

FOBAS Bulletin

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Blending of ‘unestablished’ biofuel feedstocks in marine fuels

Recently a number of ships in the Rotterdam area have, undeclared to them, received fuels with up to around 20% of an ‘unestablished’¹ blend component. One of these ‘unestablished’ products appears to have been a Cashew Nut Shell Liquid (CNSL) from undeclared source materials or production processes. This was highlighted to FOBAS as a result of investigating a number of ships reporting having experienced engine fuel pump and injector related damage leading to operational problems which have been linked to the presence of ‘unestablished’ CNSL in the fuel as supplied.

Over the last year, LR FOBAS has had at least four ships reporting similar operational issues from bunkers loaded in Rotterdam, which have been subsequently identified with a significant presence of ‘unestablished’ CNSL. This indicates the continued practice on the part of some suppliers blending ‘unestablished’ biofuel feedstocks without essential evidence of its suitability for use in marine machinery and furthermore without any notification to the receiving ship to be so alerted.

This practice is contrary to the guidance by IMO on *Best practice for suppliers* on the quality of fuel oil delivered to ships. MEPC.1 /Circ. 875/Add.1 section ‘5’ – where it states that:

5.3 Blend components should be tried and tested so that their typical properties and suitability for bunker production and how they combine with other components is well understood..... and

5.4 Where there are any uncertainties as to the nature and quality of blend component, any issue should be identified and resolved before its use in the production of bunkers.

Recognising that there is a wide range of possible biofuels, ISO 8217 specifies the now accepted bio-fuels: FAME and paraffinic fuels such as HVO, defined by the specifications of EN 14214, ASTM D6751 and EN 15940 respectively. These have been well tried and tested at sea over the past few years and are now generally acknowledged by equipment manufacturers (OEM), Classification societies (Class) and flag Administrations as acceptable ‘drop-in’ fuels.

It should be further understood by suppliers and ship operators that because of the diversity of feedstocks and production processes *‘No one biofuel / bio-oil product can be used as a reference fuel for all biofuels’*. Whilst blending in a marine fuel might result in the ISO 8217 tables 1 and 2 parameter limits being met, the onus is on the supplier to ensure that the delivered product has met the fundamental and inescapable requirement of complying with the workmanship clause defined under Clause 5 of ISO 8217.

¹ ‘Unestablished’ fuels are those that have not been proven in marine applications such as marine diesel engines and boilers unlike ‘established’ fuels such as FAME, FAME-blends, HVO and GTL. To be established, there needs to be a planned sequence leading to recognition that the fuel product in question does not in itself represent a hazard when used as a ‘drop-in’ fuel (i.e. can be used in existing machinery without adjustment) or a component thereof.



LR FOBAS over the past year has been jointly working with a ship owner and a supplier to explore the use of one of the forms of their CNSL as a blend component. This collaboration has aimed at resolving the challenges of using CNSL, by carrying out a structured and phased process, as required by Class, which has included extensive engine test bench trials and analytical assessment of the specific form of CNSL blend on offer by the supplier. The outcome of this to date has led to a provisional acceptance of this form of CNSL, cleared by OEM, Class, and flag Administration to proceed to the sea-trial stage on a specific engine for subsequent approval.

In view of the above, it is recommended that a precautionary measure is taken at the bunker procurement stage where the purchaser makes clear that no biofuel product is to be used as a blend feedstock unless otherwise offered as an 'established' biofuel and agreed by all parties, thus seeking transparency from the supplier on the blend components to be used. It should be underlined that the use of any bioproduct as a blend component in marine fuels is not allowed by Clause 5 ISO 8217:2017 unless the end-user agrees to receive an established bio-grade fuel.

Furthermore, as always, attention should be given to the collection of bunker samples. It should be ensured that all parties have witnessed the sampling process and have signed and witnessed forms accordingly. The supporting documentation should include records of all the samples considered representative of the fuel as loaded.

If you require any further information about this Bulletin, please contact us at fobas@lr.org or speak to one of our consultants on +44 (0)330 414 1000 (Southampton UK), +44 (0)1642 440991 Redcar (UK), +65 3163 0888 (Singapore), +30 211 990 7732 (Greece). For anything urgent, please contact us via our out of office number, +44 (0)1642 425660.