



Thermo

ELECTRON CORPORATION

Potentiometric Titration Application Notes

Applications Log # 67B

Overview

The bromine number of a sample is the number of grams of bromine that will react with 100 g of sample. The bromine number titration is used to indicate the level of (olefinic) unsaturation in petroleum distillates. Under the right conditions, bromine reacts more or less stoichiometrically with the double bond. In the example given here, bromine number of cyclohexene, the sample is weighed into a beaker containing an acidic solvent, and titrated with an aqueous solution of potassium

Industry	Petroleum and Refining
Species Measured	Bromine Number
Sample	Petroleum Distillates
Sample Size	0.1mL
Typical Concentration	185
Technique	# 6 First Derivative
Electrode	Double Platinum 977900
Solutions	1:5 sulfuric acid; glacial acetic acid; 1,1,1 Trichlorethane; Methanol, Potassium Bromate/ Potassium Bromide Titrant
Sample Prep	Dilute w/ special titration solvent containing: HOAc, NeOH, C2H3Cl3, and H2SO4.

Statistics

# of Trials	5	Mean	185.19	%CV	0.31
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Analysis Time 5.3minute(s)

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

Method Parameters

Sample Volume/Weight	0.077 g	Timed or Stability Readings	10.0 sec timed
Constant Increment	0.050 mL	Number of Endpoints	1
Max Titrant Volume	10.00 mL	Desired Units	...w
Molecular weight	7.99 g	Predose	3.00 mL
Prestir	10.0 sec	Additional Parameters	
Reaction Ratio	1.00		