

## Analytical Gases

Airgas® offers a full line of gases tailored for analytical equipment, including unique *BIP* Technology (an Air Products innovation) that provides premium-grade purity for argon, helium and nitrogen at costs you would expect for zero-grade gas. Airgas also provides mixes especially formulated for Flame Ionization Detectors,

Leak Detection, Electron Capture Detectors, and Nuclear Counting. Whether your lab is an industrial, medical, commercial, environmental, or academic research facility, our analytical gases provide the right characteristics to optimize your analytical performance.

### ANALYTICAL GASES

*BIP*® Technology

**Offering premium-grade benefits. Zero-grade costs.**

Quality gas is critical in delivering consistent analytical results. But finding consistent, affordable premium-grade gas can be a formidable challenge. Until now.

Laboratories have traditionally had to pay more for premium-grade gases, or use external point-of-use purifiers to filter out contaminants. Now, you can rely on *BIP*® Technology (an Air Products innovation) with its patented built-in purifier to assure the gas stream leaves the cylinder with the purity to reduce baseline noise, improve sensitivity, extend column life and get more usable gas from every cylinder.

Airgas provides *BIP* Gases in argon, helium and nitrogen, all with premium-grade purity at zero-grade costs. The *BIP* Technology, with the purifier inside, is more efficient than traditional point-of-use purifiers, since the process takes place in the high-pressure, lower-velocity environment within the cylinder. That more thoroughly exposes the purifier medium to any impurities. Traditional in-line purifiers operate in low-pressure, high-velocity conditions, which is less ideal. External purifiers also introduce the potential for leaks and require constant maintenance.

All *BIP* built-in purifiers use a 0.5 micron frit to filter particles and removes oxygen, water, hydrocarbons, and halocarbons. The purifiers go through rigorous testing and are guaranteed for the life of the cylinder.

Special Applications

<i>BIP</i> Argon		
Analysis	Specifications	Applications
Batch Certificate of Conformance	O <sub>2</sub> < 10 ppb	ICP-MS (non dewar) Atomic Absorption High-grade welding
	H <sub>2</sub> O < 20 ppb	
	THC < 100 ppb	
	N <sub>2</sub> < 5 ppm	
	CO <sub>2</sub> < 1 ppm	

<i>BIP</i> Helium		
Analysis	Specifications	Applications
Batch Certificate of Conformance	O <sub>2</sub> < 10 ppb	Carrier Gas
	H <sub>2</sub> O < 20 ppb	
	THC < 100 ppb	
	N <sub>2</sub> < 3 ppm	
	CO + CO <sub>2</sub> < 1 ppm	

<i>BIP</i> Nitrogen		
Analysis	Specifications	Applications
Batch Certificate of Conformance	O <sub>2</sub> < 10 ppb	Carrier Gas ECD Make-up Gas
	H <sub>2</sub> O < 20 ppb	
	THC < 100 ppb	
	CO + CO <sub>2</sub> < 1 ppm	

A special valve design routes gas around the purifier during filling, protecting the purifier from back-flow contamination and maintaining a positive cylinder pressure of at least 60 psig. This design not only guards against outside impurities from entering the cylinder, it also means you'll find a higher volume of useable gas in every cylinder. If you change cylinders at 500 psig, you will get 17% more useable gas out of a *BIP* Gas cylinder.

