

# Brazil Starts World's First Recycling Plant for Carton Packaging

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US-based aluminum manufacturer Alcoa announced yesterday that its Brazilian affiliate, Alcoa Alumínio, has joined Tetra Pak, Klabin and TSL Ambiental to inaugurate the world's first carton packaging recycling facility located in Piracicaba, Brazil.

The plant uses groundbreaking plasma technology, which enables the total separation of aluminum and plastic components from the cartons.

This innovative process constitutes a significant enhancement to the current recycling process for carton packaging, which up until now, separated paper, but kept plastic and aluminum together.

The plasma process provides another option for recycling, allowing for the return of all three components of the package to the productive chain as raw material.

Alcoa, which supplies thin-gauge aluminum foil to Tetra Pak for aseptic packaging, uses the recycled aluminum to manufacture new foils.

The new plasma facility has the capacity to process 8 thousand tons per year of plastic and aluminum, corresponding to recycling approximately 32 thousand tons of aseptic packaging.

The emission of pollutants during the recovery of the materials is minimal, handled in the absence of oxygen, without combustion, yielding an energy efficiency rate close to 90%.

"This project synthesizes the best that sustainability can offer, in the form of partnering, technological innovation, environmental enhancement and social development. Alcoa is proud to participate in the roll-out of this pioneering technology," stated Franklin Feder, president of Alcoa Latin America.

"Brazil already possesses an exemplary record of recycling aluminum and, consequently, the country now has the potential to become a global paradigm as well in the recovery and reuse of aseptic carton packages," Feder said.

## How Plasma Technology Works

The application of plasma technology for the recycling of carton packaging employs electrical energy to produce a jet of plasma at 15 thousand degrees Celsius to heat the plastic and aluminum mixture.

With this process, plastic is transformed into paraffin and the aluminum is recovered in the form of high-purity ingot. Alcoa will then use the recycled aluminum to manufacture new foil. Paraffin is sold to the Brazilian petrochemical industry.

The paper, extracted during the first phase of the recycling process is transformed into cardboard by Klabin. TSL Ambiental, responsible for the technology development of thermal plasma, is responsible for operating this new facility.

The plasma project began in Brazil seven years ago when the former Plasma Group of the IPT (Institute of Technological Research of the University of São Paulo -USP) began exploring the development of processes and technologies that could handle industrial residues enabling the reuse of the valuable metals and materials.

The use of plasma technology for the processing of plastic and aluminum in the carton packages was successful and formed the basis of the partnership between the four companies for the creation of the recycling plant.

## The Partners

Alcoa Alumínio S.A. was founded 40 years ago in Brazil and it is a subsidiary of Alcoa Inc., a world leader in aluminum production and technology.

Alcoa serves the aerospace, automotive, packaging, building and construction, commercial transportation and industrial markets, bringing design, engineering, production and other capabilities of Alcoa's businesses to customers.

Alcoa, through its Alcoa Recycling Company, has collected and recycled more than 300 billion aluminum cans around the world. Our efforts reduce the need for landfill space and save significant energy by producing aluminum from recycled cans.

This recycling process requires 95 percent less energy than when producing can sheet material from bauxite ore. About two-thirds of aluminum ever produced - 440 million tons of a total 680 million tons manufactured since 1886 - is still in use.

Alcoa has 131,000 employees in 43 countries and has been a member of the Dow Jones Industrial Average for 45 years and the Dow Jones Sustainability Indexes since 2001.

Klabin is the biggest paper manufacturer and exporter in Brazil. The company was founded 106 years ago, and has 18 plants (17 in Brazil and 1 in Argentina) and it is the leader in the production of papers, cardboards for packaging, corrugated cardboard boxes, industrial bags and timber.

Tetra Pak is an organization that operates in over 165 countries, producing integrated systems for processing, bottling, distribution and cardboard packaging for food such as milk and dairy products, juices, coconut water, teas, tomato by-products, creams, sauces and others.

The company started in Brazil in 1957, where it generates over 1,000 direct jobs and maintains two plants, in the city of Monte Mor (state of São Paulo) and Ponta Grossa (Paraná).

It has 53 packaging plants around the world and 16 packaging machinery plants.

In 2004, over 60 billion liters of products were bottled around the world in Tetra Pak packaging and 110 billion packaging units were delivered.

TSL Engenharia Ambiental is an engineering company that focuses on sustainable and development activities. With agents in countries such as The Netherlands, Great Britain, Spain, United States and China, the company is a reference in introducing solutions for the treatment of solid residues and effluents, as well as complementary maintenance and development of leading edge technologies for environmental preservation.

The company, headquartered in São Paulo, has a staff of 300 employees distributed in their commercial units and works in the states of Amazonas, Bahia, Rio de Janeiro, São Paulo e Sergipe.

Alcoa Alumínio S.A.  
[www.alcoa.com.br](http://www.alcoa.com.br)

Klabin  
[www.klabin.com.br](http://www.klabin.com.br)

Tetra Pak  
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