



## BIODIESEL & RENEWABLE DIESEL

are low-carbon diesel-replacement fuels produced from renewable feedstocks such as used cooking oil, animal fats, inedible corn oil, soybean oil and canola oil.

### B BIODIESEL IS...

Produced through esterification or transesterification, a simple process that reacts a fat or oil with a small amount of alcohol (typically methanol) to produce a finished fuel.



A "drop-in" fuel that can be used in all engines and equipment up to 20% and many up to 100%.



Non-toxic, biodegradable, ultra-low sulfur and 0% aromatics



Better for engines due to higher cetane and improved lubricity.



Made to meet the requirements of ASTM D975 (B5), D7467 (B6-B20), and D6751 (B100).



### RD RENEWABLE DIESEL IS...

Produced through hydrotreating, a process similar to a traditional refinery operation. This high-heat, high-pressure process produces a fuel that is chemically indistinguishable from conventional diesel.

A "drop-in" fuel that can be used in all engines and equipment up to 100%.

Ultra-low sulfur and 0% aromatics.

Better for engines due to higher cetane.

Made to meet the requirements of ASTM D975 (all blends).



### THE BEST FUEL IS...

A combination of biodiesel and renewable diesel produces a cost-effective full replacement option for petroleum diesel. As a paired fuel, biodiesel and renewable diesel optimize petroleum displacement and cost, as well as particulate matter, carbon and nitrogen oxide reductions.



**B100**  
Up to 79% less carbon emissions.



80% particulate matter reduction.



75% fewer aromatic compounds.



42% less carbon monoxide.



NOx neutral.



**RD100**  
Up to 79% less carbon emissions.

5-28% particulate matter reduction.

30% fewer aromatic compounds.

18% less carbon monoxide.

11.5% NOx reduction.



**B20 RD80**  
Up to 79% less carbon emissions.

29% particulate matter reduction.

39% fewer aromatic compounds.

23% less carbon monoxide.

9% NOx reduction.



**B50 RD50**  
Up to 79% less carbon emissions.

56% particulate matter reduction.

53% fewer aromatic compounds.

30% less carbon monoxide.

6% NOx reduction.

#### ABOUT BIODIESEL AND RENEWABLE DIESEL

Made from plant-based oils, used cooking oils, and animal fats

Clean-burning ultra-low carbon

Can be used in any diesel engine without modification

Commercially available nationwide

Today's solution for heavy-duty trucking, emergency vehicles, bus fleets, and farm equipment

Sources: Impact of biodiesel and renewable diesel on emissions of regulated pollutants and greenhouse gases on a 2000 heavy duty diesel truck, California Air Resources Board, 2015; Effects of biodiesel blends on emissions, National Renewable Energy Laboratory, 2006.