Consolidated Financial Statements and Notes

03

Statement of Profit or Loss | Other Comprehensive Income

€ in K	Notes	2021	2020
Sales revenue	[9]	3,449,222	2,335,657
Cost of sales	[10]	−1,610,295	−1,129,263
Gross profit on sales		1,838,926	1,206,394
Selling and distribution expenses	[10]	−580,676	−438,720
Research and development expenses	[10]	−139,881	−108,425
General administrative expenses	[10]	−165,045	−125,940
Other operating income and expenses	[11]	−50,170	−77,295
Earnings before interest and taxes (EBIT)		903,155	456,013
Financial income	[12]	29,294	35,854
Financial expenses	[12]	−264,026	−67,120
Financial result		−234,732	−31,267
Profit before tax		668,423	424,746
Income taxes	[13]	−241,445	−125,191
Net profit for the period		426,978	299,555
Attributable to:			
Equity holders of Sartorius AG		318,888	210,095
Non-controlling interest		108,090	89,460
Earnings per share	[14]		
Earnings per ordinary share (€) (basic)		4.66	3.07
Earnings per ordinary share (€) (diluted)		4.66	3.07
Earnings per preference share (€) (basic)		4.67	3.08
Earnings per preference share (€) (diluted)		4.67	3.08

The figures for the 2020 reporting period were restated due to the finalization of the purchase price allocations for the acquisitions of BIA Separations and WaterSep BioSeparations (see Note 8).

The Notes to the Consolidated Financial Statements are an integral part of these statements.

Statement of Comprehensive Income

€ in K	2021	2020
Net profit for the period	426,978	299,555
Cash flow hedges	–23,668	12,179
Of which effective portion of the changes in fair value	–17,165	3,707
Of which reclassified to profit or loss	–6,503	8,472
Income tax on cash flow hedges	7,100	–3,654
Net investment in a foreign operation	38,347	–46,389
Income tax on net investment in a foreign operation	–10,264	12,404
Currency translation differences	85,467	–79,848
Items that may be reclassified to profit or loss, net of tax	96,982	–105,308
Remeasurements of the net defined benefit liability	3,715	–4,942
Income tax on remeasurements of the net defined benefit liability	–1,232	97
Items that will not be reclassified to profit or loss, net of tax	2,483	–4,845
Other comprehensive income after tax	99,465	–110,153
Total comprehensive income	526,443	189,402
Attributable to:		
Equity holders of Sartorius AG	405,763	108,647
Non-controlling interest	120,680	80,755

The figures for the 2020 reporting period were restated due to the finalization of the purchase price allocations for the acquisitions of BIA Separations and WaterSep BioSeparations (see Note 8).

Statement of Financial Position

€ in K	Notes	Dec. 31, 2021	Dec. 31, 2020
Non-current assets			
Goodwill	[15]	1,362,044	1,231,372
Other intangible assets	[15]	1,095,635	991,837
Property, plant and equipment	[16][17]	1,305,823	971,548
Financial assets	[35]	60,848	34,120
Other assets		1,628	1,532
Deferred tax assets	[18]	75,152	45,022
		3,901,130	3,275,431
Current assets			
Inventories	[19]	892,827	557,285
Trade receivables	[29]	423,994	314,260
Other financial assets	[30]	24,947	40,334
Current tax assets		28,951	15,243
Other assets		83,274	78,757
Cash and cash equivalents	[28]	342,809	203,435
		1,796,802	1,209,313
		5,697,932	4,484,744

€ in K	Notes	Dec. 31, 2021	Dec. 31, 2020
Equity			
Equity attributable to Sartorius AG shareholders		1,260,304	1,031,440
Issued capital	[20]	68,416	68,416
Capital reserves	[21]	43,307	41,987
Other reserves and retained earnings	[21]	1,148,581	921,037
Non-controlling interest	[22]	459,892	348,855
		1,720,196	1,380,295
Non-current liabilities			
Pension provisions	[23]	75,403	80,368
Other provisions	[24]	13,310	11,868
Loans and borrowings	[31]	1,649,088	1,826,337
Lease liabilities	[17][31]	88,910	65,549
Other financial liabilities	[32]	421,818	128,857
Deferred tax liabilities	[18]	182,043	120,380
		2,430,572	2,233,359
Current liabilities			
Provisions	[24]	58,386	29,504
Trade payables	[33]	515,041	330,742
Loans and borrowings	[31]	311,327	175,438
Lease liabilities	[17][31]	26,138	20,043
Employee benefits	[26]	153,902	96,268
Other financial liabilities	[34]	168,991	48,706
Current tax liabilities		178,713	87,708
Other liabilities	[25]	134,666	82,682
		1,547,164	871,090
		5,697,932	4,484,744

The figures for the 2020 reporting period were restated due to the finalization of the purchase price allocations for the acquisitions of BIA Separations and WaterSep BioSeparations (see Note 8).

Start

Statement of Cash Flows

€ in K	Notes	2021	2020
Profit before tax		668,423	424,746
Financial result	[12]	234,732	31,267
Depreciation | amortization of intangible and tangible assets	[15][16][17]	231,176	179,998
Gains | losses on disposal of fixed assets		0	137
Change in provisions	[23][24]	29,706	3,906
Change in receivables	[29][30]	–99,142	–59,260
Change in inventories	[19]	–294,410	–114,067
Change in liabilities	[25][33][34]	281,620	162,720
Income taxes paid	[13]	–189,381	–120,052
Other non-cash transactions		3,090	2,130
Cash flow from operating activities		865,814	511,525
Capital expenditures	[15][16]	–407,168	–240,254
Other payments		–20,769	–8,133
Cash flow from investing activities before acquisitions		–427,936	–248,387
Acquisitions of subsidiaries and other business operations	[8]	–141,671	–1,022,150
Cash flow from investing activities		–569,607	–1,270,537
Interest received	[12]	7,391	6,963
Interest paid and other financial charges	[12]	–31,508	–25,032
Dividends paid to:			
- Shareholders of Sartorius AG		–48,233	–24,278
- Non-controlling interest		–17,530	–8,860
Changes in non-controlling interest	[8][22]	–594	–30,473
Loans and borrowings raised	[6][31]	137,039	1,186,040
Loans and borrowings repaid	[6][31]	–211,746	–196,892
Cash flow from financing activities		–165,182	907,467
Change in cash and cash equivalents		131,025	148,455
Cash and cash equivalents at the beginning of the period		203,435	54,441
Changes in scope of consolidation		343	0
Net effect of currency translation on cash and cash equivalents		8,006	539
Cash and cash equivalents at the end of the period	[28]	342,809	203,435

The figures for the 2020 reporting period were restated due to the finalization of the purchase price allocations for the acquisitions of BIA Separations and WaterSep BioSeparations (see Note 8).

Statement of Changes in Equity

€ in K	Issued capital	Capital reserves	Cash flow hedging reserves
Balance at Jan. 1, 2020	68,388	40,691	1,440
Net profit for the period	0	0	0
Cash flow hedges	0	0	9,772
Remeasurements of the net defined benefit liability	0	0	0
Currency translation differences	0	0	0
Net investment in a foreign operation	0	0	0
Tax effects	0	0	−2,931
Other comprehensive income after tax	0	0	6,841
Total comprehensive income	0	0	6,841
Share-based payments	28	1,296	
Dividends			
Issue of treasury shares for the purchase of BIA Separations			
Purchase price liability BI Israel			
Purchase of additional shares in subsidiaries			
Other changes in equity			
Balance at December 31, 2020	68,416	41,987	8,281
Balance at Jan. 1, 2021	68,416	41,987	8,281
Net profit for the period	0	0	0
Cash flow hedges	0	0	−19,078
Remeasurements of the net defined benefit liability	0	0	0
Currency translation differences	0	0	0
Net investment in a foreign operation	0	0	0
Tax effects	0	0	5,723
Other comprehensive income after tax	0	0	−13,355
Total comprehensive income	0	0	−13,355
Share-based payments	0	1,320	
Dividends			
Purchase price liabilities BI Israel / CellGenix			
Change in non-controlling interests			
Other changes in equity			
Balance at December 31, 2021	68,416	43,307	−5,074

The figures for the 2020 reporting period were restated due to the finalization of the purchase price allocations for the acquisitions of BIA Separations and WaterSep BioSeparations (see Note 8).

Pension reserves	Retained earnings	Foreign currency translation reserves	Equity attributable to Sartorius AG share-holders	Non-controlling interest	Total equity
-26,028	710,045	15,814	810,351	282,826	1,093,177
0	210,095	0	210,095	89,460	299,555
0	0	0	9,772	2,407	12,179
-4,071	0	0	-4,071	-870	-4,942
0	0	-70,088	-70,088	-9,760	-79,848
0	-46,389	0	-46,389	0	-46,389
-144	12,404	0	9,329	-482	8,847
-4,216	-33,985	-70,088	-101,448	-8,705	-110,153
-4,216	176,110	-70,088	108,647	80,755	189,402
	0		1,324	0	1,324
	-24,278		-24,278	-8,860	-33,138
	132,725		132,725	0	132,725
	19,800		19,800	0	19,800
	-14,733		-14,733	-8,629	-23,362
	-2,396		-2,396	2,764	368
-30,243	997,273	-54,274	1,031,440	348,855	1,380,295
-30,243	997,273	-54,274	1,031,440	348,855	1,380,295
0	318,888	0	318,888	108,090	426,978
0	0	0	-19,078	-4,590	-23,668
3,131	0	0	3,131	584	3,715
0	0	70,009	70,009	15,458	85,467
0	38,347	0	38,347	0	38,347
-993	-10,264	0	-5,534	1,138	-4,396
2,138	28,083	70,009	86,875	12,590	99,465
2,138	346,971	70,009	405,763	120,680	526,443
	0		1,320	0	1,320
	-48,233		-48,233	-17,530	-65,763
	-130,305		-130,305	-46,212	-176,517
	0		0	54,414	54,414
	319		319	-315	4
-28,105	1,166,025	15,735	1,260,304	459,892	1,720,196

The dividends paid per share are as follows:

	Per share in €	2021 total € in K	Per share in €	2020 total € in K
Dividend for ordinary shares	0.70	23,958	0.35	11,974
Dividend for preference shares	0.71	24,275	0.36	12,303
		48,233		24,278

Notes to the Financial Statements

1. General Information

Sartorius AG is a listed joint stock corporation established in accordance with German law and is the ultimate parent company of the Sartorius Group. The company is recorded in the German Commercial Register of the District Court of Göttingen (HRB 1970) and has its registered office at Otto-Brenner-Str. 20 in Göttingen, Federal Republic of Germany.

The Sartorius Group is a leading international partner of biopharmaceutical research and the industry. With innovative laboratory instruments and consumables, the Group's Lab Products & Services Division (LPS) concentrates on serving the needs of laboratories performing research and quality control at pharma and biopharma companies and those of academic research institutes. The Bioprocess Solutions Division (BPS), with its broad product portfolio focusing on single-use solutions, helps customers manufacture biotech medications and vaccines safely and efficiently.

In accordance with Section 315e (1) of the German Commercial Code (HGB) in conjunction with Article 4 of Regulation (EC) No. 1606/2002 of the European Parliament and of the Council of July 19, 2002 (OJ L243 p. 1), the consolidated financial statements of the Sartorius Group for the year ended December 31, 2021, were prepared in accordance with the IFRS and IFRIC Standards and Interpretations of the International Accounting Standards Board (IASB) as required to be applied by the European Union. These are available on the following website:

https://ec.europa.eu/info/business-economy-euro/company-reporting-and-auditing/company-reporting/financial-reporting_en#ifrs-financial-statements

The consolidated financial statements are prepared in euros. Unless otherwise specified, all amounts are disclosed in thousands of euros (abbreviated as € in K). In some cases, the sums of the figures given in this report may not precisely equal the stated totals, and percentages may not be exact due to rounding. The figures presented for fiscal 2020 for comparative purposes in the notes were restated to the extent necessary due to the finalization of the purchase price allocations for the acquisitions of BIA Separations and WaterSep BioSeparations (see Note 8).

The Executive Board is scheduled to submit the consolidated financial statements to the Supervisory Board on February 10, 2022.

2. Effects of New or Amended Standards

Standards to Be Applied for the First Time in 2021

The following new accounting rules were applicable for the first time and had no material impact on the consolidated financial statements:

- Amendments to IFRS 9, Financial Instruments, IAS 39, Financial Instruments: Recognition and Measurement, IFRS 7, Financial Instruments: Disclosures, IFRS 4, Insurance Contracts, and IFRS 16, Leases, Interest Rate Benchmark Reform (Phase 2)

The amendments concern modifications of financial assets, financial liabilities and lease liabilities as well as hedge accounting and disclosure requirements according to IFRS 7 which relate to the impact of the IBOR reform. The Group is not materially impacted by the IBOR reform.

- Amendments to IFRS 4 Insurance Contracts – deferral of IFRS 9

The amendments are relevant to insurance companies that are not yet applying IFRS 9 and therefore do not impact the Group.

- Amendment to IFRS 16, Leases, regarding Covid-19-related rent concessions after June 30, 2021

The amendment extends the application period of the exemption for lessees regarding the assessment of Covid-19-related debt concession. Lessees do not have to assess whether a Covid-19-related debt concession concerning lease payments which were originally due by June 30, 2022 is a lease modification under IFRS 16. The rent concession therefore does not have to be accounted for as a lease modification. This is a voluntary early application without impact on the Group's consolidated financial statements.

New Standards and Interpretations not yet Applied

The following Standards, Interpretations, and Amendments to Standards were not yet applied to the consolidated financial statements of the reporting year as they had not yet been adopted by the EU or their application was not mandatory for 2021:

Standard | Interpretation	Title	Applicable for financial years from[1]	Endorsement by the EU Commission
IFRS 14	Regulatory Deferral Accounts	January 1, 2016	No
Amendments to IFRS 3, IAS 16 and IAS 37 and amendments to IFRS 1, IFRS 9, IAS 41, and IFRS 16	Minor changes and Annual Improvements to IFRSs 2018 - 2020 Cycle (issued in May 2020)	January 1, 2022	Yes
Amendments to IAS 8	Definition of Accounting Estimates	January 1, 2023	No
Amendments to IAS 1 and IFRS Practice Statement 2	Disclosure of Accounting Policies	January 1, 2023	No
Amendments to IAS 1	Classification of Liabilities as Current or Non-Current	January 1, 2023	No
Amendments to IAS 12	Deferred Tax related to Assets and Liabilities arising from a Single Transaction	January 1, 2023	No
IFRS 17	Insurance Contracts	January 1, 2023	Yes
Amendments to IFRS 17	Initial Application of IFRS 17 and IFRS 9 – Comparative Information	January 1, 2023	No
Amendments to IFRS 10 and IAS 28	Sale or Contribution of Assets between an Investor and its Associate or Joint Venture	n/a	No

1 Mandatory application according to EU endorsement or the Standards. The Group does not plan to apply any Standard early.

To date, the Group does not expect the changes to have a material impact on its consolidated financial statements.

3. Significant Accounting Policies

Significant accounting policies are described in the notes in which the respective positions of the consolidated financial statements are further explained if they relate to specific positions. Significant general accounting policies are described below.

Basis of Preparation

The consolidated financial statements of the Group are based on the principle of the historical cost of acquisition, construction, or production, with the exception of items measured at fair value, such as derivative financial instruments or financial liabilities resulting from contingent consideration agreements.

Foreign Currency Translation

Subsidiaries' annual financial statements prepared in foreign currencies have been translated pursuant to IAS 21, The Effects of Changes in Foreign Exchange Rates, in accordance with the concept of functional currency. Foreign subsidiaries are regarded as independent subdivisions of the Sartorius Group. Items in the statement of financial position are translated at the exchange rates on the reporting date. An exception to this is the equity of consolidated subsidiaries, which is translated at historical cost. Income and expense items are converted at average rates. Any translation differences resulting from the use of different exchange rates for items in the statement of financial position and the statement of profit or loss are recognized in the other comprehensive income in shareholders' equity.

In the individual financial statements of the consolidated companies, transactions in foreign currencies are translated into the functional currency of the company at the exchange rate on the date of the transaction. Monetary assets and liabilities denominated in a foreign currency are translated at the closing rate on the reporting date. Gains and losses on foreign currency transactions are recognized in other operating income or expenses. By contrast, currency gains and losses in connection with financing activities, such as loans in a foreign currency, are recognized in the financial result.

