

25 October 2019

FOBAS Alert: High Acid number and possible contamination of fuels in Fujairah

Applicability: All ship owners and operators

Over the last month, FOBAS have tested a number of fuel oil samples from deliveries in Fujairah that have been found to have an elevated Total Acid Number (TAN). The tested TAN values were all significantly above the average for the port (0.17mgKOH/g), with some exceeding the maximum 2.5 mgKOH/g specification limit as stipulated in ISO 8217:2017. The fuels noted for their high TAN values were a combination of HSFO grades as well as new VLSFO blends indicating the issue may lie with the base residual fuel and not the cutter stocks used.

Acid number can be a reflection of naturally occurring naphthenic acids in the fuel from the crude source or a reflection of contamination with acidic compounds. High acid number fuel due to naphthenic acids are common in certain parts of the world (although not previously Fujairah) and are not considered problematic during use. Fuels contaminated with extraneous acidic compounds however have been linked to many operational problems in the past. ISO 8217 recognises that the presence of acids (even if within the specification limits) can cause operational problems if the acids present in fuels are not naturally occurring Naphthenic acids.

Investigative analysis using FTIR and GCMS test methods has been carried out on a selection of these fuels and the results show a mixed picture of contamination with low levels of certain fatty acids, phenols and oxygenated material. Some of the specific compounds detected include 4 cumyl phenol, Bisphenol and commonly found fatty acids Palmitic and Stearic acids. All individual components have been found at low levels but in combination with a number of unidentified components the total concentration in some cases is much higher.

Past experience has shown some of these components have been linked with severe operational problems, particularly around filters, fuel injection pumps and fuel injectors. We would like to reiterate that any such contaminants even at low levels may contravene the stipulations of Revised MARPOL Annex VI regulation 18.3 and International Marine Fuel Standard ISO 8217, Clause 5.

Further to this for vessels bunkering at this port we would recommend as a precaution to test any HFO for its acid number if not already doing so as standard and confirm with suppliers that they are supplying fuel in compliance with MARPOL Annex VI Reg 18.3 and ISO8217 general requirements clause 5.

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), +30 210 4580 874 (Greece). For anything urgent, please contact us via our out of office number, +44 (0)1642 425660.