



Thermo

ELECTRON CORPORATION

Potentiometric Titration Application Notes

Applications Log # 114A

Overview

Free alkalinity and soap content of an emulsifier solution were determined by titration with sulfuric acid. The titration has two endpoints; the first is equivalent to the free alkalinity (as %KOH), the second to the % soap. The % soap result is equivalent to the difference between the first and second endpoints. A different method is required for each endpoint because the first endpoint is much weaker than the second, and because a different molecular weight is required for each result.

Industry	Pharmaceuticals and Cosmetics
Species Measured	Alkali
Sample	Emulsifier Solution
Sample Size	3.0g
Typical Concentration	0.4% w/w
Technique	# 8 Preset Endpoint
Electrode	Ross Sure-Flow pH 8172BN
Solutions	0.05M H ₂ SO ₄
Sample Prep	Dilute w/ deionized water

Statistics

# of Trials	5	Mean	0.443%w/w	%CV	0.52
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Analysis Time 4.2minute(s)

Comments Rinse the electrodes, stirrer, and dispenser probe between measurements with deionized water.

Method Parameters

Sample Volume/Weight	3.02 g	Timed or Stability Readings	7.0 second(s)ond(s) timed
Constant Increment	10.0 mV	Number of Endpoints	1
Max Titrant Volume	15.00 mL	Desired Units	% w/w
Molecular weight	56.10 g	Predose	none
Prestir	5.0 second(s)	Additional Parameters	Preset pH = 8.30
Reaction Ratio	2.00		