

Lithium ore

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Geological Survey of India has recently confirmed presence of 5.9 million tonnes of lithium ore from Reasi, Jammu & Kashmir.



[ref-minerals education collation]

About the Lithium ore:

- The **Lithium (Li) ore** is a type of **rock** or **mineral** that contains significant concentrations of **lithium**.
 - **Lithium** is a **soft, silver-white alkali** metal with the **atomic number 3** and **symbol Li** on the periodic table.
- The common types of lithium ores are **spodumene, lepidolite, and petalite**.
 - These ores are mostly found in countries such as **Australia, Chile, Argentina, China, and Canada**.
 - These ores are mostly found in **igneous rocks, pegmatites, and sedimentary deposits**.
- The **processing** and **refining** methods for **lithium ore** can vary depending on the **type** of **lithium deposit**, the **characteristics** of the ore, and the **end-use** of the lithium compounds.
- The ore is **first mined** from the earth's **crust** and then undergoes **chemical process** to **increase** concentration of the **lithium content**.
- **Chemical processing** methods are **roasting, leaching, and precipitation**.
 - **Roasting** is the **heating** of ore **lower** than its **melting point** in the **presence** of **air** or **oxygen**.
 - **Leaching** is the **process** when a **solute** becomes **detached** or are **extracted** from its **carrier substance** using **solvent**.
 - **Precipitation** is the **process** of **formation** of a separable solid **substance** from a **solution**.

About the Lithium:

- Lithium has unique properties, such as being the **lightest metal**, having the **highest electrochemical** potential, and being **highly reactive** with **water**.
- Lithium is used in various applications, such as in the **production** of **rechargeable batteries**,

which are used in devices such as electric vehicles, smartphones, laptops, and energy storage systems.

- Lithium is also used in other industries, such as **aerospace**, **ceramics**, **glass**, and **pharmaceuticals**.

The Lithium ore in India:

- The **Lithium mineral block** in Jammu & Kashmir will be **auctioned** by the Government of **Jammu and Kashmir**.
- The ore of **Jammu and Kashmir** will be extracted using **hydro- metallurgical** process from **Spodumene mineral** concentrate in order to produce very pure **Lithium Carbonate**.
- The **Atomic Minerals Directorate for Exploration and Research** under **Department of Atomic Energy** has established **1600 tonnes** of lithium resource in **Mandya, Karnataka**.