For certain defined loans granted on a long-term basis and for which repayment is neither planned nor probable, the Group applies the principle of "net investments in a foreign operation." The foreign currency translation differences resulting from these loans are recognized in other comprehensive income according to IAS 21.32.

The exchange rates for major currencies against the euro were applied as follows:

	Year-end exchange rates		Average annual exchange rates	
	2021	2020	2021	2020
USD	1.13245	1.22785	1.18270	1.14196
GBP	0.83902	0.89808	0.85972	0.88951
CHF	1.03336	1.08198	1.08106	1.07042
JPY	130.36000	126.52000	129.87475	121.80849
SGD	1.52820	1.62260	1.58913	1.57408
KRW	1347.69000	1334.08000	1353.74171	1345.63574
CNY	7.18870	8.03140	7.62740	7.87300

4. Critical Accounting Judgment and Key Sources of Estimation Uncertainty

During the preparation of consolidated financial statements, management uses estimates and assumptions based on their best knowledge of the current situation, including expectations of future developments. However, actual results may differ from these estimates. Therefore, these estimates and assumptions are revised on a regular basis, and the impact of all changes is immediately recognized in the statement of profit or loss for the period.

In addition, Group management exercises its judgment in defining the accounting treatment of specific transactions when the existing standards and interpretations do not explicitly treat the accounting problems concerned.

Significant judgments and estimates are especially relevant to the business combinations described in Note 8 including the contingent consideration liabilities, the values of which may vary due to their complex subsequent accounting at fair value.

Other significant judgments and estimates are described in the notes which provide explanations to the positions of the consolidated financial statements if they relate to specific positions. The general assumptions and estimates primarily concern the following topics:

Covid-19 Pandemic

The economic development of the Group has been very robust during the pandemic. Therefore, no significant revisions were made to accounting estimates and assumptions as a result of the pandemic. However, the general level of uncertainty that is inherent in accounting estimates and assumptions increased as a result of the ongoing Covid-19 pandemic.

In fiscal 2021, the Group again achieved double-digit growth in both revenue and order intake. Furthermore, despite strained supply chains and, to some degree, longer delivery times, the Group did not experience significant difficulties on the supply side, and continuity of production operations has been secured. The biopharma industry, which is of particular relevance for the Group, is largely independent of economic fluctuations. This was demonstrated during the Covid-19 pandemic and is especially true of the BPS Division, a total solutions provider for the biopharma industry, which, in 2021 too, experienced increased demand in connection with the production of coronavirus vaccines and Covid-19 therapeutics. In the reporting period, the LPS Division, which also serves customer segments outside the biopharma industry, achieved significant double-digit growth and benefited, among others, from additional demand for components used for testing for the coronavirus. As expected, the goodwill impairment tests conducted during the reporting period did not reveal any need for impairment (see Note 15).

Impairment of Assets

The carrying amounts of property, plant, and equipment and intangible assets including goodwill are examined to determine whether there is any indication that an asset might be impaired, pursuant to IAS 36, Impairment of Assets. If there is any indication that an asset is impaired, the recoverable amount of the asset is estimated. The recoverable amount of an asset or cash-generating unit is the higher of its fair value – less costs of disposal – and its value in use. If the individual asset’s recoverable amount cannot be estimated, the recoverable amount of the asset’s cash-generating unit (CGU) is estimated.

The calculation of the value in use is generally based on discounted cash flow methods which use cash flow projections of up to five years. These projections take into account past experience and represent management's best estimate about future sales revenue and cost developments. Cash flows after the planning period are extrapolated using individual growth rates. Key assumptions on which management has based its determination of the value in use include estimated growth rates, weighted average cost of capital and tax rates. These estimates can have a material impact on the respective values and ultimately on the amount of any impairment.

Fair Value Measurement

A number of the Group’s accounting policies and disclosures require the measurement of fair values, for both financial and non-financial assets and liabilities, including Level 3 fair values.

If third-party information, such as broker quotes or pricing services, is used to measure fair values, then management assesses the evidence obtained from the third parties to support the conclusion that these valuations meet the requirements of IFRSs, including the level in the fair value hierarchy at which the valuations should be classified.

When measuring the fair value of an asset or a liability, the Group uses observable market data as far as possible.

If the inputs used to measure the fair value of an asset or a liability fall into different levels of the fair value hierarchy, then the fair value measurement is categorized in its entirety at the same level of the fair value hierarchy as the lowest-level input that is significant to the entire measurement.

5. Operating Segments

According to IFRS 8, Operating Segments, the identification of reportable operating segments is based on the "management approach"; i.e., the segments are defined in accordance with the internal control and reporting structure of an entity. Therefore, an area of activity is to be considered an operating segment if its business activities may result in revenues and expenses, its operating results are regularly reviewed by the entity's chief operating decision maker (= the Executive Board of Sartorius AG) for the purposes of performance management and resource allocation, and discrete financial information is available in its internal reporting. Consequently, the divisions Bioprocess Solutions (BPS) and Lab Products & Services (LPS) are considered operating segments. Essential criteria for their definition are the products sold in the divisions.

"Underlying EBITDA" is the key performance indicator of the operating segments of the Group, as management uses this performance measure to control the Group and segments. EBITDA corresponds to earnings before interest (financial result), taxes, depreciation, and amortization. "Underlying EBITDA" means EBITDA adjusted for extraordinary items. Extraordinary items are expenses and income in connection with acquisitions, restructuring activities, large Group projects and gains or losses from the disposal of fixed assets and investments which distort the sustainable profitability of a segment.

"Underlying EBITDA" is not a defined performance measure in IFRSs. The Group's definition of underlying EBITDA may not be comparable with similarly titled performance measures and disclosures by other entities.

Apart from that, the recognition and measurement methods for the reportable segments conform to the general Group accounting principles.

For intersegment transactions, internal transfer prices are set at prices corresponding to those that would have been agreed with external third parties in the particular situation and under the given framework conditions. Essentially, these prices are calculated by applying the cost-plus method and the resale price method or a combination of the two methods. The methods for determining the internal transfer prices are documented promptly and updated continuously. The volume of such intersegment transactions is immaterial.

Segment assets and segment liabilities are not reported to the chief operating decision maker on a regular basis and are therefore not part of the segment report.

	Sales revenue		Underlying EBITDA	
€ in K	2021	2020	2021	2020
Bioprocess Solutions	2,727,003	1,782,622	986,277	575,906
Lab Products & Services	722,219	553,035	188,754	116,314
Total	3,449,222	2,335,657	1,175,031	692,220
Reconciliation to the profit before tax				
Depreciation and amortization (excl. extraordinary items)			–231,150	–178,493
Extraordinary items			–40,727	–57,714
Earnings before interest and taxes (EBIT)			903,155	456,013
Financial result			–234,732	–31,267
Profit before tax			668,423	424,746

	Depreciation and amortization	
€ in K	2021	2020
Bioprocess Solutions	–150,550	–108,970
Lab Products & Services	–80,626	–71,028
Total	–231,176	–179,998

Geographical Information

External revenue and non-current assets are regionally distributed as follows:

	Sales revenue		Non-current assets	
€ in K	2021	2020	2021	2020
EMEA	1,411,015	935,078	2,531,478	2,078,058
Of which Germany	317,958	210,205	1,176,648	784,323
Of which France	125,715	96,075	432,766	425,173
Americas	1,141,217	812,212	1,141,837	1,041,770
Of which USA	1,061,711	755,263	1,139,292	1,039,087
Asia | Pacific	896,990	588,368	90,187	74,930
Of which China	378,713	224,198	45,262	32,962
Of which South Korea	161,854	130,325	15,900	14,853
Group	3,449,222	2,335,657	3,763,502	3,194,758

The regional allocation of non-current assets refers to the particular company location; sales revenue is reported according to the customers' location. The non-current assets correspond to property, plant and equipment as well as to intangible assets (including goodwill).

In fiscal 2021 and the prior year, none of our customers accounted for more than 5% of sales revenue.

6. Statement of Cash Flows

The statement of cash flows shows the impact of cash inflows and outflows on the cash and cash equivalents of the Group. The cash flows are classified by operating, investing, and financing activities according to IAS 7, Statement of Cash Flows.

In this context, cash and cash equivalents are assets that can be converted into cash in the short term (generally within three months). The amount disclosed in the statement of cash flows primarily includes cash on hand, bank balances, and similar items; it equals the amount presented in the statement of financial position.

The following non-cash transactions were concluded that are not presented in the statement of cash flows:

- Additions to non-current assets related to leases according to IFRS 16 are presented in Note 17.

- The expenses incurred by granting shares to the CEO and Executive Board Chairman totaled €1,320 K in 2021 and €1,324 K in 2020.

- In connection with the acquisition of BIA Separations in the prior year, one component of the purchase price was transferred in shares of Sartorius Stedim Biotech S.A.. Furthermore, a contingent consideration liability was recognized in the course of the acquisition that has to be settled in shares of Sartorius Stedim Biotech S.A. in the future and is therefore not included in the table below. The value recognized for that liability as of December 31, 2020, was restated as a result of the finalization of the purchase price allocation. For further details, see Note 8.

- In connection with the acquisition of CellGenix GmbH, the holders of the non-controlling interest were granted the right to sell their remaining shares to the Group. Therefore, a financial liability of €176.7 million was recognized at the acquisition date (see Note 8).

Financial liabilities resulting from financing activities changed as follows:

	Balance at Dec. 31, 2019 € in K	Cash flows	Currency effects	Other non-cash changes	Balance at Dec. 31, 2020 € in K
Loans and borrowings	991,094	1,008,876	−41	1,846	2,001,775
Lease liabilities	77,365	−19,729	−3,056	31,011	85,591
Liabilities for the acquisition of non-controlling interests	61,010	0	0	−19,504	41,506
Contingent considerations	0	0	−10	712	702
Total financial liabilities from financing activities	1,129,469	989,147	−3,107	14,064	2,129,574

	Balance at Dec. 31, 2020 € in K	Cash flows	Currency effects	Other non-cash changes	Balance at Dec. 31, 2021 € in K
Loans and borrowings	2,001,775	−50,980	33	9,587	1,960,415
Lease liabilities	85,591	−23,728	3,900	49,285	115,048
Liabilities for the acquisition of non-controlling interests	41,506	0	0	176,517	218,023
Contingent considerations	702	0	136	3,760	4,598
Total financial liabilities from financing activities	2,129,574	−74,708	4,069	239,149	2,298,083

7. Scope of Consolidation

Scope of Consolidated Financial Statements

The consolidated financial statements of Sartorius AG include the annual financial statements of all major companies controlled directly or indirectly via its subsidiaries by Sartorius AG. Under IFRS 10, Consolidated Financial Statements, control exists if the following criteria are met:

- Power, i.e., an investor must have existing rights that give it the current ability to direct the relevant activities of an investee that affect the latter's returns

- Exposure, or rights, to variable returns from the involvement with an investee

- Ability to use power in a way that significantly affects the investor’s returns from the investee.

Such investees are included in the consolidated financial statements from the time when Sartorius AG or its subsidiaries acquire such control. They are no longer included as of the time control is lost to an entity outside the Group.

Subsidiaries are included on the basis of their annual financial statements for the same reporting period as the parent company, using uniform Group-wide accounting policies.

All intragroup assets and liabilities, equity, income, expenses, and cash flows relating to transactions between members of the Group are eliminated in full on consolidation.

	Ownership in %	Consolidated
Sartorius AG, Göttingen, Germany	Parent company	X
Sartorius Stedim Biotech S.A., Aubagne, France, along with its subsidiaries:	73.8	X
EMEA		
Sartorius Stedim Belgium N.V., Brussels, Belgium	100.0	X
Xell AG, Bielefeld, Germany	100.0	X
Sartorius Stedim Biotech GmbH, Göttingen, Germany	100.0	X
Sartorius Stedim Plastics GmbH, Göttingen, Germany	100.0	X
Sartorius Stedim North America Holding GmbH, Göttingen, Germany	100.0	X
Sartorius Stedim Systems GmbH, Guxhagen, Germany	100.0	X
Sartorius CellGenix GmbH, Fribourg i. B., Germany	51.0	X
Metreon Bioproducts GmbH, Fribourg i. B., Germany	100.0	
Sartorius Stedim Cellca GmbH, Ulm, Germany	100.0	X
Sartorius Stedim Nordic Oy, Helsinki, Finland	100.0	X
Sartorius Stedim FMT S.A.S., Aubagne, France	100.0	X
Sartorius Stedim France S.A.S., Aubagne, France	100.0	X
Sartorius Stedim Chromatography Resins S.A.S., Cergy, France	100.0	X
Sartorius Stedim Aseptics S.A.S., Lourdes, France	100.0	X
Sartorius Stedim Ireland Ltd., Dublin, Ireland	100.0	X
Biological Industries Israel Beit Haemek Ltd., Kibbutz Beit Haemek, Israel	70.0	X
Beit Haemek Import and Marketing Agricultural Cooperative Society Ltd., Kibbutz Beit Haemek, Israel	99.0	
Sartorius Stedim Italy S.p.A., Florence, Italy	100.0	X
Sartorius Stedim Netherlands B.V., Amersfoort, Netherlands	100.0	X
Sartorius Stedim Austria GmbH, Vienna, Austria	100.0	X
Sartorius Stedim Poland Sp. z o.o., Kostrzyn, Poland	100.0	X
LLC Sartorius Stedim RUS, St. Petersburg, Russia	100.0	X
Sartorius Stedim Data Analytics AB, Umeå, Sweden	100.0	X
Sartorius Stedim Switzerland AG, Tagelswangen, Switzerland	100.0	X
BIA SEPARATIONS Podjetje za separacijske tehnologije d.o.o., Ajdovščina, Slovenia	100.0	X
Sartorius Stedim Spain S.A., Madrid, Spain	100.0	X
Sartorius Stedim Bioprocess S.A.R.L., M'Hamdia, Tunisia	100.0	X
Sartorius Stedim Hungária Kft., Budapest, Hungary	100.0	X
Sartorius Stedim BioOutsource Ltd., Glasgow, UK	100.0	X
Sartorius Stedim UK Ltd., Epsom, UK	100.0	X
Sartorius Stedim Lab Ltd., Stonehouse, UK	100.0	X
Sartorius Stedim Chromatography Systems Ltd., Royston, UK	100.0	X
TAP Biosystems Group Ltd., Royston, UK	100.0	X
The Automation Partnership Cambridge Ltd., Royston, UK	100.0	X
Americas		
Sartorius Stedim Filters Inc., Yauco, Puerto Rico	100.0	X
CellGenix Inc., Wilmington, Delaware, USA	100.0	
WaterSep BioSeparations LLC, Boston, Massachusetts, USA	100.0	X
Sartorius Stedim North America Inc., Dova, Delaware, USA	100.0	X
Asia | Pacific		
Sartorius Stedim Australia Pty. Ltd., Dandenong South, Victoria, Australia	100.0	X

Sartorius Stedim Biotech (Beijing) Co. Ltd., Beijing, China	100.0	X
Sartorius Stedim (Shanghai) Trading Co. Ltd., Shanghai, China	100.0	X
Biological Industries Hong Kong Ltd., Kowloon, Hong Kong	100.0	X
Sartorius Stedim India Pvt. Ltd., Bangalore, India	100.0	X
Sartorius Stedim Japan K.K., Tokyo, Japan	100.0	X
Sartorius Stedim Malaysia Sdn. Bhd., Kuala Lumpur, Malaysia	100.0	X
Sartorius Stedim Singapore Pte. Ltd., Singapore, Singapore	100.0	X
Sartorius Korea Biotech Co. Ltd., Seoul, South Korea	69.0	X
Sartorius Korea Operations LLC, Seoul, South Korea	100.0	X
Sartorius Stedim Taiwan Inc., New Taipei City, Taiwan	100.0	X

