

*** Name Origin:**

Greek: lithos (stone)

*** Sources:**

Spodumene, amblygonite, lepidolite and desert lake brines. Also obtained by passing electric charge through melted lithium chloride.

*** Uses:**

Used in batteries, ceramics, glass, lubricants, alloy hardeners, pharmaceuticals, hydrogenating agents, heat transfer liquids, rocket propellants, vitamin A synthesis, nuclear reactor coolant, underwater buoyancy devices and the production of tritium. Deoxidizer in copper and copper alloys.

*** Additional Notes:**

Discovered by Arfvedson in 1817. Lithium is the lightest of all metals, with a density only about half that of water. It does not occur free in nature; combined it is found in small amounts in nearly all igneous rocks and in the waters of many mineral springs. Lepidolite, spodumene, petalite, and amblygonite are the more important minerals containing it. Lithium is presently being recovered from brines of Searles Lake, in California, and from Nevada, Chile, and Argentina. Large deposits of spodumene are found in North Carolina. The metal is produced electrolytically from the fused chloride. Lithium is silvery in appearance, much like Na and K, other members of the alkali metal series. It reacts with water, but not as vigorously as sodium. Lithium imparts a beautiful crimson color to a flame, but when the metal burns strongly the flame is a dazzling white. Since World War II, the production of lithium metal and its compounds has increased greatly. Because the metal has the highest specific heat of any solid element, it has found use in heat transfer applications; however, it is corrosive and requires special handling. The metal has been used as an alloying agent, is of interest in synthesis of organic compounds, and has nuclear applications. It ranks as a leading contender as a battery anode material as it has a high electrochemical potential. Lithium is used in special glasses and ceramics. The glass for the 200-inch telescope at Mt. Palomar contains lithium as a minor ingredient. Lithium chloride is one of the most hygroscopic materials known, and it, as well as lithium bromide, is used in air conditioning and industrial drying systems. Lithium stearate is used as an all-purpose and high-temperature lubricant. Other lithium compounds are used in dry cells and storage batteries. Seven isotopes of lithium are recognized. Natural lithium contains two isotopes. Near its melting point, lithium ignites in air. Lithium poses a dangerous fire and explosion risk when exposed to water, acids or oxidizing agents. It reacts exothermally with nitrogen in moist air at high temperatures. In solution lithium is toxic and targets the central nervous system.