CONDENSA

ALUMINUM PACKAGING:

ALUMINUM PACKAGING AND CORPORATE SUSTAINABILITY

The versatility of aluminum

The adoption of aluminum packaging by companies not only drives sustainability in their operations, but also allows them to demonstrate their commitment to environmental responsibility and meet the demands of environmentally conscious consumers.

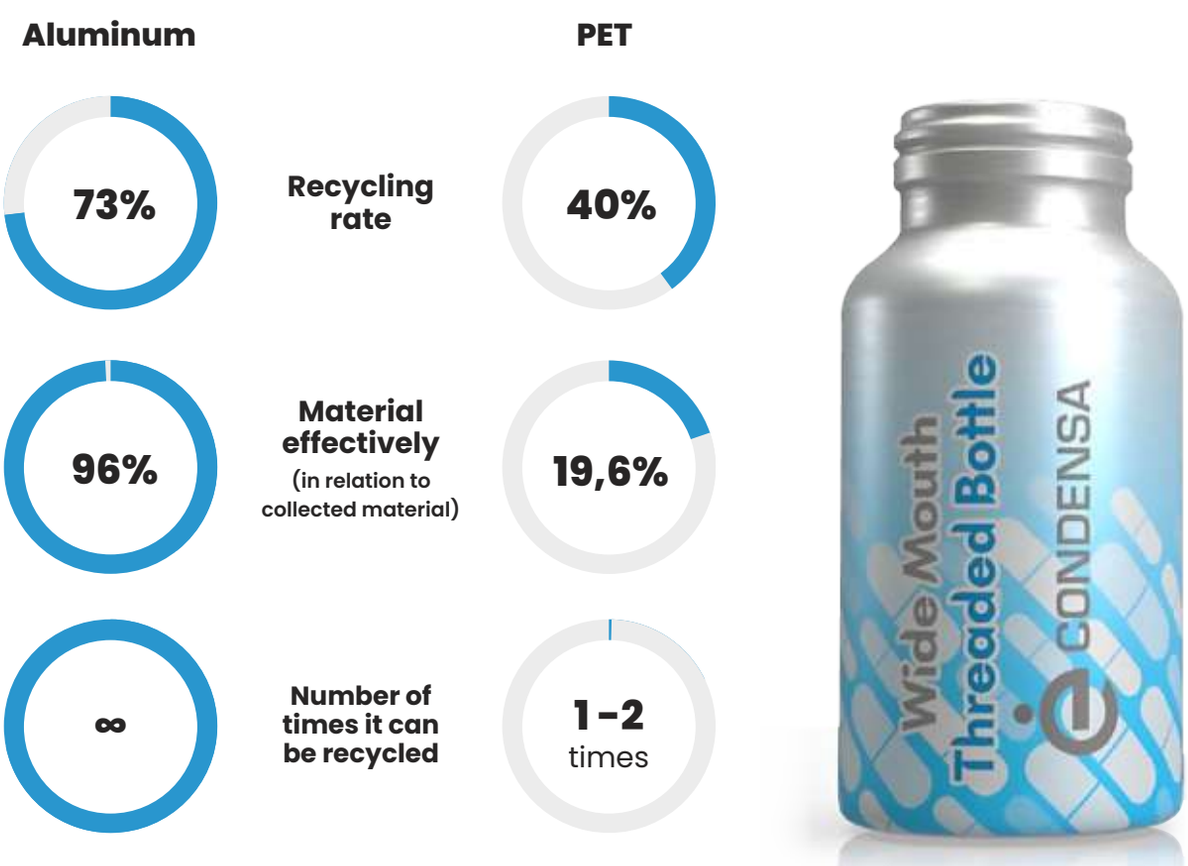
Aluminum, being highly resistant, versatile and infinitely recyclable, offers opportunities for innovation in design and functionality. Its light weight improves supply chain efficiency and reduces operating costs, thus promoting business sustainability and differentiating companies in the marketplace while contributing to environmental protection.

Aluminum vs. PET
In modern industry

Aluminum and PET plastic are two materials widely used in the modern industry, each with its own history of recycling and reuse. According to data provided by the International Aluminium Institute, aluminum stands out for its impressive 73% recycling rate.

On the other hand, PET plastic presents a different picture, with only 40% of this material being recycled.

Aluminum vs. PET recycling



Aluminum vs. Glass

Recycling advantages

The recycling value per ton of aluminum is three times higher than that of other materials such as glass.

