

Application Memo

Boric Acid in Pesticide

Industry	Agricultural chemicals
Instrument	Automatic potentiometric titrator
Measurement method	Acid-base Titration
Standards	ISO 6353-3

1. Overview

Boric acid in boric acid dumplings is quantified as follows. After D-mannitol and water are added to the sample for extraction, it is titrated with sodium hydroxide up to the endpoint. Direct titration for boric acid is difficult because boric acid hardly dissociates acid. Polyols such as mannitol form complexes with boric acid and liberate hydrogen ions. This operation makes neutralization titration for boric acid possible. The endpoint is the inflexion point on the titration curve. The boric acid in pesticide is calculated from the titration volume.

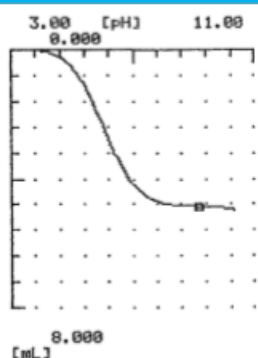
2. Apparatus

Main unit	Automatic potentiometric titrator (preamplifier STD)
Electrode	pH glass electrode Ceramic reference electrode Temperature compensation electrode

3. Reagents

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

4. Example



—Titration curve—

—Measurement results—

	Sample (g)	Titer (mL)	Concentration (%)
1	2.0148	4.8610	14.932
2	2.0060	4.9123	15.156
3	2.0145	4.8974	15.046
Average			15.045
SD			0.112
RSD(%)			0.744

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