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Biodiesel as a Lubricant

Biodiesel is not necessarily that new of a phenomenon. It has been in the spotlight lately because of rising diesel fuel prices and its potential to become a substitute for fuels that produce a lot of soot and carbons. These poisonous elements are associated with regular diesel fuel emissions (especially buses.) However; biodiesel has been around for decades as a supplement that is added to conventional diesel fuel to improve the lubricity of diesel engines.

The bottom line is that biodiesel lubricates your machinery far better than petroleum diesel fuel. Scientists and farmers have realized for years marked improvement in lubricity when biodiesel is added to conventional diesel fuel. Even biodiesel levels as low as one percent can provide up to a 65 percent increase in lubricity in distillate fuels.

To refresh your memory, pure biodiesel is referred to as B100 or 'neat' biodiesel. A biodiesel blend is pure biodiesel blended with petrodiesel. Biodiesel blends are referred to as Bxx. The xx indicates the amount of biodiesel in the blend (for example a B20 blend is 20 percent by volume biodiesel and 80 percent by volume petrodiesel.)

The smoothness and mobility of diesel fuel is especially important for diesel engines and machines that use rotary and distributor type fuel injection pumps. In these pumps, the fuel itself lubricates moving parts as it moves through the pump. This is where biodiesel can greatly increase the efficiency of a machine.

The efficiency of other diesel fuel systems-which include unit injectors, injectors, unit pumps, and in-line pumps also rely on well-lubricated diesel fuel. The reason that biodiesel fuel in blends of 20% or lower are usually added to regular diesel fuels is because biodiesel fuels consist of methyl esters of soybean oil. The esters in biodiesel have superior scuffing and adhesive wear resistance that exceeds conventional diesel fuels.

If you are unsure whether or not biodiesel or blended biodiesel will degrade the vinyls, rubbers or metals in your machinery, the engine or vehicle manufacturer should be contacted to determine if the seals, hoses, and gaskets are compatible with the biodiesel blend before use.

To ensure the safest use of biodiesel fuel, make sure that it meets the ASTM specification for pure biodiesel (ASTM D 6751) before blending with petroleum based diesel fuel. The specification for biodiesel is designed to ensure that consumers will not experience operational problems (especially accidents!) from the fuel's use. Make sure that the merchant who sells you this biodiesel can provide you with written assurance that the biodiesel meets this specification.