EMEA

Sartorius Belgium N.V., Brussels, Belgium	100.0	X
Sartorius Weighing Technology GmbH, Göttingen, Germany	100.0	X
Sartorius Corporate Administration GmbH, Göttingen, Germany	100.0	X
SI Weende-Verwaltungs-GmbH, Göttingen, Germany	100.0	X
SIV Weende GmbH & Co. KG, Göttingen, Germany	100.0	X
SI Grone 1-Verwaltungs-GmbH, Göttingen, Germany	100.0	X
SIV Grone 1 GmbH & Co. KG, Göttingen, Germany	100.0	X
SIV Grone 2 GmbH, Göttingen, Germany	100.0	X
SWT Treuhand GmbH, Göttingen, Germany	100.0	X
Sartorius Ventures GmbH, Göttingen, Germany	100.0	X
LabTwin GmbH, Berlin, Germany	94.0	
Life Science Factory gGmbH, Göttingen, Germany	100.0	
Life Science Factory Management GmbH, Göttingen, Germany	100.0	
Life Science Valley GmbH, Göttingen, Deutschland	80.0	
Sartorius Lab Holding GmbH, Göttingen, Germany	100.0	X
Sartorius Lab Instruments GmbH & Co. KG, Göttingen, Germany	100.0	X
Sartorius Biohit Liquid Handling Oy, Helsinki, Finland	100.0	X
Sartorius Nordic Oy, Helsinki, Finland	100.0	X
Sartorius France S.A.S., Dourdan, France	100.0	X
Sartorius Ireland Ltd., Dublin, Ireland	100.0	X
Sartorius Israel Ltd., Kibbutz Beit Haemek, Israel	100.0	X
Sartorius Italy S.r.l., Florence, Italy	100.0	X
Sartorius Netherlands B.V., Amersfoort, Netherlands	100.0	X
Sartorius Austria GmbH, Vienna, Austria	100.0	X
Sartorius Poland Sp. z o.o., Kostrzyn, Poland	100.0	X
LLC Sartogosm, St. Petersburg, Russia	100.0	X
LLC Sartorius RUS, St. Petersburg, Russia	100.0	X
Sartorius Spain S.A., Madrid, Spain	100.0	X
Sartorius South Africa (Pty) Ltd., Midrand, South Africa	100.0	X
Sartorius Hungária Kft., Budapest, Hungary	100.0	X
Essen BioScience Ltd., Royston, UK	100.0	X
Sartorius UK Ltd., Epsom, UK	100.0	X

Americas

Sartorius Argentina S.A., Buenos Aires, Argentina	100.0	X
Sartorius do Brasil Ltda., São Paulo, Brazil	100.0	X
Sartorius Canada Inc., Oakville, Canada	100.0	X
Sartorius de México S.A. de C.V., Tepotzotlán, Mexico	100.0	X

Essen Instruments Inc., Ann Arbor, Michigan, USA	100.0	X
Sartorius BioAnalytical Instruments Inc., Dover, Delaware, USA	100.0	X
Sartorius North America Inc., Dover, Delaware, USA	100.0	X
Sartorius Corporation, Dover, Delaware, Delaware, USA	100.0	X

Asia | Pacific

Sartorius Australia Pty. Ltd., Dandenong South, Victoria, Australia	100.0	X
Sartorius Scientific Instruments (Beijing) Co. Ltd., Beijing, China	100.0	X
Sartorius ForteBio (Shanghai) Co. Ltd., Shanghai, China	100.0	X
Sartorius (Shanghai) Trading Co. Ltd., Shanghai, China	100.0	X
Sartorius Hong Kong Ltd., Kowloon, Hong Kong	100.0	X
Sartorius India Pvt. Ltd., Bangalore, India	100.0	X
Essen BioScience K.K., Tokyo, Japan	100.0	X
Sartorius Japan K.K., Tokyo, Japan	100.0	X
Sartorius Malaysia Sdn. Bhd., Kuala Lumpur, Malaysia	100.0	X
Sartorius Singapore Pte. Ltd., Singapore, Singapore	100.0	X
Sartorius Korea Ltd., Seoul, South Korea	100.0	X
Sartorius (Thailand) Co. Ltd., Bangkok, Thailand [1]	32.7	X
Sartorius Vietnam Co. Ltd., Ho Chi Minh City, Vietnam	100.0	X

1 Sartorius Thailand is included in the scope of consolidation due to contractual agreements (see also Note 22).

The companies marked as "non-consolidated" in the above table were not included in the scope of consolidation because the figures were of minor importance for assessing the actual net worth, financial position, and profitability of the Sartorius Group. The sales revenue and total assets of the non-consolidated companies taken together account for less than 2% of the Group figures. No associates or joint ventures were consolidated; all companies identified by an "X" are fully consolidated.

The following companies were included in the scope of consolidation for the first time in fiscal 2021:

- Sartorius South Africa (Pty) Ltd., Midrand, South Africa
- Sartorius CellGenix GmbH, Freiburg, Germany
- ▪ Xell AG, Bielefeld, Germany
- ▪ Sartorius Korea Operations LLC, Seoul, South Korea

The shares in CellGenix GmbH were acquired on July 1, 2021. The entity was renamed Sartorius CellGenix GmbH in the reporting period. Xell AG was acquired on July 28, 2021. See Note 8 for details on these acquisitions.

The Group obtained control over Sartorius South Africa (Pty) on January 1, 2019. This entity was not consolidated until the reporting period for materiality reasons. Consolidation was applied with effect from January 1, 2021. In the reporting period, the remaining 20% of the shares in that entity were acquired from the owner of the non-controlling interest. Sartorius Korea Operations LLC was established in 2021 and has been strengthening the Group's production network with a site in South Korea.

For materiality reasons, the equity method was not applied to the investments in Distribo GmbH (ownership percentage: 26%) and Curexsys GmbH (22.3%).

8. Business Combinations

Business combinations are accounted for using the acquisition method. The identifiable assets acquired and liabilities assumed by the Group, as well as the consideration transferred are recognized at fair value at the acquisition date. Expenses directly related to business combinations are reported in profit or loss of the period.

Accounting for acquisitions requires certain estimates and assumptions to be made, especially about the fair value of the consideration transferred, as well as the fair values of intangible assets and of the property, plant, and equipment acquired, liabilities assumed at the acquisition date, as well as the useful lives of intangible assets and property, plant, and equipment acquired. Their measurement is largely based on projected cash flows. Differences between the expected and actual cash flows may have a material impact on future Group results.

For significant acquisitions, purchase price allocation is generally carried out with the assistance of independent third-party valuation specialists. The valuations are based on the information available at the acquisition date.

If there is a non-controlling interest in an acquiree subsequent to an acquisition, and the Group is committed to acquiring this remaining interest in the future on the basis of written put options, the Group assesses whether substantially all of the risks and rewards of ownership of this interest had been transferred to the Group by the acquisition date. If this is not the case, the Group discloses a non-controlling interest in the acquiree subsequent to the acquisition. The liability that needs to be recognized for such obligations is initially recognized against retained earnings on the acquisition date. Subsequently, any changes to this liability are recognized directly in equity.

Acquisition of BIA Separations in 2020

On November 2, 2020, the Group acquired 100% of the shares in the Slovenian purification specialist BIA SEPARATIONS Podjetje za separacijske tehnologije d.o.o. ("BIA Separations"). As of the acquisition date, BIA Separation employed around 120 employees at its headquarters in Ajdovščina, Slovenia.

The company develops and manufactures market-leading products for the purification and analysis of large biomolecules, such as viruses, plasmids, and mRNA, which are used in cell and gene therapies and other advanced therapies. It is therefore complementary to the existing product portfolio for biopharma customers, and will be integrated in the Bioprocess Solutions Division. BIA's technology for manufacturing-scale purification is already used in the production of the first commercialized advanced therapeutics. The company also has a strong presence with novel drug candidates that are still in the clinical pipeline. Although this bodes well in terms of potential growth, the timing of this growth is especially uncertain given the ongoing Covid-19 pandemic that already existed on the acquisition date, and the risks inherent in the development of drugs.

Determination of the acquisition-date fair values of the assets acquired and liabilities assumed, as well as of the consideration transferred, was completed in 2021. The following table presents preliminary and final valuations:

	Preliminary purchase price allocation € in K	Final purchase price allocation € in K
Other intangible assets	308,014	237,709
Property, plant and equipment	13,834	13,834
Inventories	3,317	2,646
Trade receivables	1,696	1,696
Other assets	679	679
Cash and cash equivalents	2,176	2,176
Deferred taxes - net	-58,100	-44,614
Other liabilities	-10,074	-10,074
Net assets acquired	261,542	204,052
Purchase price (transferred at acquisition date)	366,891	366,891
Contingent consideration	285,530	90,369
Goodwill	390,879	253,208

The main assets included in other intangible assets are BIA Separations technology for manufacturing-scale purification (€225.4 million) and customer relations (€12.2 million).

The consideration transferred includes a payment of €234.2 million in cash and 405,887 shares in the Group's stock-listed subsidiary Sartorius Stedim Biotech S.A., the fair value of which was measured at €132.7 million as of the acquisition date. In addition, the parties have further agreed on three tranches of earn-out payments based on the sales performance of BIA Separations over the five fiscal years subsequent to the acquisition. Depending on this sales performance, the sellers are entitled to receive additional shares in Sartorius Stedim Biotech S.A. Until its settlement, this additional contingent consideration agreement is classified as a financial liability and measured at fair value through profit or loss at each reporting date. At the acquisition date, the contingent consideration component was finally valued at €90.4 million. This estimate reflects the expected future sales performance and the assumed number of shares to be transferred, as well as the present value of the expected future share prices at the expected settlement dates. The lower end of the bandwidth of possible outcomes of the contingent consideration is zero, while the upper limit cannot be quantified due to settlement in shares.

As of the reporting date on December 31, 2021, the fair value of the contingent consideration liability was measured at €288.2 million. The change since December 31, 2020 (amount based on the final purchase price allocation: €80.6 million) mainly reflects the rise in the share price of Sartorius Stedim Biotech S.A. and strong growth in sales revenues in 2021. Furthermore, the discount rates applied to calculate the present value of the future obligation were adjusted to reflect the market rates at December 31, 2021. The difference of about €207.7 million between the valuation as of December 31, 2020, and the reporting date was recognized in the financial result. The range of possible outcomes of the contingent consideration had changed to the extent of that of the tranche relating to the sales in 2021 (fair value at reporting date: €97.9 million), which is only subject to changes in the share price up to the point where the shares are transferred to the sellers.

The key input parameters for the valuation of the financial liability are the sales revenue expectations for the next few years, as well as the share price of Sartorius Stedim Biotech S.A. at the respective valuation date. The valuation results are less sensitive to realistic changes of other valuation parameters, e.g., the discount rates applied. Assuming 10% higher (lower) sales revenues in each of the remaining relevant years of the plan period would result in an increase in the reportable liability of approximately €32 million (decrease of approximately €28 million). If the share price of Sartorius Stedim Biotech S.A. had been 10% higher (lower) at the reporting date, the liability would have been €29 million higher (€29 million lower). The actual future outcomes may differ from these sensitivities that are determined by changing only the respective key input parameter in isolation.

Expenses of €3.6 million directly attributable to the acquisition were recognized as other expenses in profit or loss. The resulting goodwill represents synergies, such as those arising from BIA Separations' access to the Group's worldwide sales and distribution network, the completion of the Bioprocess Solutions Division's product portfolio, and intangible assets that are not recognized separately; e.g., the know-how of the skilled workforce. Goodwill is not tax-deductible.

Acquisition of WaterSep BioSeparations LLC in 2020

On December 9, 2020, the Group acquired 100% of the shares in the U.S.-based entity WaterSep BioSeparations LLC. The company employed about 15 employees in Marlborough, Massachusetts, USA, at the acquisition date. WaterSep BioSeparations develops, manufactures, and markets hollow-fiber membrane devices and pre-sterilized assemblies for upstream and downstream biopharmaceutical applications. This acquisition is complementary to the Group's portfolio for cell and gene therapy applications, cell harvesting and various solutions for intensified bioprocessing, and will be integrated into the Bioprocess Solutions Division.

Determination of the acquisition-date fair values of the assets acquired and liabilities assumed, as well as the consideration transferred, was completed in 2021. The following table presents preliminary and final valuations:

	Preliminary purchase price allocation € in K	Final purchase price allocation € in K
Other intangible assets	3	8,073
Property, plant and equipment	236	558
Inventories	362	450
Trade receivables	362	362
Other assets	85	85
Cash and cash equivalents	111	111
Other liabilities	-68	-390
Net assets acquired	1,091	9,250
Purchase price (transferred at acquisition date)	22,518	22,518
Contingent consideration	4,887	702
Goodwill	26,313	13,971

The purchase price amounts to €23.2 million, of which €22.5 million was paid in cash. The parties further agreed on an earn-out component, which depends on the future sales revenue in the years from 2021 to 2023 and is due in 2024. This agreement is classified as a financial liability and measured at fair value through profit or loss on each reporting date. The contingent consideration was measured at a fair value of €0.7 million at the acquisition date. On the reporting date of December 31, 2021, the fair value amounted to around €2.6 million as a result of the expectation of higher sales in the remaining earn-out periods. The lower end of the bandwidth of possible outcomes of the contingent consideration is zero; the upper limit is $9 million.

Expenses of €0.7 million directly attributable to the acquisition were recognized as other expenses in profit or loss. The other intangible assets comprise technologies (€6.6 million) and customer relationships (€1.4 million). The resulting goodwill represents synergies, such as those arising from WaterSep BioSeparations' access to the Group's worldwide sales and distribution network, the completion of the Bioprocess Solutions Division's product portfolio, and intangible assets that are not recognized separately; e.g., the know-how of the workforce. Goodwill is tax deductible.

Acquisition of CellGenix GmbH

On July 1, 2021, the Group acquired a majority stake (51% of shares and voting rights) in the reagent manufacturer CellGenix GmbH. The company that is based in Freiburg, Germany, and has a sales subsidiary near the biotechnology hub in Boston, Massachusetts, USA, produces and markets cell culture components, such as GMP-grade growth factors, cytokines, and media for manufacturing cell and gene therapy products. The acquisition is complementary to the Bioprocess Solutions Division. Founded in 1994 at the University Medical Center of Freiburg, CellGenix employed some 70 people at the acquisition date.

The purchase price allocation is as follows:

	Final purchase price allocation € in K
Other intangible assets	102,230
Property, plant and equipment	15,983
Inventories	12,621
Trade receivables	4,599
Other assets	649
Cash and cash equivalents	16,397
Deferred taxes - net	-34,863
Other liabilities	-10,966
Net assets acquired	106,650
Purchase price	112,085
Non-controlling interest	52,259
Goodwill	57,694

The purchase price for the 51% stake in CellGenix GmbH amounted to approx. €112.1 million and was paid in cash. The directly attributable acquisition-related costs totaled €0.6 million and were recognized in other expenses. Non-controlling interests were measured at their proportionate share of the net assets.

The parties further agreed put and call options, according to which the acquisition of an additional 25% of the shares is planned in 2023 and of the remaining 24% stake in 2026. The exercise prices depend on the future sales revenue with CellGenix products. For the obligation to purchase the remaining shares, the Group recognized financial liabilities totaling €176.7 million at the acquisition date. Subsequent to the acquisition, the liabilities are measured at amortized cost according to the effective interest rate method. Any changes are recognized directly in equity. At the reporting date, the liability was measured at €173.8 million. Assuming 10% higher (lower) sales revenues in each of the remaining relevant years of the plan period would result in an increase in the liability to be reported at the reporting date of approximately €8.3 million (decrease of approximately €9.3 million).

The intangible assets recognized separately are related mainly to technologies (€64.4 million), customer relationships (€33.7 million), and brands (€4.2 million). The resulting goodwill reflects synergies, e.g., those realized by the acquiree's access to the Group's global sales and distribution network and the combination of the acquired business with the Group's existing media manufacturing operations, the expansion of the Bioprocess Solutions Division's product portfolio, and intangible assets that are not recognized separately, such as the acquired workforce. Goodwill is not tax-deductible.

Acquisition of Xell AG

On July 28, 2021, the Group acquired 100% of the shares in the German cell culture specialist Xell AG. The company, which is headquartered in Bielefeld, Germany, employed some 35 employees on the acquisition date and is complementary to the product portfolio of the Bioprocess Solutions Division. Xell AG develops, produces, and markets media and feed supplements for cell cultures, especially for manufacturing viral vectors that are used in gene therapeutics and vaccines. Beyond these media, the company offers various analytical services for characterizing, screening, and quantifying media components, as well as for optimizing media composition.

