

BIODIESEL Education Network News

From the National Biodiesel Board

a quarterly newsletter for the petroleum industry

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new biodiesel blend specs published by ASTM International

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Biodiesel is reaching new heights as a proven fuel, bolstered by new quality specifications for biodiesel blends published by ASTM International in the Fall. Biodiesel producers, petroleum companies, engine companies, vehicle manufacturers, pipeline operators, fleets and consumers will benefit from the new biodiesel blend specifications, using them for fuel preparation, quality checking, engine design, and bid and purchasing contracts.

ASTM International, one of the largest and most highly regarded standards development organizations in the world, has now officially published the highly anticipated biodiesel blend specifications on the ASTM Web site www.astm.org for general use. The new biodiesel blend specifications include:

- ASTM D975-08a, Specification for Diesel Fuel Oils — used for on- and off-road diesel applications; revised to include requirements for up to 5% biodiesel.

- ASTM D396-08b, Specification for Fuel Oils — used for home heating and boiler applications; revised to include requirements for up to 5% biodiesel.

- ASTM D7467-08, Specification for Diesel Fuel Oil, Biodiesel Blend (B6 to 20) — a completely new specification that covers finished fuel blends of between 6% (B6) and 20% (B20) biodiesel for on- and off-road

diesel engine use.

ASTM International also approved some updates to the existing ASTM standard for biodiesel, ASTM D6751, which is designed to control pure biodiesel (B100) product quality prior to blending with conventional diesel fuel.

The rigorous ASTM process yielded stringent specifications to help ensure the availability of high quality biodiesel blends in the marketplace.

Bob McCormick, Principal Engineer on Fuels Performance at the National Renewable Energy Laboratory



automakers welcome B6-B20 spec (NREL), said, "The new ASTM standards for biodiesel blends are the result of years of negotiation between the various parties at ASTM and years of research on how the properties of biodiesel blends affect engine performance. NREL has conducted extensive research over the past 4 years to support development of these standards, which we believe will lead to an expansion of markets for biodiesel while at the same time ensuring that users have trouble-free performance." This research was jointly supported by the U.S. Department of Energy and the National Biodiesel Board (NBB) under a con't on p. 4

Biodiesel questions? We have the answers!



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BioheatOnline.com to help dealers with marketing

The National Biodiesel Board is pleased to announce the launch of Bioheatonline.com, an exciting new Web site designed to educate dealers and customers on the beneficial properties of Bioheat® fuel, an environmentally friendly home heating oil blended with pure biodiesel.

Bioheat oil meets the increasing demand for cleaner and greener home heat. Bioheatonline.com was created with two goals in mind – to educate home heating oil dealers and customers on the benefits of Bioheat fuel, and to provide top-notch marketing tools for local heating oil dealers. With a simple, video-based

approach, Bioheatonline.com features personable hosts who walk consumers through the basics of biodiesel and Bioheat fuel while explaining the benefits for our country, our environment, and our homes.

For heating oil dealers, the site provides technical resources and clear, concise information about blending and selling Bioheat heating oil. The site also encourages heating oil dealers to register online to become Bioheat dealers. Once registered, dealers are given access to professionally produced advertising and



marketing materials, customizable for their market, with the help of the Shaw Company, the campaign's creator and authorized facilitator. In addition to marketing materials, dealers have access to the Bioheat hotline at 877-B5-1-LINE, where they can discuss technical and market issues with the industry professionals at Advanced Fuel Solutions led by Paul Nazzaro, Sr.

With more than 140 registered Bioheat fuel dealers already, the heating oil market is going green. Now it has got all the tools to do it at Bioheatonline.com.



With cold weather blanketing much of the nation, ensuring the smooth operation of biodiesel-powered vehicles and equipment all winter is a top priority of the industry. The bottom line is that high quality biodiesel blends can be used year-round -- even in the coldest climates.

Like regular diesel fuel, biodiesel can gel at very low temperatures. But, with good fuel management, petroleum distributors can ensure they are providing biodiesel that users can count on throughout the winter months.

To achieve that goal, fuel distributors and biodiesel users must first understand that the composition and cold flow properties of diesel fuels vary widely. Cold flow characteristics can be influenced by a number of factors, including the source the crude oil is made from, how it's refined and if it's blended to improve performance during cold weather.

biodiesel blends keep flowing during winter

Similarly, the cold flow properties of B20 or higher biodiesel blends can vary based on the feedstock from which they are made. In addition, the better the cold flow characteristics of the base diesel fuel, the greater the effect of blending biodiesel on its cold flow properties.

Proper fuel management is the key to a trouble-free winter. The first and most important thing is to make sure your fuel meets the national standard, ASTM D 6751. Quality fuel is critical to successful cold flow operation.

Second, cold flow properties can be improved by blending biodiesel with kerosene. Kerosene (#1-D) has excellent cold flow properties and is often blended with #2-D in the winter months across the U.S. to improve and/or ensure operability. Cloud and pour points and cold filter plugging point (CFPP) of some #1-D can be well below -30° F.

Third, a number of additives are available for improving the low temperature operability of diesel fuels. These additives include pour point depressants, filterability or flow improvers that lower CFPP, and wax anti-settling additives. The effectiveness of the additives is dependent on the properties of the fuel. Therefore, it is critical to first understand what your base diesel cold weather specifications are (cloud point, pour point and cold filter plugging point). All additives must be introduced

before fuel reaches its cloud point and must be properly blended.

Finally, block and filter heaters and indoor vehicle storage can also help ensure problem-free winter operation. However, regardless of your approach, cold weather management plans should be in place well before the cold weather sets in.

