

Wettability Tester **Model C1001**

The **Model C1001 Wettability Tester** is designed specifically for evaluation of spacers and/or pre-flushes designed to water-wet the surfaces that the cement is expected to bond to after said surfaces have been exposed to non-aqueous fluids, specifically oil and synthetic-based drilling fluids. Both the apparent wettability of various mud/spacer interface volumes and the apparent wettability of just the spacer system against oil-wetted surfaces can be evaluated.



Method

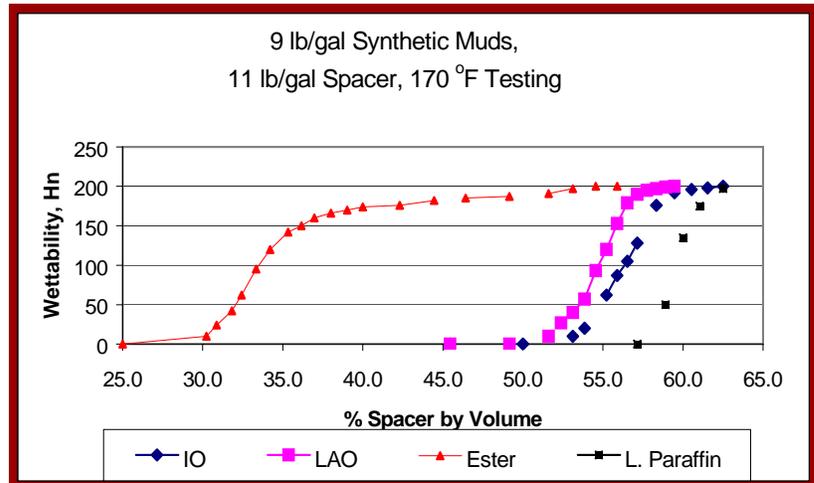
Normally, oil-external fluids are not electrically conductive, whereas water-based spacers are; actual conductivity depending on the solution chemistry of that fluid. The Wettability Tester measures both the surface-acting and electrical properties of the fluid being tested. The accompanying circuitry takes the electrical activity in the fluid and on the electrode surfaces and provides a continuous reading to reflect the apparent wettability of the fluid measured in the dimensionless unit of *Hogans* (Hn).

Apparatus

This instrument consists of a double-walled stainless steel mixing jar, a blender base, and an electronics control unit. A harness connection provides power to the heater, the thermocouple, and the electrodes. The jar can be used on most commercial blender bases. The accompanying electronics control unit contains the temperature controller and wettability electronics.

When the cup is empty, no electrical activity is present and the resulting reading should be 0 Hn. Likewise, with the cup full of a stable, oil-external drilling fluid the reading is 0 Hn. Once the external phase of the fluid in the cup starts to exhibit electrical activity, a measurable level of apparent wettability will ensue. The meter reading will then be able to provide a quantitative measure of the degree of apparent wettability that is occurring in the fluid and allow direct comparisons between different spacer and surfactant systems. It also allows examination of the effects of individual surfactants on the system.

This graph illustrates the wettability transition that is occurring during the phase transition for four synthetic based drilling fluids as they are mixed with an aqueous spacer that contains a popular surfactant package.



Specifications

Power: 115 Volts 60 Hz
Maximum Temperature: 180°F (82°C)
Volume: 300ml

Ordering Information

Item	Part Number
Wettability Tester Model C1001	203936
Replacement Blade Assembly	204651

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