The purchase price allocation is as follows:

	Final purchase price allocation € in K
Other intangible assets	27,839
Property, plant and equipment	8,063
Inventories	1,077
Trade receivables	529
Other assets	105
Cash and cash equivalents	16
Deferred taxes - net	–9,363
Other liabilities	–5,809
Net assets acquired	22,457
Purchase price (transferred at acquisition date)	48,072
Contingent consideration	1,877
Goodwill	27,492

The purchase price totaled €49.9 million, of which €48.1 million was paid in cash. The parties further agreed two earn-out components, which are due in 2024 and 2026 and depend on future sales revenues in the years 2022 to 2025. This contingent consideration is classified as a financial liability and is measured at fair value through profit or loss at each reporting date. As of the acquisition date, this contingent consideration was measured at €1.9 million. The lower (upper) limit of the bandwith of possible outcomes for this contingent consideration is zero (€25.6 million).

On the reporting date of December 31, 2021, the fair value of the financial liability was measured at €2.0 million. Assuming 10% higher (lower) sales revenues in each of the remaining four years of the plan period would result in an increase in the liability to be reported at the reporting date of approximately €1.4 million (decrease of approximately €0.9 million). The bandwith of possible outcomes was unchanged on December 31, 2021.

The directly attributable acquisition-related costs totaled €0.3 million and were recognized in other expenses. The intangible assets recognized separately are related mainly to technologies (€25.2 million), customer relationships (€1.6 million), and brands (€1.0 million). The resulting goodwill reflects synergies, e.g., those realized by the acquiree's access to the Group's global sales and distribution network and the combination of the acquired business with the Group's existing cell culture media competencies and capacities, the expansion of the Bioprocess Solutions Division's product portfolio, and intangible assets that are not recognized separately, such as the acquired workforce. Goodwill is not tax-deductible.

Effects of the Acquisitions on the Group's Sales Revenue and Net Result in 2021

Since their first-time consolidation, the companies acquired in 2021 contributed sales revenue of €12.5 million (CellGenix GmbH) and €4.2 million (Xell AG). Excluding one-time items from the purchase price allocations, the impact on the Group's net result is immaterial. If the acquisitions closed in the reporting period had both taken place as of January 1, 2021, sales revenue (net profit) of the Group for 2021 would have amounted to around €3,464.2 million (€425.3 million).

Notes to the Statement of Profit or Loss

9. Sales Revenue

Revenue is recognized according to IFRS 15, Revenue from Contracts with Customers. Revenue is disaggregated into the categories of the "nature of products" and "geographical regions" as shown in the following table. The categorization by "nature of products" corresponds to the reportable segments as the identification of the reportable segments is based in particular on the different products sold. Regional disaggregation of revenue is based on the customers' location.

			2021			2020
€ in K	Group	Bioprocess Solutions	Lab Products & Services	Group	Bioprocess Solutions	Lab Products & Services
Sales revenue	3,449,222	2,727,003	722,219	2,335,657	1,782,622	553,035
EMEA	1,411,015	1,130,489	280,526	935,078	698,476	236,601
Americas	1,141,217	913,052	228,164	812,212	651,268	160,943
Asia | Pacific	896,990	683,462	213,528	588,368	432,878	155,490

The Group produces and sells instruments and consumables as well as related services in its two segments BPS and LPS. The Group satisfies its performance obligations depending on the goods to be transferred and the services promised. Most of the revenues from the sale of products is recognized at the point where the customer obtains control over the goods. Typically, this is when the significant risks and rewards of ownership of the goods are transferred to the customer. Therefore, the point in time may vary depending on the agreement with the individual customer.

For complex products that require installation at the customer's site, revenue is recognized upon formal customer acceptance. To a low extent, revenue is recognized over time in the customer-specific project business. In these cases, revenue is recognized according to project progress, which is measured based on the percentage of costs to date compared to total estimated contract costs. The amount of actual costs incurred to date appropriately reflects the progress and the transfer of control to the customer as the Group has a right to reimbursement of costs to date plus an appropriate margin, if the project is cancelled by the customer without cause. Revenue from services is generally recognized when the services are performed or have been performed. If the services are performed continuously over a period of time, the Group recognizes the related revenue over time. In this case, revenue is generally recognized pro rata in relation to the total contract period. Product sales are typically accompanied by the legally required warranty. Any material extended warranties are accounted for as separate performance obligations.

According to the general payment terms, customer payments are due in the short term, typically within 30 days. To some extent, the Group obtains advance payments, e.g., to avoid credit risks. Therefore, the Group regularly has contract liabilities (payments received on account of orders). In addition, the Group recognizes contract liabilities in connection with service contracts (deferred revenues) when customers pay in advance.

The contracts do typically not contain significant financing components. The Group uses the practical expedient provided by IFRS 15 regarding the existence of a significant financing component. This means that a financing component is only taken into consideration when the length of time between the transfer of goods or services and the receipt of consideration is expected to exceed one year and the effect is material.

The aggregate amount of the transaction price allocated to the performance obligations that are unsatisfied (or partially unsatisfied) at the end of the reporting period amounted to €2,057.7 million (2020: €1,223.9 million). The Group expects that these unsatisfied performance obligations will, for the most part, be satisfied in 2022.

There were no extraordinary changes in the carrying amounts of the contract liabilities and contract assets in the reporting period. Revenue in the amount of €134,010 K was recognized in the reporting period that was included in the contract liability balance at the beginning of the reporting period (2020: 79,234 K).

The balances of trade receivables and contract assets are presented in Note 29. For details on the impairment losses on trade receivables and contract assets recognized in the reporting period, see Note 40. The following table shows the balances of the Group's contract liabilities.

€ in K	Line item in statement of financial position	Carrying amount Dec. 31, 2021	Carrying amount Dec. 31, 2020
Deferred revenue	Other liabilities	73,932	37,400
Payments received on account of orders	Trade payables	232,045	140,931
Total contract liabilities		305,977	178,331

10. Functional Costs

The statement of profit or loss is prepared according to the function of expense method, also known as "cost of sales". The expenses are allocated to the respective functional areas of production, sales and distribution, research and development, as well as to general administration.

Expenses relating to cross-functional initiatives or projects are assigned to the respective functional costs based on an appropriate allocation principle.

The "Cost of sales" item includes the cost of products sold and the cost of merchandise sold. In addition to directly attributable expenses, such as raw materials and supplies, employee benefits expense, and energy expenses, cost of sales also includes overheads that can be attributed to the manufacturing area, and the corresponding depreciation and amortization.

The selling and distribution expenses relate in particular to the costs of the sales organization, distribution, and marketing.

Research and development expenses comprise the cost of research and product and process development, provided they are not capitalized.

The "General administrative expenses" item primarily comprises employee benefits expense and the cost of materials of the general administrative area.

All profit and loss items that cannot be allocated to one of the functional areas mentioned are recognized as other operating income and expenses. These essentially include effects from currency translation, disposal of non-current assets, allowances on trade receivables, and extraordinary income and expenses. Income from grants related to expenses is recognized as other income, when there is reasonable assurance that the conditions associated with the grants will be complied with and the grants will be received.

The total expenses incurred by the functional areas for materials and employee benefits are as follows:

Raw Materials and Supplies

€ in K	2021	2020
Expenses for raw materials and supplies and for purchased goods (incl. changes in inventories)	620,282	439,673
Cost of purchased services	236,917	159,063
	857,199	598,736

Employee benefits can be broken down as follows:

Employee Benefits

€ in K	2021	2020
Wages and salaries	789,483	609,007
Social security	158,342	119,988
Expenses for retirement benefits and pensions	17,687	13,847
	965,511	742,842

11. Other Operating Income and Expenses

€ in K	2021	2020
Currency translation gains	45,878	34,632
Income from the decrease in allowances for bad debts	5,283	3,381
Income from grants	1,717	2,458
Other income	6,375	4,026
Other operating income	59,253	44,496
Extraordinary expenses	−40,727	−57,714
Currency translation losses	−35,333	−32,227
Allowances for bad debts	−4,739	−9,103
Other expenses	−28,624	−22,749
Other operating expenses	−109,423	−121,792
Other operating income and expenses	−50,170	−77,295

The item reported as income from grants discloses the grants for expenses (essentially related to research and development projects), which are recognized as income as soon as there are sufficiently reliable indications that the necessary prerequisites have been met.

The main extraordinary items of fiscal 2020 and 2021 related to integration and acquisition costs as well as various strategic Group projects.

In 2021, currency translation gains include €−6,503 K (2020: €8,472 K) from the reclassification of amounts in relation to hedging relationships that had previously been recognized in equity (see Note 37).

12. Financial Result

€ in K	2021	2020
Interest and similar income	396	414
- of which from affiliated companies	40	135
Income from derivative financial instruments	6,134	11,650
Other financial income	22,764	23,790
Financial income	29,294	35,854
Interest and similar expenses	−26,567	−21,676
Expenses for derivative financial instruments	−5,862	−9,143
Interest for pensions and other retirement benefits	−351	−594
Expenses from valuation of contingent considerations and similar agreements	−212,288	0
Other financial charges	−18,958	−35,708
Financial expenses	−264,026	−67,120
	−234,732	−31,267

Other financial expenses and income include the effects of compound interest and the measurement of loans and other financial liabilities denominated in foreign currencies. The expenses from the valuation of contingent considerations result to the extent of €207.7 million from the remeasurement of the contingent consideration in connection with the acquisition of BIA Separations. In the prior period, the valuation effect on this liability was €9.8 million based on the final purchase price allocation and is included in "Other financial income" (in the consolidated financial statements for 2020, income amounting to €31.6 million was reported based on the preliminary purchase price allocation; see Note 8).

13. Income Taxes

€ in K	2021	2020
Current income taxes	−260,869	−150,135
Deferred taxes	19,424	24,944
- of which from tax losses	−1,660	6,485
- of which from temporary differences	21,084	18,459
	−241,445	−125,191

Current income taxes are calculated based on the particular national taxable income for the year, as well as according to national tax regulations. In addition, current taxes may contain adjusted amounts to cover any tax payments or refunds for years not yet assessed.

The following table explains the differences between the tax expense expected and the income tax expenses reported for the particular fiscal year. The expected tax rate is determined based on a weighted average tax rate applied to the pre-tax income of the Group.

€ in K	2021	2020
Expected tax rate	22.7%	24.9%
Expected tax expense	–152,015	–105,746
Effects from intragroup dividends and other non-deductible expenses	–75,062	–13,411
Steuerfreie Erträge und Steuergutschriften	5,660	13,253
Deductible temporary differences and tax losses not capitalized	–3,158	–7,426
Taxes from previous years and adjustments from the revised evaluation of the recoverability of deferred tax assets	–12,177	–9,973
Withholding and other income taxes with different tax base	–3,942	–2,351
Other	–751	463
Income taxes	–241,445	–125,191
Effective tax rate	36.1%	29.5%

The increase in the effective tax rate is particularly due to the effect from the remeasurement of the contingent consideration in connection with the acquisition of BIA Separations (see Note 12). The corresponding expenses are not deductible for tax purposes and, therefore, result in an increase in the tax rate in relation to the profit before tax reported in these consolidated financial statements.

14. Earnings per Share

IAS 33, Earnings per Share, requires earnings per share to be calculated separately for each class of share. The undiluted earnings per share (basic EPS) are calculated based on the number of ordinary shares outstanding during the period. Treasury shares are not included in the calculation of the average number of shares outstanding.

	2021	2020
Ordinary shares		
Basis for calculating basic earnings per ordinary share (net profit after non-controlling interest), € in K	159,357	104,932
Weighted average number of shares outstanding	34,226,009	34,226,009
Basic earnings per ordinary share in €	4.66	3.07
Weighted average number of shares outstanding for calculating the diluted earnings per share	34,226,009	34,226,009
Diluted earnings per ordinary share, in €	4.66	3.07
Preference shares		
Basis for calculating basic earnings per preference share (net profit after minority interest), € in K	159,531	105,163
Weighted average number of shares outstanding	34,189,853	34,189,853
Basic earnings per preference share in €	4.67	3.08
Weighted average number of shares outstanding for calculating the diluted earnings per share	34,189,853	34,189,853
Diluted earnings per preference share, in €	4.67	3.08

Notes to the Statement of Financial Position

15. Goodwill and Intangible Assets

Goodwill

€ in K	Goodwill
Gross book values at Jan. 1, 2020	695,772
Currency translation	–52,514
Acquisitions through business combinations	588,114
Gross book values at Dec. 31, 2020	1,231,372
Amortization and impairment losses at Jan. 1, 2020	0
Currency translation	0
Amortization and impairment losses in 2020	0
Amortization and impairment losses at Dec. 31, 2020	0
Net book values at Dec. 31, 2020	1,231,372
Gross book values at Jan. 1, 2021	1,231,372
Currency translation	45,405
Acquisitions through business combinations	85,267
Gross book values at Dec. 31, 2021	1,362,044
Amortization and impairment losses at Jan. 1, 2021	0
Currency translation	0
Amortization and impairment losses in 2021	0
Amortization and impairment losses at Dec. 31, 2021	0
Net book values at Dec. 31, 2021	1,362,044

The additions in fiscal 2021 were attributable to the acquisitions of CellGenix GmbH and Xell AG (see Note 8). The additions in the prior period were attributable to the acquisitions of WaterSep BioSeparations LLC, BIA Separations (see Note 8), and the selected Life Sciences businesses of Danaher.

Owing to the integration of our businesses in the Bioprocess Solutions and Lab Products & Services divisions, and our respective positioning as a total solutions provider, goodwill is monitored at the level of these cash-generating units and tested annually for impairment according to IAS 36 (impairment test).

Thus, goodwill is allocated to the segments as follows:

€ in K	Dec. 31, 2021	Dec. 31, 2020
Bioprocess Solutions	1,010,936	902,279
Lab Products & Services	351,109	329,093
	1,362,045	1,231,372

The impairment tests for fiscal 2021 were conducted as of November 30, as in prior periods. The calculations measure the recoverable amount on the basis of the value in use of the particular cash-generating unit. Our cash flow forecasts consider previous experience and are generally based on the current projections of Group management for a period of four years. For the Bioprocess Solutions Division, calculations were based on an average terminal growth rate of 2.5% for the fiscal years after 2025. This terminal growth rate is derived from market expectations, which forecast medium-term growth rates in the high upper single-digit to double-digit range for the biopharmaceutical market targeted by the division. The major growth drivers will include the aging population, the increase in population and improved access to pharmaceuticals in emerging-market countries, as well as the ongoing paradigm shift toward the utilization of single-use products in the manufacture of biopharmaceuticals. For the Lab Products & Services Division, a terminal growth rate of 1.5% was used for fiscal years after 2025.

The discount rates of the cash-generating units correspond to their weighted average cost of capital (WACC) and were determined as follows:

		2021		2020
	Before tax	After tax	Before tax	After tax
Bioprocess Solutions	7.8%	6.3%	7.7%	6.3%
Lab Products & Services	8.4%	6.4%	8.6%	6.7%

In fiscal 2021, these impairment tests did not result in the recognition of impairment losses. Even realistic changes in the basic assumptions on which measurement of value in use is based would not result in the carrying amount of the cash-generating units exceeding their value in use.