The National Biodiesel Board (NBB) has developed a special section of its Web site devoted solely to cold flow issues -- www.biodiesel.org/cold. The site offers fuel distributors technical guidance on using B20 in cold weather and examples of "Cool Customers" who successfully use biodiesel blends year-round in cold climates, including:

- Aspen Resorts (CO)
- City of Keene (NH)
- City of Denver(CO)
- Pictured Rocks National Lakeshore (MI)
- Boise Fire Department (ID)

Fuel distributors may ask cold weather-related questions at "Ask Ben" at www.biodiesel.org/askben. Questions will be answered within 48 hours.

PA fuel marketers prepare for B2 requirement in diesel fuel

Diesel fuel sold in Pennsylvania will be a shade greener while giving a boost to the state's economy, thanks to an announcement Gov. Ed Rendell made at the Pennsylvania Farm Show. The Governor confirmed that each gallon of diesel fuel in Pennsylvania will contain at least 2 percent biodiesel starting in January of next year.

"The major challenge we've always had is getting fuel out to the public," said Ben Wootton, President of the Pennsylvania Biodiesel Producers Group (PABPG) and President of Keystone Biofuels, a biodiesel producer. "We repeatedly hear 'Where can I buy the fuel?' This legislation helps ensure that the oil companies' terminals offer biodiesel product."

The legislation, passed in July 2008, called for a blend of B2 (2 percent biodiesel, 98 percent diesel fuel) in each gallon of biodiesel sold in Pennsylvania. This was contingent upon the in-state production of biodiesel of 40 million gallons, which has now been met. Producers maintained a 3.3 million gallon per month average for a 90 day period. The twelve month period from this January, until the effective date next January, is to allow infrastructure to be built up to prepare for the additional biodiesel sales.

"Pennsylvania is one of only a handful of states

FTC labeling laws in effect

The new federal pump labeling laws took effect Dec. 16. The Federal Trade Commission requires labels to be displayed on all retail biodiesel pumps selling more than a 5% blend of biodiesel. The purpose of the labeling is to inform "consumers of the percent of biomass-based diesel or biodiesel that is contained in the biomass-based diesel blend or biodiesel blend that is offered for sale, as determined by the FTC."

The FTC labeling requirement together with the recent success of the biodiesel industry at ASTM International will provide easier access to the fuels marketplace for biodiesel. In fact, as we move forward, biodiesel blends of 5% or less are simply considered part of the conventional diesel fuel pool and will meet the same ASTM D975 performance requirements.

Three categories of biodiesel blends or biomass-based diesel blends are addressed in the ruling:

that has adopted biodiesel requirement legislation," said Shelby Neal, National Biodiesel Board Director of State Governmental Affairs. "Pennsylvania is improving its environment, enhancing economic development during a challenging time, and helping the US break its dependence on foreign oil."

The requirement is legislated to ramp up to B5 and to B20, with higher in-state production criteria for each level. The Pennsylvania Department of Agriculture's Weights and Measures division will help to enforce the on-road B2 requirement.



- No Label Required:
 - Fuel blends containing no more than 5% biodiesel and no more than 5% biomass-based diesel and that meet ASTM D975.
- Labels Required:

-Fuel blends containing more than five but no more than 20% biodiesel or biomass-based diesel.
-Fuel blends containing more than 20% biodiesel or biomass-based diesel.

There are separate labels for biodiesel and biomass-based diesel.

NBB has an issue brief located at: biodiesel.org/resources/

PR_supporting_docs/20080811_Final%20-%20Issue%20Brief-FTC%20Ruling%20August11_.pdf

The official labels are available for \$1 in the store at allthingsbiodiesel.com, along with other marketing materials such as a pump topper kit.

On the Web

BEN News Sponsored by the USDA National Biodiesel Education Program

University of Idaho Biodiesel Education Program technical notes can be viewed at www.biodieseleducation.org.



ASTM, con't. from p. 1

Cooperative Research and Development Agreement.

The ASTM specifications provide details on requirements for fuel characteristics as well as the relevant standard test methods to use for each. The new biodiesel standards apply to all finished biodiesel blends, regardless of the type of feedstock used to make the fuel.

Steve Howell, Technical Director for the NBB and Chairman of the ASTM Biodiesel Task Force, noted that the specifications are set on a performance basis for a diesel engine, not on the feedstock or the production process. "These specifications combine the input of engine interests, petroleum interests, and biodiesel interests, as well as government and military representatives, researchers and academics. It took cooperation and a lot of data and information sharing between all those parties to reach consensus. This is an important achievement for the biodiesel industry that will help move us forward."

The official publication of the new biodiesel blend specifications is welcome news to automakers and engine manufacturers, who have been requesting a finished blend specification for B20 biodiesel blends for several years. Some companies, such as Chrysler LLC, had stated that the need for that spec was the single greatest hurdle preventing their full-scale acceptance of B20 use

in their diesel vehicles. Chrysler was instrumental in working with the ASTM task force toward B20 specification development and approval, having supported fleet use of B20 in its Dodge Ram diesel pickups since January 2006.

There are 34 companies currently certified as BQ-9000 Producers of biodiesel. There are also 14 BQ-9000 Marketers under this program. The biodiesel industry's BQ-9000 program couples the foundations of universally accepted quality management systems with the ASTM product specifications, and has become the premier quality designation in the industry.

Biodiesel blends up to B20 (20% biodiesel) meeting ASTM specifications can be used in diesel engines with few or no modifications. All major automakers and engine manufacturers in the U.S. currently accept the use of at least B5, and 50 percent of U.S. manufacturers already accept the use of B20 blends or higher in at least some of their equipment. Several more companies are expected to raise their approvals to B20 now that the final ASTM specifications for B6-B20 blends have been approved and published.

The ASTM International biodiesel standards can be purchased from ASTM Customer Service: www.astm.org.

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