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Market Guide

ASTM D1655-18a specifies FIJI technology for co-processed Aviation Turbine Fuel

What is co-processing?

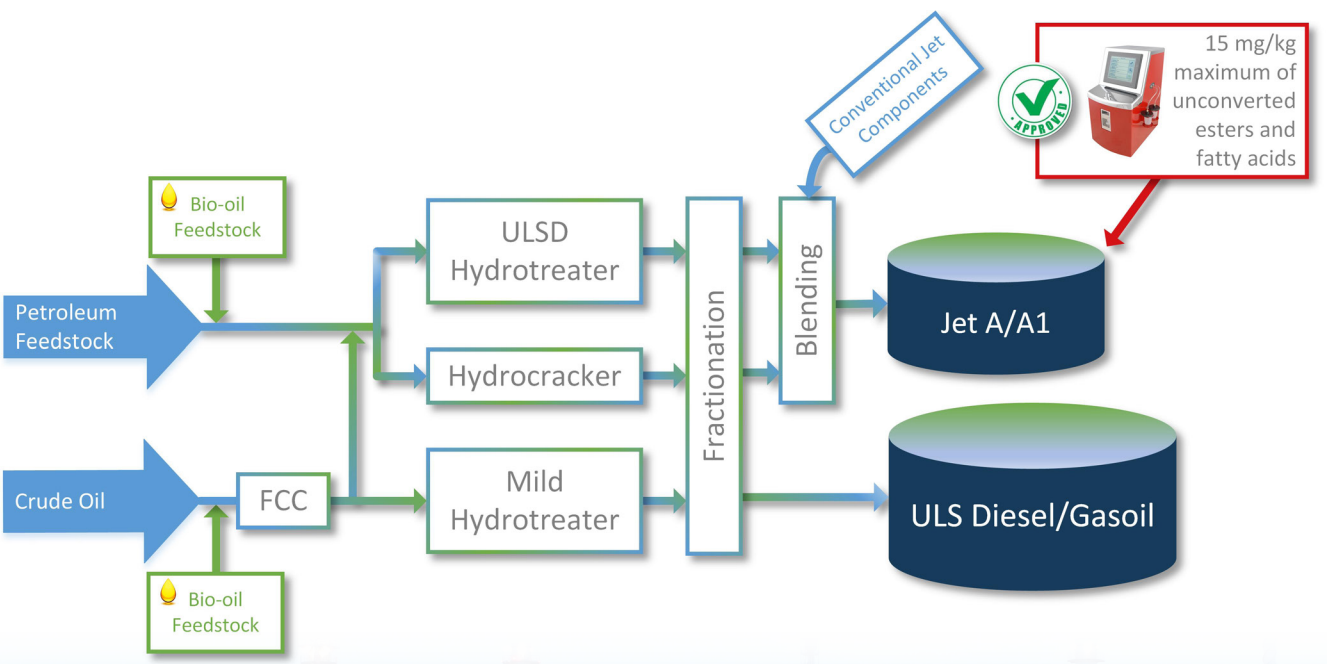
Co-processing is the ability to refine bio feedstocks and intermediate petroleum products to produce renewable hydrocarbon fuels simultaneously.

Co-processing allows the production of low carbon fuels economically by using existing refining, transport, and storage infrastructure and enables refineries to meet their obligations to reduce greenhouse gas emissions for transport fuels.

Bio feedstocks include vegetable oils, fat-based oils and cooking oils as well as pyrolysis oils.

ASTM D1655-18a Standard Specification for Aviation Turbine Fuel now allows a refinery to manufacture jet fuel using a bio feedstock of up to 5% by volume. This feedstock is limited to monoglycerides, diglycerides, triglycerides, free fatty acids and fatty acid esters such as FAME.

To ensure the bio feedstock is converted to hydrocarbon during the refining process, the extent of conversion is monitored using test method ASTM D7797/IP 583 (FIJI). The finished product is limited to 15 mg/kg of unconverted esters and fatty acids tested by ASTM D7797/IP 583 (FIJI).



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Advantages of co-processing fuels

- Aviation fuel may now contain up to 5% by volume co-processed feedstock
- Meets renewable fuel targets
- Enables refiners to use pyrolysis oils and vegetable oils, as well as other bio materials such as used cooking oil
- Suitable for Low Carbon Fuel Standards (LFCS)

Potential challenges

- To optimise refinery process conditions ensuring bio feedstock is totally converted to a suitable hydrocarbon for aviation use *(reference annex a1.2.2 of ASTM D1655)*
- Quality assurance monitoring of product movement from refinery to wing
- There is a high potential for bio products to comingle with aviation fuels

ASTM D1655 (*Standard Specification for Aviation Turbine Fuels*)

ASTM D1655 now includes ASTM D7797/ IP 583 (FIJI) as a mandated test for all refineries who are co-producing fuel. This is to verify that the co-processed feedstock in aviation fuel has not exceeded the permitted level of 15mg/kg unconverted esters and fatty acids *(reference annex a1.2.2.2 note 2 of ASTM D1655)*.

Who does this affect?

- Refineries producing aviation fuel that are co-processing biofuel
- Distributors supplying aviation fuel that may have been derived from a refinery that is co-processing biofuel

FIJI, the solution

- ASTM D1655-18a specified FIJI technology
- Detects non-conversion of vegetable oils
- Preferred test for management of change (MOC) studies to release product
- Ensures co-processed feedstock has not exceeded the permitted level of 15mg/kg FAME
- Suitable for untrained operators
- Monitor run down jet line samples
- Rapid screening detects all FAME types
- Minimal cost per test
- Robust and easy to use
- Internationally approved specification test

Further information about FIJI can be found at

www.stanhope-seta.co.uk/4524/FIJI

or by scanning the QR code

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