

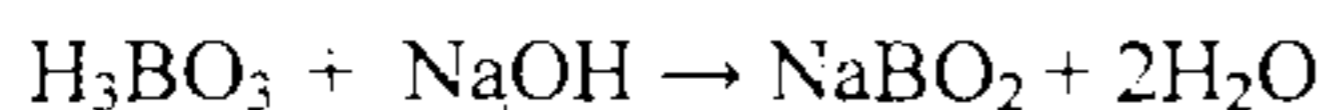
ANALYSIS OF BORIC ACID

Objective

Determination of the percentage of H_3BO_3

Introduction and principle

Boric acid is too weak an acid to be titrated quantitatively in aqueous solution with sodium hydroxide solution using a visual indicator. However, it can be titrated with standard alkali in the presence of mannitol using phenolphthalein as indicator



Boric acid is esterified in the presence of polyhydric alcohols, such as glycerol or mannitol, forming a monobasic acid which is strong enough to give a satisfactory end point. It is stated that if glycerol is added a glycerylboric acid is formed. At least 30% glycerol is added or mannitol is needed to prevent hydrolysis of the titratable acid.

Method

Accurately weigh the sample (about 1g), add water (100ml) and mannitol (15g) and titrate with M NaOH using phenolphthalein as indicator

Exercises

1. Calculate the percentage of boric acid
2. Write the reaction between boric acid and glycerol/mannitol
3. Determine the melting point and mention the application of boric acid