

# FUEL SYSTEM OVERVIEW

**In addition to the analysis of fuel samples taken when bunkering, an increasing number of ship owners and ship managers have chosen to monitor the quality of bunker fuel throughout the fuel oil system as part of a preventative maintenance programme.**

In part, this can be attributed to evidence of elevated levels of catalytic fines – in particular, in low sulphur residual fuels – which analysis of data from samples submitted to Intertek Lintec’s fuel testing programme illustrates.

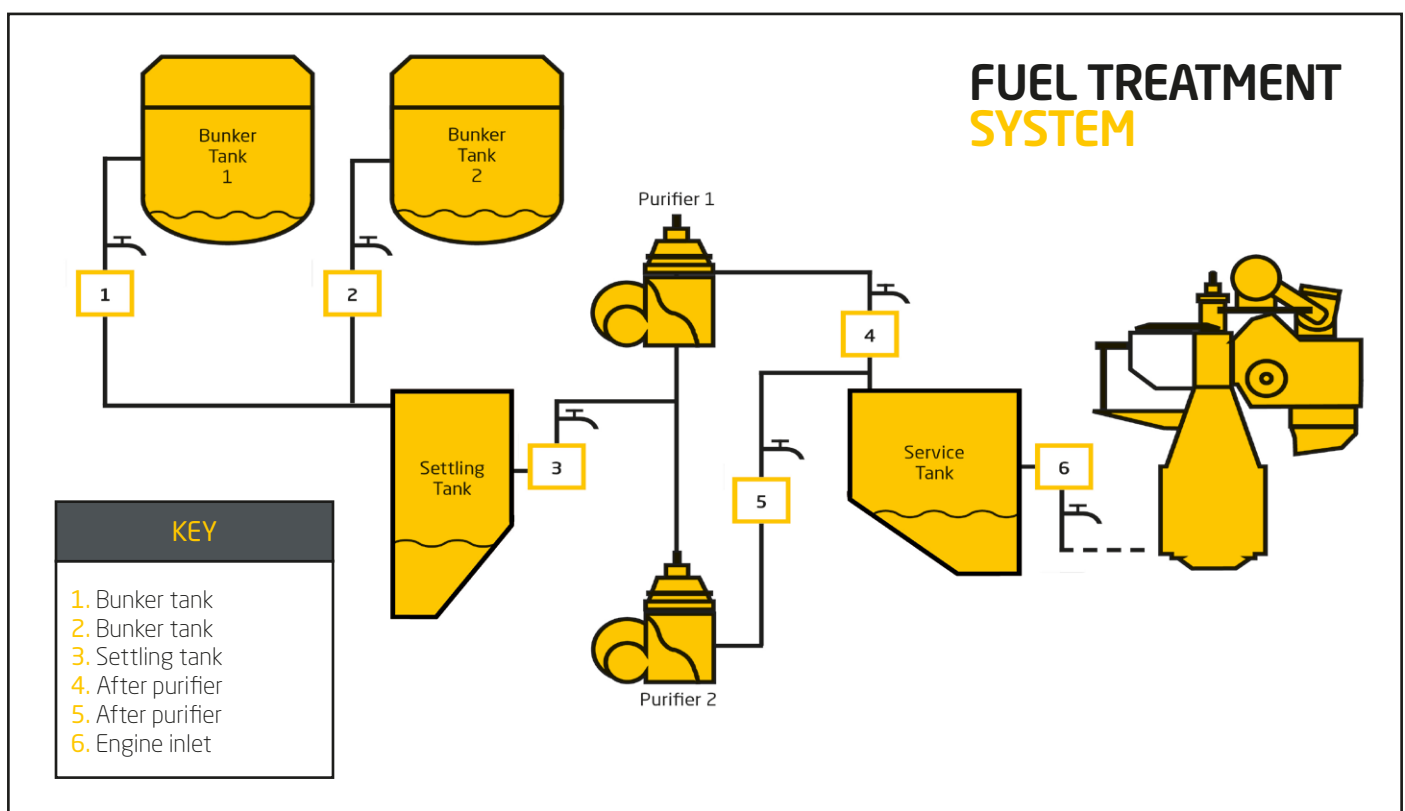
In addition to the possibility of high levels of catalytic fines in delivered fuel, it should be borne in mind that particles which might have settled in tanks on board can find their way in to fuel after being agitated, after a period of heavy weather for example. No matter how they arrive in the fuel, it is essential to ensure that the level of catalytic fines in the injected fuel oil meets the specification set by the engine builder, typically in the region of 10mg/kg.

In order to reduce the likelihood of fuel with high levels of catalytic fines from progressing through the fuel system, a combination of settling, purification and filtration is adopted.

As the time available for settling in tanks is limited, especially given the impact that the requirement for segregation of fuels with different Sulphur contents has had on tank usage, the likelihood of catalytic fines settling out has reduced.

It is vital therefore that a vessel’s fuel handling system operates at optimum efficiency. Including a fuel system overview as part of your planned maintenance regime can significantly reduce the likelihood of the ingress of catalytic fines. Typically a total of six samples, from the points indicated below, are taken and submitted for analysis.

**THE POTENTIAL FOR DAMAGE THESE CATALYTIC FINES CAN CAUSE IS WELL KNOWN**



# HOW TO TAKE SAMPLES AND FORWARD THEM FOR ANALYSIS

As is the case for all laboratory analysis, obtaining representative samples is essential and reference should be made to the equipment manufacturer's handbook for specific guidelines regarding the taking of fuel samples.



However, a few general points to bear in mind are:

1. Reference to your company's health and safety policy should be made.
2. Ensure that all personnel who may come into contact with fuel are adequately equipped with the correct personal protection equipment.
3. Sample points should be free from dirt.
4. Before any sample is drawn, a small amount of fuel oil, enough to ensure that the correct fuel is being sampled, should be flushed through.

*Note :- Fuel oil collected from this operation should be segregated and carefully disposed of.*

5. Samples should then be captured in a clean and previously unused sample bottle.

6. Sampling points will depend on the particular layout of each vessel but the 'before purifier' samples should be taken as close as possible to the inlet of the purifier and, if possible, before the purifier inlet filter.
7. Similarly the 'after purifier' samples should be taken as close as possible to the clean oil outlet of the purifier.

Samples should be forwarded to Intertek Lintec in order that full analysis against the ISO 8217 specification can be carried out.

A comparison can then be made of the analysis results, with special attention being paid to the levels of catalytic fines and water content.

## How to send your sample

1. Place the samples in the mailing cartons / boxes provided.
2. Complete the pro-forma invoice and the DHL airway bill.
3. Hand the mailing boxes / cartons to your agent, together with the proforma invoice and airway bill.
4. Send the completed "Request for bunker sample collection" form to Intertek Lintec via E-Mail [lintec.dhl@intertek.com](mailto:lintec.dhl@intertek.com).

Intertek Lintec will then arrange for the samples to be collected and forwarded to our laboratory.

## FOR MORE INFORMATION



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