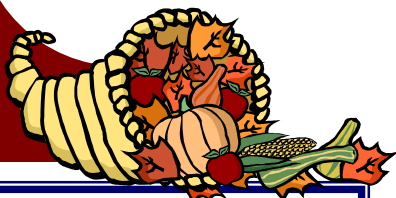


STANDARD ISSUE



Is your Standard 1%? OURS IS!

Why choose DCG? Quality is key!

DCG Calibration Standards

+/-1% or less gravimetric uncertainty per component. NIST Traceable by weight with the gravimetric values verified by one or more analytical techniques - NIST Certificate #'s: 822/266926-02, 822/272801-06. Where applicable, Reference Standards meet or exceed the following guidelines: ISO 6142, ISO 6143, GPA 2198, API 14.1.6.2 and API 14.1.6.3.

WHAT'S HOT? AMPOULES! AMPOULES! AMPOULES!

DCG offers a vast and growing line of liquid standards in ampoules and bottles, including but not limited to:

Sulfur

- Total Sulfur
- Total Sulfur and Total Nitrogen
- Trace Sulfur and Nitrogen in Aromatic Hydrocarbons
- Speciated Sulfur
- Sulfur Simulated Distillation
- Low and Ultra Low Sulfur in Diesel

Specialty

- Total Fluoride
- Total Nitrogen
- Low level Oxygenates

- Total Chloride
- HPLC-CLND System Suitability
- DHA
- ENI4105 & ENI4110

ASTM Methods

- D3606, D5580 & D6277
- D4735 & D7011
- D4815, D5599 & D3710
- D2887
- D6069
- D6730
- D5501 & D6584

Custom standards are always available upon request.

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EDUCATION STATION: Converting Btu's from Ideal to Real

The difference between Ideal Btu's and Real Btu's is the compressibility of the gas.

Compressibility of Gas = Z

The compressibility of the gas and the Compressibility Factor are **not** the same thing.

The Compressibility Factor is also known as the "Z" Factor.

$$\text{Compressibility Factor ("Z" Factor)} = \frac{I}{Z}$$

The compressibility of the gas will always be less than 1.000

The "Z" Factor will always be greater than 1.000

Example 1:

How to convert 1050.0 Ideal gross, dry Btu/scf with a "Z" Factor of 1.00235

$$[1050.0 \text{ Ideal gross, dry Btu/scf}] \times [1.00235 \text{ (Z Factor)}] = 1052.5 \text{ Real gross, dry Btu/scf}$$

Example 2:

How to convert 1050.0 Ideal gross, dry Btu/scf with a Gas Compressibility of 0.9979

$$\frac{I}{Z} = \text{Z Factor}$$

$$\frac{I}{0.9979} = 1.0021$$

$$[1050.0 \text{ Ideal gross, dry Btu/scf}] \times [1.0021 \text{ (Z Factor)}] = 1052.2 \text{ Real gross, dry Btu/scf}$$

The Compressibility of Gas and the "Z" Factor vary for different gas streams and pipeline conditions.

WHAT'S NEW? ASTM D5580 & ASTM D3606

DCG now offers:

ASTM D5580

- Determination of Benzene, Toluene, Ethylbenzene, p/m Xylene, C9 and Heavier Aromatics and Total Aromatics in Finished Gasoline by Gas Chromatography.
- Five different standards
- Daily check standards
- Valve timing standards

ASTM D3606

- Determination of Benzene and Toluene in Finished Motor and Aviation Gasoline by Gas Chromatography.
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- Six check standards

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A Long Way From Home: Alejandro Gonzales Brings His Ingenuity to Houston

Alejandro Gonzalez was born and raised in Venezuela. His parents recognized his early potential and were able to send him to the University of Central Venezuela where his thesis on developing a method for taking and preserving samples for the analysis of Sulfur species in Natural Gas replaced some traditional GPA (Gas Processors Association) methods. It is still used today with the name SULFTRAP (Patent No. US 5109713. Dec., 1993).

