Rules for Ammonium Nitrate

Why in News

Recently, the Government has amended the **rules for Ammonium Nitrate** to curb its **pilferage, introduce fire-fighting provisions** as well as **improve ways to handle** and store the chemical.

- These rules have been amended from the lesson learnt from the **Beirut Explosion** in 2020. Nearly 3,000 tons of ammonium nitrate was stored at **Beirut's port for six** years that detonated in 2020, wreaking death and destruction.

Key Points

- **About New Rules:**
  - The rules require that ammonium nitrate received at ports be transferred to storage houses **500 metres beyond the port area.**
  - The rules also permit the **auction of seized lots of ammonium nitrate** to ensure safe and speedy disposal besides requiring that Ammonium Nitrate be imported in bagged form only.
  - The amendments include **provision for adequate fire-fighting facilities in storage and handling areas**, improvement of flooring in storage and handling areas.
  - This will reduce the handling of loose chemicals at port and therefore enhance safety.
- **About Ammonium Nitrate:**
  - **Ammonium Nitrate (NH_4NO_3)** is a nitrogen-rich white, crystalline chemical which is soluble in water.
  - **Uses:**
    - It is a common chemical ingredient of **agricultural fertilisers.**
    - It is used as an ingredient for the production of **anaesthetic gases** and **cold packs.**
    - It is also the main ingredient in the manufacture of **commercial explosives** used in mining and construction.
  - **As Explosive:**
    - It is the main component of the explosive composition known as **ANFO-Ammonium Nitrate Fuel Oil.**
    - Pure ammonium nitrate is not an explosive on its own. For Ammonium nitrate to be explosive, **a primary explosive or detonator** like RDX or TNT is required.
    - Many **Improvised Explosive Devices** (IEDs) used by terrorists around the world have ANFO as the main explosive.
    - **Stored ammonium nitrate is a fire hazard** and can explode in two ways.
      - It may come in contact with some explosive mixture.
      - Due to the oxidation process at large scale, heat may be generated starting a fire and then explosion. This seems to be the primary likely cause of the incident at Beirut port.

- **Regulations:**
    - **Global:** It is classified as an **oxidising content** (Grade 5.1) under the **United Nations classification of dangerous goods.**
        - The United Nations Committee of Experts on the Transport of Dangerous Goods categorizes the types of dangerous goods, under nine classes like Explosive Materials, Inflammable liquids, Easily oxidising contents etc.
    - **India:** In India, the manufacture, conversion, bagging, import, export, transport, possession for sale or use of ammonium nitrate is covered under The **Ammonium Nitrate Rules, 2012.**
        - The **Explosives Act, 1884**, define ammonium nitrate as the "compound with formula **NH_4NO_3** including any mixture or compound having more than 45% ammonium nitrate by weight including emulsions, suspensions, melts or gels but **excluding** emulsion or slurry explosives and non explosives emulsion matrix and fertilizers from which the ammonium nitrate cannot be separated".
        - Storage of ammonium nitrate in large quantities in populated areas is illegal in India.
        - For the manufacture of ammonium nitrate, an Industrial licence is required under the **Industrial Development and Regulation Act, 1951.**
        - A **license** under the Ammonium Nitrate Rules, 2012 is also required for any activity related to ammonium nitrate.

Source: IE