Oleum Gas Leak

Prelims: *Current events of national and international importance | Disaster Management | Science & Technology*

Why in News?

A fresh oleum gas leak at a chemical unit in Boisar has once again brought attention to recurring industrial safety incidents in the Tarapur-Boisar belt of Palghar district, Maharashtra.

- **Oleum (fuming sulphuric acid)** – It is a highly corrosive, dense, *oily liquid* ranging from colourless to pale yellow, formed by dissolving *sulfur trioxide in sulfuric acid*.
- **Application** – It is primarily used in industrial sulfonations, explosives, dye manufacturing, and producing high-strength sulfuric acid.
- **Impact** – It reacted with air to release sulphur dioxide and other sulphur oxides.
- This produced a dense white cloud that reduced visibility within the factory premises and surrounding areas.
- **Tarapur-Boisar Industrial Estate** – Together form one of Maharashtra's *oldest and largest industrial estates*.
- This area houses a large number of chemical, pharmaceutical, and allied manufacturing units operating in close proximity.
- **Risk –** Because many hazardous processes take place within a relatively small area, the probability of accidents involving gases, chemicals or industrial spills increases.
- **Other Hazardous Substances in Use** – Many of the factories in the area handle highly reactive or toxic substances such as *chlorine, nitrogen derivatives, and other industrial gases*.
- These materials require stringent safety systems, specialised storage infrastructure, and continuous monitoring.

Safeguards against chemical disasters in India

- Indian Penal Code (IPC)
- Various guidelines under the Disaster Management Authority (NDMA).
- Environment Protection Act, 1986
- Manufacture, Storage and Import of Hazardous Chemical (MSIHC) Rules, 1989 & Chemical Accident Rules, 1996
- Public Liability Insurance Act, 1991
- National Environment Appellate Authority Act, 1997
- National Green Tribunal Act, 2010

Quick Fact

Major Toxic Industrial accident	
Incident	**Nature of Hazard**
Ammonia Gas Leak (Mumbai, 2024)	Toxic in concentrated form, absorbed by inhalation, ingestion, eye/skin contact.
Propylene Gas, 2024	Highly flammable, but not toxic to breathe. PPE required for responders.
Monomethylamine (MMA) Gas, 2024	Highly inflammable, fishy odour, causes respiratory toxicity, lung congestion, oedema, and eye damage.
Hydrogen Sulphide Gas (Punjab, 2023)	Neurotoxin affecting the nervous system. Common toxic gases: methane, H_2S, CO, CO_2.
Styrene Gas Leak, (Vizag, Andhra Pradesh, 2020)	Affects the central nervous system, long-term exposure is linked to headaches and possible leukaemia.
Methyl Iso Cyanate (MIC) (Bhopal, Madhya Pradesh, 1984)	Severe lung damage, pulmonary oedema, corneal injury, and death from acute exposure.

Reference

Indian Express | Oleum gas leak at the Tarapur-Boisar belt

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