

# BIODIESEL

POWERING VEHICLES WITH THE MOST DIVERSE FUEL ON THE PLANET

MORE THAN ONE HUNDRED YEARS AGO, the earliest examples of the compression ignition engine developed by Rudolf Diesel were engineered to run on a variety of fuels. This fuel diversity was demonstrated at the 1900 World's Fair by running a diesel engine on peanut oil. The concept of an abundant renewable fuel source that can be produced domestically made sense then and makes even more sense now.

#### **BIODIESEL DELIVERS FUEL DIVERSITY**

Highly efficient clean diesel vehicles fueled with a biodiesel blend are a logical and environmentally friendly way to ease our dependence on foreign oil. Automakers recognize this and today all manufacturers selling diesel vehicles in North America support the use of B5, a blend of 5 percent biodiesel. Furthermore, 60 percent of U.S. manufacturers approve the use of B20, which contains 20 percent biodiesel and 80 percent petroleum diesel.

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Underscoring auto manufacturer support of biodiesel is the new Ford Super Duty's diesel emblem that prominently features "B20." Several major manufacturers of agricultural equipment also approve the use of 100 percent biodiesel in their equipment.

"The B20 emblem on the side of every Ford diesel pickup truck is powerful evidence of just how far biodiesel has come with the Original Equipment Manufacturers," says Joe Jobe, CEO of the National Biodiesel Board. "Ford is the first OEM to fully integrate its biodiesel acceptance into a marketing strategy at the level of including biodiesel promotion on every diesel vehicle exterior. It shows that consumers want biodiesel, and Ford listened."

#### HIGH QUALITY FUEL HERE TODAY

Today's biodiesel industry is expected to produce 800 million gallons of high quality fuel this year. The industry's commitment to producing the highest quality fuel meeting ASTM (American Society of Testing and Materials) standards helps fuel refiners, importers, and blenders achieve the petroleum displacement goals of the Renewable Fuel Standard, or RFS2.

Fuel quality is a critical component for greater acceptance of biodiesel by both automakers and consumers. The National Biodiesel Board recognized this fact early on and has focused on the adoption and implementation of high quality fuel standards.

It has been a driving force behind ASTM D6751 as the fuel specification for B100 biodiesel prior to blending. Specifications for up to 5 percent biodiesel in standard petroleum diesel, as well as for blends between B6-B20, have also been achieved with help from the NBB.



"The biodiesel industry has spent considerable energy on a program to ensure that only high quality fuel makes it into the marketplace," Jobe says. "Our aggressive fuel quality program, which includes education, encouragement, and enforcement, has resulted in 48 states adopting the national standard for biodiesel. Also, 70 percent of biodiesel production capacity is now represented by BQ-9000 certified producers." BQ-9000 is the biodiesel industry's comprehensive fuel quality assurance program for biodiesel producers, marketers, and testing laboratories.

#### AN ADVANCED BIOFUEL FOR A CLEANER TOMORROW

Since biodiesel can be made from a variety of renewable resources like soybean oil, other plant oils, fats, recycled grease, and in the future algae, it is considered the most diverse fuel source in the world. Soy-based biodiesel benefits the world's food supply because the process only extracts the oil and leaves the protein behind. The protein can then be used as a food stock for both animals and humans.

Biodiesel has the highest energy balance of any liquid fuel. For example, virgin soy oil returns 4.5 units of energy for every unit of carbon energy required to produce it. Biodiesel also cuts lifecycle carbon emissions by 80 percent compared to petroleum diesel. Its considerable greenhouse gas reductions make biodiesel the first and only commercially available "advanced biofuel" produced in the U.S.

"Biodiesel is the most diverse fuel on the planet and the best carbon reduction strategy for diesel engines," says Jobe. "It is likely to be for generations to come."