

Biodiesel

A Growing Market for Methanol

What is biodiesel and what are its advantages?

Biodiesel is a renewable fuel produced by the chemical reaction of methanol and vegetable oils or animal fats that is used as a replacement or blender for diesel fuel. Biodiesel can be blended with conventional diesel and used in cars, trucks, buses, and farm equipment. Compared to petroleum based fuels, biodiesel demonstrates decreased global warming impacts, reduced emissions, greater energy independence, and a positive impact on domestic economies.

How is it produced?

There are many feedstocks used to make biodiesel. Soybean and recycled cooking oils are used in the United States, rapeseed is commonly used in Europe, while palm oil and jatropha oil are popular biodiesel feedstocks in Asia and Africa. The main reaction for converting oil to biodiesel is called transesterification. The transesterification process reacts methanol with the triglyceride oils contained in vegetable oils, animal fats, or recycled greases, forming fatty acid methyl esters (biodiesel) and glycerin. Some feedstocks must be pretreated before they can go through the transesterification process. In this step, the feedstock is reacted with methanol in the presence of a strong acid catalyst (sulfuric acid), converting the free fatty acids into biodiesel. The remaining triglycerides are converted to biodiesel in the transesterification reaction. The methanol is typically removed after the biodiesel and glycerin have been separated, to prevent the reaction from reversing itself. The methanol is cleaned and recycled back to the beginning of the process. Generally, 20 pounds of methanol is used for every 100 pounds of biodiesel produced.

What is the global outlook for Biodiesel?

According to *Biodiesel Magazine*, biodiesel demand is expected to double between 2009 and 2015, while supply is expected to grow threefold. Current global biodiesel capacity is already large enough to supply the demand of 10 billion gallons per year projected for 2015. Countries around the world — including the EU, Colombia, Costa Rica, Jamaica, Mexico, Panama, USA, China, India, South Africa and Malaysia — are requiring biodiesel to be blended with diesel fuel. In other countries such as the U.S., the government provides a \$1-per-gallon tax credit to help biodiesel become more competitive with conventional diesel. With the EU considering a potential biofuel mix for 2030, the global market for biodiesel is expected to increase dramatically, which means an expanding market for methanol.

For more information visit the National Biodiesel Board at www.biodiesel.org,
the European Biodiesel Board at www.ebb-eu.org
and the Malaysian Palm Oil Board at www.mpob.gov.my

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Common Biodiesel Feedstocks

Soybean Oil
Recycled cooking Oil
Palm Oil
Jatropha Oil
Rapeseed
Algae

