

Petrodiesel vs Biodiesel

Petrodiesel	Biodiesel	Explanation
Made from crude oil (a product of fractional distillation)	Made from triglycerides like vegetable oils and animal fats (a product of the process transesterification)	
10% more energy efficient		Tbh no idea lol
Non-polar molecules → less hygroscopic (substance that absorbs water easily)	Polar molecules (from the 2 electronegative oxygen atoms) → more hygroscopic	Water is a polar molecule, so it's more attracted to polar biodiesel molecules than the non-polar petrodiesel molecules
Produces carbon dioxide, sulphur dioxide emissions	Produces carbon dioxide emissions and sulphur dioxide depending on the triglyceride it's made from (canola oil contains sulphur dioxide)	
Volatile (tendency to vaporize), less viscous (measure of liquid's resistance to flow)	Viscous, less volatile	(read the next explanation)
Short hydrocarbon chains	Long hydrocarbon chains	Longer the hydrocarbon chain, the more energy needed to break the bonds. Also, longer = more viscous
Made up of 75% alkanes and 25% aromatic hydrocarbons		
Weak dispersion forces (explains less viscosity and more volatility compared to biodiesel)	Dipole-dipole bonds	

Similarities

- both more dense than petrol
- both are not pure substances (other elements are mixed in)
- diesel produces 10-20% less of carbon dioxide emissions than petrol

Combustion reactions

Petrodiesel



Biodiesel

