

# STANDARD ISSUE



## DCG's Belief in Going the Extra Mile

At DCG, exceptional customer service is even more important during a downturn economy. In the past couple of years, when many companies have either cut out or drastically reduced their time, money and energy spent in the area of service for their customers, DCG decided this is when its customers needed exceptional customer service more than ever! DCG increased their budget in customer service by almost 300% because this is when we figured those that have been loyal to DCG needed experience and exceptional service more than ever, to help you cut your costs. These past two years, we have taken a bold step in Customer Service and have made it a priority to listen to our Customers and see how we can help them succeed, particularly this past year during tough economic times. With that in mind, we have sent our staff to cities and conferences, just to meet up with many of our customers. We have gone from coast to coast visiting clients that needed us and those that could benefit from our complimentary consulting services.

Roy Rodriguez has had the honor of being one in the DCG senior staff team that spent much of his time visiting clients this past year. The Customer Service Department has seen how the value has been beneficial to both customers and to DCG. The customers have learned how extensive DCG's product line has become, and how some of our complimentary consulting has helped them save money in the long run. Until Roy made these regular visits around the country and to certain places around the world, very few customers realized how they could benefit from our complimentary consulting, until they actually took advantage of it. For DCG, the benefit was seeing the value of their staffs work assist those that have been loyal to them for years and decades.

"We've held seminars for laboratory teams, operators, and technicians," said Roy. "By getting together and discussing what is being done and what the different methods are actually saying, the correct usage of the Calibration Standards is attained and ways are found to make the most of them – thereby saving the user money."

DCG doesn't stop at Standards. The experienced staff has an extensive pool of knowledge. DCG staff attends ASTM, API, GPA, ISO and various other meetings and conferences to have the most up to date information that can be shared with others who may not have the opportunity to attend.

DCG's other value to its customers is that it has been able to help out in Applications of various products. Since DCG has practical laboratory experience, the experts working in DCG's labs are able to give expert opinions on which application will meet their need.



## SPRING MADNESS AT DCG!

5% OFF

*ALL Premier Quality and Custom Standards*

## Employee Spotlight:

### Clyde Black

DCG would like to introduce to you its Facility Manager,



Clyde Black. Clyde keeps the DCG facility maintained and running which makes organization and on-time delivery possible. Due to his background as a former small business owner, Clyde brings the concept of getting the job done right, the first time around, to DCG.

For almost half-a-decade, Clyde has taken the initiative to deliver many of DCG's products to its customers within Texas. This year, he has taken on a special assignment, as a senior specialist on DCG products and services, he will make visits to many of DCG's clients, share his expertise at a one-on-one level, and provide guidance on what would be best suited for our customers needs; this will assist them in saving money and time, while keeping their instruments in the best condition possible. At DCG, Clyde works with a team of senior staff members, each with over 20 years of experience in the industry, and as a team they solve some of the industry's most difficult problems.

Clyde attends many of the Biodiesel conferences as a senior representative of DCG. Also, aside from his work and training in his current role, Clyde has been certified as a **Hazardous Materials Technician, On Scene Incident Commander, and Confined Space Entry**. Growing in one's work is very important to Clyde, who takes on many challenging assignments and tasks at DCG. In his spare time, Clyde retreats to his property in Buffalo, Texas where he enjoys hunting, fishing, riding motorcycles and recreational utility vehicles.

We hope you will look out for Clyde when he is in your neck of the woods!

## Our History Of An Easy Standard...

By: Alejandro Gonzalez, Research Chemist

*Abridged Edition*

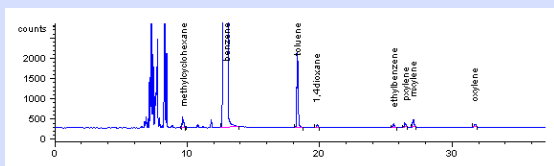
An external standard for trace contaminants in benzene is what you might call an easy blend; and it is to a certain degree, but even something that simple has some work that needs to be done before it gets out to the world.

