

STD 10 CHEMISTRY CHAPTER 5 COMPOUNDS OF NON-METALS

FIRST BELL CLASS 25 &26 NOTES & WORKSHEETS

The gas used in the production of nitrogenous fertilisers such as urea, ammonium sulphate, ammonium nitrate, ammonium phosphate etc is **Ammonia (NH₃)**

[To see class 25 click here](#)

Preparation of Ammonia in laboratory

Experiment	Observation	Inference
Heat a mixture of a little ammonium chloride(NH ₄ Cl) and calcium hydroxide (Ca(OH) ₂) in a test tube. Show wet blue and red litmus papers at the mouth of the test tube one by one.	A colourless gas with pungent odour is formed. It turns wet red litmus into blue.	The gas formed is ammonia. It is basic in nature

Balanced chemical equation of the reaction

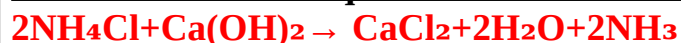
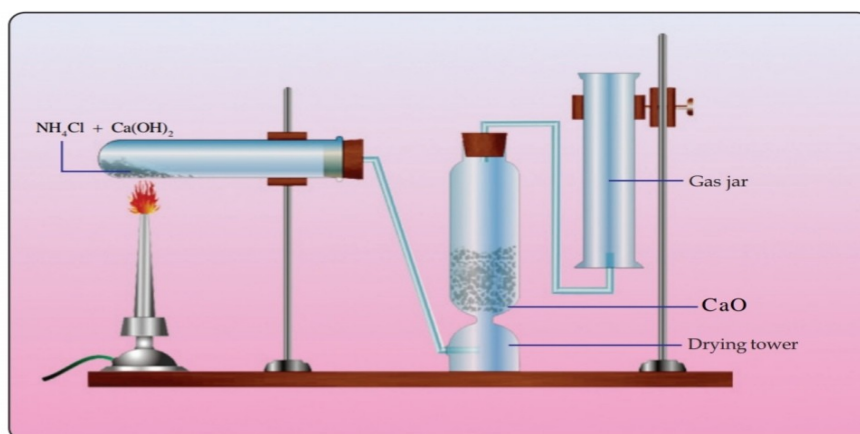


Figure showing the preparation of ammonia in the laboratory



Analyse the above figure and answer the questions

1. Why is ammonia gas passed through quick lime (CaO) ?

Ammonia gas is passed through a drying tower containing quick lime (CaO) to remove the moisture present in it.

2. The gas jar used for collecting ammonia is kept inverted. Why?

Ammonia has density less than that of air. So it is collected by the downward displacement of air.

[To see class 26 click here](#)

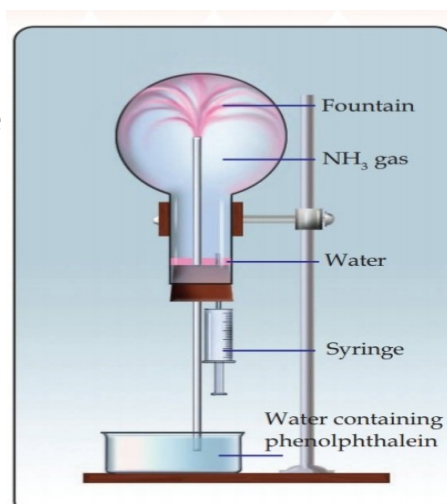
Fountain experiment of ammonia to prove the high solubility of ammonia in water

Experiment

Collect dry ammonia in a round bottomed flask as shown in figure. Dip the jet tube in the beaker containing water in which some phenolphthalein is added. Using a syringe add a few drops of water into the flask in which ammonia is taken

Observation :- A pink coloured fountain is formed inside the RB flask.

Conclusion:- Ammonia dissolves fastly in water forming ammonium hydroxide alkali. Phenolphthalein shows pink colour in alkaline solution. So a pink coloured fountain is formed. This experiment proves that
a. Ammonia is highly soluble in water.
b. Ammonia dissolves in water forms alkaline solution.



Characteristics of Ammonia

Colour	Colourless
Odour	Pungent smell
Nature	Basic
Solubility in water	Very high
Density	Less than that of air

Liquor Ammonia	Liquid Ammonia
A highly concentrated solution of ammonia in water is called Liquor Ammonia.	Ammonia gas can be liquified easily by applying pressure. Liquified ammonia is known as Liquid Ammonia.

Uses of Ammonia

1. For the manufacture of chemical fertilisers like ammonium sulphate, ammonium phosphate, urea etc.
2. As a refrigerant in ice plants.
3. To clean tiles and window panes.
4. In the manufacture of explosives.

Worksheet

1. Which are the reactants needed for the laboratory preparation of ammonia ?
2. Concentrated sulphuric acid is not used to dehydrate ammonia. Why?
3. In fountain experiment of ammonia, what is the colour of fountain formed ?
4. Fill in the blanks
 - a. $2\text{NH}_4\text{Cl} + \text{Ca}(\text{OH})_2 \rightarrow \text{CaCl}_2 + \text{-----} + \text{-----}$
 - b. $\text{NH}_3 + \text{-----} \rightarrow \text{NH}_4\text{OH}$
5. Which are the commonly used ammonium fertilisers?
6. When an ammonia tanker leaks, water is sprayed to reduce its intensity. What is the reason for this?
7. Select the correct one those which are applicable to ammonia in the table

Colour	Yes/No
Odour	Pungent smell/No smell
Nature	Acidic/Basic
Solubility in water	Less/Very high
Density	Less than that of air/More than that of air

8. Write any two uses of ammonia?

Prepared by **USHAKUMARY. S**
Govt HSS Karunagappally