

- IDEALFUEL -

Lignin as a feedstock for renewable marine fuels

GRANT AGREEMENT No. 883753

HORIZON 2020 PROGRAMME - TOPIC LC-SC3-RES-23-2019

“Development of next generation biofuel and alternative renewable fuel technologies for aviation and shipping”



Deliverable Report

D4.1 – Initial material data sheet with technical properties of the Bio-HFO and benchmark fuels



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Publishable summary

The overall objective of EU H2020 IDEALFUEL is to enable the utilization of lignocellulosic feedstocks, *i.e.* woody non-food biomass source in a sustainable manner. IDEALFUEL aims to develop an efficient and low-cost chemical pathway to convert lignocellulosic biomass into a biogenic Heavy Fuel Oil (Bio-HFO) that can be used as drop-in fuel in the existing maritime fleet.

In order to determine the drop-in property of the novel Bio-HFO, the fuel properties have to comply with the limits for residual marine fuel set by the ISO 8217 standard. In this deliverable the initial technical properties such as viscosity, density of the pure Bio-HFO, benchmark fuels are summarized.

The fuels to be used as a baseline and later to be used for blending with the Bio-HFO were identified, namely MGO, UCOME, HFO RMD 80 and HFO RMG 380. Parameters of baseline fuels and Bio-HFO listed in the Standard ISO8217 have been measured. The goal is to have Bio-HFO or blends of Bio-HFO with baseline fuels fit for purpose. The results show that the viscosity of Bio-HFO complies with the ISO 8217 standard, but the density does not. The quality of Bio-HFO has improved through the project but still needs further improvement especially with respect to fuel homogeneity, due to the separation of the heavy and lighter phases of bio-HFO. The fuel properties can be improved in various ways such as filtration and vacuum distillation although this needs further research.