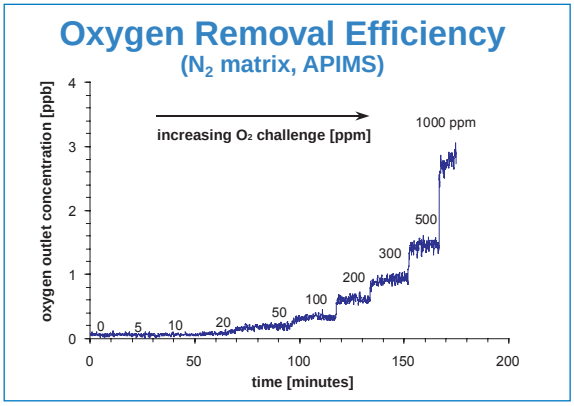
Remove Harmful Non-Methane Hydrocarbons

Typical performance of OMX-Plus™ Resin for the removal of NMHC, such as n-Hexane, is shown below:



Remove Killer Oxygenated Impurities

The removal efficiency of OMX-Plus™ for oxygen-containing impurities remains essentially unchanged from the efficiency expected with NANOCHEM® OMX. Shown below is typical performance upon exposure to progressively increasing oxygen impurity concentration. Even with a 200 ppm O_2 challenge, the residual oxygen in the purified N_2 is < 1 ppb.



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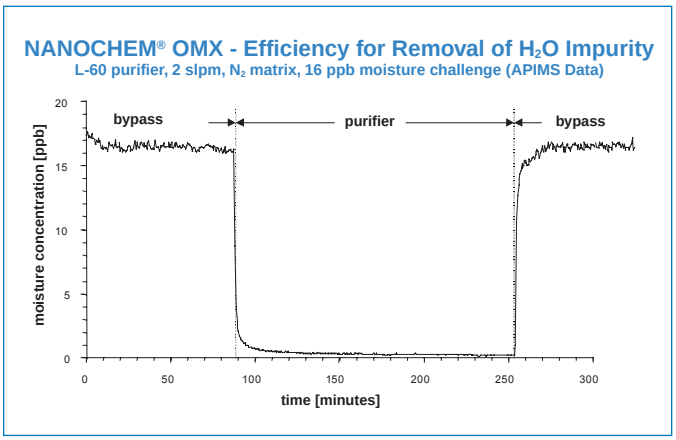
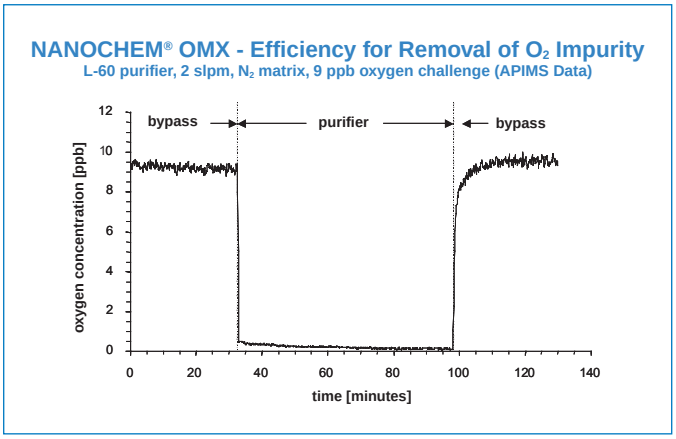
Pure "PPT" Performance (H_2O and O_2)

Removal of oxygen and moisture impurities is typically at the detection limits of APIMS, 30-100 ppt (parts per *trillion*) measured at the outlet of the purifier.





Purifier Models / Sizes

NANOCHEM® OMX-Plus™ purification medium is available in a wide variety of hardware configurations for point-of-use, distribution, source and bulk purification applications:

Model	Maximum Recommended Flow Rate** slpm	(NM³/hr)	Media Volume ml or liters	Maximum Allowable Operating Pressure With End-Point psig (MPa)	Without End-Point psig (MPa)
A-Series*	50	(3)	300, 500, 2000 ml	150 (1.14)	500 (3.55)
L-Series	50-150	(3-9)	300, 500, 2000 ml	150 (1.14)	500 (3.55)
C / CL-Series	50-150	(3-9)	300, 500 ml	150 (1.14)	500 (3.55)
H-Series	50	(3)	300, 500 ml	150 (1.14)	500 (3.55)
HP-Series	50	(3)	500 ml	N/A	2,850 (19.8)
VG-Series	50	(3)	500 ml	N/A	2,850 (19.8)
P-Series	150-400	(9-24)	4, 8, 16, 32 liters	150 (1.14)	350 (2.51)
MS-Series	1000	(60)	8, 16, 32 liters	150 (1.14)	300 (2.17)
WK-Series*	60-300	(3.6-18)	500, 2500 ml	N/A	500 (3.55)
	1000	(60)	9 liters	N/A	350 (2.51)

*Drop-in replacements available for competing hardware designs.
**For higher flow rates, contact Matheson Tri-Gas, Inc.

Please contact your local Matheson Tri-Gas, Inc., Sales Engineer or call (215) 648-4000 to obtain a purifier lifetime estimate for your specific operating conditions.

Options

Manual & Air-Operated with Bypass Modules
End-Point Detection – AC or DC powered
0.003 µm particle filter with 99.9999999% retention (standard on models up to 4-lit media volume, optional for 8, 16, 32-lit models).

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