

# Lithium: White Gold [B2]

Il litio è un elemento chimico che si utilizza per immagazzinare l'energia che alimenterà la società del futuro. La domanda di questo prezioso metallo crescerà vertiginosamente nei prossimi anni.



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Lithium (Li) is a [naturally-occurring](#) chemical element and one critical to the clean energy transition. Rechargeable [lithium-ion](#) batteries [power](#) the most-used electronic [devices](#) on the planet from portable electronics to electric vehicles and cell phones. Lithium can also [store](#) significant amounts of energy from solar and wind [power](#).

## PROPERTIES

The name lithium is derived from a Greek word meaning 'stone', a reference to where it comes from. A [silvery](#)-white metal, it is so light it can float on water and so soft it can be cut with a knife. It [ignites](#) on contact with water and burns with a bright red flame, and lithium fires are extremely difficult to [put out](#). Along with hydrogen and helium, lithium was one of the three elements produced in huge quantities by the Big Bang.

## BRIEF HISTORY

Lithium was discovered in 1817 by Swedish chemist Johan August Arfvedson. In 1855 pure lithium was produced in a [suitable](#) quantity for measurement by German chemist Robert Bunsen and British chemist Augustus Matthiessen. During the [oil](#) crisis of the 1970s, a group of scientists began developing the [lithium-ion](#) battery, a type of lithium battery that was also rechargeable. They succeeded in 1991, but it was not until 2019 that the technology crucial for its development was optimised, winning John B. Goodenough of the US, Stanley Whittingham of the UK, and Akira Yoshino of Japan the Nobel Prize for Chemistry. With [widespread](#) use and commercialisation now possible, [lithium-ion](#) now [powers](#) everything.

## RESERVES

But where does lithium come from? With eight million tons, Chile has the world's largest known reserves, ahead of Australia (2.7 million tons), Argentina (two million tons) and China (one million tons). Australia and China extract lithium through [ore](#) mining. In South America, lithium comes from a type of salt desert known as a 'salar'. Both extraction methods are controversial. Lithium [ore](#) mining is much cleaner than that of fossil fuels, but any mining technique damages the environment and chemicals are still required. Extraction from salt deserts involves lithium-containing saltwater from underground lakes brought to the surface and evaporated in large [basins](#). However, locals say that this is contributing to [droughts](#), which [threaten livestock farming](#) and lead to vegetation drying out.

## SUPPLY AND DEMAND

Lithium is in limited supply and is difficult to recycle. Demand, however, is set to [skyrocket](#) in the near future. In the EU, for example, new petrol and diesel cars will be [banned](#) from 2035. EVs (Electric Vehicles) [rely on](#) [lithium-ion](#) batteries, but lithium prices mean that they are still too expensive for most people to [afford](#). Fortunately, [more](#) environmentally-

friendly sources of lithium are under investigation, as well as better techniques for its extraction, and battery recycling programmes.

## **TREATING MENTAL ILLNESS**

Lithium is sometimes used in medicines to treat certain mental illnesses, such as bipolar disorder. Lithium can treat [acute mania](#), or '[highs](#)', and help with longer-term [mood](#) stabilisation. It's also used in treating some types of depression.

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# Glossary

- **put out** = spegnere
- **widespread** = generalizzato
- **basins** = bacini, conche
- **livestock farming** = allevamento di bestiame
- **devices** = dispositivi
- **power** = alimentare
- **store** = immagazzinare
- **oil** = petrolio
- **droughts** = siccità
- **banned** = vietare
- **highs** = episodi di euforia
- **lithium-ion** = ione di litio
- **ignites** = prendere fuoco
- **ore** = minerale
- **skyrocket** = salire alle stelle
- **mood** = stato d'animo
- **naturally-occurring** = presente in natura
- **suitable** = adatta
- **threaten** = minacciare
- **rely on** = dipendere da
- **afford** = permettersi
- **acute mania** = stato maniacale acuto
- **silvery** = argentato