



TELEDYNE INSTRUMENTS

Advanced Pollution Instrumentation

A Teledyne Technologies Company
9480 Carroll Park Drive, San Diego, CA 92121-5201
Phone (858) 657-9800 Fax: (858) 657-9818 Toll Free 1800 324-5190
E-mail: api-customerservice@teledyne.com <http://www.teledyne-api.com>

Service Note

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BUYING CERTIFIED BOTTLES OF GAS

- I. Scope
 - A. An explanation of some pitfalls when buying bottles of reference gas for calibration.

- II. NIST and Protocol Gas Quality
 - A. When buying a bottle of gas, it is imperative that you receive a copy of the Report of Analysis of NIST traceable gas mixtures. This certificate **MUST** reference the 'SRM' used to reference that bottle. SRM stands for "Standard Reference Material" and is your assurance that the bottle in question has in fact been tested against the NIST Standard Reference Material. Do **NOT** buy a bottle of gas without this certificate!
 - B. It has been discovered that simply because a gas bottle is listed as "NIST traceable" does not mean that it is accurate. Certain manufacturers of gases have had difficulty obtaining certificates referencing SRM's (NIST is running behind). Don't rule out the possibility that your "bulletproof" gas analysis may be faulty!
 - C. As a case in point, one customer of API was having a problem with "nonlinearity" of an analyzer. Their High level and Low level span gases were within 1 % of expected value, but the midpoint was 8 % low, (they were using three separate "NIST traceable" bottles). API suggested that the problem was not the analyzer, but the bottles. We suggested they buy bottles from a more reputable gas specialist and get a copy of the certificate. They did this and subsequent tests showed accuracy had improved to greater than 97 %.
 - D. API recommends that bottles be purchased from a company with a good reputation for supplying protocol gases with an SRM.
 - E. Whenever you buy bottles, remember to ask for a copy of the certificate and make sure there is an SRM number and you will be preventing a potential disaster.