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Potentiometric Titration Application Notes Applications Log # **627A**

Overview Alkalinity of oil emulsions was determined by "Sequencing" procedures that linked two preset endpoint techniques (alkalinity & pH adjust) and one first derivative technique (sulfonate). 0.1 M hydrochloric acid is used as the titrant for alkalinity and pH adjust. The Orion 960 Titrator PLUS calculates the sample concentration.

Market	Metals	***Species Measured***	Alkalinity
Sample	Oil Emulsion	***Sample Size***	10mL
		Typical Concentration	0.2-0.35% w/v
Technique #	8 Sequencing, preset endpoint	***Electrode***	Sure Flow pH electrode 810200

Solutions 0.1M HCl. Triton X-100 654203. pH buffers. Electrode fill solution.

Sample Prep Calibrate the pH electrode with pH 4 and 7 buffers. Add 60mL DI water and 1mL triton to the 10 mL sample. Titrate to preset endpoint of pH 5.3 (method 1). Titrate to present endpoint of pH 2.5 (method 2) prior to sulfonate analysis.

Methods 1,2, and 3 are linked together in a sequence to measure alkalinity and sulfonate on the same sample.

Statistics

# of Trials	3	***Mean***	0.323%w/w	***%CV***		***Analysis Time***	3.1 minute(s)

Comments Rinse the electrodes, stirrer, and dispenser probe between measurements with deionized water. Method 1 measures alkalinity; method 2 adjusts pH to 2.5; method 3 measures sulfonate.

Method Parameters

Sample Volume/Weight	10.0 mL	***Timed or Stability Readings***	3 seconds timed
Constant Increment	10.0 mV	***Number of Endpoints***	1
Max Titrant Volume		***Desired Units***	% w/w
Molecular weight	53.0 g	***Predose***	none
Prestir	15 sec	***Additional Parameters***	
Reaction Ratio	1.00		