

Business Development of Bioprocess Solutions

Double-digit gains in sales revenue, order intake and earnings again

Sales growth increased in all three regions

Strong demand for all product categories



Products for biopharmaceutical production



Filters for sterilization of biopharmaceutical media



Technologies for cell harvesting, purification and concentration



Scalable single-use bioreactor systems for cell culture processes



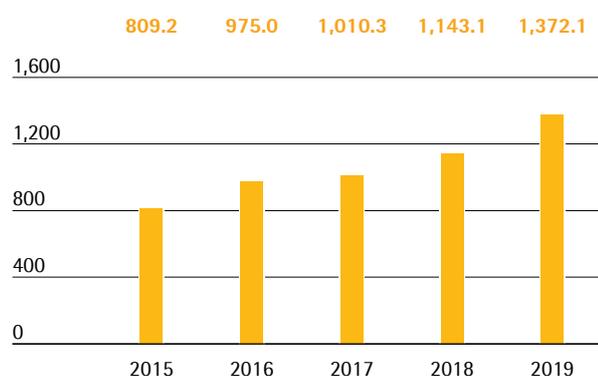
Single-use bags for cell cultivation, fermentation and storage of biopharmaceuticals

Sales Revenue and Order Intake

In fiscal 2019, the Bioprocess Solutions Division sustained its high momentum from the previous year, recording significant double-digit gains in sales revenue and profit yet again. The division's sales revenue rose in constant currencies by 18.1% to €1,372.1 million (reported: +20.0%) and was fueled by high demand across all product categories and geographies. Thus, sales growth even slightly exceeded our forecast of 13% to 17%, which was considerably raised at mid-year 2019. Consolidation of Biological Industries as of mid-December 2019 did not contribute any material growth.

Sales Revenue 2015 to 2019

€ in millions



Sales Revenue and Order Intake

€ in millions	2019	2018	in % reported	in % cc
Sales revenue	1,372.1	1,143.1	20.0	18.1
Order intake	1,479.3	1,233.7	19.9	18.0

In the reporting year, the division increased its revenues in all three regions. EMEA, the region generating the highest revenue for the division and representing around 38% of its total sales, recorded a very solid gain of 13.2% to €526.9 million. In the Americas region, which represented around 37% of division revenue, sales increased substantially again against a strong prior-year base, by 19.3% to €504.9 million. The Asia | Pacific region, which accounted for around 25% of the division's total sales, also saw very strong growth. Fueled by dynamic project business, sales revenue surged 24.8% to €340.3 million.

Order intake also showed very positive development in the reporting year, rising 18.0% in constant currencies to €1,479.3 million. On a reported basis, this increase was 19.9%.

Sales by Region

€ in millions	2019	2018	in % reported	in % cc
EMEA	526.9	464.7	13.4	13.2
Americas	504.9	410.0	23.1	19.3
Asia Pacific	340.3	268.4	26.8	24.8

Overproportionate Increase in Earnings

In the reporting year, the Bioprocess Solutions Division significantly increased its underlying EBITDA by 24.5% to €406.8 million. Due to economies of scale and as a consequence of the IFRS 16 Standard, the division's respective margin was up year over year from 28.6% to 29.6%.

Underlying EBITDA and EBITDA Margin

	2019	2018
Underlying EBITDA in € millions	840.6	326.9
Underlying EBITDA margin in %	29.6	28.6

In the year under review, the Bioprocess Solutions Division recorded negative extraordinary items of –€19.1 million relative to €13.0 million a year earlier. The prior-year figure was positively impacted to a strong degree by one-time income of €35.2 million in connection with the modification of the contract with Lonza.

Products and Sales

The Bioprocess Solutions Division sells products and services for the entire added-value chain in biopharmaceutical production and upstream process development. The portfolio includes cell lines, cell culture media, bioreactors, a wide range of products for separation, purification and concentration, and systems for the storage and transport of intermediate and finished biological products.

New Products with a Focus on Automation

During the reporting year, Sartorius introduced a new generation of the automated microbioreactor system ambr® 15. This device controls up to 48 bioreactor cultures in single-use vessels in parallel. The system is used in biopharmaceutical labs for cell line development and process optimization. The second generation of the device offers enhanced hardware and software.

Moreover, special bioreactors were launched on the market that are optimized for the production of cellular immune therapies, among other things.

Sartorius also updated its software for the multivariate data analysis of biopharmaceutical production processes. This software takes the extensive data sets that are generated at different points in the production process, combines them into a uniform system and enables them to be monitored, controlled and analyzed. The updated version offers improved user friendliness and accessibility as well as time-saving analysis functions.

Sartorius presented its new integrity testing device Sartocheck® 5 for testing and demonstrating the functional capability of its filters. It offers additional possibilities for electronic data capture and further processing such as the automatic transfer of test results to central databases, among other things.

Sales Activities Expanded

The Bioprocess Solutions Division markets its product portfolio directly through its own field sales representatives. Sales activities for key accounts are coordinated and supported by global key account management.

