



Ambr® Vessels

Simplifying Progress

Sustainability Fact Sheet

SARTORIUS

Overview

Ambr® single-use bioreactors provide high precision conditions that support a wide range of applications and cultivation modes.

This fact sheet presents the current sustainability status of Ambr® vessels, using the Ambr® 250 High Throughput mammalian vessel and Ambr® 15 Cell Culture vessel as examples. It highlights our commitment to enhancing the sustainability of our products, with continuous improvements being made over time.



Life Cycle Thinking

At Sartorius, we are committed to sustainability and are actively seeking innovative ways to reduce the ecological footprint of our products.

Adopting life cycle thinking is key to enhancing sustainability and considering the environmental impacts from raw materials to end-of-life disposal. We are dedicated to refining our production methods, boosting efficiency, minimizing waste. We also consider the environmental toll of shipping practices and are committed to optimizing logistics to reduce carbon emissions.

Our ongoing research into materials and designs aims to lessen environmental impact and enhance the recyclability of our products. Guided by Product Carbon Footprint (PCF) screenings, we gain valuable insights that drive the development of more sustainable products and deepen our understanding of their ecological footprints.

Integrating life cycle thinking into our operations not only supports the sustainability of our products but also enables our customers to make environmentally conscious decisions with confidence.



Environmental Overview

Material Selection

All materials of construction are selected with care. The polymers used for plastic parts and support materials, mainly polycarbonate, and the packaging materials, mainly cardboard, are of good quality and can easily be recycled.

Raw Material Acquisition

Raw and support materials are supplied from sources close to the manufacturing sites where feasible. Injection molding of the main polycarbonate and polypropylene parts and bioreactors assembly are performed at Sartorius plant in order to reduce the environmental impact of internal transport.

Material Processing

Plastic components are manufactured on modern equipment in efficient processes that take material, energy and water consumption into account. The main plastic components are injected in Sartorius to minimize the scraps and to optimize the process.

Certification

The production site for bioreactors in Stonehouse, Great Britain, is certified according to ISO 14001. The environmental management system enables our organization to improve the environmental performance, meet legal and other obligations, and achieve environmental objectives.

Additionally, the production site in Stonehouse has received the International Sustainability and Carbon Certification PLUS (ISCC PLUS), a globally recognized certification for recycled, biocircular, and biobased products. This certification enables us to advance toward using bio-circular feedstock at our resin manufacturers, thereby reducing the environmental impact of the plastic components without the need for additional product validation. All manufacturing processes, materials, and components will remain unchanged, maintaining the same technical and performance specifications. This ensures no impact on the fit, form, or function of the final product. In summary, this certification allows us to source products more sustainably and contribute to a circular economy without the need for their revalidation.

Distribution

The production and distribution of the bioreactors are managed with logistics solutions that minimize transport impacts to final customers. Since mid-2023, our transformational Air-to-Ocean distribution initiative has further enhanced this effort, saving over a kilogram of CO₂eq per Ambr® vessel.



Product

	Ambr® 250	Ambr® 15
Recyclability	60%	100%
Renewable Content	49%	83%

The recyclability of our product stands at 60% for Ambr® 250 and 100% for Ambr®15, reflecting our commitment to sustainability and environmental responsibility.

Recyclability is defined as the characteristic of products that retain useful physical or chemical properties after serving their original purpose. Once these products are separated and sent to recycling, they can be reintroduced into manufacturing as raw materials¹. In this context, we refer to the technical recyclability of a material or component, meaning that technological solutions exist to recycle them, either mechanically or through advanced recycling methods.

Additionally, starting in early 2025, we have introduced renewable content in our Ambr® vessels. They are manufactured using polycarbonate derived from post-consumer renewable waste streams, such as used cooking oil, with a composition of 49% by mass of the product for Ambr® 250 and 83% for Ambr®15. They are certified by ISCC PLUS through a mass balance approach. All materials and components will remain unchanged, maintaining the same technical and performance specifications without the need for additional product validation.



