Albemarle®
ALL THE ELEMENTS FOR A BETTER WORLD

Critical Minerals *for a More Resilient World*

Albemarle is a global leader in transforming critical resources into essential ingredients for mobility, energy, connectivity and health. Albemarle provides crucial solutions that enable modern living and are indispensable for advanced manufacturing, national defense and energy security.

Lithium (Li)

Lithium is a critical element that plays a significant role in various aspects of modern life. It is essential for national security and energy independence, serving as a cornerstone in the development of advanced technologies and renewable energy solutions in multiple industries and applications. Furthermore, lithium is indispensable in our daily lives as it is present in countless everyday products, enhancing modern living.

APPLICATIONS	ALBEMARLE SOLUTIONS	VALUE OF THE ELEMENT
AGRICULTURE & FOOD		
Agrochemicals	*Tools for Synthesis (TFS) reagents*	Butyllithium and other reagents are used for the synthesis of agrochemical compounds such as herbicides and fungicides.
Equipment and Machinery	*Battery materials (Lithium carbonate, lithium hydroxide, lithium metal, electrolyte salts)*	Lithium batteries power heavy machinery, providing efficient and reliable energy.
AUTOMOTIVE & EV		
EV / Hybrid / Plug-In Hybrid EV Batteries	*Battery materials*	Lithium-ion batteries are essential for electric and hybrid vehicles, providing high energy density and long life cycles.
Plastics	*TFS reagents*	Organo-magnesium reagents are used to prepare Ziegler-Natta catalysts used for the synthesis of plastics such as polyethylene and polypropylene.
Tires (specialties grade)	*Butyllithium*	Lithium compounds are critical to the rubber and plastics industries. They are used in tire manufacturing to enhance durability and performance.
AEROSPACE & AVIATION		
Commercial Aviation and Aviation Materials	*Battery materials, bulk metal lithium*	Lithium is used in various components of aircraft to reduce weight and improve fuel efficiency.
Drones and Electric Vertical Take-Off and Landing (eVTOL)	*Battery material*	Lithium batteries provide lightweight and efficient power sources for drones and are critical for the development of eVTOL and drone aircraft, which aim to revolutionize urban air mobility.
Satellites	*Battery material*	Lithium batteries power satellites, ensuring long-term energy supply in space. Additionally, lithium metal is a lightweight material used in aircrafts, transportation vessels, spacecrafts, satellites and more.
BUILDING & CONSTRUCTION		
(Enamels) Appliances	*Lithium carbonate, lithia, spodumene*	Lithium compounds are used in coatings for refrigerators, stoves and washing machines to improve performance and longevity.
(Enamels) Glazes and Cookware	*Lithium carbonate, lithia, spodumene*	Lithium enhances the heat resistance and durability of cookware coatings and is used in the production of cooktop stoves.
Glass and Ceramics	*Lithium carbonate, lithia, spodumene*	Lithium compounds are used in glazes to improve color, durability, finish and more.
Quick-Setting Cement and Tiles / Adhesives	*Lithium hydroxide & others*	Lithium additives accelerate the setting time of cement and adhesives. Lithium hydroxide is used to preserve concrete construction materials against adverse reactions.
Road Pavements	*Butyllithium*	Butyllithium is used to create special road pavements to reduce noise and the abrasion of tires.
Self-Leveling Floors	*Lithium carbonate & others*	Lithium compounds are used in self-leveling floor materials for their quick-setting properties.

APPLICATIONS	ALBEMARLE SOLUTIONS	VALUE OF THE ELEMENT
ELECTRICAL & ELECTRONICS		
Chargers, Batteries, E-bikes and Wearable Devices	*Battery materials*	Lithium-ion technology is the backbone of rechargeable batteries in various electronic devices, providing efficient, lightweight and long-lasting power.
Electronic Device Covers and Advanced Glasses	*Lithium carbonate, lithia, spodumene*	Lithium compounds are used in the production of durable covers for electronic devices.
Photographic Chemicals	*Lithium chloride*	Lithium chloride is used in photographic developer solutions.
Robots	*Battery materials*	Lithium batteries power robots, enabling longer operational times.
Semiconductor Manufacturing	*Butyllithium, TFS reagents*	Butyllithium & TFS reagents are used in the synthesis of silanes and metal precursors for high-k materials.
Smartphones, Tablets, Laptops and TVs	*Battery materials*	Lithium-ion batteries power most modern devices, offering long-lasting energy.
GRID STORAGE		
Energy / Grid Storage Solutions	*Lithium carbonate*	Lithium-based storage solutions improve the efficiency and reliability of energy grids.
Power Grid	*Lithium carbonate*	Lithium batteries are used for energy storage in power grids, helping to balance supply and demand.
Solar Panels	*Lithium carbonate*	Lithium batteries store energy generated from solar panels, making renewable energy more reliable.
INDUSTRIAL PROCESSES		
Equipment and Machinery	*Battery materials*	Lithium batteries power heavy machinery, providing efficient and reliable energy.
Lubricating Greases	*Lithium hydroxide*	Lithium greases are used in a wide range of industrial applications for their high performance, including industrial processes for automotive, steel, aircraft and heavy machinery.
Metallurgy	*Lithium metal, lithium carbonate, lithium chloride, lithium fluoride*	Lithium-containing products are used to improve the physical and chemical properties of metals and alloys, as scavenger for refining copper and other metals, in the continuous casting of steel and as components of salt baths for dip brazing and open furnace soldering.
MEDICAL DEVICES & EQUIPMENT		
Pacemakers	*Lithium carbonate, lithium metal foils*	Lithium batteries provide long-lasting power for pacemakers, ensuring reliable heart rhythm management.
PHARMACEUTICAL & NUTRITION		
Pharmaceuticals	*Lithium carbonate (API), TFS reagents*	Lithium is used in the development of new active ingredients, excipients, synthesis routes and medications, such as those for mood disorders, hypertension and HIV treatment.
Vitamins	*TFS reagents*	Lithium compounds are used in trace amounts in some vitamin formulations for their potential health benefits.

Learn more at albemarle.com

Albemarle®