US Department of Energy adds helium to its Critical Material List

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News

The US Department of Energy (DOE) added helium to its 'DOE Critical Material List' under Section 7002 of the Energy Act of 2020. The notice was signed on 21 Oct 2026 and released on 23 Oct. Helium has no substitute in semiconductor (chip) manufacturing, leak-testing of natural-gas pipelines and quantum computing, and is vital in medical and scientific uses. DOE said rising chip demand for AI and data centres has raised supply risk. It builds on the 2023 DOE Critical Materials List.

Key facts

Notice	Signed 21 Oct 2026; released 23 Oct – DOE Office of Critical Minerals & Energy Innovation
Law	US Energy Act of 2020, Sec 7002 – high supply-risk + essential energy function
Helium	Atomic no. 2; noble gas (Group 18); second-lightest element; lowest boiling point of all elements

Discovery	18 Aug 1868 – Janssen saw a yellow spectral line during a solar eclipse at Guntur (AP); Lockyer named a new element; Ramsay isolated it on Earth in 1895
Source	By-product of natural gas; top two producers – USA, Qatar
India	Fully import-dependent for helium; over half from Qatar

Background

- Science: Helium is a colourless, odourless, non-flammable, inert noble gas. It is the second most abundant element in the universe after hydrogen, but being light it escapes Earth's atmosphere. It forms underground by alpha decay of uranium and thorium and collects with natural gas. Its name comes from the Greek 'helios' (Sun).
- Uses: liquid helium cools the superconducting magnets of MRI machines; semiconductor making; optical-fibre production; pressurising rocket fuel tanks; 'heliox' mixtures for deep-sea diving; balloons.
- India's critical minerals: the Ministry of Mines released a list of 30 critical minerals in 2023 (lithium, cobalt, rare earth elements etc.). The 'National Critical Mineral Mission' (NCMM) was approved by the Union Cabinet in January 2025 (₹34,300 crore over 7 years). KABIL (Khanij Bidesh India Ltd), a joint venture of NALCO, HCL and MECL under the Ministry of Mines, acquires mineral assets abroad – e.g. lithium exploration in Catamarca, Argentina.

Tamil Nadu link: At Manavalakurichi (near Colachel), Kanyakumari district, the mineral separation plant of IREL (Indian Rare Earths Ltd, under the Department of Atomic Energy) separates ilmenite, zircon, rutile, monazite and sillimanite from beach sand. Monazite is a key source of thorium and rare earth elements. Also, the Kodaikanal Solar Observatory (working since 1899) is renowned for solar spectrum studies.

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