

Study of Compounds - Ammonia

Chapter 9: Study of Compounds - Ammonia · Topic 1

Key Concept

Ammonia is prepared in the lab by heating an ammonium salt with a base, and industrially by the Haber process (nitrogen + hydrogen under high pressure/temperature with a catalyst).

Ammonia gas is colourless, has a pungent smell, is lighter than air, and is extremely soluble in water, forming ammonium hydroxide.

Ammonia acts as a weak base, turning red litmus blue, and reacts with acids to form ammonium salts.

Ammonia is widely used in manufacturing fertilisers, as a refrigerant, and in the production of nitric acid and other chemicals.

Quick Revision Notes

- Lab prep: heating ammonium salt with a base.
- Industrial prep: Haber process (N_2+H_2 , catalyst).
- Ammonia gas: colourless, pungent smell.
- It's lighter than air, highly soluble in water.
- Dissolving forms ammonium hydroxide.
- Ammonia is a weak base, turns red litmus blue.
- It reacts with acids to form ammonium salts.
- Uses: fertilisers, refrigerant, nitric acid production.

Practice Questions

- 1 Describe the lab preparation of ammonia gas.
- 2 Describe the Haber process for industrial ammonia production.
- 3 List the physical properties of ammonia gas.
- 4 Write the reaction of ammonia with hydrochloric acid.
- 5 Research uses of ammonia in industry.
- 6 Explain ammonia's properties in your own words.