



## BIP Technology

### Setting the Standard in High Purity Gases

**The Problem** In gas chromatography, surveys have shown that more than 70% of problems with GC analysis come from the impurities in the carrier gas used. Specifically, levels of Oxygen and Moisture in carrier gases can cause significant damage to expensive columns, and the damage is usually done before being detected.

**Requirement** In today's competitive process and analytical markets, there is constant pressure to increase productivity, optimize processes and improve quality while minimizing costs. Add in ongoing environmental requirements, and you have an increased demand for more accurate and reliable analyses of a wide range of complex chemical compounds. Until now, finding a consistent, premium-grade gas at affordable prices was a formidable challenge.

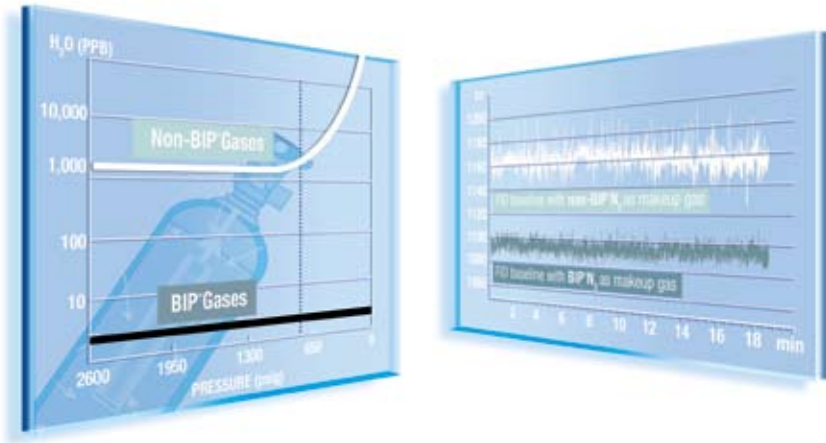
**The Process** In-cylinder purification offers you the very highest purity levels for the most demanding laboratory applications. We start with our ultra high purity gas, which is filled into our BIP® cylinders. With total control over the cylinder condition and its contents, BOC is able to guarantee that the gas leaving the BIP® system will remain consistent, cylinder after cylinder, from start to finish.

**The Solution** BOC BIP® Grade Helium, Nitrogen, and Argon have a patented delivery system where the gas purification is built into each cylinder. BIP®, allows total control over the cylinder condition and its contents, and lets BOC guarantee that the gas leaving each BIP® cylinder contains less than 10ppb oxygen and 20ppb water. With BIP cylinders, no special equipment is required, allowing continued use of your current Specialty Gas supply systems.



## Benefits

- Each cylinder has an individual internal purifier system to guarantee purity. No Rogue cylinder contamination.
- Reduces levels of Oxygen and Moisture to ppb levels.
- Reduces base line noise
- Allows better peak separation
- Extends the life of expensive GC columns
- Purification processes are proven much more efficient at higher gas pressures. As BIP® is always at cylinder pressure, it is much more efficient than downstream external in-line purifiers.
- External Filter Systems are costly to maintain, and reduce productivity by taking the focus away from the GC. BIP removes the requirement, and the expense.



## BIP Specifications

Grade	Helium		Nitrogen		Argon	
	5.3	BIP	5.3	BIP	5.3	BIP
CO <sub>2</sub>	< 1 ppm	–	< 1 ppm	–	–	–
N <sub>2</sub>	< 5 ppm	< 1ppm	–	–	< 8 ppm	< 1 ppb
O <sub>2</sub>	< 1 ppm	< 10 ppb	< 2 ppm	< 10 ppb	< 2 ppm	< 10 ppb
THC <sup>±</sup>	< 0.5 ppm	< 100 ppb	< 0.5 ppm	< 100 ppb	< 0.5 ppm	< 100 ppb
H <sub>2</sub> O	< 1 ppm	< 20 ppb	< 1 ppm	< 20 ppb	< 1 ppm	< 20 ppb
CO	–	–	< 1 ppm	–	–	–
CFC <sup>**</sup>	–	< 1 ppb	–	< 1 ppb	–	–

\*THC as CH<sub>4</sub>

\*\* CFC = Halocarbon

Certificate of Conformance on Source Material available on Request

## BIP Equipment Recommendation Cylinder

## Supply Panel

High Purity Dual Stage Regulator  
 Model C200/2B-100-A-580 Brass  
 Model C200/2S-100-A-580 Stainless Steel  
 High Purity Fixed Station Panel  
 S201B-100-FH Brass Single Stage Gas Panel with purge  
 S201S-100-FH Stainless Steel Single Stage Gas Panel with purge



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BIP® is an innovation of **PRODUCTS**

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