Celsius® FFT 75 L for Large Volume Management

Simplifying Progress

Sustainability Fact Sheet

SARTORIUS

Overview

Building on more than 20 years of experience in designing single-use solutions, we have developed the bioprocessing solutions with their adapted quality control levels able to support drug handling and transportation steps in frozen state. Discover our product range for cold chain management with Celsius® bags for frozen storage and shipping of bulk drug substance from 30 mL to 75 L.

This fact sheet presents the current sustainability status of Celsius® FFT 75 L single-use container. 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 in plastic components and support materials, along with packaging materials like cardboard, are of high quality and largely recyclable.

Raw Material Acquisition
Raw and support materials are supplied from sources close to the manufacturing sites where feasible. Bag manufacturing and final assembly are performed in two close countries in order to reduce the environmental impact of internal transport.

Material Processing
Bags, tubes and other components are manufactured on modern equipment in efficient processes that take material, energy and water consumption into account. The French production site sends the plastic scraps to external recycling, and use renewable energy to manufacture the bag.

Certification
The production sites for Celsius® FFT 75 L bags in Aubagne, France and M'Hamdia, Tunisia, are ISO 14001 certified. The environmental management system enables our organization to improve the environmental performance, meet legal and other obligations, and achieve environmental objectives.

Distribution
The production and distribution of the bags is managed with logistics solutions allowing for minimized impacts linked to transport to the final customers.

Partnership With Envirotainer for Frozen Shipment
Sartorius and Envirotainer have partnered to develop and qualify new solutions for the transport of frozen pharmaceutical substances, combining industry-leading expertise in biopharmaceuticals and temperature-controlled packaging.
Together, we develop a solution to optimize and secure the use Celsius® FFT Palletized containers with ProofTainer, Envirotainer's advanced passive solution available through their global leasing offering.

ProofTainer integrates vacuum insulation panels (VIPs) and phase change materials (PCMs) to deliver stable internal temperatures for over 120 hours, even at conditions as low as –50°C—without relying on dry ice. This eliminates the operational complexity and safety risks associated with dry ice handling, while ensuring product integrity throughout the journey.

As part of Envirotainer's leasing model, ProofTainer supports a circular logistics approach, its light weighted and significantly lower CO_2 emissions across the supply chain. This solution empowers our customers to meet sustainability targets without compromising on performance or reliability.

Product

The Celsius® FFT 75 L containers are designed for use in a palletized format, accommodating up to 4 containers per pallet for a total capacity of 300 L. The standard unit operation, which includes 1 pallet, 4 containers, and 1 cover, is 97% recyclable and contains 31% recycled material, reflecting our commitment to sustainability and environmental responsibility.

4× Celsius® FFT 75 L on Celsius® FFT Pallet Base

With Celsius® FFT Pallet Cover

	Components			Standard Operational Unit
	Pallet Base	Container	Pallet Cover	Pallet Base + 4 Containers + Pallet Cover
Recyclability	94%	98%	97%	97%
Recycled Content	44%	37%	-	31%

Elements of the Pallet Base: Options at the End-Of-Life

Component	Material	Recyclable
Pallet, pins and other metal components	SS, AL	Yes
Plastic or multi-material components	Sil, CS	No

Elements of the Container: Options at the End-Of-Life

Component	Material	Recyclable
Frames	AL	Yes
Bag chamber	EVA	Yes
Tubes	Sil (Pt)	No
Mono-material fluid contact component (i.e. port)	LLDPE	Yes
Multi-material fluid contact components (i.e. connectors)	Acrylate, PC, PP and others	No
Non-fluid contact components (i.e. clamps, screws, plate, caps, etc.)	AL, SS, PET, HDPE, PC and others	Yes
Non-fluid contact components such as nuts and washer	SS, PA	No

Elements of the Pallet Cover: Options at the End-Of-Life

Component	Material	Recyclable
Metal compoentns such as bars, pins, screws and others	SS	Yes
Sleeve and top cap part	PP	Yes
Top cap part	PVC	No

AL = Aluminium, CS = Carbon Steel, EVA = Ethylene vinyl acetate, PA = Polyamide, PC = Polycarbonate, PET = Polyethylene terephthalate, PP = Polypropylene, PVC = Polyvinylchloride, Sil = Silicone, Sil (Pt) = Platinum Cured Silicone, SS = Stainless Steel, Sil (Pt) = Platinum Cured Silicone, SS = Stainless Steel, HDPE = High Density Polyethylene, LLDPE = Linear Low Density Polyethylene

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 Celsius® FFT 75 L.

Packaging

	Components			Standard Operational Unit
	Pallet Base	Container	Pallet Cover	Pallet Base + 4 Containers + Pallet Cover
Recyclability	100%	86%	100%	91%
Recycled Content	58%	59%	28%	52%
Renewable Content	83%	84%	40%	75%

Recyclability[1]
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 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 Content[2]
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 Content[3]
Proportion of the mass of recycled material on the total mass of the product or packaging.

Elements of the Primary and Secondary Packaging Pallet Base: Options at the End-Of-Life

Category	Packaging Element	Material	Recyclable
Plastics	Foam	LDPE	Yes
Paper and Cardboard	Bottom and top	Cardboard	Yes

Elements of the of the Primary and Secondary Packaging Container: Options at the End-Of-Life

Category	Packaging Element	Material	Recyclable
Plastics	Protection pad	Sil	No
	Polybag	LDPE	Yes
	Reverse cable tie	PA	No
	Overpouch	PE/PA/PE film	No
	Strapping band	PP	Yes
	Corner (Strip)	LDPE	Yes
Paper and Cardboard	Box	Cardboard	Yes

Elements of the Primary and Secondary Packaging Pallet Cover: Options at the End-Of-Life

Category	Packaging Element	Material	Recyclable
Plastics	Box	PP	Yes
Paper and Cardboard	Box	Cardboard	Yes

PA = Polyamide, PE = Polyethylene, PP = Polypropylene, Sil = Silicone, LDPE = Low Density Polyethylene

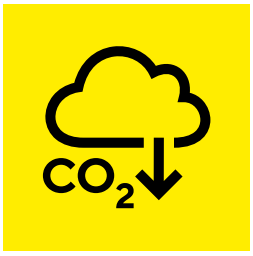
Definitions: [1]Based on European Environmental Agency GEMET – Environmental thesaurus | [2]Corporate Sustainability Reporting Directive (CSRD) | [3]Only recycled post-industrial and recycled post-consumer materials shall be considered as recycled content. The numbers provided herein are the best available 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 Celsius® FFT 75 L.

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

For further information, visit
sartorius.com/en/company/sustainability

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