



VISWA LAB

12140 Almeda Road,
Houston, Texas 77045, USA

Tel: USA (713) 842-1985
Fax: USA (713) 842-1981
Email: techupdate@viswalab.com
Web: <http://www.viswalab.com>

TECHNICAL UPDATE: 2011/2/4

UNACCEPTABLE CONTAMINATION LEVELS IN BUNKER FUELS

A few days ago we reported on a number of contaminants present in bunker fuels supplied in Houston and at least three ships reporting machinery damage. We are now reporting about a sample of fuel bunkered in Sevilla, Spain.

It would appear that since ISO 8217 does not check for presence of contaminants, far too many liberties are being taken with bunker fuel supplied.

In this fuel supplied in Sevilla, Spain, Asphaltene content was 10.0% (against 2% to 6% in normal fuels), MCR 15.3 % (though within limits, this is higher than average) and CCAI was 855 (which is high).

Xylene Equivalent - This is a test to determine the adequacy of aromatics content in the fuel to keep the asphaltene in solution. Normally if Xylene equivalent is more than 30, the aromatic content is considered to be very low. For this fuel, the Xylene equivalent was 50!!

GCMS analysis showed presence of Phenol at 217ppm. Phenols may come from low cost shale oil used as cutter stock. Phenols produce instability, add to the acidity of the fuel and have a negative effect on the ignition and combustion properties. Sometimes the low viscosity (in this case the supply was 253 cSt against 380 cSt) shows that possibly excessive, low cost Phenol cutter stock was added.

With all this, predictably, the vessel has suffered broken piston rings. It is hazardous and nerve racking to change piston rings when vessel is at mid sea. If it is a high traffic area, a ship drifting while piston rings are being renewed is a major hazard. We have already sent an update (2010/10/32 and 2009/4/7) where the combination of MCR greater than 11.5%, asphaltene greater than 10.5% and CCAI greater than 848 can cause piston ring breakage in 380 cSt fuels. In addition, this Sevilla fuel also had contaminants and low aromatics as noted above.

It is clear that ISO 8217 is not going to identify problem fuels. Only extended tests can do this. Increasingly the price for not identifying the problem fuels is becoming expensive indeed!

Please do not hesitate to contact us with any questions.

Best regards,
Dr.Vis