Other Intangible Assets

€ in K	Patents, licenses, technologies and similar rights	Brand names	Customer relationships	Capitalized development costs	Payments on account	Total
Gross book values at Jan. 1, 2020	320,265	43,076	225,984	193,627	214	783,165
Currency translation	−39,561	−3,092	−15,606	−2,587	−18	−60,864
Acquisitions through business combinations	520,461	10,118	123,145	0	0	653,724
Capital expenditures	6,084	0	947	43,601	0	50,632
Disposals	−201	0	−822	−1,090	0	−2,113
Transfers	50	0	569	532	−7	1,144
Gross book values at Dec. 31, 2020	807,098	50,101	334,218	234,083	189	1,425,688
Amortization and impairment losses at Jan. 1, 2020	−132,669	−8,259	−131,375	−79,293	0	−351,596
Currency translation	4,520	509	4,072	488	0	9,589
Amortization and impairment losses in 2020	−42,828	−2,723	−25,361	−22,465	0	−93,377
Disposals	194	0	822	1,090	0	2,106
Transfers	−3	0	−569	0	0	−573
Amortization and impairment losses at Dec. 31, 2020	−170,787	−10,473	−152,411	−100,180	0	−433,851
Net book values at Dec. 31, 2020	636,311	39,629	181,807	133,903	189	991,837

€ in K	Patents, licenses, technologies and similar rights	Brand names	Customer relationships	Capitalized development costs	Payments on account	Total
Gross book values at Jan. 1, 2021	807,098	50,101	334,218	234,083	189	1,425,688
Currency translation	33,160	2,813	14,708	3,464	22	54,168
Acquisitions through business combinations	89,628	5,201	35,240	0	0	130,069
Capital expenditures	8,094	0	14	50,863	213	59,184
Disposals	–91	0	0	0	0	–91
Transfers	126	–432	432	0	0	126
Gross book values at Dec. 31, 2021	938,016	57,683	384,612	288,409	424	1,669,145
Amortization and impairment losses at Jan. 1, 2021	–170,787	–10,473	–152,411	–100,180	0	–433,851
Currency translation	–7,034	–610	–5,043	–1,006	0	–13,694
Amortization and impairment losses in 2021	–66,618	–3,340	–30,816	–25,219	0	–125,993
Disposals	31	0	0	0	0	31
Transfers	–3	0	0	0	0	–3
Amortization and impairment losses at Dec. 31, 2021	–244,411	–14,423	–188,270	–126,406	0	–573,510
Net book values at Dec. 31, 2021	693,605	43,260	196,342	162,004	424	1,095,635

Intangible assets acquired are reported at cost less accumulated, regular amortization calculated according to the straight-line method. The useful life of an intangible asset is the period over which this asset is expected to contribute directly or indirectly to the cash flows of that entity.

Costs incurred within the scope of the development of new products and methods are capitalized as internally generated intangible assets only if the criteria according to IAS 38.57 are met. The capitalization of internally-generated intangible assets includes a certain level of estimates and assumptions, e.g., the assessment of the technical feasibility of a development project, its expected market prospects, and the determination of useful lives.

The capitalized development costs essentially cover the costs attributable to the staff involved in R&D, raw materials and supplies, external services and directly attributable overheads. Internally generated intangible assets are amortized over their useful lives on a straight-line basis.

If an internally generated intangible asset cannot be capitalized, the development costs are recognized as expenses in the period in which they are incurred. Costs for research activities are reported as expenses in the period in which they are incurred.

Amortization of intangible assets is based on the following periods of useful life:

Software	2 to 10 years
Customer relationships and technologies	3 to 20 years
Capitalized development expenses	4 to 6 years
Brand name	2 years to an indefinite period

The brand name acquired in the Stedim transaction (carrying amount: €10,779 K) is considered to have an indefinite useful life as there is no foreseeable limit to the period over which it is expected to generate net cash inflows for the company. Because of the integration of the "Stedim" brand into the name of the "Sartorius Stedim Biotech" sub-group and the name of that sub-group's parent entity, the relevant cash flows cannot be measured separately, however. The recoverability of the brand name was considered at the next-higher level of the cash-generating unit (CGU), i.e., the Bioprocess Solutions Division.

The useful lives of the remaining brand names acquired through business combinations are estimated at up to 20 years.

Amortization of intangible assets is allocated to the corresponding functions in the statement of profit or loss. For capitalized development costs, amortization is reported in the cost of sales.

In fiscal 2021, development costs of €50,863 K (2020: €43,601 K) were recognized as assets.

In fiscal 2021, impairment losses of €0.9 million were recognized (2020: 0.0 Mio. €).

16. Property, Plant and Equipment

€ in K	Land, buildings and improvements	Technical machinery and equipment	Factory and office equipment and other equipment	Payments on account and construction in progress	Total
Gross book values at Jan. 1, 2020	540,581	251,498	189,371	109,505	1,090,954
Currency translation	–9,895	–6,315	–2,781	–4,248	–23,239
Acquisitions through business combinations	6,948	5,656	716	8,982	22,303
Capital expenditures	39,681	27,239	21,376	105,782	194,079
Disposals	–683	–3,754	–6,360	539	–10,258
Transfers	19,332	23,556	9,156	–52,733	–689
Gross book values at Dec. 31, 2020	595,964	297,881	211,476	167,828	1,273,149
Depreciation and impairment losses at Jan. 1, 2020	–91,522	–129,007	–112,194	–175	–332,898
Currency translation	1,709	2,662	1,700	3	6,075
Amortization and impairment losses in 2020	–21,080	–22,158	–21,903	0	–65,141
Disposals	547	2,657	5,675	0	8,880
Transfers	–296	–12	275	164	131
Depreciation and impairment losses at Dec. 31, 2020	–110,642	–145,857	–126,446	–8	–382,953
Net book values at Dec. 31, 2020	485,323	152,024	85,030	167,820	890,196
Net book values of right-of-use assets at Dec. 31, 2020	68,279	1,344	11,729	0	81,352
Total book values property plant & equipment at Dec. 31, 2020	553,602	153,368	96,759	167,820	971,548

Start

€ in K	Land, buildings and improvements	Technical machinery and equipment	Factory and office equipment and other equipment	Payments on account and construction in progress	Total
Gross book values at Jan. 1, 2021	595,964	297,881	211,476	167,828	1,273,149
Currency translation	12,745	8,424	2,688	5,131	28,987
Acquisitions through business combinations	13,010	5,555	1,021	72	19,658
Capital expenditures	45,487	44,219	34,969	222,394	347,068
Disposals	−430	−5,307	−5,268	−46	−11,051
Transfers	55,193	17,094	3,206	−75,588	−95
Gross book values at Dec. 31, 2021	721,969	367,865	248,093	319,790	1,657,718
Depreciation and impairment losses at Jan. 1, 2021	−110,642	−145,857	−126,446	−8	−382,953
Currency translation	−2,342	−3,320	−1,912	0	−7,574
Amortization and impairment losses in 2021	−26,446	−30,129	−22,917	0	−79,493
Disposals	245	4,137	5,015	0	9,398
Transfers	69	83	−137	0	14
Depreciation and impairment losses at Dec. 31, 2021	−139,115	−175,086	−146,398	−8	−460,608
Net book values at Dec. 31, 2021	582,854	192,779	101,695	319,782	1,197,110
Net book values of right-of-use assets at Dec. 31, 2021	95,314	1,886	11,513	0	108,713
Total book values property plant & equipment at Dec. 31, 2021	678,168	194,665	113,208	319,782	1,305,823

The "Property, plant and equipment" item is reported at cost and, if subject to depreciation, reduced by regular depreciation. Impairment tests are conducted when impairment indicators are identified. The straight-line method is applied to depreciation reported in the consolidated financial statements.

Depreciation of property, plant and equipment is based on the economic useful life. The following assumptions for the useful life are typically applied:

Buildings	15 to 50 years
Machinery	5 to 15 years
Factory and office equipment	3 to 13 years

Depreciation is presented in the statement of profit or loss according to how the assets are used, in the cost of sales, selling and distribution expenses, research and development expenses, administrative expenses, and other operating expenses.

Borrowing costs are expensed as incurred unless they are directly attributable to the acquisition, construction, or production of a qualifying asset and are therefore part of the cost of that asset.

Grants related to assets are generally deducted from the cost of assets.

17. Leases

Lease accounting follows IFRS 16, Leases. For the financing structure of the Sartorius Group, leases are not of high relevance. In fiscal 2021 and in the past, the Group invested heavily in its sites. The main considerations for leases are therefore generally of a practical nature, for example, with regard to the company's management of IT hardware or fleet management. Accordingly, leases of IT hardware and cars represent the major number of the Group's lease contracts. The lease term of such leases is generally fixed, typically extending to between three and five years.

Furthermore, at some sites, the Group has leases of buildings, which are negotiated and managed locally. These contracts may contain extension options, which are included in the lease term according to IFRS 16 when the Group is reasonably certain that the option will be exercised. The Group does not act as a lessor to a material extent.

According to IFRS 16, a lessee generally recognizes a right-of-use asset as well as a lease liability, which represents its obligation to make lease payments. The Group makes use of the exemptions for short-term leases and leases of low-value assets and recognizes the corresponding lease payments as an expense generally on a straight-line basis over the particular lease term. Accordingly, no right-of-use assets and no lease liabilities are recognized for these leases. Furthermore, taking IFRS 16 under consideration, no right-of-use assets and no liabilities are recognized for leases between Group entities. The Group does not apply this Standard to leases of intangible assets.

In the statement of financial position, the Group presents right-of-use assets according to the nature of the underlying lease assets under "Property, plant and equipment." Right-of-use assets are recognized at cost less accumulated depreciation and any impairment losses. The cost of the right-of-use assets comprises the present value of the future lease payments, any payments paid upon or before commencement of the lease, any initial direct costs, and costs for dismantling or removing the lease asset. The right-of-use assets are typically depreciated over the lease term. If the transfer of legal ownership of a lease asset is planned at the end of the lease term, the right-of-use asset is depreciated over the economic useful life of the lease asset. In the statement of profit or loss, depreciation is recognized within functional costs.

The lease liabilities are disclosed separately on the face of the statement of financial position. Lease liabilities are initially recognized at an amount equal to the present value of the future lease payments. The lease payments do generally not include any payments in relation to non-lease components. In general, the specific applicable incremental borrowing rate of the Group is used for discounting. Subsequently, the carrying amount of the lease liabilities is increased by interest expenses and reduced by lease payments. Interest expenses are reported in the financial result and, to the extent they are paid, in the financing section of the cash flow statement together with "Interest paid."

As of December 31, 2021, lease liabilities stood at €115 million (2020: €86 million). The maturities of the future lease payments are presented in Note 39. The composition of the right-of-use assets included in "Property, plant and equipment" as of December 31, 2021, as well as of the preceding reporting date and the main changes are presented in the table below.

€ in K	Land, buildings and improvements	Technical machinery and equipment	Factory and office equipment and other equipment	Total
Gross book values at Jan. 1, 2020	79,887	3,072	15,677	98,637
Currency translation	-3,818	-31	-284	-4,133
Acquisitions through business combinations	6,004	0	0	6,004
Additions	17,552	180	8,645	26,377
Disposals	-700	-12	-2,466	-3,178
Transfers	0	-107	57	-49
Gross book values at Dec. 31, 2020	98,925	3,102	21,630	123,657
Depreciation and impairment losses at Jan. 1, 2020	-17,554	-899	-5,298	-23,751
Currency translation	934	17	130	1,081
Amortization and impairment losses in 2020	-14,690	-882	-5,908	-21,480
Disposals	663	0	1,145	1,809
Transfers	0	5	30	36
Depreciation and impairment losses at Dec. 31, 2020	-30,646	-1,758	-9,901	-42,305
Net book values at Dec. 31, 2020	68,279	1,344	11,729	81,352

€ in K	Land, buildings and improvements	Technical machinery and equipment	Factory and office equipment and other equipment	Total
Gross book values at Jan. 1, 2021	98,925	3,102	21,630	123,657
Currency translation	5,263	40	439	5,742
Acquisitions through business combinations	3,344	1,001	57	4,402
Additions	39,423	340	7,311	47,074
Disposals	-5,033	-77	-2,550	-7,660
Transfers	0	0	-91	-91
Gross book values at Dec. 31, 2021	141,922	4,406	26,797	173,124
Depreciation and impairment losses at Jan. 1, 2021	-30,646	-1,758	-9,901	-42,305
Currency translation	-1,706	-33	-194	-1,932
Amortization and impairment losses in 2021	-18,331	-761	-6,599	-25,691
Disposals	4,075	32	1,361	5,468
Transfers	0	0	48	48
Depreciation and impairment losses at Dec. 31, 2021	-46,608	-2,520	-15,284	-64,411
Net book values at Dec. 31, 2021	95,314	1,886	11,513	108,713

The table below shows the interest expenses presented in the financial result, the total cash outflows for existing leases, and expenses recognized for short-term leases and leases of low-value assets during the reporting period. No material expenses were recognized for variable lease payments in the reporting period.

€ in K	2021	2020
Interest expenses for leases	3,062	2,710
Expenses for short-term leases	2,661	2,468
Expenses for leases of low value assets	7,068	5,111
Repayment of lease liabilities	23,728	19,729
Total cash outflows for leases	36,519	30,018

18. Deferred Taxes

		Deferred tax assets		Deferred tax liabilities	Changes recognized in profit or loss
€ in K	Dec. 31, 2021	Dec. 31, 2020	Dec. 31, 2021	Dec. 31, 2020	
Other intangible assets	2,077	812	174,159	129,611	1,666
Tangible assets	0	0	18,082	14,552	−2,852
Inventories	31,773	17,935	5,847	0	11,055
Receivables and other current assets	5,392	4,730	0	0	1,894
Provisions	17,330	16,808	0	0	2,112
Liabilities	28,512	17,903	0	0	10,859
Taxable losses carried forward	11,813	12,697	0	0	−1,660
Interest carry-forwards	0	770	0	0	−800
Tax on investments in subsidiaries	0	0	5,700	2,850	−2,850
Total	96,897	71,655	203,788	147,013	19,424
Offset	−21,745	−26,634	−21,745	−26,634	
Total (net)	75,152	45,022	182,043	120,380	

Deferred tax assets and liabilities are determined based on temporary differences between the carrying amounts and the tax bases of assets and liabilities, including differences from consolidation. In addition, loss carry-forwards and tax credits are considered. Measurement is based on the tax rates expected to be effective in the period in which the asset is realized or liability settled. Changes in deferred tax assets and liabilities are reflected in income taxes in the statement of profit or loss. The exceptions are changes that are to be recognized in other comprehensive income directly in equity, as well as effects from acquisitions and currency effects.

In principle, tax rates and tax rules are used that have been enacted or substantively enacted at the reporting date. Deferred tax assets are recognized to the extent that it is probable that taxable profit at the level of the relevant tax authority will be available for the utilization of the deductible temporary differences or losses carried forward.

The Group operates in various tax jurisdictions and therefore has to determine tax positions under respective local tax laws and tax authorities' views, which can be complex and subject to different interpretations by taxpayers and local tax authorities. The amount of uncertain tax positions is determined on the basis of the best estimate of expected tax payments.

Deferred tax assets have to be recognized for all deductible temporary differences and unused tax losses to the extent that it is probable that future taxable profit will be available against which the deductible temporary differences and unused tax losses can be utilized. As future developments are uncertain and partly beyond management's control, assumptions are necessary to estimate future taxable profits as well as the period in which deferred tax assets will be recovered.

Estimates are revised in the period in which there is sufficient evidence to revise the assumption. If management considers it probable that all or a portion of a deferred tax asset cannot be realized, a corresponding valuation allowance is taken into account.

Deferred Tax Assets

For losses of €128 million to be carried forward (prior year: €126 million), no deferred tax amounts were recognized because of the lack of foreseeability of future taxable profits. Of these unused tax losses, €7.1 million can still be carried forward for a limited time (prior year: €9.1 million) of which €5.2 million will expire in the next five years (prior year: €9.1 million). In addition, the Group had unused interest carry-forwards in the amount of €2.1 million (prior year: €6.1 million). No deferred tax assets were considered for these carry-forwards in the reporting year (prior year: €3.0 million). Furthermore, no deferred tax assets were recognized for deductible temporary differences amounting to €30 million (prior year: €35 million).

Deferred tax assets of about €1 million (prior year: about €2 million) relate to companies that reported losses in the year under review or in the prior reporting period. These losses carried forward were reported as assets to the extent that it is assumed that taxable profits will be available in the future, against which the unused tax losses and the deductible temporary differences can be offset.

Deferred Tax Liabilities

The deferred tax liabilities in connection with intangible assets essentially relate to assets acquired in business combinations and, consequently, are mainly linked to customer relationships and technologies.

For temporary differences in connection with shares in subsidiaries, which amounted to €55 million (prior year: €48 million), deferred tax liabilities were not recognized on these differences as the Group controls the development of the temporary differences and the realization of such liabilities is not expected within the foreseeable future.

The income taxes recognized in other comprehensive income are disclosed in the following table:

€ in K	2021	2020
Cash flow hedges	7,100	−3,654
Remeasurements of the net defined benefit liability	−1,232	97
Net investment in a foreign operation	−10,264	12,404
Currency translation	−2,335	1,996
Total	−6,731	10,843

19. Inventories

€ in K	Dec. 31, 2021	Dec. 31, 2020
Raw materials and supplies	307,088	156,913
Work in progress	210,753	159,867
Finished goods and merchandise	356,232	233,661
Payments on account	18,753	6,843
	892,827	557,285

€ in K	Dec. 31, 2021	Dec. 31, 2020
Gross amount of inventories	961,536	594,619
Write-downs	–68,709	–37,334
Net amount of inventories	892,827	557,285

Raw materials and supplies, including merchandise, are reported under "Inventories" at average cost. In principle, finished goods and work in progress are reported at cost of conversion. This cost includes direct costs attributable to these materials and the appropriate portion of production and material handling overheads, general administrative expenses, and depreciation and|or amortization of non-current assets, provided that these expenses are caused by production.

