

## Neutralization that uses ethanol solvent

Level Elementary

### Concept

It is confirmed that mixing acid and alkali can produce neutral solution.

When the acid and the alkali neutralize, it is confirmed that water and the salt are made.

It is practiced to mix the acid and the alkali and to make the neutral solution.



### Materials

ethanol, bromothymolblue solution(BTB), sodium hydroxide, hydrochloric acid, beaker, test tube, slide glass, straw, balance and graduated cylinder(100ml)

### Procedure

#### ①Preparation for hydrochloric acid

5ml of conc. hydrochloric acid (35%) is added to ethanol 95ml, and it makes 100ml total.

The BTB solution is added, and make it to yellow.

#### ②Preparation for sodium hydroxide solution

The sodium hydroxide of 2g dissolves in the water of 10ml, and adding the ethanol makes it to 100ml.

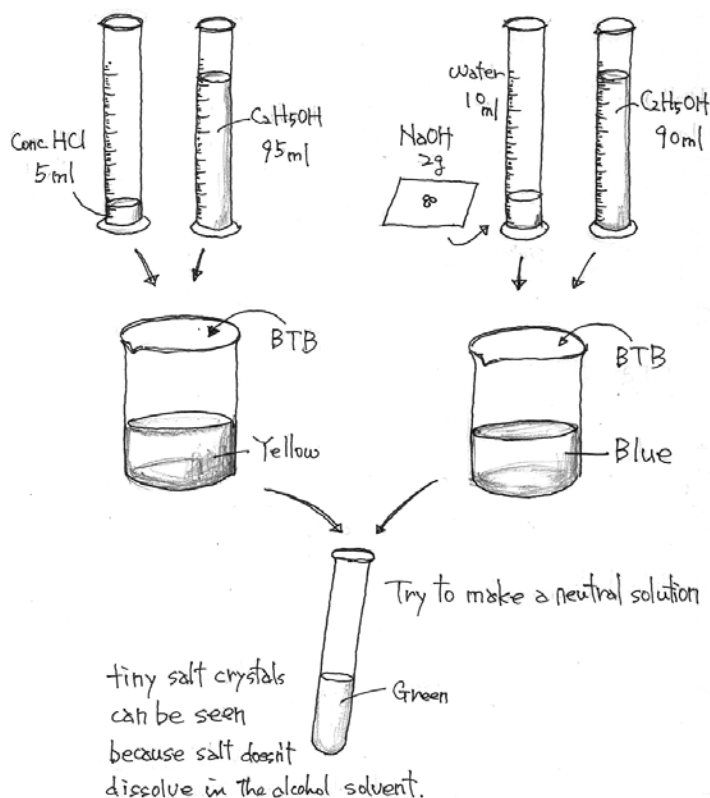
It makes it to blue when adding the BTB solution.

#### ③Neutralization

The hydrochloric acid and the sodium hydroxide solution are mixed and it neutralizes.

The solution is put in carefully as green the color of the BTB solution.

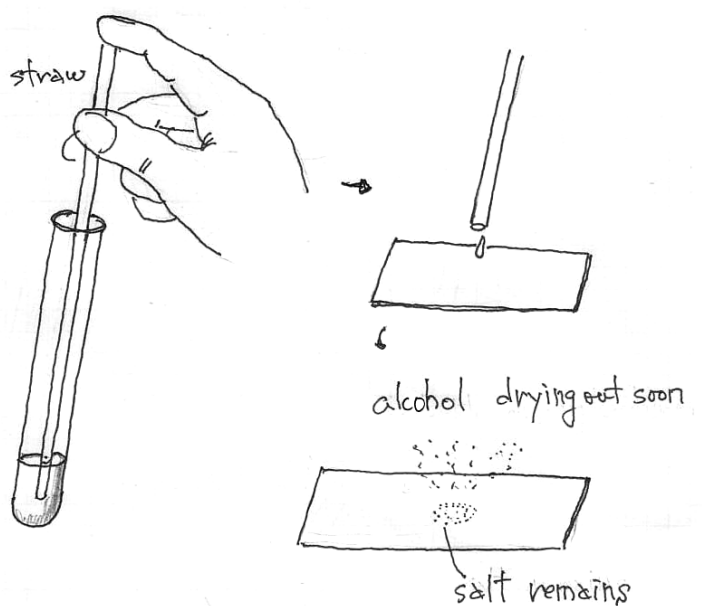
A straw is used instead of a pipette.



#### ④ Confirmation of salt

A small amount of solution that neutralizes is taken by a straw, and put it on the slide glass.

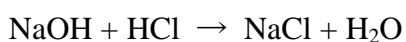
After the ethanol volatilizes, the crystal is observed.



#### Science

When the hydrochloric acid and the sodium hydroxide are neutralized, water and sodium chloride (salt) are made.

The chemical equation is as follow.



In usual solution, the salt dissolves into water.

Therefore, whether the salt was able to be done really is not confirmed easily.

Sodium chloride doesn't dissolve into alcohol.

The moment when the salt is made can be confirmed by using alcohol solvent.

The ethanol is a convenient solvent. When the solution is put on the slide glass, it volatilizes soon and the crystal of the salt remains.