



## Vizag Gas Leak

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### Why in News

Recently, a gas leak has affected five villages in Visakhapatnam in Andhra Pradesh.

- The source of the gas leak was a **styrene plant** owned by South Korean electronics giant LG located in the area.
- The possible reason for gas leak is **stagnation and changes in temperature** inside the storage tank that could have resulted in **auto polymerization** (chemical reaction) **and vapourisation** of the styrene.

### Styrene

- **Description:**
  - Styrene is an **organic compound** with the formula **C<sub>8</sub>H<sub>8</sub>**.
  - It is a **derivative of benzene (C<sub>6</sub>H<sub>6</sub>)**.
  - It is stored in factories as a liquid, but evaporates easily, and has to be kept at temperatures under 20°C.
- **Sources:**

Styrene is found in vehicle exhaust, cigarette smoke, and in natural foods like fruits and vegetables.
- **Uses:**

It is a flammable liquid that is used in the manufacturing of polystyrene plastics, fiberglass, rubber, and latex.
- **Risk of Exposure:**
  - **Short Term Exposure:** It can result in respiratory problems, irritation in the eyes, irritation in the mucous membrane, and gastrointestinal issues.
  - **Long-Term Exposure:** It could drastically affect the central nervous system and lead to other related problems like peripheral neuropathy. It could also lead to cancer and depression in some cases.

However, there is no sufficient evidence of an association between styrene exposure and an increased risk of leukemia and lymphoma.

## State of Chemical Disaster Risk in India

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- According to the **National Disaster Management Authority (NDMA)**, in the recent past, over 130 significant chemical accidents have been reported in the country.
- Further, there are thousands of registered hazardous factories and unorganised sectors dealing with numerous ranges of hazardous material posing serious and complex levels of disaster risks.
- There are over 1861 **Major Accident Hazard (MAH) units** spread across 301 districts and 25 states and three Union Territories in all zones of the country.
  - The Major Accident is defined as an incident involving loss of life inside or outside the site or ten or more injuries.
  - Further it also involves the release of toxic chemical or explosion or fire or spillage of hazardous chemical resulting in 'on-site' or 'off-site' emergencies leading to adverse effects to the environment.

## Laws to Protect Against Chemical Disasters in India

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- **Laws Before and During Bhopal Gas Tragedy (1984):**  
At the time of the **Bhopal gas tragedy**, the **Indian Penal Code (IPC)** was **the only** relevant law specifying criminal liability for such incidents.

- **Laws After Bhopal Gas Tragedy (1984):**

- **Bhopal Gas Leak (Processing of Claims) Act, 1985 :** It gives powers to the central government to secure the claims arising out of or connected with the Bhopal gas tragedy.
  - Under the provisions of this Act, such claims are dealt with speedily and equitably.
- **The Environment Protection Act, 1986:** It gives powers to the central government to undertake measures for improving the environment and set standards and inspect industrial units.
- **The Public Liability Insurance Act, 1991:** It is an insurance meant to provide relief to persons affected by accidents that occur while handling hazardous substances.
- **The National Environment Appellate Authority Act, 1997:** Under this Act, the National Environment Appellate Authority can hear appeals regarding the restriction of areas in which any industries, operations or processes or class of industries shall not be carried out or shall be carried out subject to certain safeguards under the Environment (Protection) Act, 1986.
- **National Green Tribunal, 2010:** It provided for the establishment of the **National Green Tribunal** for effective and expeditious disposal of cases related to environmental protection and conservation of forests.
  - According to PRS legislative, any incident similar to the Bhopal gas tragedy will be tried in the National Green Tribunal and most likely under the provisions of the Environment (Protection) Act, 1986.
  - If an offence is committed by a company then every person directly in charge and responsible will be deemed guilty, unless he proves that the offence was committed without his knowledge or that he had exercised all due diligence to prevent the commission of such an offence.

**Source:IE**