Inventories must be measured at the lower of cost and the net realizable value. The net realizable value is the estimated selling price in the ordinary course of business less the estimated costs of completion and the estimated costs necessary for marketing, sales, and distribution. Where inventory risks exist, such as the risk of reduced shelf life as a result of storage periods or limited usability, inventories are marked down accordingly.

20. Issued Capital

The issued capital of Sartorius AG is divided into 37,440,000 bearer ordinary shares and the same number of non-voting preference shares, each with a calculated par value of €1.00. Preference share owners receive an increased dividend (surplus dividend) of €0.01 per preference share from the distributable profit; however, the dividend must amount to at least €0.02 per preference share. All shares are fully paid up.

Sartorius AG exercised the authority granted at the Annual Shareholders' Meeting on June 21, 2000, to repurchase treasury shares in the amount of €16,082 K pursuant to Section 71 (1), no. 8 of the German Stock Corporation Act (AktG). As required by IAS 32, treasury shares were deducted from equity and capital reserves.

These shares are held in particular as currency for future acquisitions of companies. From October 27, 2000, to the reporting date, a total of 831,944 ordinary shares were repurchased at an average price of €11.27 and a total of 840,983 preference shares at an average price of €7.98. In December 2015, 25,000 ordinary shares and 25,000 preference shares were issued to the CEO and Executive Board Charmain Dr. Joachim Kreuzburg in accordance with his 2014 remuneration agreement. In November 2020, 13,785 ordinary shares and 13,785 preference shares were issued to the CEO and Executive Board Chairman Dr. Joachim Kreuzburg in accordance with his 2019 remuneration agreement.

Following the stock split carried out in 2016, 3,213,991 ordinary shares and 3,250,147 preference shares remain as treasury stock, representing a proportion of €6,464 K (8.6%) of the share capital.

As in the prior year, no treasury shares were purchased in fiscal 2021.

21. Reserves

Capital Reserves

Capital reserves include the amounts generated above the nominal amount in previous years, when Sartorius AG issued shares. As part of the stock split, an amount of €51,291 K was reclassified from capital reserves to issued capital in fiscal 2016.

In fiscal 2021, capital reserves rose by €1,320 K (prior year: €1,296 K) due to the employee benefits expense to be offset in connection with the share-based remuneration agreement with Dr. Kreuzburg.

Cash Flow Hedging Reserves

Amounts recognized in other comprehensive income as part of an effective hedging relationship are transferred to the cash flow hedging reserves. In particular, these are fluctuations in the fair value of currency hedges as well as their respective tax effects. The cumulative amount transferred to other comprehensive income as of the reporting date stands at €−9,306 K (prior year: 14,362 K).

Pension Reserves

Actuarial gains and losses from defined benefit plan commitments, including their respective tax effects, are included in pension reserves. For further details, see Note 23.

22. Non-Controlling Interest

The Sartorius Stedim Biotech subgroup headquartered in Aubagne, France, accounts for the majority of non-controlling interest in the Sartorius Group. The latter holds approximately 74% of the capital and 85% of the voting rights in this subgroup. The following subsidiaries account for further non-controlling interest amounts:

- Sartorius Korea Biotech based in Seoul, South Korea, with a 69% share in capital
- Sartorius Thailand, Bangkok, Thailand (33%)
- Biological Industries, Kibbutz Beit Haemek, Israel (50%)
- Sartorius CellGenix GmbH (51%)

The investment in Sartorius CellGenix GmbH was acquired in fiscal 2021 (see Note 8 for details). Sartorius Thailand is consolidated due to contractual arrangements to ensure control.

€ in K	2021	2020
Cumulative non-controlling interest as of Dec. 31		
Sartorius Stedim Biotech	384,193	327,169
Other	75,699	21,686
	459,892	348,855
Profit or loss allocated to non-controlling interest		
Sartorius Stedim Biotech	108,493	87,947
Other	-403	1,513
	108,090	89,460
Dividends paid to non-controlling interest		
Sartorius Stedim Biotech	16,413	8,068
Other	1,117	792
	17,530	8,860

The following condensed financial information refers to the Sartorius Stedim Biotech Group:

Condensed Statement of Financial Position

€ in K	Dec. 31, 2021	Dec. 31, 2020
Non-current assets	2,495,469	1,982,789
Current assets	1,455,629	873,945
	3,951,098	2,856,733
Equity	1,733,228	1,461,000
Non-current liabilities	1,180,752	827,893
Current liabilities	1,037,119	567,840
	3,951,098	2,856,733

Condensed Statement of Profit or Loss and Other Comprehensive Income

€ in K	2021	2020
Sales revenue	2,886,977	1,910,081
Profit before tax	646,720	460,694
Income taxes	-232,411	-122,095
Net profit for the period	414,309	338,599
Other comprehensive income after tax	42,865	-30,927
Total comprehensive income	457,174	307,672

Condensed Statement of Cash Flows

€ in K	2021	2020
Cash flow from operating activities	695,971	416,879
Cashflow aus Investitionstätigkeit	–465,226	–621,116
Cash flow from financing activities	–71,711	234,066
Change in cash and cash equivalents	159,033	29,829
Cash and cash equivalents at the beginning of the period	59,762	28,166
Net effect of currency translation on cash and cash equivalents	4,831	1,767
Cash and cash equivalents at the end of the period	223,626	59,762

23. Pension and Employee Benefits Provisions

Defined Contribution Plans

Most companies in the Group have defined contribution plans, frequently in the form of government-backed retirement insurances. In fiscal 2021, an amount of €51.9 million was recognized for defined contribution plans (prior year: €36.7 million).

Defined Benefit Plans

Pension provisions and similar obligations are recognized in accordance with IAS 19, Employee Benefits, applying the projected unit credit method. Under this method, obligations for pensions and other post-employment benefits are determined in accordance with actuarial valuations. In addition to known pensions and entitlements, these valuations rely on certain assumptions including discount rates, future salary and pension increases, and mortality rates.

The assumed discount factors reflect the interest rates that were paid on the reporting date for prime corporate (industrial) bonds with matching maturities and denominated in the relevant currencies. If such corporate bonds are not available with matching long-term maturities or are insufficiently available, their matching interest rates are determined by extrapolation.

Due to changing market and economic conditions, the underlying key assumptions may differ from actual developments and may lead to significant changes in pension and other post-employment benefit obligations. All resulting actuarial gains and losses are shown directly in other comprehensive income of the respective period according to IAS 19 and do therefore not affect profit or loss. The actuarial losses, which were transferred to the pension reserves, essentially resulted from a change in the discount rate and totaled €–40,792 K (prior year: €–44,507 K).

An amount of €57,357 K (prior year: €60,947 K) relates in particular to the net amount of pension provisions for retirement pension plans in Germany. These provisions are based on direct commitments to employees under defined benefit pension plans. Under these commitments, the employees earn benefits for each year of service rendered to the company. The pension benefits are generally not funded by assets. A substantial portion of these provisions relates to Sartorius AG. In this case, the obligations measured pertain, firstly, to the General Pension Plan ("Allgemeine Versorgungsordnung") for employees whose employment commenced prior to January 1, 1983. Secondly, individual commitments have been made to current and former Executive Board members and executives.

Measurement of the post-employment benefit obligations of the German Group companies is based on the following actuarial assumptions:

	2021	2020
Discount rate	0.90%	0.45%
Future salary increases	3.00%	3.00%
Future pension increases	2.00%	2.00%

Concerning the assumptions on mortality and invalidity, the actuarial tables (RT) 2018 G compiled by Klaus Heubeck were used.

The following parameters were used for the French companies:

	2021	2020
Discount rate	0.90%	0.50%
Future salary increases	2.00%	2.00%
Future pension increases	2.00%	2.00%

The amounts reported in the statement of profit or loss and in the statement of comprehensive income consist of the following:

€ in K	2021	2020
Service cost	2,204	1,985
Net interest cost	312	570
Components of defined benefit costs recognized in profit or loss	2,516	2,555
Return on plan assets (excl. interest)	−46	−58
Actuarial gains | losses	−3,669	5,000
Components of defined benefit costs recognized in other comprehensive income	−3,716	4,942
Total defined benefit costs	−1,200	7,497

In the statement of profit or loss, the current service cost is disclosed according to the assignment of employees to the respective functions.

The net amount or present value included in the consolidated statement of financial position arising from the Group's obligation in respect of defined benefit plans is as follows:

€ in K	Dec. 31, 2021	Dec. 31, 2020
Present value of obligations	97,449	98,421
Fair value of the plan assets	22,046	18,052
Net liability	75,403	80,368

Defined Benefit Obligation

€ in K	2021	2020
Present value of obligations as of Jan. 1	98,421	91,369
Current service cost	3,386	2,705
Past service cost	–1,182	–720
Interest cost	489	697
Actuarial gains | losses	–3,773	5,001
Currency translation differences	792	–205
Retirement benefits paid in the reporting year	–2,567	–4,044
Employer contributions	298	260
Employee contributions	546	449
Change in the scope of consolidation	0	0
Contributions by the plan participants	2,504	1,949
Other changes	–1,464	959
Present value of obligations as of Dec. 31	97,449	98,421

The actuarial gains and losses of the defined benefit obligation are allocated as follows:

€ in K	2021	2020
Experience adjustments	2,219	1,498
Changes in demographic assumptions	–1,036	171
Changes in financial assumptions	–4,957	3,332
Total	–3,773	5,001

Plan Assets

€ in K	2021	2020
Plan assets at Jan. 1	18,052	14,818
Interest income	178	128
Return on plan assets (excl. interest)	46	58
Actuarial gains | losses	–104	1
Group contribution & payments	–1,999	–1,724
Employee contributions	546	449
Currency translation differences	582	–100
Employer contributions	2,241	2,066
Contributions by the plan participants	2,504	1,949
Other changes	0	408
Plan assets as of Dec. 31	22,046	18,052

Composition of Plan Assets

Plan assets essentially consist of insurance contracts with insurance companies in Germany and Switzerland. An amount of €7.6 million (prior year: €6.2 million) is held by local banks as securities for subsidiaries in South Korea.

Risks

The defined benefit plans do not entail any significant entity-specific or plan-specific risks. Due to the rather low coverage of the defined benefit obligation by plan assets, liquidity risks arise in principle, which are immaterial for the Group due to their low monetary amount.

Sensitivity Analysis

An increase or a decrease in the actuarial assumptions would have the following impacts on the defined benefit obligations for the year ended December 31, 2021 (a plus sign before the number indicates an increase in the obligation):

Demographic assumptions		
Change in life expectancy	−1 year	+1 year
Effect	−3,939	4,035

Financial assumptions		
Change in discount rate	−100 bps	+100 bps
Effect	12,946	−11,187
Change in future salary increase	−50 bps	+50 bps
Effect	−2,646	2,717
Change in future pension increase	−25 bps	+25 bps
Effect	−3,217	3,358

Present value of the defined benefit obligations for the year ended December 31, 2020:

Demographic assumptions		
Change in life expectancy	−1 year	+1 year
Effect	−4,000	4,106

Financial assumptions		
Change in discount rate	−100 bps	+100 bps
Effect	15,018	−12,431
Change in future salary increase	−50 bps	+50 bps
Effect	−2,983	3,208
Change in future pension increase	−25 bps	+25 bps
Effect	−3,229	3,382

The sensitivity analysis presented above may not be representative of the actual change in the defined benefit obligation as it is unlikely that changes in assumptions occur in isolation. Furthermore, the present value of the defined benefit obligation was calculated using the same method that was applied in calculating the defined benefit obligation liability recognized in the statement of financial position (projected unit credit method).

Maturity Analysis

The undiscounted cash flows from defined benefit obligations can be allocated to maturities as follows:

€ in K	Dec. 31, 2021	Dec. 31, 2020
< 1 year	4,297	4,302
1-5 years	16,956	15,388
6-10 years	26,961	23,976
>10 years	138,040	119,595

The weighted average duration of the defined benefit obligations is 15.4 years (prior year: 16.4 years).

For fiscal 2022, payments of €5.8 million for defined benefit plan commitments are expected (prior year: €5.2 million). These cover contributions to plan assets and payment of retirement benefits.

24. Other Provisions

Provisions are recognized if a legal or constructive obligation or liability to third parties exists and if an outflow of resources is probable and the expected obligation can be reliably estimated. The amount recognized for a provision represents the best estimate of the obligation at the reporting date.

To determine the amount of the obligations, certain estimates and assumptions need to be applied, including an evaluation of the probability that such an obligation could occur, and the amount of costs incurred. Typically, significant uncertainties are involved in the determination of provisions related to onerous contracts, warranty costs, closure of business locations, asset retirement obligations and legal proceedings.

Non-Current Provisions

€ in K	Payments to employees on early retirement plan	Other	Total
Balance at Jan. 1, 2020	4,332	4,105	8,437
Change in the scope of consolidation	0	2,744	2,744
Currency translation	–5	–89	–94
Consumption	–2,083	–192	–2,275
Reversals | Utilization	–4	–179	–183
Additions	2,833	406	3,239
Balance at Dec. 31, 2020	5,073	6,795	11,868

€ in K	Payments to employees on early retirement plan	Other	Total
Balance at Jan. 1, 2021	5,073	6,795	11,868
Change in the scope of consolidation	0	0	0
Currency translation	–1	–7	–8
Consumption	–2,411	–404	–2,815
Reclassifications	0	0	0
Reversals | Utilization	0	–53	–53
Additions	3,663	655	4,318
Balance at Dec. 31, 2021	6,324	6,986	13,310

The non-current provisions comprise mainly provisions for partial retirement agreements, a type of early retirement plan, and employee bonuses for their company anniversaries. These obligations arise mainly at German Group companies. The early retirement plans are partial retirement plans that permit employees to work part-time for 3 to 5 years directly before they are due to retire at the legal retirement age and that are financially supported by the company.

According to IAS 19, the expenses related to severance payments to be earned in future periods must be spread over the active employee's respective remaining period of service. Actuarial gains and losses, as well as past service costs, are to be recognized in profit or loss.

Bonuses for service anniversaries are generally granted to employees who have completed 20, 25, 30, and 40 years of service and cover additional special vacation as well as relatively small amounts of money.

Non-current provisions are reported at their present value on the reporting date. The discount rate is -0.2% (prior year: -0.3%) for employees on the early retirement plan and 0.77% (prior year: 0.28%) for provisions recognized for service anniversaries. In fiscal 2020 and 2021, the effect of compounding non-current provisions, including the effects of changes in the interest rate, were immaterial.

Current Provisions

€ in K	Warranties	Other	Total
Balance at Jan. 1, 2020	7,555	7,867	15,422
Currency translation	−322	−46	−367
Change in the scope of consolidation	696	1,400	2,096
Consumption	−330	−809	−1,140
Reversals	−1,748	−1,748	−3,496
Additions	7,334	9,654	16,988
Balance at Dec. 31, 2020	13,186	16,318	29,504

€ in K	Warranties	Other	Total
Balance at Jan. 1, 2021	13,186	16,318	29,504
Currency translation	828	82	910
Change in the scope of consolidation	110	399	509
Consumption	−1,085	−1,144	−2,229
Reclassifications	0	0	0
Reversals	−3,997	−3,606	−7,603
Additions	25,693	11,602	37,295
Balance at Dec. 31, 2021	34,735	23,651	58,386

Provisions for warranties cover expected replacement deliveries and repairs. Such provisions are recognized to cover individual risks, provided that their occurrence is more likely than not, as well as to cover general warranty risks based on past experience.

Other provisions include those for pending losses on onerous contracts and for uncertain obligations concerning employee benefits, as well as provisions for interest in connection with tax risks.

25. Other Liabilities

€ in K	Dec. 31, 2021	Dec. 31, 2020
Tax and social security	54,483	36,075
Other	80,183	46,607
Other liabilities	134,666	82,682

26. Employee Benefits

The liabilities for employee benefits amount to €153,902 K (prior year: €96,268 K) and include accruals for paid vacation and overtime, variable remuneration, and other personnel liabilities.

