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The Biodiesel Standard (ASTM D 6751)

All engines are designed and manufactured for a fuel that has certain characteristics. In the US, the industry organization that defines the consensus on fuels is the American Society for Testing and Materials (ASTM). In the case of diesel fuel (and biodiesel), the responsibility for setting standards lies within ASTM Committee D02 on Petroleum Products and Lubricants. In order to assure that the standards are rigorous and robust, ASTM committee D02 is comprised of fuel producers, engine equipment manufacturers, and third party interests (users, government agencies, consultants). ASTM also uses a complicated ballot process in which a single negative vote is enough to defeat a ballot, so this is a true consensus organization. An ASTM standard is not easily achieved. Some standards can take over 10 years to gain agreement and be issued by ASTM. This rigorous, time-consuming process is why ASTM standards are recognized and adopted by others worldwide.

ASTM fuel standards are the minimum accepted values for properties of the fuel to provide adequate customer satisfaction and/or protection. For diesel fuel, the ASTM standard is ASTM D 975. All engine and fuel injection manufacturers design their engines around ASTM D 975. In cooperative discussions with the engine community early in the biodiesel industry's development, engine manufacturers strongly encouraged the biodiesel industry to develop an ASTM standard for biodiesel fuel which would allow them to provide their customers with a more definitive judgment on how the fuel would affect engine and fuel system operations compared to ASTM D 975 fuel for which an engine was designed.

In June of 1994, a task force was formed within ASTM Subcommittee E on Burner, Diesel, Non-Aviation Gas Turbine, and Marine Fuels of ASTM Committee D02, with the expressed objective of developing an ASTM standard for biodiesel. The biodiesel standard, ASTM PS 121-99, was approved by Subcommittee E, and subsequently issued by ASTM in June of 1999 (for copies, see the ASTM web site at www.astm.org). In December of 2001, ASTM approved the full standard for biodiesel, with the new designation of D-6751 (succeeds PS 121-99). This standard covers pure biodiesel (B100), for blending with petrodiesel in levels up to 20% by volume. Higher levels of biodiesel are allowed on a case-by-case basis after discussion with the individual engine company, since most of the experience in the US thus far has been with B20 blends.

The approval of this biodiesel standard, and the technical reviews necessary to secure its approval, has provided both the engine community and customers with the information needed to assure trouble free operation with biodiesel blends.

Engine Warranties

All diesel engine companies warranty the product they make - engines. They warranty their engines for "materials and workmanship." If there is a problem with an engine part or with engine operation due to an error in manufacturing or assembly within the prescribed warranty period, the problem will be covered by the engine company.

Typically, an engine company will define what fuel the engine was designed for and will recommend the use of that fuel to their customers in their owner's manuals.

Engine companies do not manufacture fuel or fuel components. Therefore, engine companies do not warranty fuel - whether that fuel is biodiesel or petrodiesel fuel. Since engine manufacturers warranty the materials and workmanship of their engines, they do not warranty fuel of any kind. If there are engine problems caused by a fuel (again, whether that fuel is petrodiesel fuel or biodiesel fuel) these problems are not related to the materials or workmanship of the engine, but are the responsibility of the fuel supplier and not the engine manufacturer. Any reputable fuel supplier (biodiesel, petrodiesel, or a blend of both) should stand behind its products and cover any fuel quality problems if they occur.

Therefore, the most important aspect regarding engine warranties and biodiesel is whether an engine manufacturer will void its parts and workmanship warranty when biodiesel is used, and whether the fuel producer or marketer will stand behind its fuels should problems occur.

Most major engine companies have stated formally that the use of blends up to B20 will not void their parts and workmanship warranties. This includes blends below 20% biodiesel, such as the 2% biodiesel blends that are becoming more common. Several statements from the engine companies are available on the NBB website. Some engine companies have already specified that the biodiesel must meet ASTM D-6751 as a condition, while others are still in the process of adopting D-6751 within their company or have their own set of guidelines for biodiesel use that were developed prior to the approval of D-6751. It is anticipated that the entire industry will incorporate the ASTM biodiesel standard into their owner's manuals over time.

The National Biodiesel Board, the trade association for the biodiesel industry, has formed the National Biodiesel Accreditation Commission (NBAC) to audit fuel producers and marketers in order to improve the quality of biodiesel production and handling throughout marketing channels in the U.S. NBAC issues a 'Certified Biodiesel Marketer' seal of approval for biodiesel marketers that have met all requirements of fuel accreditation audits. This seal of approval will provide added assurance to customers, as well as engine manufacturers, that the biodiesel marketed by these companies meets the ASTM standards for biodiesel and that the fuel supplier will stand behind its products.

With biodiesel that meets the D-6751 specification, there have been over 45 million miles of successful, problem-free, real-world operation with B20 blends in a wide variety of engines, climates, and applications. The steps taken by the biodiesel industry to work with the engine companies and to ensure that fuel meets the newly accepted ASTM standards provides confidence to users and engine manufacturers that their biodiesel experiences will be positive and trouble-free.

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605 Clark Ave • PO Box 104898
 Jefferson City, MO 65110-4898
 (800) 841-5849 • fx: (573) 635-7913
[contact via email](#)



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