

Stable isotopes of lithium available from ISOFLEX

Isotope	Z(p)	N(n)	Atomic Mass	Natural Abundance	Enrichment Level	Chemical Form
Li-7	3	4	7.016004	92.50%	≥99.95%	Hydroxide Monohydrate (⁷ LiOH·H ₂ O)



Lithium, named for the Greek word *lithos* (“stone”), was discovered in 1817 by Johan August Arfvedson during an analysis of petalite ore from the Swedish island of Utö.

A soft, silvery-white metal with a body-centered cubic structure, lithium has a heat capacity about the same as that of water. It ignites in air near its melting point and burns with a crimson-red flame and dense white fumes. It has a dangerous fire and explosion risk when exposed to water, nitrogen, acids or oxidizing agents. It is soluble in liquid ammonia, forming a blue solution.

Lithium has a high electrical conductivity and is used to make high-energy lithium batteries. It can be combined with lead, magnesium, aluminum or other metals for very useful alloys. Its most important application is in preparative chemistry as the starting material to prepare lithium hydride, amide, nitride, alkyls and aryls.

Properties of Lithium

Name	Lithium
Symbol	Li
Atomic number	3
Atomic weight	6.941
Standard state	Solid at 298 °K
CAS Registry ID	7439-93-2
Group in periodic table	1
Group name	Alkali metal
Period in periodic table	2
Block in periodic table	s-block
Color	Silvery-white
Classification	Metallic

Properties of Lithium (continued)

Melting point	180.54 °C
Boiling point	1342 °C
Thermal conductivity	84.80 W/(m·K) at 298.2 °K
Electrical resistivity	8.55 $\mu\Omega\cdot\text{cm}$ at 0 °C; 12.7 $\mu\Omega\cdot\text{cm}$ at 100 °C
Electronegativity	1.0
Specific heat	3.57 kJ/kg K
Heat of vaporization	147 kJ·mol ⁻¹ at 1342 °C
Heat of fusion	3.10 kJ·mol ⁻¹
Density of solid	0.534 g/cm ³
Vapor pressure	1 torr at 745 °C and 10 torr at 890 °C
Oxidation state	+1
Atomic radius	1.225 Å
Ionic radius	Li ⁺ : 0.59 Å (coordination number 4)
Electron configuration	[He]2s ¹