

PHARMACEUTICAL INORGANIC CHEMISTRY- BP104T

UNIT: 3 (GASTROINTESTINAL AGENTS)

CLASS: 1

TOPIC: ACIDIFIERS

ACIDIFIERS: They are the drugs which are able to increase acidity in gastro-intestinal tract

- Some of the drugs are also used to increase metabolic acidosis
- Acidifiers are of four types
 1. Gastric Acidifiers
 2. Systemic Acidifiers
 3. Urinary Acidifiers
 4. Acids

1. Gastric Acidifiers:

These are the drugs which are used to restore the acidity of the stomach temporarily in patients suffering from achlorhydria or hypochlorhydria.

2. Systemic Acidifiers:

These are the drugs which are able to neutralize the alkaline body fluids particularly blood in patients suffering from systemic alkalosis.

3. Urinary Acidifiers:

These are the drugs which increase the acidity of urine, which helps in treatment of urinary tract disorders.

4. Acids:

Used as pharmaceutical acids in the preparations of various drugs

DILUTE HCL:

Category: Acidifiers

Molecular Weight: 36.5 g/mol

Synonyms: Spirit of salt

Preparation: 274 grams of HCl is added to 726 grams of water

Properties:

- It is a colorless, clear and fuming Liquid
- It is pungent in odor
- It is soluble in water and alcohol

Storage:

- Stored in well closed container of glass or other inert material at temperature not exceeding 30°C

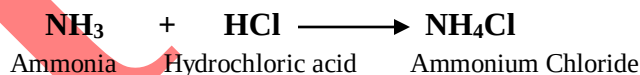
Uses:

- used as an acidifier
- used as pharmaceutical aid
- it is also used to activate protolytic enzyme “**pepsin**”

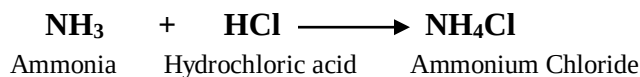
AMMONIUM CHLORIDE:**Molecular Formula:** NH_4Cl **Category:** Acidifier**Method of Preparation:**

Commercially it is prepared by neutralizing ammonia with HCl

- The solution is evaporated till crude vitreous crystalline mass of NH_4Cl is obtained



- It is also prepared by treating ammoniacal gas liquor with lime and the liberated ammonia is passed in HCl
- It is also prepared by heating ammonium sulphate with NaCl



Properties:

- it is a white, fine and crystalline powder
- it is odorless
- it is soluble in water and alcohol
- it is freely soluble in glycerine
- a solution of 0.8% w/v of NH_4Cl is isotonic with serum

Uses:

- maintaining Acid-Base equilibrium in body fluids
- it has diuretic effect
- used as mild expectorant

Storage:

- Stored in a tightly closed container.

Dose:

- as systemic acidifier 1-2 grams 4 times a day
- for expectorant action 0.3 to 0.5 grams dose is used
- administered in form of injection and tablets

Assay:

Assay is done by Acid-Base titrations.

About 0.1 gram of NH_4Cl sample is weighed accurately and kept in a conical flask about 50 ml of water is added to dissolve it followed by addition of 5 ml of neutralized formaldehyde solution

Neutralization is done by dilute NaOH solution after keeping aside for couple of minutes the liberated HCl is made to titrate with standard NaOH by using phenolphthalein as an indicator.

Equivalent factor:

Each ml of 0.1 ml NaOH = 0.0534 grams of NH_4Cl

2 MARKS QUESTIONS

1. What are acidifiers? Classify them with suitable examples

5 MARKS QUESTIONS

1. Write a note on acidifiers and write in detail about dil.HCl

10 MARKS QUESTIONS

1. What are acidifiers? Classify them with suitable examples and write the method of preparation, assay and uses of ammonium chloride