
VERIFICATION OF MICROSEPAROMETER CALIBRATION

Requirements

Reference Base Fluid Surfactant free kerosene
Aerosol OT Premix Part No 142 90 5955
Attapulugus Clay Part No 142 00 9999

Procedure

The procedure to verify the calibration status of any Microseparometer is almost identical to performing an actual Microseparometer test. The difference is that a dispersing agent is added to the reference base fluid. This dispersing agent simulates the presence of a surface-active substance (surfactant). During the Microseparometer test, when the distilled water is added to the reference base fluid in the syringe, a specific amount of the premixed dispersing agent is also added using the 50 microlitre pipette (furnished with each Microseparometer).

The premix is a 10% w/v solution of dispersing agent (AOT) in toluene. Tests performed using a given number of 50 microlitre injections of premix to 50 millilitres of reference base fluid should yield Microseparometer ratings within a particular range of values as listed in the Tables 4, 5 and 6, "*Expected Performance with Reference Fluid containing a Dispersing Agent*", in ASTM D3948.

For example, four 50-microlitre injections of premix in 50 millilitres of Jet-A reference base fluid are equivalent to 0.4 millilitres per litre. According to Table 4 in ASTM D3948, the Microseparometer rating should be in the range of 69 to 88, with a standard value of 80.

Test results (Microseparometer ratings) that are repeatedly outside the acceptable range of values indicate improper performance. In this case, the Microseparometer requires adjustment and/or repair. It should be returned to Med-Lab in Derby for re-calibration and/or repair.

If surfactant free kerosene reference fluid is not available, i.e. having a Microseparometer rating of 99 (limits for acceptable performance 97-100), the procedure for preparing the surfactant free kerosene reference fluid is described in Annexe X1 of ASTM D3948. This requires the use of attapulugus clay.



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