



“बेटी बचाओ, बेटी पढ़ाओ”

JAYOTI VIDYAPEETH WOMEN'S UNIVERSITY, JAIPUR
Faculty of Pharmaceutical Science

Faculty Name	- JV'n Abhishek Kumar
Course	- B. Pharm (1 st sem)
Session	- Pharmaceutical Inorganic Chemistry – (General Methods of Preparation)

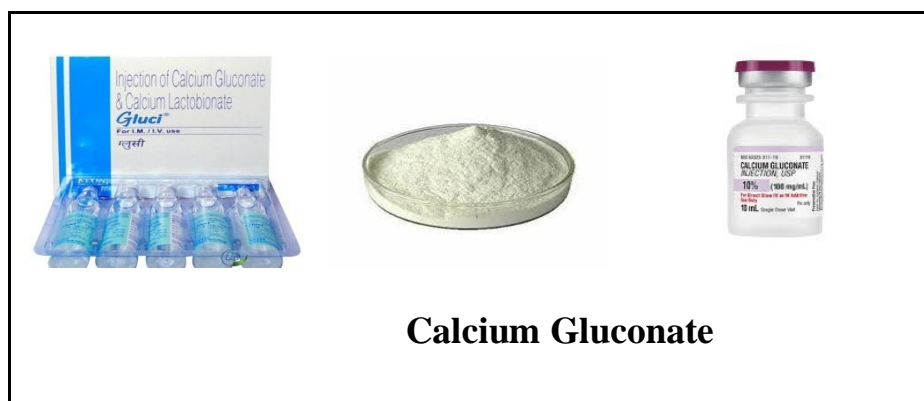
Academic Day starts with –

- Greeting with saying ‘Namaste’ by joining Hands together following by 2-3 Minutes Happy session, Celebrating birthday of any student of respective class and National Anthem

Pharmaceutical Inorganic chemistry Unit 1

1. General Methods of Preparation of Calcium Gluconate:

Calcium gluconate is typically prepared by the reaction of calcium carbonate with gluconic acid. The reaction yields calcium gluconate and water as products. This process involves the neutralization of calcium carbonate with gluconic acid.

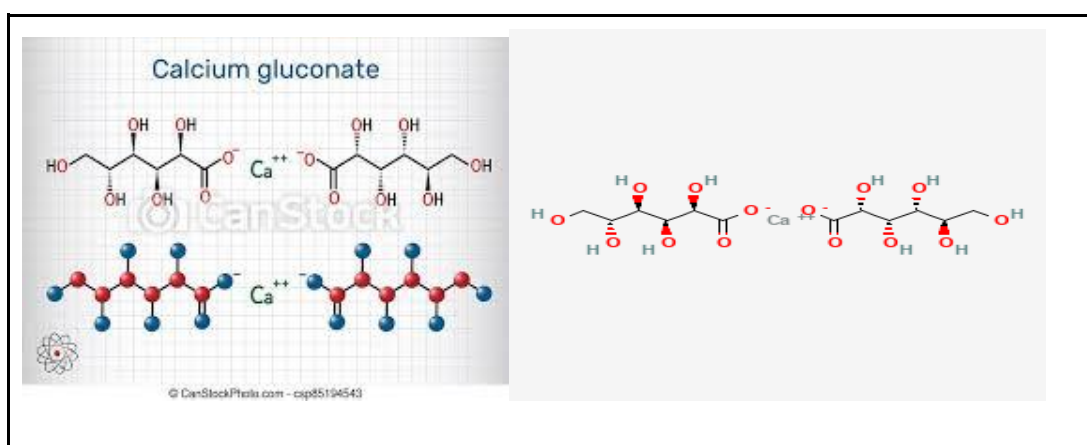


1.2. Assay for Calcium Gluconate:

The assay for calcium gluconate involves determining the calcium content in the compound. One common method is complexometric titration, where calcium ions are titrated with a solution containing a chelating agent, such as EDTA (ethylene diamine tetraacetic acid). The change in color of the solution indicates the endpoint of the titration.

