

09 August 2017

**Fuel Quality Issue:** Off-spec Aluminium and Silicon (Cat fines) fuels in Fujairah

**Applicability:** ship owners and operators

In the last week FOBAS has tested a number of fuel samples bunkered in Fujairah which have tested Aluminium and Silicon (Al+Si/Cat fines) at levels above the 95% confidence limit of the ISO8217(2017) RME/RMG and RMK grades.

Results have ranged from marginally above at 75 mg/kg up to nearly double at 139 mg/kg. Al+Si at 75mg/kg can be difficult to reduce but may be manageable; however Al+Si at levels up to 139mg/kg would prove extremely difficult to bring down to acceptable levels for engine entry (<15mg/kg). Carry over of abrasive Al+Si material at high levels may lead to damage to fuel pumps/injectors and cylinder components.

There are steps that can be taken to maximize the Al+Si reduction:

- Fuel should remain in settling tanks for the maximum possible time, with elevated heating as appropriate, to facilitate gravitational separation of Al+Si through settling. Both settling and service tanks should be drained off at regular intervals.
- Separators should be operated using optimum arrangement and settings, ensuring optimal fuel flow rate and steady state fuel through-put temperature of 98 Deg C to enhance separator efficiency. The de-sludge cycle frequency may be increased to optimise bowl cleanliness and separation efficiency in removing Al+Si from the fuel oil.

And further recommendations for monitoring performance and signs of increased wear:

- Additionally during the use of any fuel with high Al+Si attention should be given to any increase in fuel rack position needed to maintain set engine revolutions/load, which may indicate increased wear rates of fuel pump/injectors.
- Spot checks on ring packs and liners should be carried out at the earliest opportunity for signs of Al+Si abrasive wear.

In case that a vessel bunkers a fuel with a tested Al+Si off-spec as above the first action we would recommend is that further samples are taken from upper, middle, lower and bottom of the respective

bunker tanks to confirm the original result and to establish the distribution of the catfines in the tank(s). Additionally the suppliers should be contacted and requested to comment on the results.

As good general practice we would recommend regular checks of purifier performance by having samples taken from inlet and outlet of all purifiers analyzed for at least water, ash and element concentration, including Al+Si, to be confident of purifier performance at all times.

As ever it is extremely important to take representative bunker drip samples during bunkering process so that quality of the bunkered fuel can be ascertained.

*If you require any further information about this Bulletin, please contact us at [fobas@lr.org](mailto: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 932 (Greece).*

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