© Airborne Labs | **Dr. Don Pachuta, CEO**

Company Profile

Airborne Labs International, Inc.

Since its founding in a basement garage back in 2000, Airborne Labs International has witnessed significant growth. That garage belonged to the company's founder and now its CEO, Don Pachuta, who has since moved operations into a 10,000 sq ft facility in Somerset, New Jersey, now home to the company's laboratory and analytical product divisions.

Airborne Labs has come a long way. Today it boasts an international distributor-service network spanning Poland, France, Norway, Russia, Africa, India, Pakistan, the Philippines, China, Brazil, Israel, and Dubai, and is an employee-stock ownership program (ESOP) firm.

The business specializes in gas analysis, including ISO-17025 accredited laboratory testing, and makes gas analyzer systems and associated product offerings (including detector tubes, sampling containers, passivated hardware). The company also offers on-site gas sampling, hazmat shipping, analyzer system design, installation, training, spare parts and repair services including remote diagnosis.

The commercial lab's success lies in state-of-the-art analytical instrument assets that are specially engineered to require only a small, low-pressure volume of sample gas for full lab analysis. These assets allow Airborne Labs to rent or sell special gas sampling kits of simple, low-pressure sampling of 'Division 2.2' type gases. With this, non-compressed 2.2 gases can be legally, quickly and economically shipped to Airborne's laboratory from anywhere in the world as "non-hazardous materials of no commercial value."

ASU purities

With a nod to one of the themes of this month's magazine, air gases, Airborne Labs provides air separation unit (ASU) inlet air quality studies, routine ASU plant or custom quality test programs, emergency quality troubleshooting, and NFPA gas outlet purity studies at medical/pharma facilities.

To do this, the company has the experience and assets needed to determine the purity of ASUs and other commodity gases, such as xenon, krypton and neon, to any purity grade requirement. Utilizing over two decades of experience in air separation analysis, Airborne Labs performs its routine, contractual ASU quality test programs for many international gas suppliers. The company also offers on-site ASU sampling services such an "intake air" quality test programs.

Gas purity is usually expressed in terms of "number of nines". For example, a gas described as "five nines" is 99.999% pure or contains no more than 0.001% = 10 parts per million (ppm) v/v of defined impurities. A gas purity expression of 99.999% is actually obtained by an "impurity subtraction" process. This involves:

- **Defining** the most likely contaminants list
- **Measuring** each targeted impurity
- **Subtracting** total impurities found from 100%

Impurities routinely monitored in ASUs and specialty gases include nitrogen, oxygen, argon, krypton, neon, helium, carbon monoxide, carbon dioxide, nitrous oxide, water vapor, methane, acetylene, non-methane hydrocarbons, sulfur oxides, nitrogen oxides, halogenated organics and particulates.

Airborne Labs offers both on-site sampling and sample pick-up for many of its customer applications and supplies all the needed sampling equipment and training. The company's field chemists are hazmat certified for return shipment, so that any hazardous samples can be sent back to the lab for analysis.

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Future plans

In the near future, Airborne Labs says it hopes to educate customers on reducing costs for performing routine, rapid outside testing services using low-pressure, low-volume "no-haz" methods of sampling and analysis of gas samples. To do this, the company is developing new analytical methods to also allow rapid, precise, economic sampling/testing methods for high purity oxygen, aviation breathing oxygen, and many other gas sample types which will be useful to many industries. gw