Elements of the Ambr® 250: Options at the End-Of-Life

Component	Material	Recyclable
Lid, drive shaft, vessel sensor body and pipette cap	PC	Yes
Tubes	TPE	No
Blade impeller, pivot pin, liquid manifold and tube support	PP	Yes
Filters and pipette cap seal	PE	Yes
Others	Various	No

Elements of the Ambr® 15: Options at the End-Of-Life

Component	Material	Recyclable
Body, lid, impeller	PC	Yes
Cap	PE	Yes
Filter	PE	Yes
Dowel pin	SS	Yes
Sparge tube	PP	Yes

PC=Polycarbonate, PE=Polyethylene, PP=Polypropylene, SS= Stainless steel, TPE= Thermoplastic elastomer

Definitions: ¹Based on European Environmental Agency GEMET – Environmental thesaurus

Disclaimer
The recyclability of the product may be influenced by its use, such as the presence or absence of agents defined as hazardous, as well as local regulations and the capabilities of local companies to manage those materials. Data refers to the Ambr® 250 High Throughput bioreactor, Mammalian (001-5G25) and Ambr® 15 Cell Culture bioreactor (001-7B01).

Packaging

	Ambr® 250	Ambr® 15
Recyclability	100%	100%
Renewable Content	86%	96%
Recycled Content	22%	43%

Recyclability¹

Characteristic of products that still have useful physical or chemical properties after serving their original purpose and, after being separated and sent to recycling, can be reintroduced into manufacturing as raw materials.

We refer here as technical recyclability of a material | component | packaging material if technological solutions exist to recycle them (mechanically or via advanced recycling).

Renewable Content²

Materials that are derived from resources that are quickly replenished by ecological cycles or agricultural processes, so that the services provided by these and other linked resources are not endangered and remain available for the next generation. In our product packaging, we refer specifically to cardboard and paper.

Recycled Content³

Proportion of the mass of recycled material on the total mass of the packaging.



Elements of the Primary and Secondary Packaging of the Ambr® 250: Options at the End-Of-Life

Category	Packaging Element	Material	Recyclable?
Plastics	Pouch	PE film	Yes
Paper and Cardboard	Leaflet	Paper	Yes
	Product box	Corrugated cardboard	Yes
	Divider & spacer	Corrugated cardboard	Yes
	Box labels	Paper	Yes

Elements of the Primary and Secondary Packaging of the Ambr® 15: Options at the End-Of-Life

Category	Packaging Element	Material	Recyclable?
Plastics	Bag	PE	Yes
Paper and Cardboard	Product box	Cardboard	Yes
	Fitment	Paper	Yes
	Box labels	Paper	Yes

PE = Polyethylene

Definitions: ¹Based on European Environmental Agency GEMET – Environmental thesaurus | ²Corporate Sustainability Reporting Directive (CSRD) | ³Only recycled post-industrial and recycled post-consumer materials shall be considered as recycled content. The numbers provided herein are the best available approximations.

Disclaimer
The recyclability of the packaging may be influenced by local regulations as well as the capabilities of local companies to manage those materials. Data refers to the Ambr® 250 High Throughput bioreactor, Mammalian (001-5G25) and Ambr® 15 Cell Culture bioreactor (001-7B01).

Sustainability at Sartorius

Sartorius is dedicated to shaping a future where improved medicine is more accessible to many. Concurrently, we acknowledge and address the impacts of our operations globally.

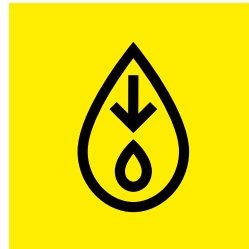
Taking into account the concerns of its stakeholders, Sartorius has defined six strategic sustainability topics:



Climate Action



Resources and
Circularity



Water and Effluents



Supply Chains



Social Responsibility



Corporate
Governance

Germany

Sartorius Stedim Biotech GmbH
August-Spindler-Strasse 11
37079 Goettingen
Phone +49 551 308 0

USA

Sartorius Stedim North America Inc.
565 Johnson Avenue
Bohemia, NY 11716
Toll-Free +1 800 368 7178



For further contacts, visit

[sartorius.com](https://www.sartorius.com)