In addition, printed aluminum containers offer an additional major advantage over glass: the possibility of eliminating plastic labels, shrink sleeves and adhesives common on glass that contaminate the recycling stream and cause operational problems during the process.

Aluminum vs. Glass Recycling:
Savings per ton of recycled material

Aluminum		Glass
14.000 Kw/hr	**Energy**	**42** Kw/hr
270 ft^3	**Landfill space**	**54** ft^3
6,545 liters	**Oil**	**19** liters
∞ times	**Recycled**	Mostly brown and green color

NÜWATER. (2021). Glass vs aluminum vs boxed - Which water is best? [Blog Post]. Retrieved from https://nuwater.life/blogs/news/glass-vs-aluminium-vs-boxed-which-water-is-best

Codensa Vitamin Packers:
Life Cycle Assessment (LCA)

A recent Life Cycle Assessment (LCA) for Condensa Nutraceuticals evaluated the Global Warming Potential (GWP) of different aluminum bottle configurations.

Using 100% recycled aluminum cuts emissions from 0**.326 to 0.09 kg CO_2 eq/unit** — a reduction of over 70% compared to virgin aluminum. For reference, a PET bottle emits about 0.25 kg CO_2 eq/unit, and glass up to 0.6 kg CO_2 eq/unit.

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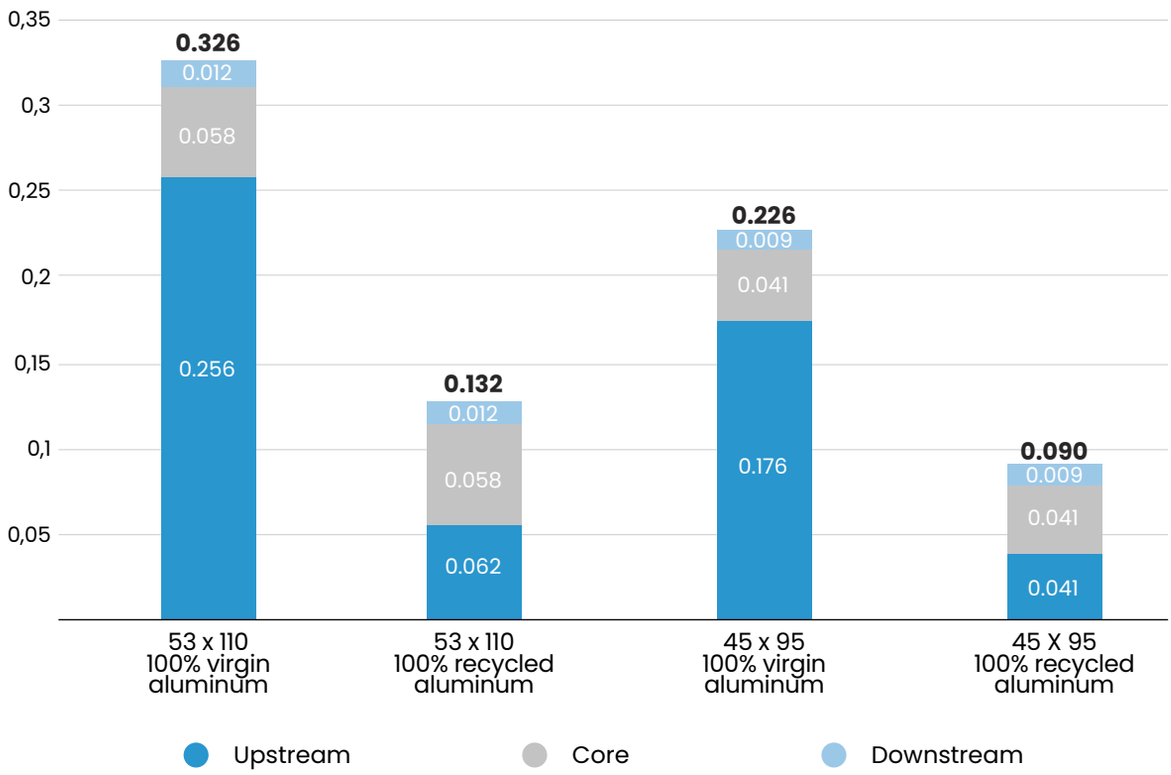
Condensa's bottles achieve **65–80% lower emissions**, showing the efficiency of aluminum and circular design — and that's without even considering aluminum's infinite recyclability, meaning its **real long-term environmental benefit is even greater**.

