

Isodiesel – a novel renewable diesel fuel

Isodiesel, trademark for an innovative diesel fuel produced from renewable biomass sources, namely fatty acids from vegetable oils and/or animal fats. The innovative technology enables Isodiesel to retain its preferred properties no matter what the feedstock source is.

Ben-Gurion University's team of researchers and fuel experts have been researching different technologies for a number of years to come up recently with this new technology to yield Isodiesel, a superior diesel overcoming many of the problems related to Biodiesel for consumers and the environment.



Isodiesel is manufactured in a one stage process. Tests performed so far at an independent certified laboratory indicate that Isodiesel has a set of superior fuel qualities. This 2nd generation diesel fuel contains mostly branched hydrocarbons with <10% aromatics and no sulfur. Isodiesel complies with ASTM Grade 2 D975 standard. The innovative production process developed by Ben Gurion university researchers was tested in a mini-pilot plant.

Emissions

Tests conducted at a certified laboratory using a 2.5L Ford engine revealed reduced emission when compared with D2 diesel. The NOx emission has been reduced by 15% to 28%.

Feedstock

Isodiesel can be efficiently prepared from tallow as well as soybean, canola, sunflower or other vegetation sources. Pretreatment and cleanup procedures have been demonstrated for crude tallow and for soybean oils.

Benefits

- May be used as "drop in fuel" i.e. no need to be blended with regular diesel.
- Excellent lubricity and stability of Isodiesel compared with all other available products.
- High cetane number, low cloud point. NOx and particulate emission measured in preliminary engine tests were much lower than the values measured with regular diesel.
- Compatible with currently existing engine technologies and fuel distribution systems.

Potential Commercial Uses and Strategic Partners

Motor vehicles and small power stations fuel applications. Isodiesel can be blended with traditional diesel fuel with no engine modification requirements. Drivers will have a superior diesel, while not noticing any difference between their "old" diesel grade and the tank containing Isodiesel, whatever the conditions or ambient temperatures are. Partnering with a multinational oil manufacturer or distiller or distributor in order to address the need for investments in distribution systems or vehicles to accommodate greater renewable fuel use seems the winning combination of partnering.

Development Stage and Development Status Summary

Ben-Gurion University's own tests, together with those carried out by engine and automotive test facility, have shown that Isodiesel based fuel performs very well.

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Patent Status

Patent pending

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