Helium

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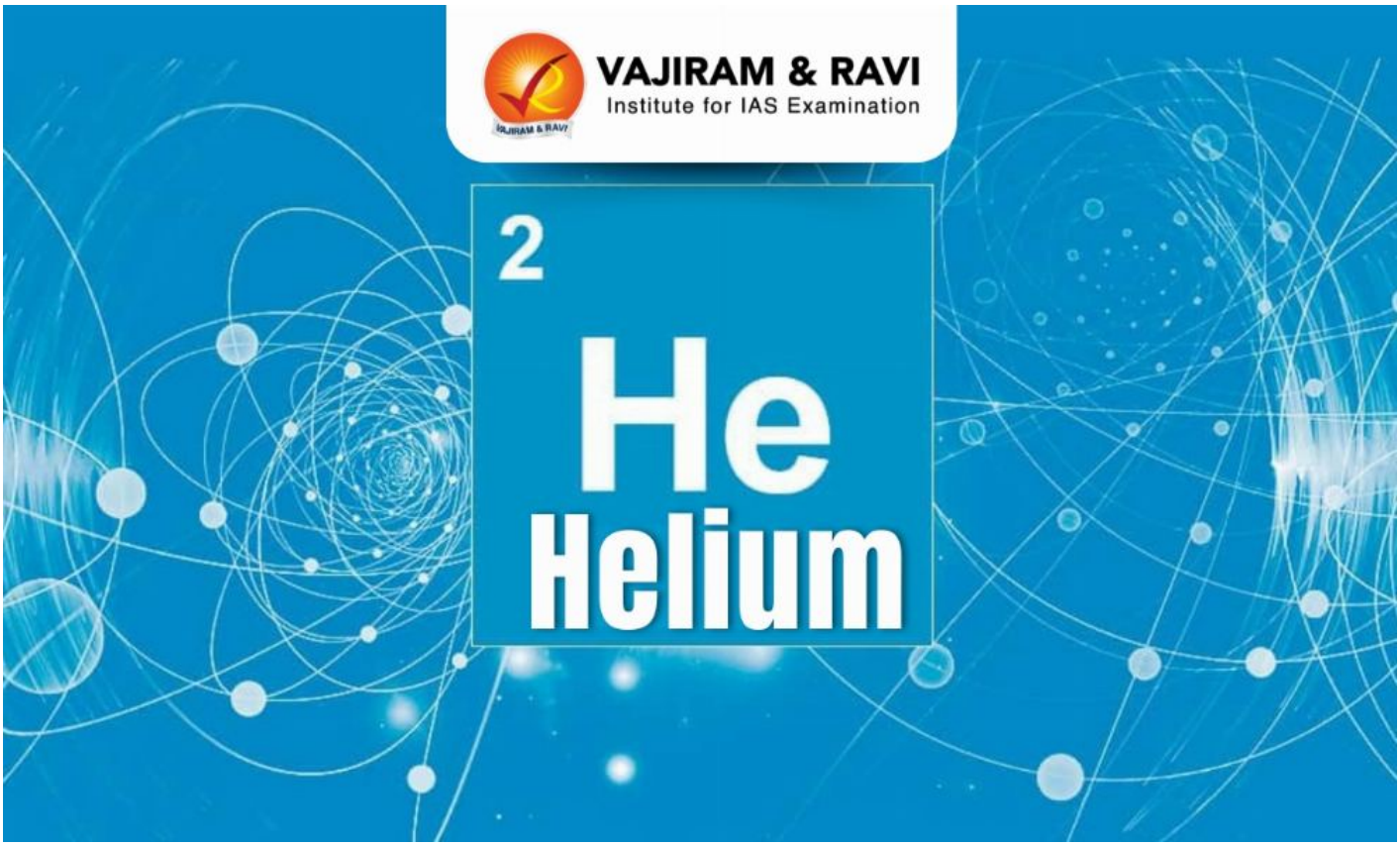

Helium Latest News

Recently, the Ministry of Commerce and General Administration of Customs, China, has temporarily but immediately banned helium exports from the country.

About Helium

- It is an **inert gas** and does not react with other substances or combust.
- It was **discovered in 1868** by **Jules Janssen and Norman Lockyer** via a yellow spectral line during a solar eclipse.
- **Formation:** It is a **non-renewable resource** generated deep in the earth's crust, where the radioactive decay of uranium and thorium atoms emits alpha particles, which **capture electrons to form helium atoms.**

Properties of Helium

- Its **atomic number is 2,** making it the second lightest element after hydrogen.

- Helium also has a **very low boiling point** (-268.9° C), allowing it to remain a gas even in super-cold environments.
- It does not participate easily in **chemical reactions.**
- Helium is the **second-lightest element**, after hydrogen, and is not manufactured.
- The **gas is non-toxic,** but cannot be breathed on its own, because it displaces the oxygen humans need for respiration.
- It is the only element that cannot be solidified by sufficient cooling at normal atmospheric pressure.
- **Largest global reserves:** United States, Algeria, and Russia.
- India's **Rajmahal Volcanic Basin** (Jharkhand) is a significant helium reservoir trapped for billions of years.

Applications of Helium

- **Used as Coolant:** It is used as **coolant to cool the magnets in MRI machines**, the silicon wafers in the semiconductor fabricating industry, and, increasingly, some of the devices used in quantum computers.
- **Leak Detector:** Engineers use helium as a leak-detector.
- **Optical Fibre Manufacture:** It is also used in the **process of drawing optical fibres** to rapidly and uniformly cool molten glass and to displace oxygen or nitrogen from forming bubbles inside the material.
- **Aerospace:** Spaceflight organisations like ISRO, NASA, and SpaceX **use helium to pressurise fuel tanks** in rockets.
- **Research and the tourism** sector in many parts of the world also use helium to inflate balloons and airships.

Source: TH