Life Cycle Assessment:
Global Warming Potential for Vitamin Packers



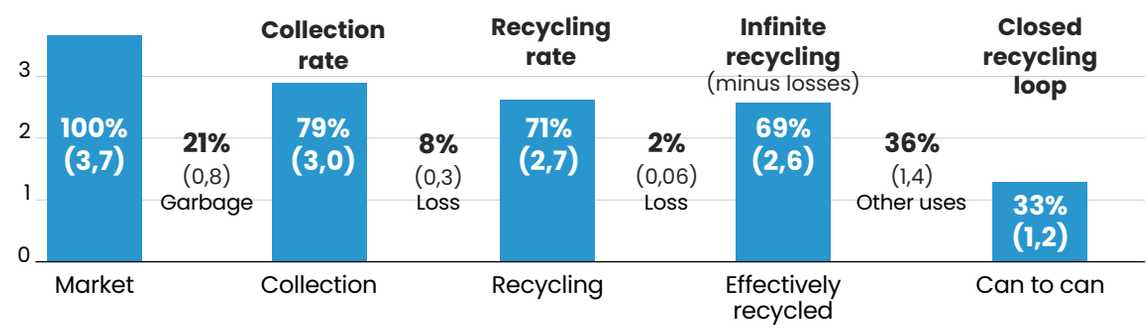
Sources: Condensa LCA 2025; International Aluminium Institute; NüWater 2021

Recycling process:
Comparing different materials

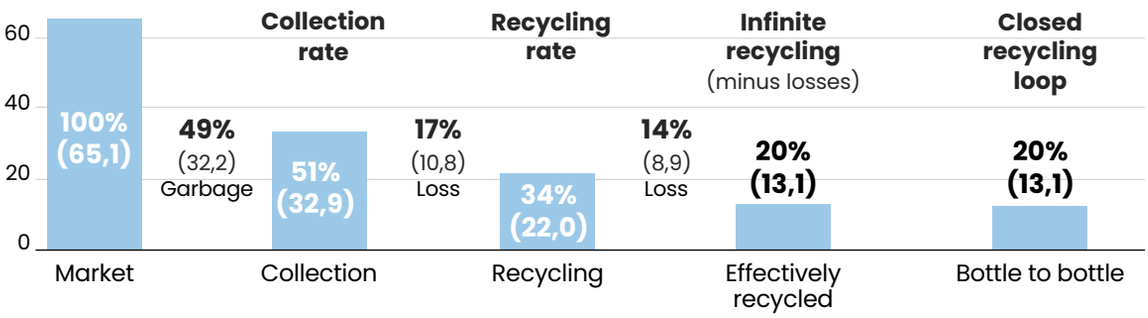
Aluminum, glass and PET plastic stand out as materials widely used in everyday life and, therefore, important recycling targets.

This comparative chart explores the process and final recycling rates of these materials, providing a comprehensive view of their environmental impact and their viability as sustainable alternatives in waste management.

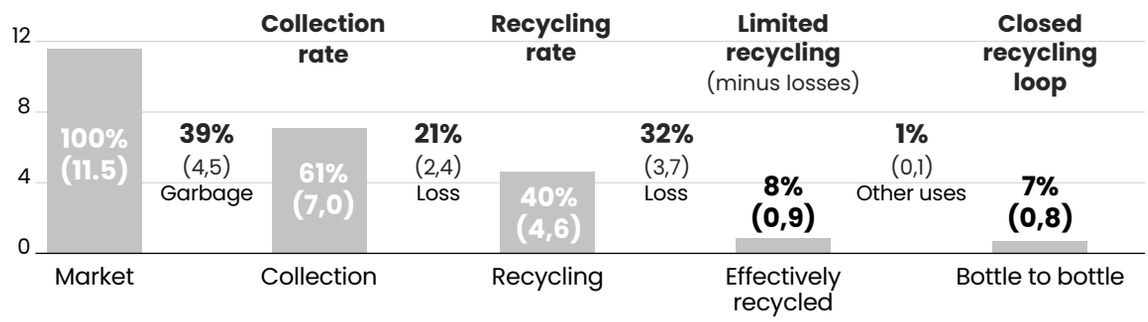
Aluminum cans - millon tons



Glass bottles - millon tons



PET bottles - millon tons



*Information based in 5 studied countries.

International Aluminum. (s/f). A CIRCULARITY CASE FOR ALUMINIUM COMPARED WITH GLASS AND PLASTIC.

Aluminum not only plays a key role in the recycling process, but also contributes significantly to the reduction of pollution at all stages of its production, supply and reuse cycle.

Let's work together to transform and reduce the environmental impact on our planet.