

## Application Memo

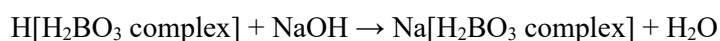
# Purity of Boric Acid

Industry	Inorganic chemical industry
Instrument	Automatic potentiometric titrator
Measurement method	Acid-base titration
Standards	ISO 6353-3

## 1. Overview

Boric acid is measured according to ISO 6353-3: 1987. The test sample is dissolved in Mannitol and water and titrated with 1mol/L sodium hydroxide up to the endpoint, which is the maximum inflexion on the titration curve. Purity of boric acid is calculated from the titration volume of 1 mol/L sodium hydroxide.

This titration method with sodium hydroxide makes use of the fact boric acid which is dissolved in the solution of water and polyhydric alcohol like mannitol or glycerin, becomes strong acid by forming complex ion. Two molecules of polyhydric alcohol form a complex with one molecule of boric acid. And the complex reacts with sodium hydroxide as follows:



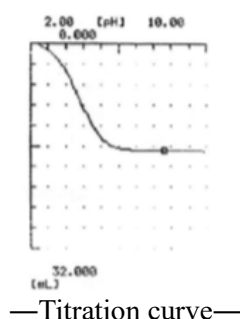
## 2. Apparatus

Main unit	Automatic potentiometric titrator (preamplifier STD)
Electrode	Combined glass electrode Temperature compensation electrode

## 3. Reagents

Titrant	1 mol/L sodium hydroxide
Solvent	Pure water
Additive	D-mannitol

## 4. Example



—Measurement results—			
	Sample (g)	Titer (mL)	Boric acid (%)
1	1.0113	16.7059	98.83
2	1.0695	17.6421	98.69
3	1.0781	17.8306	98.95
Average			98.82
SD			0.13
RSD(%)			0.13

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