Working on a new chromatographic standard method for the ASTM International D16 Committee on Aromatic Hydrocarbons and Related Chemicals, we made a series of standards with various compositions in the following ranges:

|                   |                 |
|-------------------|-----------------|
| Methylcyclohexane | 2 - 2000 ppm wt |
| Toluene           | 2 - 2000 ppm wt |
| 1,4 - Dioxane     | 5 - 2000 ppm wt |
| Ethylbenzene      | 2 - 2000 ppm wt |
| p - Xylene        | 2 - 2000 ppm wt |
| m - Xylene        | 2 - 2000 ppm wt |
| o - Xylene        | 2 - 2000 ppm wt |
| Benzene           | balance         |

Obviously, the first thing we need to know in order to make a quality standard is the purity of our raw products.

We ran Mass Specs and several Gas Chromatographs to achieve good characterization of all the compounds. We found that the contaminants in our benzene were exactly the same components we needed to add, logically (fig. 1) see below.



Since the market doesn't offer a higher quality of benzene, we had to purify our own in order to get a clean matrix for our standard. For an application such as this, we needed more than one option.

There are three main ways for this purification:

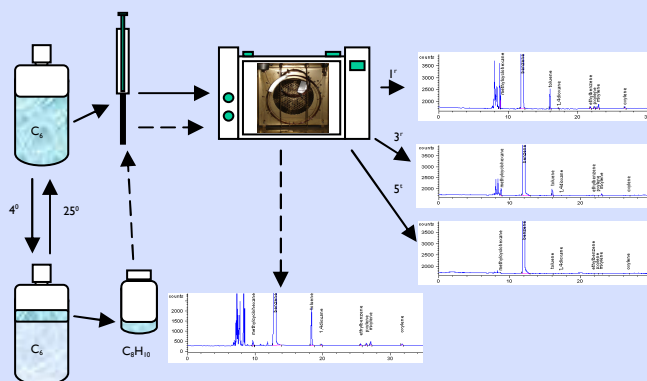
- Acid reaction – filtration: even more difficult purification after the reaction, since we would be changing one contaminant for other.

- Distillation: dangerous, serious accidents have been reported during this process.

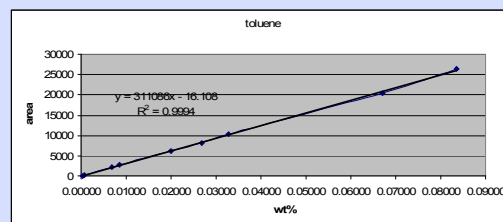
- Recrystallization: simple and safe, ASTM approved.

With that information in mind, we tried the recrystallization method (fig. 2): the benzene was frozen slowly overnight at 4°C, just below its melting point of 5.5°C. The following morning we had a block of frozen benzene with a liquid cover comprised of a blend of benzene and concentrated contaminants. This blend was discarded and the benzene was allowed to melt for analysis. This test gave us a cleaner chromatogram for the benzene, since the contaminants stayed in liquid phase. This process was repeated until the GC signal of

benzene was clean, in this case, seven times. Figure 2 (below) shows a schematic of the process.



After purification, we made a series of gravimetric standards using the cleaned benzene, and we got a calibration curve for each compound. We will use the Toluene as an example of the whole process (fig. 3) see below.



The calibration looked good, but we are assuming we got our benzene completely clean, which needs to be proven yet. In the next couple of issues of our newsletter we will explain how we prove ourselves the standard is actually good.

### DCG: Meet and Greet & School Schedule

#### March:

DCG School of Chromatography, Pearland, TX, 3/15—3/19

DCG Method Development Class, Pearland, TX, 3/22—3/26

Pittcon, Orlando, Florida, 3/1—3/5

API, Dallas, TX, 3/15—3/19

ISO, Houston, TX, 3/23

American Chemical Society, San Francisco, CA, 3/22-3/26

#### April:

DCG School of Chromatography, Pearland, TX, 4/5—4/9

DCG Method Development Class, Pearland, TX, 4/12—4/16

CSHM, Calgary Canada, 4/20—4/22

### CONTACT DCG

customerservice@dcgpartnership.com

DCG PARTNERSHIP I, LTD

4170 A MAIN

PEARLAND, TX 77581

Phone: 281-648-1894

Fax: 281-648-1895



Visit us  
On-line

[www.dcgpartnership.com](http://www.dcgpartnership.com)