Financial Instruments | Financial Risks

Financial instruments are any contracts that give rise to a financial asset of one entity and a financial liability or equity instrument of another entity. Such financial instruments are recognized on the trade date. The following sections provide a comprehensive overview of the relevance of financial instruments to Sartorius and additional information on the items of the statement of financial position that include financial instruments.

Financial assets are primarily comprised of cash and cash equivalents, trade receivables as well as derivatives with a positive fair value.

Financial liabilities of the Group mainly comprise loans from banks, trade payables, lease liabilities and derivative financial instruments with a negative fair value. Furthermore, material financial liabilities result from contingent consideration according to IFRS 3. Except for derivative financial instruments and contingent consideration, financial liabilities are measured at amortized cost using the effective interest method.

27. Financial Instruments: Significant Accounting Policies

Financial instruments are accounted for according to IFRS 9, Financial Instruments. Under IFRS 9, the classification and measurement approach for financial assets reflects both the entity's business model (held-to-collect, held-to-collect-and-sell, other) within the scope of which assets are held and the contractual cash flow characteristics ("SPPI" criterion: solely payments of principal and interest). There were no reclassifications of financial instruments during the reporting period.

With regard to the impairment of financial assets, IFRS 9 sets out an expected-loss model. Financial assets are generally regarded as credit-impaired when there are objective indications that cast doubt on the probability of fully collecting the cash flows of the respective financial assets. With regard to the financial assets of the Group, the simplified approach applied to trade receivables is of particular importance.

Besides trade receivables, cash and cash equivalents are the most material financial assets on the Group's statement of financial position as of the reporting date, December 31, 2021. No impairment is recognized for these financial assets due to materiality considerations. As on the last reporting date, for the remaining financial assets that are measured at amortized cost, no impairment is recognized as of December 31, 2021, for the 12-month expected credit losses, given the Group's immaterial historical losses.

Derivatives such as forward contracts on foreign currencies are measured at fair value. In this context, the derivatives are recognized at fair value calculated applying recognized mathematical methods. The fair values are based on the market data available at the time the value of these derivatives is calculated. Instruments that are not designated as hedging instruments and to which no hedge accounting is applied are classified as held for trading. Changes in the fair values of derivative financial instruments are either recognized in profit or loss or, in the case of hedging relationships, in other comprehensive income.

The Group applies the hedge accounting rules of IFRS 9. The Group uses forward transactions to hedge cash flow risks that result from changes in foreign exchange rates in relation to sales of products and the production activities, and designates only the spot element of the hedging instrument.

Financial Assets

28. Cash and Cash Equivalents

The Group considers all highly liquid investments with up to three months' maturity from the date of acquisition to be cash or cash equivalents. These mainly comprise deposits in banks. Cash and cash equivalents are measured at cost. As of the reporting date on December 31, 2021, cash and cash equivalents stood at around €342,809 K (prior year: €203,435 K).

29. Current Trade and Other Receivables

€ in K	Dec. 31, 2021	Dec. 31, 2020
Trade receivables from third parties	419,868	306,727
Amounts due from customers for contract work [1]	4,106	6,159
Receivables from non-consolidated affiliates	20	1,374
Trade receivables	423,994	314,260

1 Contract assets according to IFRS 15 (see Note 9).

The carrying amounts of trade receivables approximate the receivables' fair value due to their short maturities. Contract assets result from customer-specific construction contracts that meet the criteria for recognition of revenue over time in accordance with IFRS 15 (see Note 9). The amount of trade receivables presented as of December 31, 2021, is reduced by €168.1 million as result of factoring because substantially all risks and rewards in relation to the financial assets sold were transferred to the buyer (prior year: €121.5 million). In particular, credit risk and any foreign exchange rate risks were transferred completely.

Impairment losses on trade and other receivables are recognized using separate allowance accounts. For information on how these allowances were determined, see Note 40.

30. Other Financial Assets

€ in K	Dec. 31, 2021	Dec. 31, 2020
Derivative financial instruments	1,518	13,428
Loan receivables from affiliates	5,253	12,694
Miscellaneous other financial assets	18,176	14,212
Other financial assets	24,947	40,334

The carrying amount of derivatives represents the positive market values of currency hedges. The remaining other financial assets are measured at amortized cost, less any impairment losses, by application of the effective interest method.

Financial Liabilities

31. Loans and Borrowings and Lease Liabilities

€ in K	Balance at Dec. 31, 2021	Of which non-current	Balance at Dec. 31, 2020	Of which non-current
Loans and borrowings	1,960,415	1,649,088	2,001,775	1,826,337
Lease liabilities	115,048	88,910	85,591	65,549
	2,075,463	1,737,998	2,087,366	1,891,886

A major pillar of financing for the Sartorius Group is the syndicated credit line of €600 million concluded in December 2020 with a minimum maturity up to 2024, which can be extended at the end of 2022 by one year upon unanimous agreement of the parties. To date, this credit line has not been utilized by the Group. Further elements of the company's financing are various note loans ("Schuldscheindarlehen") placed in 2012, 2016, 2017, and 2020, respectively, with a total volume of approximately €1,250 million and original maturities of up to 10 years. Furthermore, the company has several current and non-current loans totaling around €675 million.

These predominantly long-term financing instruments are supplemented by various short-term credit lines totaling around €270 million.

32. Other Non-Current Liabilities

€ in K	Dec. 31, 2021	Dec. 31, 2020
Liabilities for the acquisition of non-controlling interests	211,692	35,614
Contingent considerations	194,932	81,269
Liability for phantom stock units in connection with the AllPure acquisition	7,812	4,991
Other liabilities	7,382	6,983
Total	421,818	128,857

For the liabilities resulting from the contingent consideration agreements in connection with the acquisitions of BIA Separations, WaterSep BioSeparations and Xell as well as for the liabilities in connection with the potential acquisition of the remaining non-controlling interest in Sartorius CellGenix due to the put options of the owners, see Note 8. The liabilities for the acquisition of non-controlling interests further include the non-current portion of the liabilities resulting from the put options of the non-controlling shareholders of Biological Industries amounting to €37.9 million (prior year: €35.6 million).

33. Trade Payables

€ in K	Dec. 31, 2021	Dec. 31, 2020
Payments received on account of orders [1]	232,045	140,931
Trade payables to third parties	281,897	188,782
Payables to affiliated companies	1,099	1,030
Trade payables	515,041	330,742

1 Contract liabilities according to IFRS 15 (see Note 9).

34. Other Current Financial Liabilities

€ in K	Dec. 31, 2021	Dec. 31, 2020
Derivative financial instruments	11,468	26
Other	157,523	48,680
Other financial liabilities	168,991	48,706

“Other liabilities” as of December 31, 2021, include the current portion of the liabilities in connection with the possible acquisition of the non-controlling interest in Biological Industries (€6.3 million; prior year: €5.9 million) as well as the current portion of the contingent consideration in connection with the acquisition of BIA Separations (€97.9 million; prior year: €0.0 million). Furthermore, as of December 31, 2021, the Group had refund liabilities in accordance with IFRS 15 amounting to €21,865 K (2020: €10,858 K).

35. Carrying Amounts and Fair Values

The following table shows the carrying amounts and fair values of the Group's financial instruments according to IFRS 9 as of December 31, 2021, and as of December 31, 2020:

€ in K	Category acc. to IFRS 9	Carrying amount Dec. 31, 2021	Fair value Dec. 31, 2021	Carrying amount Dec. 31, 2020	Fair value Dec. 31, 2020
Investments in non-consolidated subsidiaries	n/a	31,625	31,625	15,162	15,162
Financial investments	Equity instruments at fair value through profit or loss	4,460	4,460	4,460	4,460
Financial investments	Debt instruments at fair value through profit or loss	17,350	17,350	11,545	11,545
Financial assets	Measured at amortized cost	7,413	7,413	2,953	2,953
Financial assets (non-current)		60,848	60,848	34,120	34,120
Amounts due from customers for contract work (contract assets)	n/a	4,106	4,106	6,159	6,159
Trade receivables	Measured at fair value through other comprehensive income	180,860	180,860	119,414	119,414
Trade receivables	Measured at amortized cost	239,028	239,028	188,687	188,687
Trade receivables		423,994	423,994	314,260	314,260
Receivables and other assets	Measured at amortized cost	23,429	23,429	26,906	26,906
Derivative financial instruments in hedge relationships [1]	n/a	1,518	1,518	13,428	13,428
Other financial assets (current)		24,947	24,947	40,334	40,334
Cash and cash equivalents	Measured at amortized cost	342,809	342,809	203,435	203,435
Loans and borrowings	Financial liabilities at cost	1,960,415	1,986,620	2,001,775	2,009,789
Trade payables	Financial liabilities at cost	282,996	282,996	189,812	189,812
Trade payables | payments received for orders (contract liabilities)	n/a	232,045	232,045	140,931	140,931
Trade payables		515,041	515,041	330,742	330,742
Derivative financial instruments in hedge relationships [1]	n/a	11,468	11,468	26	26
Other financial liabilities	Financial liabilities at fair value through profit or loss	292,828	292,828	81,269	81,269
Other financial liabilities	Financial liabilities at cost	286,513	286,097	96,268	96,376
Other financial liabilities		590,809	590,393	177,563	177,671

1 The amounts each contain the non-designated part of derivatives of a total of -€0.6 million (2020: -€1.0 million).

The fair values of the financial instruments were determined on the basis of the market information available on the reporting date, and are to be allocated to one of the three levels of the fair value hierarchy in accordance with IFRS 13.

Level 1 financial instruments are measured on the basis of prices quoted on active markets for identical assets and liabilities. In Level 2, financial instruments are measured on the basis of input factors that can be derived from observable market data or on the basis of market prices for similar instruments. Level 3 financial instruments are measured on the basis of input factors that cannot be derived from observable market data.

The financial instruments recognized at fair value as at December 31, 2021, relate especially to the contingent considerations in connection with the acquisitions of BIA Separations, WaterSep BioSeparations, and Xell. Since the valuations depend, among other factors, on the predicted sales performance of the acquired businesses, the valuations are regarded as Level 3 inputs. For further information about the acquisitions and the measurement of contingent considerations on the respective acquisition dates and as of the reporting date, please refer to Note 8.

The remaining financial instruments recognized at fair value on the reporting date are mainly trade receivables that are part of a portfolio that is “held-to-collect-and-sell”, as well as derivatives in the form of forward contracts. These trade receivables are valued in the same way as trade receivables measured at amortized cost due to their short contractual maturities and immaterial credit risks. The derivatives were measured on the basis of their quoted exchange rates and market yield curves (Level 2).

The “financial investments” measured at fair value are measured on the basis of the most recent reliable indicators available as of the reporting date, e.g., on the basis of the most recent financing round, the latest investor’s updates, or at historical cost of acquisition (Level 3).

The fair values disclosed for financial liabilities recognized at amortized cost, especially liabilities to banks and those related to note loans (“Schuldscheindarlehen”), were measured on the basis of the yield curve, taking the current indicative credit spreads into account (Level 2).

The fair values of the remaining financial assets and liabilities to be disclosed approximate the carrying amounts because of their predominantly short maturities. The maximum default risk is reflected by the carrying amounts of the financial assets recognized in the statement of financial position.

The Group recognizes transfers between the levels of the fair value hierarchies at the end of the reporting period during which the change has occurred. In the current reporting period, there were no transfers between the levels.

36. Net Result for Financial Instruments

The net gains and losses of the various categories of financial instruments are presented in the following table:

Category acc. to IFRS 9 € in K	2021	2020
Financial assets at amortized cost	17,663	−9,085
Financial assets and liabilities at fair value through profit or loss	−207,505	8,573
Financial assets at fair value through other comprehensive income	1,807	−6,766
Financial liabilities at cost	−14,075	−8,850

The net result of financial assets measured at amortized cost primarily consists of currency translation effects as well as changes in allowances.

The net result of financial assets and liabilities measured at fair value through profit or loss consists primarily of changes in the fair value of derivative financial instruments as well as of interest income and expenses for these instruments, and of changes in the value of contingent consideration in connection with business combinations (see Note 8).

The net result of financial instruments through other comprehensive income consists of income and expenses in connection with trade receivables that are not solely held to collect contractual cashflows, but may also be sold under the factoring program.

The net result of liabilities measured at amortized cost mainly consists of the effects of foreign currency translation.

The total interest income and expenses for financial assets and liabilities that are not recognized at fair value through profit and loss are as follows:

€ in K	2021	2020
Interest income	1,652	1,289
Interest expenses	–22,706	–20,613

Capital and Financial Risk Management

Capital Management

In the Sartorius Group, capital is managed in order to maximize earnings of the company's stakeholders by optimizing the ratio of equity to liabilities.

Furthermore, we ensure that all Group companies operate under the premise of the going-concern principle. The financial liabilities described in Note 31 are regarded as managed capital as are the cash and cash equivalents and equity capital.

Goals of Financial Risk Management

The Treasury Management unit of the Group coordinates access to national and international financial markets. In addition, the Treasury Management unit monitors and controls financial risks, which essentially entail currency, interest rate, liquidity, and credit risks.

The Sartorius Group strives to minimize the impact of currency and interest rate risks using (derivative) financial instruments. Hedging transactions and their control are carried out by different staff members. Moreover, the Group's Internal Auditing Department regularly monitors the use of such financial instruments. Derivative financial instruments are traded for hedging purposes only.

37. Management of Exchange Rate Risks and Hedge Accounting

Management of Exchange Rate Risks

The Group is exposed to currency risks as approximately two thirds of its sales revenue is generated in foreign currencies and, of this amount, two thirds is generated in U.S. dollars or currencies linked to the U.S. dollar. At the same time, Sartorius' global manufacturing network enables the company to offset the lion's share of sales revenues received in foreign currency within the Group against costs likewise incurred in foreign currency. The remaining net currency exposures are hedged according to a cash flow at risk (CfaR) model within the limits of a risk budget with derivative financial instruments. The resulting hedge ratios reach up to 80% for the relevant currencies, respectively. The Group generally follows a rolling hedging strategy of up to 12 months in advance. These hedging measures are reviewed at regular intervals in the light of current market risk parameters and adapted where necessary.

On the basis of the material forward contracts concluded by the end of the reporting date, we secure the right, and simultaneously create the obligation, to sell an established foreign currency amount on the exercise date at a specific exchange rate against the euro, independently of the actual exchange rate on that date. The profit or loss resulting from the difference between the current and the previously agreed exchange rate is generally recognized as income or expense in the statement of profit or loss.

The following table shows the forward transactions as of the reporting date:

December 31, 2020	Currency	Volume	Maturity	Fair value € in K
Forward contract	USD	225,000	2021	12,669
	USD	225,000		12,669
Forward contract	JPY	1,550,000	2021	152
	JPY	1,550,000		152
Forward contract	CAD	−2,000	2021	11
	CAD	−2,000		11
Forward contract	GBP	43,000	2021	570
	GBP	43,000		570

December 31, 2021	Currency	Volume	Maturity	Fair value € in K
Forward contract	USD	426,700	2022	−10,193
	USD	426,700		−10,193
Forward contract	JPY	3,750,000	2022	162
	JPY	3,750,000		162
Forward contract	CHF	−5,000	2022	−26
	CHF	−5,000		−26
Forward contract	GBP	93,800	2022	220
	GBP	93,800		220
Forward contract	SEK	120,000	2022	−113
	SEK	120,000		−113

Sartorius uses a cash flow at risk (CfaR) model to measure foreign currency risk. The basis for the analysis of foreign currency risks are the expected cash inflows and outflows in foreign currencies (so-called net exposures). The total foreign currency risk to which all absolute values of the net exposures are aggregated is as follows at the reporting date for the following 12 months:

In millions of €	Dec. 31, 2021	Dec. 31, 2020
Foreign currency exposure	1,056	571
Of which short positions	58	74

The risk position of the Group is reflected by the CfaR that remains after considering all hedging activities of the Group. The CfaR approach takes into account the impact of possible currency fluctuations on the cash flows in foreign currencies (against the euro) on the basis of probability distributions. In this context, the covariances of the foreign currencies weighted with the net exposures serve as input factors for the estimation of portfolio volatility, which is decisive for determining the CfaR. Correlations between the currencies are taken into account in this method as risk is reduced in the risk aggregation.