After he graduated, Alejandro went to work for PDVSA Intevep taking samples and analyzing Sulfur and Hydrocarbon content for the characterization of Natural Gas in new oil and gas wells. His work again helped his company convert from GPA2261 Backflush to GPA2286 Natural Gas Extended Analysis.

While working on a special project, Alejandro and two colleagues developed a method to quantify the amount of Hydrogen Sulfide present in asphalt, transformer oil, Orimulsion, lubricants, residual fuel oil and other viscous petroleum substances. Alejandro installed this method in the Shell Westhollow research facility in Houston, TX in 1995 for testing by experts for ASTM (American Society for Testing and Materials). It

became a standard method for the industry in 1996 (ASTM D6021-96). As part of the same work, Alejandro designed an apparatus and an instrument for taking, preserving and processing this kind of sample, which resulted in two more US patents: US Patent No. 5390551 (Feb. 21, 1995) and US Patent No. 5379654 (Jan. 10, 1995).

Alejandro accepted a job offer from DCG Partnership in 2003 and moved his family to Texas. For nearly five years Alejandro has headed Research and Development of new products. He has worked to expand the DCG product line to include a standard for total acid number in lubricant oil, liquid fuels and biofuels, standards for Parafins and Aromatics for DHA and SimDis, a standard for Sulfur compounds for Sulfur SimDis and a standard for Glycerine and Glycerides in Biodiesel.

He is an active member in three areas of the American Chemical Society; Analytical, Fuel and

Petroleum Divisions. Alejandro also sits on the D02 and D16 committees for ASTM International, and is Secretary for the D02.D.05 subcommittee. His most recent new developments in analytical methods include a purification of Benzene (for ASTM International D16 committee) and Methanol in Biodiesel (to be presented at Pittcon 2008).



"Nothing shocks me; I'm a scientist!"

Even with all his accomplishments, Alejandro Gonzalez remains a grounded and humble man. When I approached him about this article, he sincerely responded, "Why would anybody want to read about me?" Still, his thick glasses and lab coat cannot hide his cheery disposition and lighthearted sense of humor. He will gladly admit he thoroughly enjoys the challenging projects he tackles as DCG's resident

Research Chemist.

"Nothing shocks me; I'm a scientist!" he said with a big grin.

I smiled. It's not every day you hear *Indiana Jones* quoted with a Latin accent.

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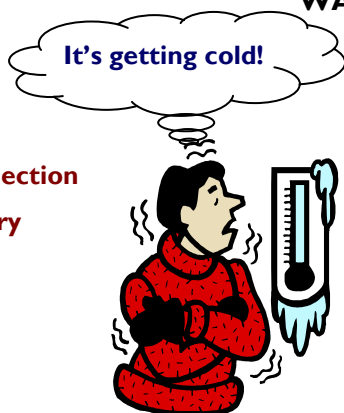
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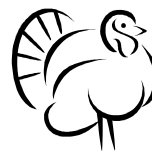
DCG Partnership would like to wish you a very Happy Holiday Season. Please look for the next "Standard Issue" in January 2008.

ABOUT US:

Groundbreaking Cross-Training Program Strengthens DCG's Value for You

Get the latest and greatest professional advice directly from the DCG lab! Our chemists have a plethora of information in their heads and we are passing it on to you. In keeping with our goal to maintain the best customer relations available in the industry, we have introduced a new program called "Chemist Consultants." Each Wednesday one of our Production Chemists will spend the day with Customer Service in order to be available to talk to clients about some of those technical inquiries you may have been itching to ask. That's right! When you call on Wednesdays you can speak directly with a chemist and ask any questions you may have about your standard or the production process. After all, who knows DCG quality products better than the people who make them?

We are also looking for customers to volunteer their standards to be made during our "Sales Person in the Lab" program!! Okay, not really.



HAPPY HOLIDAYS FROM DCG PARTNERSHIP