Discover our Freezing Capabilities:
Celsius® Product Lines
Overview of the Freezing and Thawing Operations

Celsius®-Pak
(Volumes: 30 mL, 100 mL, 1 L, 2 L, 8.3 L and 16.6 L)

Celsius® FFT
(Volumes: 2 L, 4 L, 6 L and 12 L)

Celsius® Controlled Freeze Thaw (CFT)

Celsius® Flexible Freeze Thaw (FFT)

Controlled Thawing Operation

Storage & Logistics

Celsius® Shippable Storage Module (SSM)

Celsius® SSM Shipper

Total Solution Provider

Celsius® FT33 | 66 | 100

Celsius® FFT Shippers

Celsius® CFT Logistics
Sartorius Stedim Biotech offers comprehensive solutions, using either patented freeze-thaw technologies or conventional freezers, for the handling, storage, transfer and shipping of biopharmaceuticals.

The Celsius® CFT systems use a proprietary heat transfer technology to freeze and thaw biopharmaceutical solutions, scalable from process development to commercial scale production products.

The Celsius® FFT single-use assemblies are designed to provide the freezing container used in conventional freezer. The associated logistics for frozen storage and shipping of biopharmaceuticals is also available.

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Freezing & storage in conventional freezer

Celsius® Filling Station FS16-S2

Celsius® FT33 | 66 | 100

Filling Operation

Controlled Freezing Operation
The Celsius® S3 Benchtop system is the only laboratory instrument available on the market to evaluate the Freeze and Thaw processes of new drug candidates in single-use containers with full scalability to production scale.

This tool allows generation of consistent samples library useful for evaluating stability, storage conditions and formulations.

Samples frozen in the Celsius® S3 Benchtop system may be stored at different temperatures to investigate the drug substance stability, using final scale-like conditions.
16.6 L Process Scale vs. 30 mL L5
Celsius® S³ Overview
We Provide Our Support in Your Freezing Operations

**Security of Supply**
Sartorius Stedim Biotech has established multiple manufacturing sites with consistent industrial processes. The expertise of designing Single-Use solutions based on collaborative supplier management and customer demand planning assures a state of the art and robust supply chain that can cope with strong market growth.

**Quality Assurance**
Single-Use Products follow applicable ISO and FDA regulations for Medical Devices. Design, Manufacture and Sterilization processes are conducted under conditions that mirror biopharmaceutical operations and meet cGMP requirements.

**Validation**
Celsius® Bags have been qualified applying the most complex and innovative test regimes. Biological, chemical and physical tests combined with extensive extractable testing provide users of Celsius® with data representing the widest range of process fluids in a variety of processing conditions.

Full compliance with ISO11137 allows sterility assurance level validation of $10^{-6}$ for each Single-Use System over its entire shelf life.

**Application Support Development Studies**
Feasibility studies are enabled using Sartorius Stedim Biotech Laboratory Scale Freeze and Thaw Technologies to assess the characteristics (quality, activity, robustness) of a drug substance.

The studies are designed to replicate the freeze | hold | thaw profiles of the Production Scale Controlled Freeze-Thaw Systems.

Biological entities have their own intrinsic characteristics that call for the development of product specific studies. Our applications group will work with clients to develop studies that will address the unique requirements of their biological entity.