



Thermo

ELECTRON CORPORATION

Potentiometric Titration Application Notes

Applications Log # 165

Overview

The amine value is determined by titrating to a first derivative endpoint with 0.1 M perchloric acid in glacial acetic acid. This method uses the Orion ROSS Combination pH electrode with a saturates solution of LiCl in methanol as the filling solution. Results are reported as TBN which is defined as the number of mg of KOH needed to neutralize all basic constituents present in 1 g of sample.

Industry	Plastics, Rubber, Polymers				
Species Measured	Amine Value				
Sample	Polymide Resins				
Sample Size	0.1g				
Typical Concentration	426TBN				
Technique	# 6 First Derivative				
Electrode	Ross Combination pH 8172BN				
Solutions	0.1M Perchloric acid/glacial acetic acid; saturated LiCl in MeOH; glacial acetic acid; methanol; potassium hydrogen phthalate				
Sample Prep	Weigh about 0.1 g of the polyamide resin into a beaker and add about 40 mL of glacial acetic acid. Make sure the pre-stir time allows the sample to completely dissolve.				
Statistics					
# of Trials	10	Mean	426TBN	%CV	0.97
Analysis Time	3.6minute(s)				
Comments	Rinse the electrodes, stirrer, and dispenser probe between measurements with deionized water.				

Method Parameters

Sample Volume/Weight	0.109 g	Timed or Stability Readings	5.0 sec timed
Constant Increment	10.0 mV	Number of Endpoints	1
Max Titrant Volume	11.00 mL	Desired Units	TBN
Molecular weight		Predose	7.023 mL
Prestir	80.0 sec	Additional Parameters	
Reaction Ratio	1.00		