

SUSTAINABILITY IN ALUMINUM PACKAGING:

WHY ANODIZING MAKES A DIFFERENCE

KEY TAKEAWAYS

- Aluminum offers near-infinite recyclability with no loss in performance
- Anodizing enhances durability and aesthetics without harming recyclability
- Anomatic's environmental processes meet strict standards and reduce waste

ALUMINUM'S BUILT-IN SUSTAINABILITY ADVANTAGE

Aluminum is one of the most sustainable packaging materials available. According to the Aluminum Association, roughly 75 percent of all aluminum ever produced is still in use today. Its recyclability is virtually infinite, with no degradation of material performance even after multiple cycles.

Compared to other packaging materials, aluminum stands out. Typical container recycling rates in the U.S. are 45 to 50 percent for aluminum, 30 to 40 percent for glass, and under 20 percent for plastic bottles (PET). Aluminum's high recycling rate, combined with the fact that producing new products from recycled aluminum uses 95 percent less energy than creating virgin material, makes it a compelling choice for brands focused on reducing their environmental impact.

ANODIZING: ENHANCING PERFORMANCE WITHOUT SACRIFICING RECYCLABILITY

Anodizing takes aluminum's sustainability benefits a step further. **The process enhances durability, corrosion resistance, and aesthetics—all without adding additional materials like lacquers or coatings that could complicate recycling.**

"Anodized aluminum can still be melted down and reused within standard recycling streams," says Josh Robertson, Business Commercialization Manager at Anomatic. "The anodizing process converts the metal's surface into aluminum oxide, which remains chemically compatible with the base material."

This means that even after anodizing, aluminum retains its place in the circular economy. **Its enhanced durability also extends product lifespan, which aligns with growing demand for refillable and reusable packaging solutions.**

MANAGING ENVIRONMENTAL TRADE-OFFS

Like any industrial process, anodizing comes with environmental considerations. It requires energy, chemicals, and water. But Anomatic has taken proactive steps to minimize these impacts.

Mark Ormiston, Vice President of Innovation and Technology, explains: "We recycle water across multiple stages using filtration, ion exchange, and by incorporating it into our cooling systems. We also recycle our major acid compositions using state-of-the-art ion exchange technology."

One standout example is Anomatic's phosphoric acid recycling system, one of the largest of its kind, recovering over 1,800 metric tons of phosphoric acid annually.

Energy efficiency is another focus area. The company has implemented LED and high-performance fluorescent lighting, room occupancy sensors, and on-demand steam generation with heat recovery systems. Additionally, all waste streams are managed with PLC-operated and monitored treatment systems to ensure full environmental compliance.

MEETING RISING CUSTOMER EXPECTATIONS

As sustainability goals become central to corporate strategies, Anomatic's customers are bringing higher expectations to the table. This includes demands for packaging solutions that minimize environmental impact, use recycled content, and enable better material separation for recycling.

"We're seeing more requests for life cycle assessments (LCAs), carbon footprint data, and details on recycled content," says Robertson. "Brands want transparency and traceability throughout their supply chains."



Anomatic works closely with customers to meet these needs, providing environmental impact data and helping brands align with their own ESG goals.

INNOVATION FOR THE FUTURE

Anomatic continues to invest in research and development to push sustainability further. **Recent advances include creating 100 percent recycled aluminum alloys suitable for deep drawing and anodizing, addressing both manufacturing needs and environmental performance.**

“With near-infinite recyclability, lower energy use, and environmentally responsible processes, anodized aluminum

remains a clear choice for sustainable packaging,” says Ormiston. “It offers a win-win for brands looking for aesthetics, durability, and a strong sustainability story.”

CONCLUSION

Sustainability is no longer optional for brands looking to stay competitive in the packaging market. **Aluminum, enhanced through responsible anodizing processes, offers both environmental benefits and premium performance.** Anomatic’s commitment to continuous improvement, waste reduction, and material innovation ensures that customers not only meet today’s sustainability goals but are also prepared for the demands of tomorrow.



BIGGER IDEAS. SMALLER FOOTPRINTS



ABOUT THE CONTRIBUTORS

Josh Robertson is Business Commercialization Manager with an extensive technical background and knowledge of the packaging industry. He has been with Anomatic for 18 years in various roles; ultimately landing as the commercial team’s technical expert to customers and brands looking to leverage Anomatic’s sustainable and premium packaging solutions.

Mark Ormiston is Vice President of Innovation and Technology at Anomatic and has been with the company for almost 35 years. Mark is the resident expert at Anomatic when it comes to metallurgy, the anodizing process, and sustainability practices. His vast knowledge has helped develop and create new processes and products to promote sustainability throughout the organization and within our offerings.



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