Sartorius has expanded its direct sales in Asia/Pacific through the acquisition of a sales partner in Taiwan that has been selling Sartorius products since 2012, particularly from the Bioprocess Solutions Division.

During the year under review, Sartorius joined the National Institute for Innovation in Manufacturing Biopharmaceuticals (NIIMBL) which is based in Newark, Delaware, USA. The institute was founded in 2017 as a public-private partnership, and has an extensive network of academic and industrial partners in the USA.

Product Development

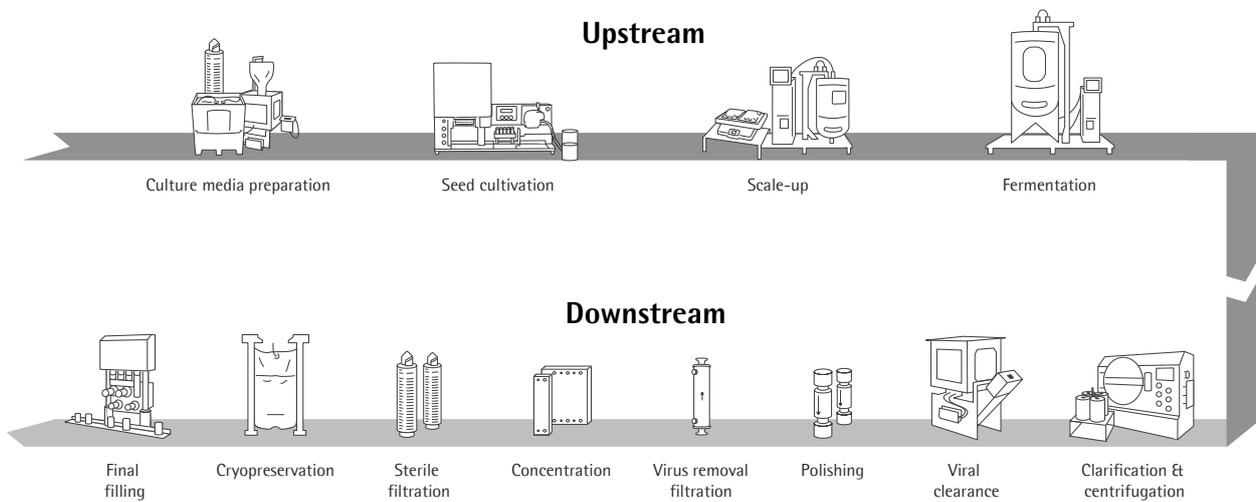
Activities in product development encompass both new and advanced in-house product developments in our own core technologies as well as the integration of new products through collaborations and acquisitions.

Development activities at Sartorius focus on technology areas such as membranes, which are the core component of our filter products; various technology platforms such as single-use containers and sensors; and control technologies for processes such as fermentation. Additional focal areas include developments in materials and components such as plastics, elastomers and intelligent polymers; expanded data analysis; and cell line development.

Sartorius signed a cooperation agreement with Novasep for the development of a membrane-based chromatography system. Novasep is an established manufacturer of gel-based batch and continuous chromatography systems, and Sartorius offers innovative solutions for membrane chromatography in single-use technologies. The combination of Novasep's established chromatography platform and Sartorius membrane solutions is intended to bring together the strengths of both technologies. The resulting system is designed to improve the efficiency of the purification step and strengthen the downstream positioning of Sartorius.

Our largest site for product development is Göttingen, Germany; other key sites are Aubagne, France; Guxhagen, Germany; Bangalore, India; Bohemia, New York, United States; Royston, United Kingdom; and Umeå, Sweden.

Technologies for the entire added-value chain in biopharmaceutical production



Simplified diagram

Production and Supply Chain Management

Bioprocess Solutions has a very well developed production network around the world. The largest production sites are located in Germany, France and Puerto Rico (U.S.). This division also manufactures in the United Kingdom, Switzerland, Tunisia, India, the United States and, since 2018, in China.

Expansion of Production Capacity

During the reporting year Sartorius started up operations at its expanded production facilities in Yauco, Puerto Rico. The U.S. market, in particular, is served by this plant. The site's considerably larger production capacities enable Sartorius to deliver an even broader spectrum of products to its American customers directly from the region.

Within about three years of construction, the production capacity for filters and single-use bags for biopharmaceutical production was more than doubled, and, for the first time, extensive capacity for the manufacture of filter membranes was established outside the company's primary German site in Göttingen. The facility in southwestern Puerto Rico offers about 190,000 square meters of space and is designed to accommodate further long-term growth: If needed Sartorius can at least double its production capacity there.

At company headquarters in Göttingen, capacity for membrane modification was expanded, and an additional building for office and laboratory space was opened.

During the reporting year, staff moved into the development and production center for cell lines in Ulm. With 6,000 square meters of usable floor space, the new center offers twice the previously available capacity.