

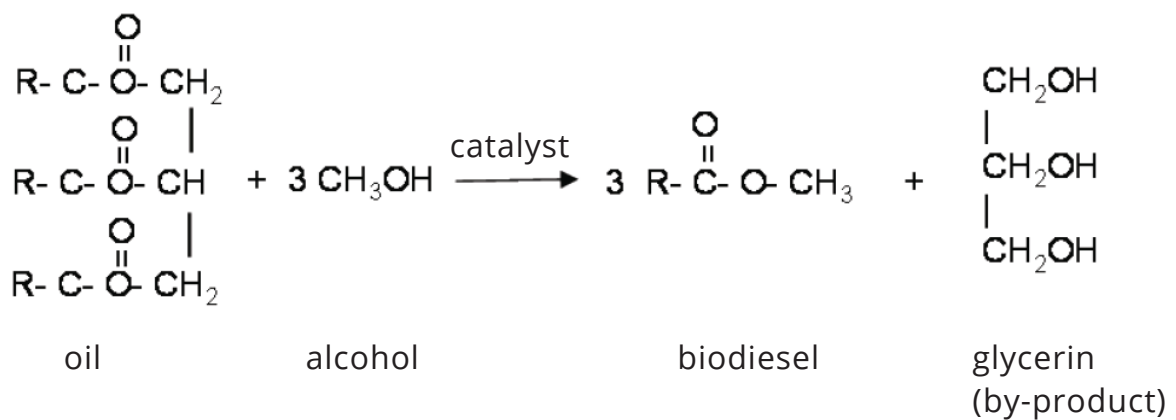


WHAT IS BIODIESEL?

Biodiesel is a diesel fuel made from renewable materials, such as vegetable oils, that can be used in diesel engines.

Chemically: Alkyl esters, of methyl and of ethyl. Are registered as a fuel and as an additive for fuel, in the Environmental Protection Agency (EPA- EEUU). Can be used as a pure fuel at 100% (B100), as a mixing base for petroleum gasoil (B29), or in a low proportion as an additive from 1 to 5%. By this way the biodiesel is complemented, it doesn't compete with petroleum.

BIODIESEL CHEMICAL COMPOSITION



THE BIODIESEL

- » As a fuel mixed with petrodiesel (B20)
- » As a petrodiesel additive (<1% to 5%)
- » Where the petrodiesel #1 or #2 (kerosene or diesel) is used.



Biodiesel Specifications in USA (From July, 1996)

Property	ASTM Method	Value	Unit
Ignition point	D93	100,0 mín.	°C
Sediments and water	D1796	0,050 máx.	Vol. %
Carbonic residue (sample 100%)	D4530++	0,050 máx.	Wt %
Sulfated ash	D874	0,020 máx.	Wt %
Viscosity	D445	1,9 – 6,5	Cst
Sulfide	D2622	0,05 máx.	Wt %
Cetane number	D613	40 mín.	
Cloud point	D2500	Por cliente	°C
Corrosion cuprica	D130	N° 3b máx.	
Acid number	D664	0,80 máx.	Mg KOH/gm
Free glycerin	G.C.#	0,020 máx.	Wt %
Total glycerin	G.C.#	0,240 máx.	Wt %

+ This specifications are in the ASTM proces for aproval. In USA there is a considerable amount of experiences with a 20% biodiesel mix with a 80% diesel in based of petroleum. The Biodiesel, can also be use in its pure form. The use of these mixes for over a 20% biodiesel must be tested case by case until the other experiences are available.

++ Or the testing method equivalent of the ASTM.

Australian actualization of the test method USDA.