

# Bhopal Gas Tragedy

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## Bhopal Gas Tragedy: Forty Years of Toxic Legacy

### Context

Forty years after the **Bhopal gas disaster** (December 2-3, 1984), several hundred tonnes of toxic waste remain around the Union Carbide plant, posing serious environmental and health risks.

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### Background

- Despite efforts by locals, activists, and directives from the **National Green Tribunal** and the **Supreme Court**, the Madhya Pradesh government has only managed to dispose of a small fraction of the waste.
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### Key Points on the Disaster

#### 1. Union Carbide Plant Operations

- Established in the 1960s to produce **carbaryl insecticide** using methyl isocyanate (MIC).
- MIC, a highly toxic compound, reacts violently with water, releasing heat and vapors.

#### 2. The Gas Leak

- On **December 2, 1984**, water entered an MIC storage tank, causing it to boil.
  - Cooling systems were diverted, allowing toxic vapors to escape and spread into the environment.
  - MIC exposure caused eye irritation and severe respiratory issues, especially as most victims were asleep at the time.
  - The **Union Carbide Corporation** has never disclosed the exact composition of leaked gases, hindering effective medical responses.
  - Some reports indicated the presence of **hydrogen cyanide**, raising further concerns.
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### Toxins Present at the Site

A **1999 Greenpeace report** identified toxic substances, including:

- **Heavy Metals:** Mercury, chromium, copper, lead, and nickel.
  - **Organic Compounds:** Hexachlorobutadiene, chloroform, carbon tetrachloride, and trichlorobenzene.
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### Impact of Heavy Metals

- **Mercury:** Damages organs, disrupts cellular functions.
  - **Chromium:** Essential at low doses but toxic at high levels, causing immune and genetic damage.
  - **Lead:** Disrupts photosynthesis in plants, damages animal cells, and hinders energy production.
  - **Nickel:** Linked to cancers of the lungs, nose, and sinuses.
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### Impact of Organic Compounds

- **Hexachlorobutadiene:** Possible carcinogen; causes liver damage, kidney cell destruction, and brain activity inhibition.
  - **Chloroform:** Affects the central nervous system, leading to fainting or death at high concentrations.
  - **Carbon Tetrachloride:** Highly toxic; damages vision, nerves, and heart function.
  - **Trichlorobenzene:** Accumulates in fatty tissues, damaging the liver and kidneys.
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### Conclusion

The lingering toxic waste from the Bhopal disaster remains a stark reminder of the environmental and human toll of industrial negligence. Effective disposal and accountability are urgently needed to address the lasting impacts.

