A Voyage into the world of Aluminum

In his book, **From the Earth to the Moon**, published almost 150 years ago, **Jules Verne** described aluminum as **“the color of silver but light as crystal…”**and from that material imagined the lunar capsule that launched his three heroes in an imaginary adventure.

Even then, aluminum was considered a great technical solution for future challenges. When we look around today, we find that, indeed, aluminum is an essential feature of modern civilization.

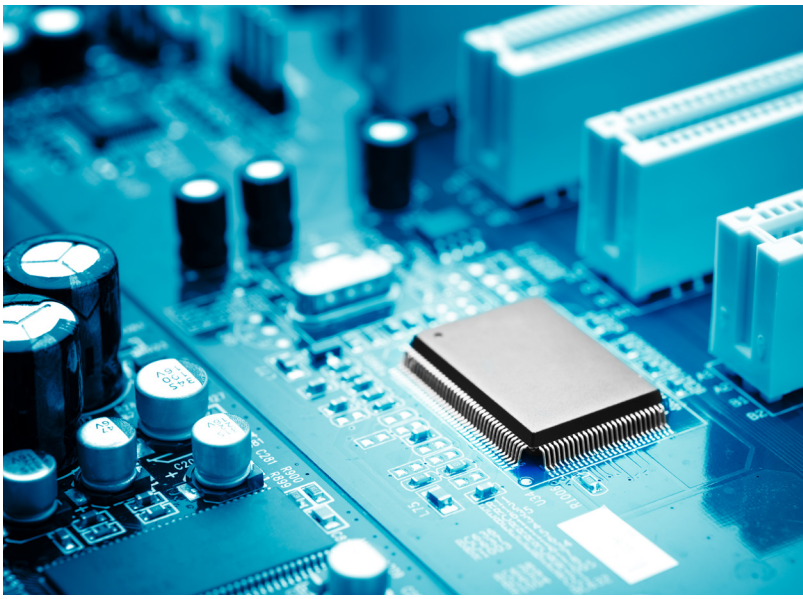
In fact, we can no longer imagine life without this metal.

LIMITED ONLY BY THE IMAGINATION

Aluminum´s physical and chemical properties are remarkable, from every perspective: it is light, strong, malleable and so resistant to corrosion that it hardly requires maintenance.

It is non-magnetic and does not give off sparks, is a terrific conductor of electricity and heat and reflects electromagnetic radiation well.

Other relevant characteristics include a low melting point, excellent performance in low temperatures and resistance to traction (stretching). What´s more, it fuses easily with other elements such as magnesium, manganese, copper and zinc, as well as titanium and chrome under certain conditions, forming alloys that are much stronger and more durable than pure aluminum.



What´s more, it can be recycled over and over again without losing its properties with the recycling process itself requiring only five percent of the energy needed to produce virgin metal.

In light of all this, the use of aluminum has skyrocketed right along with technological progress, in recent years. Currently 68 million tons of aluminum are producer yearly

WHERE DOES IT COME FROM

Aluminum is the third most common element (after oxygen and silicon) on our planet, making up eight percent of the Earth´s crust. Nevertheless, it is expensive to obtain because of its great affinity with other elements that causes it to form chemical chains that are hard to break apart.

Aluminum compounds are found right underfoot, present in most rocks. However, it does not exist as a pure element in nature. It's most abundant and viable source is the mineral bauxite, in which the aluminum atom forms molecules with oxygen and combines with other minerals. To produce pure aluminum this link must be broken using a process called electrolysis (whose discovery in 1888 led to the mass production of aluminum), which requires huge amounts of electric energy. The largest bauxite deposits are located in Russia, China, Australia, Brazil and the African continent.

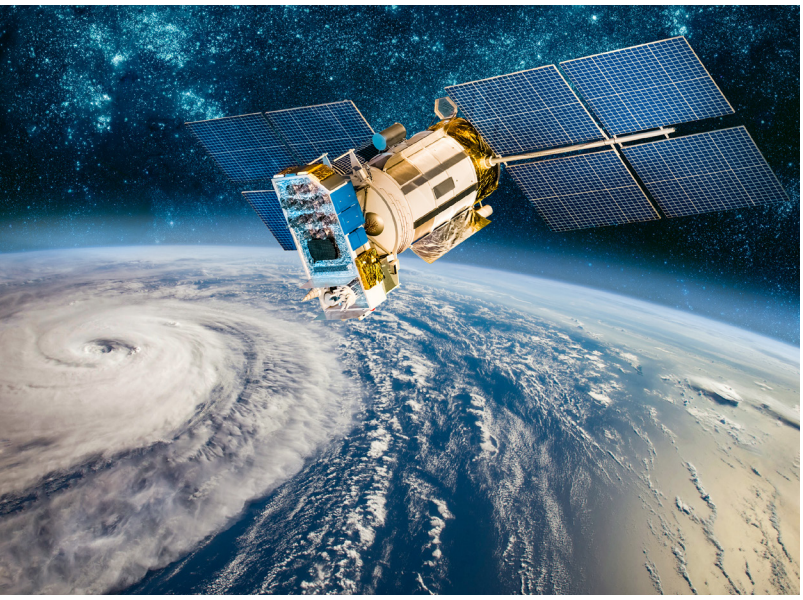
Aeronautics is one industry that simply could not exist without aluminum. The metal is intrinsic to airplanes; were they made of steel, they would be too heavy to get off the ground.

About 90 percent of the metal in airplanes is aluminum. Indeed, its lightweight and non-corrosive features make it essential to the aerospace industry in general. It is NASAS´s most requisitioned material. And airplanes are not the only means of transport that the metal has radically changed.

LIFE WITHOUT ALUMINIUM IS NOW UNIMAGINABLE.

The automotive industry now uses over seven million tons of aluminum per year in cars and trucks. With more and more parts being made from it, vehicles are becoming much lighter and much more fuel-efficient. For the same reasons, the railroad industry uses aluminum for locomotives and cars.

It is also widely used in sports. For example, over 90 percent of baseball bats are made from aluminum, as are the vast majority of high-performance bicycles and medium-priced rackets.



Construction makes heavy use of aluminum for windows, doors, walls, roofs and facings as well as for entire buildings such as industrial structures and stadiums. In addition, more and more designers, architects and artist are using aluminum for embellishments and decorations.

Aluminum lightness, conductivity and stretch resistance make it the ideal material for the electricity industry´s high-tension wires and lots of other equipment parts. It is also used in irrigation, heating and refrigeration piping.

Among its many other applications, and given that it gives perfect protection against air, humidity and light, aluminum is outstanding for food and medicine containers and packaging. As for beverages in addition to quickly chilling them, aluminum containers are hard to break. Best of all, they are 100 percent recyclable.

Due to its unbeatable qualities for cooking, aluminum is most commonly used in the kitchen in the form of fry pans, cookware & bakeware. Likewise, aluminum foil is handy for covering pans of baked goods, as well as for heating food or keeping it cold and fresh.

ALMEXA anticipates and responds to the fast-evolving market needs.