



**METHOD OF TEST FOR DETERMINING THE PARTICLE CHARGE
OF CATIONIC EMULSIFIED ASPHALTS****SCOPE**

This IM is intended to provide the procedure for identifying cationic emulsions (positively charged particles).

APPARATUS

- Milliampmeter, and a variable resistor
- Two (2) stainless steel plates approximately 1 in. x 4 in. (25 mm x 100 mm), insulated from each other and rigidly held parallel 1/2 in. (12.5 mm) apart.
- Glass or plastic beaker, at least 400 ml capacity
- 1 timing device, either a watch or clock

PROCEDURE

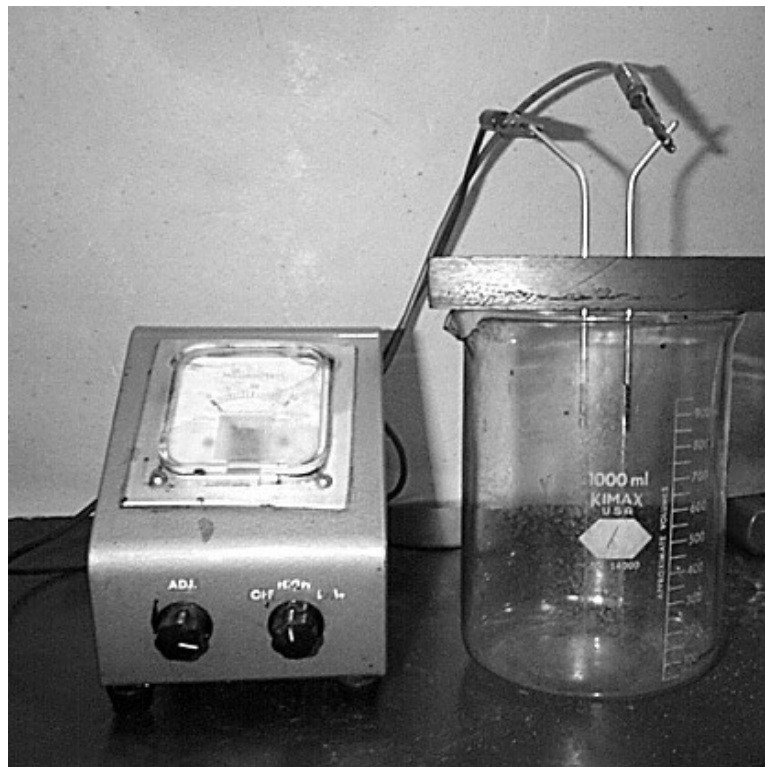
1. Pour the emulsion to be tested into the glass beaker to a height that will allow the electrodes to be immersed about 1 in. (25 mm) in the emulsion.
2. Connect the current source (black wire, negative and red wire, positive) to the electrodes. Insert the electrodes into the emulsion to a depth of about 1 in. (25 mm).
3. Adjust the current to at least 8mA with the variable resistor and start timing.
4. When the current has dropped to 2mA or at such a time that an appropriate amount of asphalt has been deposited on one of the electrodes, disconnect the current source and gently wash the electrodes with clean water. (Some types of slow-setting emulsions will not deposit an asphalt layer on either electrode. Allow the current source to continue for at least 1 hour before making this conclusion.)
5. Observe the asphalt deposit on the electrodes. A cationic emulsion will deposit a layer of asphalt on the cathode (negative, black wire, electrode) while the anode (positive, red wire, electrode) remains relatively clean. If the asphalt is deposited on the anode, the emulsion is considered to be anionic.

DOCUMENTATION

1. Report the test results in terms of the determined polarity (positive or negative).

If there was no asphalt deposit on either electrode, the test result must be reported as “inconclusive by this test method.”

NOTE: The emulsion supplier must provide evidence of polarity, prior to use in the project when emulsions have inconclusive test results.



Particle Charge Tester