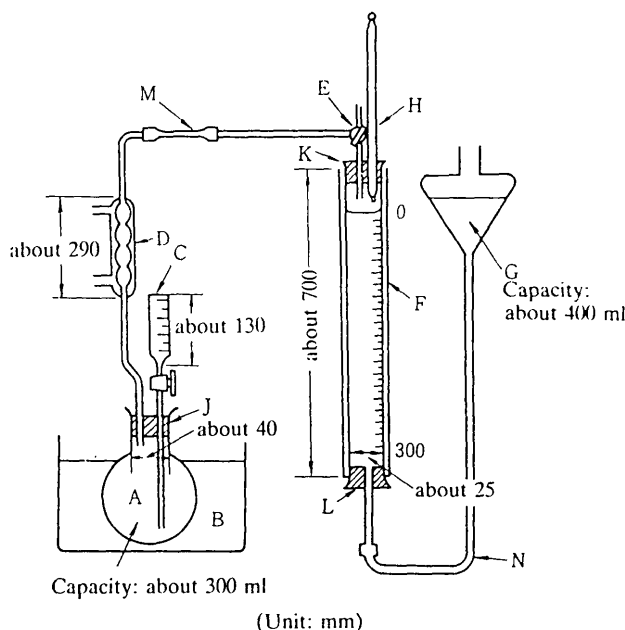


B. GENERAL TESTS

Quantitative Test for Generated Gas

The Quantitative Test for Generated Gas is designed to measure the quantity of gas generated from Baking Powder.

Apparatus Use the apparatus illustrated in the figure below.



A: Round-bottom flask for gas generation (Capacity: about 300 ml)

B: Water bath

C: Acid-dropping funnel

D: Condenser

E: Three-way stopcock

F: Gas buret with outer tube (Capacity: about 300 ml, scale: 1-ml graduations)

G: Leveling bottle (Capacity: about 400 ml)

H: Thermometer

J, K, L: Rubber stoppers

M, N: Rubber tubes

Preparation of Replacing Solution Weigh 100 g of sodium chloride, dissolve in 350 ml of water, add 1 g of sodium hydrogen carbonate, and add diluted hydrochloric acid (1 : 3) until the solution shows slight acidity to methyl orange TS.

Procedure Wrap 2.0 g of the sample (in the case of Duplex Baking Powder, use the sample that mixed at the same rate as at the time of use) in Japanese paper, and place into flask A for gas generation filled with 100 ml of water beforehand. Connect

B. GENERAL TESTS

the apparatus, open three-way stopcock E, move leveling bottle G vertically to adjust the level of the replacing solution to the zero mark on the scale of gas buret F. Allow water to flow through condenser D, turn three-way stopcock E and, after the path is opened between condenser D and gas buret F, add dropwise 20 ml of diluted hydrochloric acid (1 : 3) from dropping funnel C, then immediately close the cock of the dropping funnel. While occasionally shaking the flask gently, heat in a water bath at 75 °C, and lower leveling bottle G according to the level of gas buret F. After 3 minutes, when the levels of the replacing solution in gas buret F and leveling bottle G are matched, read the level on scale V (ml), and take temperature t° of the generated gas with thermometer H. Calculate the volume of generated gas V₀ (ml) in a normal state by the formula given below. Determine the blank value v (ml) in the same manner, and make any necessary correction.

$$V_0(\text{ml}) = (V - v) \times \frac{P - p}{101} \times \frac{273}{273 + t}$$

Where P = atmospheric pressure (kPa) at the time of measurement,
p = vapor pressure (kPa) of water at t °C.