



Service Update: Contaminated fuel from the US Gulf region

Applicability: All ship owners and operators

Lloyd's Register's Fuel Oil Bunker Analysis Service (FOBAS) has recently identified several externally contaminated fuels from the US Gulf region. The contaminants were detected by following in-depth analysis of fuel samples which revealed above average acid number during routine analysis.

Further investigation of these samples using FT-IR* and GC-MS** techniques confirmed that the acids present in the fuels were predominantly fatty (Rosin acids) in nature with some other low levels of contaminants such as glycols and alpha-pinene being present as well. The presence of Rosin acids and alpha-pinene suggested possible presence of Tall Oil. One of the vessels using the contaminated fuel reported serious problems of sludging and fuel pumps injection malfunction / unusual wear leading to low fuel injection pressure and eventually loss of power mainly on auxiliary engines.

The fatty acids and other compounds found are not usually expected to be in fuel oil and their presence constitutes a breach of MARPOL Annex VI regulation 18.3 and section 5 of ISO 8217, which state:

The fuel oil shall not include any added substance or chemical waste which either-

- (a) jeopardises the safety of ships or adversely affects the performance of the machinery, or
- (b) is harmful to personnel, or
- (c) contributes overall to additional air pollution

Fuels containing similar contaminants have been associated with fuel pump problems in the past as well. Therefore, as a precautionary measure, FOBAS clients who are bunkering fuels from the US Gulf region are advised to carry out an additional acid number test and to pay particular attention to fuel pump and injector performance..

Notes

A fuel's acid number alone is not a definitive indicator of fuel quality, but can help alert owners and operators to the possible presence of contaminants. Cases of fuels exhibiting above average acid number usually relate to naphthenic acids originating from the crude source, but an above average acid number in a marine fuel oil may be associated with external contamination. Therefore, each case should be investigated on its own merits.

* FT-IR; Fourier Transform – Infrared Spectroscopy

** GC-MS; Gas Chromatography – Mass Spectrometry

For further information

For further information about this bulletin or for any further information about fuel, oil contamination, please contact Lloyd's Register FOBAS on fobas@lr.org or speak to one of our experts by calling +44 (0) 23 8024 9797 (UK), +65 6278 9444 (Singapore) or +30 210 4580 932 (Greece).