Compatibility Check

Instruction Manual

Introduction

Almost all heavy fuels are blended at some stage. During blending or on subsequent storage, reactions can occur that result in sludge formation which, if burned, could cause serious damage to the engine. The aromaticity or solvent capacity of the fuel oil can be too low and an asphaltene precipitate will occur. Filter blockage, reduced fuel injector performance, poor combustion, and even damage to piston rings and liners may occur. Bunkers from different sources should be segregated whenever possible and being checked for COMPATIBILITY.

Procedure:

1) Draw representative samples from your tanks, e.g. by using Martechnic SAMPLING EQUIPMENT. Shake the samples well.

2) Fill approx 30 ml of water into the heating bath to ensure good heat transfer.

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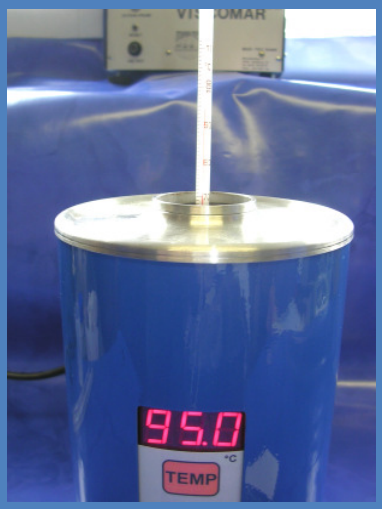
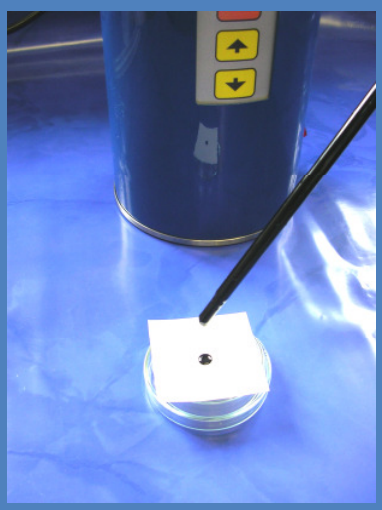
3) Fill the first sample into the glass tube, up to the 50 ml mark. Fill the second sample on top up to the 100 ml mark. Mix both samples, e.g. by stirring with the thermometer. Afterwards place the tube in the heating bath.

4) Switch on the heating bath for heating the sample up to 95°C, checking and stirring with the thermometer.

5) The heating temperature can be adjusted by two touch sensors (arrows up and down). Slight pressure is enough to increase or decrease the "target" temperature. Upon selection, quickly touch the TEMP field TWICE. Once selected the heating bath will remember the temperature, even if switched off.



6) When temperature is stable, place the sheet of spot test paper on the open petri dish, where you intend to place the spot, and let the second drop of fuel drip on it from the thermometer. Place sheet and petri dish on top of the heating bath and let it dry thoroughly.



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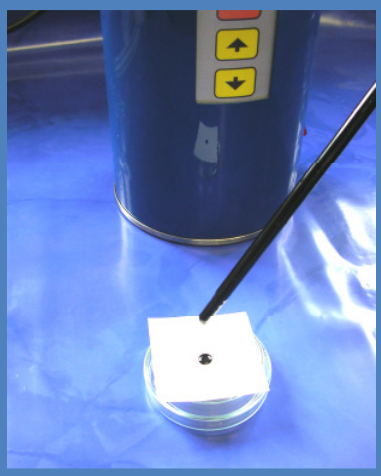
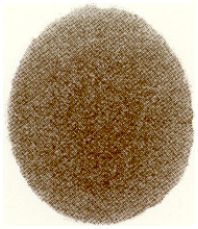
7) For the comparison of the drop, refer to the comparative spots given below.



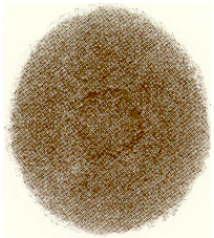
INTERPRETATION OF RESULTS WITH REFERENCE SPOTS:

1. Homogenous Spot - no inner ring:

2. Faint or poorly defined inner ring ,
   only slighter darker than the background



3. Well-defined inner ring,



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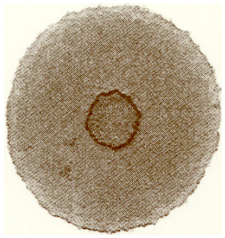
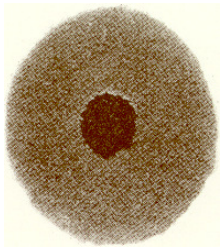
4. Well-defined inner ring, thicker than the ring in spot 3. and somewhat darker than the background.



5. Very dark solid or nearly solid area in the center. Central area is much darker than the background.



Remark:

Of the above spots only No.
(1) shows a stable sample which generally can be used without a problem.
(2)-(5) are already unstable to varying extent.

Oil samples comparable to (2)-(4) may cause varying amounts of sludging, according to how it is treated.

Oil samples comparable to (5) most probably will cause severe sludging, and any action taken to prevent problems may prove ineffective!!

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