

Safe, Accurate, Consistent, Reliable... Every Time

Sophisticated communication programs and mixture blending software (world-wide databases with international access) provide the very latest in mixture technology for our customers.

■ **Component Raw Material**

All blending source gases and liquids are qualified to ensure that they are appropriate for your application. We have determined through experience that certain impurities affect the performance or stability of the final mixture.

We have developed and used special proprietary purification techniques for the removal of critical impurities. Upon request a complete impurity profile or specific impurity analyses can be provided.

■ **Cylinder Preparation**

Praxair utilizes a series of computer controlled heating, vacuum and purge cycles to prepare both aluminum and steel cylinders.

For low concentration or highly

reactive components we use our additional, proprietary cylinder treatment processes. With the application of these unique cylinder preparation processes, we are able to produce accurate part per billion and low part per million concentration reactive gas mixtures with guaranteed stabilities.

■ **Blending Systems**

Praxair prepares mixtures utilizing high load, high sensitivity Gravimetric Balances, Micro Balance Capillary Injection, Computerized Dynamic Blending Systems and Volumetric Manifolds. In every case we use the method best suited to your application.

All gravimetric balances are calibrated with NIST traceable weights. All balances, gauges and process instruments undergo specified periodic maintenance and calibration.

■ **Mixture Homogenization**

Once a particular mixture is prepared, mechanical rolling, gas turbulence or molecular agitation is used to ensure the homogeneity of the final mixture.

■ **Analytical Instrumentation**

- Gas Chromatography (GC detectors, - TCD, FID, ECD, HID, DID, FPD, PID, NPD, RGA)
- Chemiluminescence
- Fourier Transform Infrared (FTIR)
- Atomic Absorption (GFAA)
- Mass Spectroscopy (MS)
- Fluorescence UV
- Process Instrumentation (NDIR, O₂, THC, H₂O)

■ **Reference Materials**

- Standard Reference Materials (SRM)
- NIST Traceable Reference Materials (NTRM)
- Gas Manufacturer's Intermediate Standards (GMIS)
- Praxair Primary Laboratory Standards (PPLS)

■ **Ongoing Inter-Laboratory Quality Assurance Evaluation Programs**

- Performed Quarterly

Praxair's North American Specialty Gas Facilities are staffed with chemists and engineers trained in the preparation and analytical certification of specialty gas mixtures.

A knowledgeable sales and technical support team is ready to assist you in determining and specifying all your specialty needs including: high purity gases, calibration mixtures and the correct delivery equipment.



Manufacturing And Quality Control

Producing quality gas mixtures begins with proper cylinder selection and preparation to ensure high quality and enhanced stability. Outlets are selected according to Compressed Gas Association (CGA) guidelines.

The manufacture and certification of all Praxair specialty gases are documented in a comprehensive quality assurance manual. Where appropriate, traceability will be established to Praxair Primary Laboratory Standards or to NIST Traceable Standards. All processes, procedures, analytical methods and reports are carefully documented, controlled and internally assessed by Praxair Q.C./Q.A. Officers.

Documentation

Certification:

Certificate of Compliance (COC1)

Document that delineates that a product meets or exceeds the minimum purity or analytical accuracy as specified.

Certificate of Conformance (COC2)

Statement of guarantee that the product from a specific batch conforms to the components, minimum purity and maximum impurity specifications as listed.

Certificate of Analysis (COA)

A document that reports the actual analytical test results for pure product or for a calibration mixture. Either single cylinder or batch analysis certification is available.

Available Upon Request!