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Aim :→

To determine the acid value of HCl.

Reference :→

Dr Miniyar P.B., Dr. Jain, K.B. Ap practical Book of Pharmaceutical Organic Chemistry. "Nirali Publication"

Requirement :-

S.No.	Chemicals	Qty(ml)	Apparatus	Qty
1.	Fixed oil (eg. Castor oil)	10.9	Iodine flask (250ml)	01
2.	Potassium hydroxide	2.9	Reflux condensor	01
3.	Conc. HCl	3.9	Burette (50ml)	01
4.	Methyl red (as indicator)	0.5	Beaker (250ml)	01
5.	Sodium Carbonate	0.59	Pipette (10ml) graduated	01
6.	Phenolphthalein Sol^{n}	2ml		

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Theory :-

Acid is a substance that is sour in taste. It turns blue litmus to red. It's PH is less than 7. It is a molecule or iron capable of either donating a proton, known as a Bronsted lowry acid, or capable of forming a covalent bond with an electron known as lewis acid. The first category of acids are the Proton donor or bronsted lowry acids, It's aqueous solution release H^+ ions.

Ex :- HCl, Sulphuric acid.

Hydrochloric acid :- (HCl) → It is also known as muriatic acid is an aqueous solution of hydrogen chloride (chemical formula - HCl). It is a colourless solution with a distinctive pungent smell. It is classified as a strong acid, HCl is an important laboratory reagent and industrial chemical hydrochloric acid has many uses. It is used in the production of chloride fertilizers and dyes in electroplating and in the Photographic, textile and rubber industries. It is corrosive to eyes, skin and mucous membrane.

HCl is commonly ~~known~~ used for the neutralization of alkaline agents as a bleeding agent in food, textile, metal and rubber industries.

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Procedure :-

(i) Weigh about 10 g of the substance being examined in an iodine flask.

(ii) Prepare 50 ml mixture of equal volume of ethanol (95%) and ether and 0.5 ml phenolphthalein sol^n and titrate it against 0.1 N aqueous potassium hydroxide (KOH) sol^n to neutralise it.

(iii) Dissolve weighed quantity of the substance in above neutralised sol^n if the sample does not dissolve in the cold solvent, connect the flask with condenser and warm slowly with frequent shaking until the sample dissolve.

(iv) Add 1 ml of phenolphthalein solution and titrate with 0.1 N aqueous potassium hydroxide (KOH) solution until the solution remains faintly pink after shaking for 30 seconds.

(v) Calculate the acid valve from the following equation.

$$\text{Acid value} = 5.61 \times \frac{n}{w}$$

where n = the no. of ml of 0.1 N potassium hydroxide sol^n

w = weight of the substance in gm.

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