

A New Standard in Sustainable Closures

FIBER-BASED TECHNOLOGY.
LIFE CYCLE VERIFIED.
CLIMATE IMPACT MINIMIZED.

Blue Ocean Closures leads the global shift away from plastic with advanced fiber-based caps and lids – designed to meet the demands of brands, regulators, and consumers alike. Now, third-party verified data confirms what our mission always promised: our solutions deliver the lowest climate impact in their class.

Proven by Life Cycle Assessment

An independent cradle-to-grave study by RISE (Research Institutes of Sweden) confirms the environmental advantage of our molded fiber closures over conventional alternatives. Sustainability without disrupting production or compromising quality.

Fossil CO₂ emissions per lid:

- **Metal lid:** 0.058 kg CO₂e
- **Plastic (PP) lid:** 0.047 kg CO₂e
- **Fiber-based lid:** 0.022 kg CO₂e

That's:

- **62% lower emissions vs. metal**
- **53% lower emissions vs. plastic**

This performance holds even with a higher lid weight – 14.66 g vs. 10–11 g for metal/plastic. If optimized for weight, the fiber lid's advantage increases further.



From Forest to Finish: How We Reduce Carbon

Our molded closures are made from FSC®-certified cellulose fibers. These fibers store the CO₂ absorbed during photosynthesis, offsetting the emissions generated during manufacturing and end-of-life processing.

- Carbon-retaining material
- Energy-efficient production with no water usage
- End-of-life pathways designed for recycling or biodegradation

Drop-In Simplicity, Scalable Innovation

Blue Ocean Closures solutions are built for easy integration:

- Standard neck sizes (38mm, 45mm) or custom design
- Filling-line compatible – no equipment changes
- Strong torque performance – comparable or superior to plastic
- ISO22000 certified food safety
- Hydrophobic, shelf-stable, tamper-evident ready



Life Cycle Analysis in Detail

Verified according to ISO 14040/44

The assessment compares fiber-based lids to metal twist-off lids and plastic (PP) alternatives with identical geometry, using Swedish 2020 recycling rates.

Lid Type	Emissions (kg CO ₂ e)	Lower climate impact (%) with fiber based vs. metal and plastic
Metal (10.23g)	0.058	62%
Plastic PP (11.28g)	0.047	53%
Fiber (14.66g)	0.022	—

The study accounts for:

- Material extraction
- Manufacturing
- Recycling or incineration with energy recovery

End-of-Life Performance

- Paper (fiber): 78.1% recycling rate
- Metal: 83.2%
- Plastic: just 19.3%

The fibers in our closures degrade naturally and when recycled, they stay in the paper loop, supporting circular systems.

A Platform for Future-Ready Brands

Blue Ocean Closures is more than a materials shift – it's a strategic advantage:

- Supports ESG and regulatory compliance (plastic taxes, EU directives)
- Strengthens consumer-facing sustainability narratives
- Enhances shelf appeal and brand differentiation
- Backed by award-winning innovation and industrial partnerships

As demand for low-carbon, plastic-free packaging grows, our technology is positioned to lead. The data is clear. The future is fiber.