1.3. Properties of Calcium Gluconate:

- Calcium gluconate is a white to off-white crystalline powder.
- It is highly soluble in water.
- It has a slightly bitter taste.
- Calcium gluconate is stable under normal storage conditions.



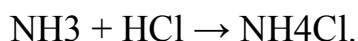
Medicinal Uses of Calcium Gluconate:

- Calcium gluconate is used as a calcium supplement to treat conditions like calcium deficiency.
- It's used to treat hypocalcemia (low blood calcium levels).
- It's also employed to counteract the effects of magnesium toxicity in conditions like magnesium sulfate overdose.
- Calcium gluconate can be used in the treatment of osteoporosis.
- In emergency situations, it's used to manage conditions like hyperkalemia (high blood potassium levels) by stabilizing the cardiac membrane.



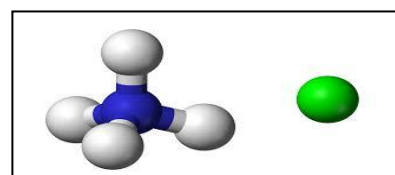
General Methods of Preparation for Ammonium Chloride:

Ammonium chloride can be prepared through a reaction between ammonia gas and hydrochloric acid. The chemical equation for this reaction is:



Assay for Ammonium Chloride:

The assay for ammonium chloride involves determining the content or concentration of ammonium chloride in a sample. This can be done through various methods, such as titration. For instance, you can react a known volume



of ammonium chloride solution with a solution of a strong base (such as sodium hydroxide) of known concentration. The endpoint of the reaction can be detected using indicators, and the amount of base consumed gives you the amount of ammonium chloride present.

Properties of Ammonium Chloride:

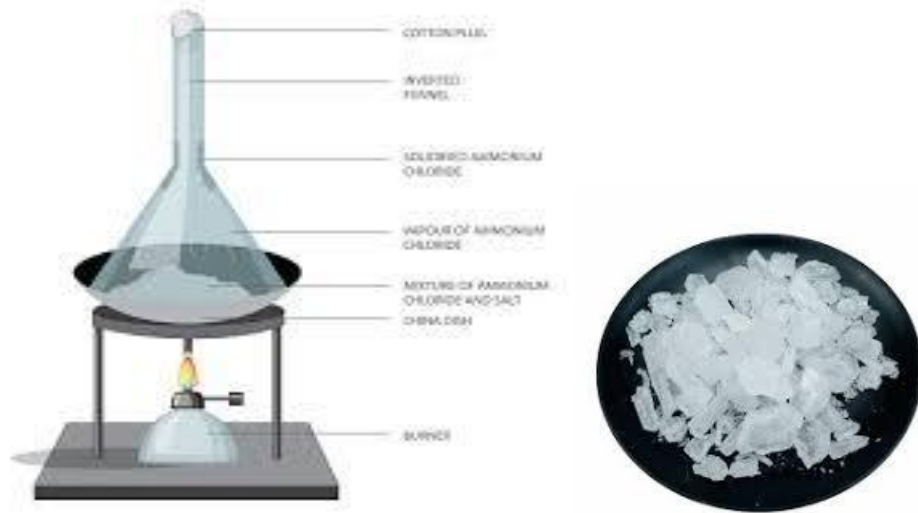
- Ammonium chloride is a white crystalline solid with a distinctive salty taste.
- It has a high solubility in water.
- It sublimates when heated, meaning it directly changes from a solid to a gas without melting.
- Ammonium chloride is acidic in aqueous solutions due to the hydrolysis of its ions.

Medicinal Uses of Ammonium Chloride:

Ammonium chloride has some medicinal applications:

- It can act as an expectorant, helping to thin and loosen mucus in the respiratory system.
- It is used in cough medicines to aid in the relief of congestion and cough.
- In certain medical conditions, it might be used as a urinary acidifier to help reduce the pH of urine.

SUBLIMATION OF AMMONIUM CHLORIDE



Ammonium Chloride