The possible negative impact on EBITDA is determined for each currency based on actual exchange rates and net exposures with a confidence level of 95% for the next 12 months. The following table presents the possible negative impact for the Group as determined by the CfaR approach for the following 12 months:

In millions of €	Dec. 31, 2021	Dec. 31, 2020
Cashflow-at-Risk	37	22

Hedge Accounting

Derivative financial instruments are measured at the time of acquisition at cost and at fair value on subsequent reporting dates. The changes in value of the derivative financial instruments are generally recognized in the statement of profit or loss on the reporting date.

If the derivative financial instruments are used to hedge cash flow risks arising from exchange rate risks and a qualifying hedging relationship exists based on the criteria of IFRS 9, the valuation adjustments for the effective portion are recognized in other comprehensive income. Only the change in the spot element of the forward contracts used as cash flow hedges are regularly designated. Amounts accumulated in equity are reclassified to profit or loss in other income and other expenses (see Note 11) in the same periods in which the hedged items affect profit or loss. The changes in the cash flow hedging reserves are shown in the statement of changes in equity and in the statement of comprehensive income. The non-designated or ineffective part is recognized immediately in profit or loss in the financial result.

The critical terms match method is used to test the effectiveness of a hedging relationship; in other words, the economic relationship between the hedging instrument and the underlying hedged item is determined based on the consistency of the significant contractual features of the transactions. To this extent, the Group conducts a qualitative assessment. Hedge ineffectiveness may possibly arise if the timing of future transactions deviates from the original assumptions or the credit risk of the counterparties of the forward contract changes.

The following table shows the impact of foreign currency hedges on the net worth, financial position, and earnings of the Group:

Currency	Carrying amount (assets) Dec. 31, 2020 € in K	Carrying amount (liabilities) Dec. 31, 2020 € in K	Hedge ratio	Change in value of hedging instruments € in K	Change in value of hedged items € in K	Nominal amount in each foreign currency in K	Maturity: 1-6 months	Maturity: 7-12 months	Average exercise price
USD	13,673	3	100%	13,670	13,670	225,000	155,000	70,000	1.15
CAD	11	0	100%	11	11	2,000	2,000	0	1.55
JPY	166	10	100%	156	156	1,550,000	1,550,000	0	124.65
GBP	524	0	100%	524	524	43,000	23,000	20,000	0.91

Currency	Carrying amount (assets) Dec. 31, 2021 € in K	Carrying amount (liabilities) Dec. 31, 2021 € in K	Hedge ratio	Change in value of hedging instruments € in K	Change in value of hedged items € in K	Nominal amount in each foreign currency in K	Maturity: 1-6 months	Maturity: 7-12 months	Average exercise price
USD	207	9,637	100%	-9,430	-9,430	426,700	253,400	173,300	1.17
CHF	0	26	100%	-26	-26	5,000	5,000	0	1.04
JPY	200	16	100%	184	184	3,750,000	1,420,000	2,330,000	130.28
GBP	916	825	100%	91	91	93,800	88,800	5,000	0.86
SEK	0	125	100%	-125	-125	120,000	49,000	71,000	10.22

In the statement of financial position, hedging instruments with a positive fair value are disclosed under "Financial assets (non-current)" and "Other financial assets (current)," while instruments with a negative fair value are reported under "Other financial liabilities (non-current)" and "Other financial liabilities (current)."

38. Interest Risk Management

The entire Sartorius Group is generally financed through Sartorius AG, which uses internal Group loans to ensure the financing of all Group companies. The Sartorius Group is exposed to interest rate risks as some loans are taken out at variable interest rates. As of December 31, 2021, the Group predominantly obtained financing at fixed interest rates (approx. 93%), meaning that interest rate risk is of minor significance for the Group's net worth, financial position, and earnings. As in the prior year, the interest rate hedges concluded by the Group in the past are not currently being used.

As of December 31, 2021, the volume of variable interest loans was around €140 million (prior year: €319 million). For the financial instruments held as of the reporting date, a sensitivity analysis yields the following results: if the market interest rate had been 1.0 percentage point higher, this would have had an impact on annual profit of €–1.1 million resulting from the variable interest loans (prior year: €–3.5 million).

A decrease in the base interest rate to 0% was used to measure the sensitivities of declining interest rates. Under this condition, the corresponding effect on profit before tax would have been immaterial (prior year: €0.3 million).

39. Liquidity Risk Management

The following table shows the liquidity analysis for financial liabilities, excluding derivatives, in the form of contractually agreed undiscounted cash flows based on conditions as of the reporting date:

€ in K	Carrying amount Dec. 31, 2020	Cash flow Dec. 31, 2020	< 1 year	1 to 5 years	> 5 years
Loans and borrowings	2,001,775	2,103,959	195,126	1,174,436	734,397
Lease liabilities	85,591	103,841	22,629	51,346	29,866
Trade payables	189,812	189,812	189,812	0	0
Other liabilities (excluding derivatives)	177,537	183,631	48,777	90,886	43,968
Financial liabilities	2,454,715	2,581,243	456,344	1,316,668	808,231

€ in K	Carrying amount Dec. 31, 2021	Cash flow Dec. 31, 2021	< 1 year	1 to 5 years	> 5 years
Loans and borrowings	1,960,415	2,042,966	329,956	1,065,717	647,293
Lease liabilities	115,048	133,776	29,127	66,933	37,716
Trade payables	282,996	282,996	282,996	0	0
Other liabilities (excluding derivatives)	579,341	585,233	167,718	307,115	110,400
Financial liabilities	2,937,800	3,044,970	809,797	1,439,765	795,409

The carrying amounts and cash flows for the derivatives are shown as follows:

€ in K	Carrying amount Dec. 31, 2020	Cash flow Dec. 31, 2020	< 1 year	1 to 5 years	> 5 years
Gross fulfillment					
Forward contracts	26	26	26	0	0
Payment obligation			15,044	0	0
Payment claim			–15,018	0	0
Derivatives	26	26	26	0	0

€ in K	Carrying amount Dec. 31, 2021	Cash flow Dec. 31, 2021	< 1 year	1 to 5 years	> 5 years
Gross fulfillment					
Forward contracts	11,468	11,451	11,451	0	0
Payment obligation			395,735	0	0
Payment claim			–384,284	0	0
Derivatives	11,468	11,451	11,451	0	0

The Group controls liquidity risks by maintaining credit lines and additional facilities with banks, continuously tracking the forecasted and actual cash flows, and by managing the maturity profiles of financial assets and liabilities.

It is not expected that cash outflows will occur at materially different reporting dates or in materially different amounts.

Local cash funds in certain countries (e.g., China and India) are only available to the Group for cross-border transactions subject to exchange controls.

As in the previous year, all derivative financial instruments of the Group are subject to the German Master Agreement for Financial Futures with regard to offsetting of the cash flows.

The syndicated credit line amounting to €600 million at variable interest rates had not been used as of December 31, 2021 (utilization prior year: €0 million). In addition, the Group had further bilateral credit lines at variable interest rates available amounting to €270 million as of December 31, 2021 (prior year: €260 million), of which approximately €33 million had been drawn at the reporting date (prior year: €7 million).

As of December 31, 2021, there were no material financing agreements that require the Group to comply with standard financial key ratios, so-called financial covenants.

40. Credit Risk Management

Credit risk is the risk of financial loss to the Sartorius Group if a counterparty to a financial instrument fails to meet its contractual obligations. Credit risks arise in particular from trade receivables as well as from cash and cash equivalents and bank deposits. Moreover, the Group is exposed to credit risks arising from derivatives with a positive fair value and, to a low degree, to other contractual cash flows from debt securities.

Credit risk is managed centrally for the Group by the Treasury Management unit. The creditworthiness of banks and financial institutions as counterparties of the Group is continuously monitored in order to detect increases in credit risks at an early stage. If no new information is obtained, the Group assumes that its related financial assets still have only a low credit risk.

Customers are assigned to different risk limits, which are essentially based on business volume, past experience, and the net worth and financial situation of these customers. The management responsible for these customers regularly reviews compliance of their assigned customers with these credit limits. In some cases, advance payments are required for deliveries to avoid credit risks. There are no significant concentrations of credit risks arising from individual customers or regions.

For some trade receivables, the Group has collateral, such as guarantees, financial securities and suretyship contracts to which the Group can resort under the contractual arrangements should a counterparty default on its payment obligations.

Impairment of Financial Assets

Trade Receivables and Contract Assets

Trade receivables and contract assets, in particular, are required to be measured according to the model for recognition of expected credit losses.

The Sartorius Group applies the simplified impairment approach according to IFRS 9 for trade receivables and contract assets, thus taking lifetime expected credit losses into account. The impairment model starts with an analysis of the actual historical credit loss rates. These are adjusted, taking into consideration forward-looking information and the effects of current changes in the macroeconomic environment, if significant. Due to the immaterial level of historical credit losses, the Group currently determines the expected credit losses for its portfolio of trade receivables as a whole. However, historical loss rates are analyzed regularly in more detail in order to apply different loss rates to different portfolios. Contract assets relate to projects for typical Sartorius customers so that the Group assumes that the loss rates applied to trade receivables appropriately approximate the loss rates of the contract assets. Accordingly, there is no further differentiation between trade receivables and contract assets.

On this basis, the allowances for trade receivables and contract assets were determined as follows for the year ended December 31, 2021, and as of the previous reporting date on December 31, 2020:

31.12.2020 in T€	Not due	1-30 days overdue	31-60 days overdue	61-90 days overdue	More than 90 days overdue	Total
Gross carrying amount of trade receivables	259,304	16,431	3,187	8,682	36,391	323,995
Gross carrying amount of contract assets	6,159	0	0	0	0	6,159
Impairment loss allowance	388	245	702	226	14,333	15,895

31.12.2021 in T€	Not due	1-30 days overdue	31-60 days overdue	61-90 days overdue	More than 90 days overdue	Total
Gross carrying amount of trade receivables	324,582	29,372	26,259	18,569	36,641	435,423
Gross carrying amount of contract assets	4,106	0	0	0	0	4,106
Impairment loss allowance	741	64	594	92	14,045	15,535

The impairments in fiscal 2021 include those related to trade receivables measured at fair value though other comprehensive income which amount to approximately €3.4 million (prior year: €3.9 million).

The expected credit losses are determined based on a loss rate of 0.05%. In addition, impairments are determined on the basis of individual assessments. Days overdue are one essential criterion in this context. A default is generally presumed when there is no longer any reasonable expectation of recovering a financial asset. In such a case, the respective receivables are derecognized.

The movements in the allowance for impairment losses on trade receivables and contract assets are presented below:

€ in K	2021	2020
Valuation allowances at January 1	-15,895	-9,686
Net remeasurement of loss allowance recognized in profit or loss	-4,739	-9,105
Derecognition and consumption	439	507
Recoveries of amounts previously impaired	5,286	3,382
Currency effects	-548	395
Changes in scope of consolidation	-79	-1,388
Valuation allowances at December 31	-15,535	-15,895

Cash and Cash Equivalents

Besides trade receivables, cash and cash equivalents were the most significat financial assets in the Group's statement of financial position as of December 31, 2021, as was the case in the previous year. The expected credit losses are monitored at regular intervals. Due to the high creditworthiness of the counterparties and the short maturities or contract terms, which are short by definition, any impairment that would theoretically have to be recognized for these financial assets is immaterial. Therefore, no impairment is recognized for cash and cash equivalents.

Other Financial Assets

For the other financial assets measured at amortized cost, as in the previous year, no impairment was recognized as of December 31, 2021, for the twelve months of expected credit losses due to immaterial historical credit losses. In the event of a significant increase in credit risk, which is generally presumed when a payment is more than 30 days past due, the lifetime expected credit losses are recognized for the respective financial asset. A default is generally presumed if there is no longer any reasonable expectation of recovering a financial asset. This is generally presumed when payments are more than 90 days past due. As of the reporting date, there are no indications of increases in credit risk to a material extent. The carrying amounts of the financial assets reflect the maximum credit loss for these assets at the end of the fiscal year.

41. Other Risks Associated with Financial Instruments

As of the reporting date, the Sartorius Group was exposed to risks arising from the volatility of the share price of Sartorius Stedim Biotech S.A. because of the contingent consideration in connection with the acquisition of BIA Separations. As of the reporting date, there were no other significant risks of volatility in share prices; only vested portions of share-based payments are linked directly to the price development of Sartorius stock.

For details on other types of risk, please refer to the Group Management Report.

42. Share-based Payments

Within the Sartorius Group, share-based payments are made in the form of so-called phantom stock units at Sartorius AG.

The phantom stock units are virtual options on the shares of Sartorius AG. Specifically, the company's phantom stock plan credits each member of the Executive Board at the beginning of every year with phantom stock units valued at an agreed amount. These phantom stock options may be exercised no earlier than four years after this sum has been credited and only if certain conditions with respect to the performance of Sartorius AG shares are met. If an Executive Board member exercises an option, the number of phantom stock units granted is evaluated at the current stock exchange price. The amount paid out is capped at 2.5 times the grant price. The fair value of the phantom stock units was measured using a Black-Scholes model and is disclosed as follows:

Components with a long-term incentive effect	Number of phantom stock units	Fair value at year-end on Dec. 31, 2021 € in K	Fair value at year-end on Dec. 31, 2020 € in K	Paid out € in K
Tranche for fiscal 2017	6,620	0	1,167	1,167
Tranche for fiscal 2018	5,647	1,134	1,134	0
Tranche for fiscal 2019	5,413	1,541	1,541	0
Tranche for fiscal 2020	3,332	1,585	1,078	0
Tranche for fiscal 2021	2,084	1,135	0	0
	23,096	5,395	4,920	1,167

In fiscal 2021, expenses relating to granting and measuring phantom stock units amounted to €1,642 K (prior year: €1,787 K). As in the prior year, no phantom stock units were exercisable on the reporting date. All phantom stock units granted in the reporting year were attributable to members of the Executive Board. Based on resolutions of the Supervisory Board on December 5, 2019, Dr. Kreuzburg was granted a supplementary compensation component, which provides for transferring shares of the company to him. These share-based payments are subject to the rules of IFRS 2. Based on the agreed conditions, the resulting amounts are to be spread as an employee benefits expense from the respective grant date over the full vesting period of the respective plan. In fiscal 2021, an amount of €1,320 K (prior year: €1,323 K) was therefore recognized as an employee benefits expense resulting from the grant of shares. For further details on the phantom stocks and the share-based remuneration of Dr. Kreuzburg, please refer to the Remuneration Report.

Other Disclosures

The consolidated financial statements were prepared on a going-concern basis.

The exemption options provided by Section 264 (3) of the German Commercial Code (HGB) were applied to the annual financial statements reported by Sartorius Lab Holding GmbH, Sartorius Weighing Technology GmbH, and Sartorius Corporate Administration GmbH, all based in Göttingen, Germany, for the year ended December 31, 2021.

The exemption options provided by Section 264b of the HGB were applied to the annual financial statements reported by SIV Weende GmbH & Co. KG, SIV Grone 1 GmbH & Co. KG, and Sartorius Lab Instruments GmbH & Co. KG, all based in Göttingen, Germany, for the year ended December 31, 2021.

Material Events after the Reporting Date

Acquisition of ALS Automated Lab Solutions GmbH

On January 3, 2022, the Group acquired the majority of shares and voting rights in ALS Automated Lab Solution GmbH and strengthens thereby its bioanalytics portfolio of the LPS Division with an additional complementary element. The laboratory technology company based in Jena, Germany, develops, manufactures, and markets solutions for the automated analysis, selection, and isolation of cells. With these solutions, ALS enables life science customers to significantly reduce time to result and cost in cell line development and antibody discovery. Other application areas are the development of cell and gene therapeutics as well as rare single cell molecular diagnostics in cancer and prenatal research. The company employed some 30 employees as of the acquisition date and generated sales revenue in the high single-digit million-euro area in 2021.

The purchase price for the acquired stake of 62.5% of ALS Automated Lab Solutions GmbH amounted to approx. €24 million (net) and was paid in cash. The parties further agreed on options according to which the acquisition of the remaining 37.5% of the shares is planned in 2026. The exercise price of the options depends on the future sales revenues of the acquired business. In view of the short period between the acquisition and the preparation of the consolidated financial statements, no preliminary revaluation of the acquired net assets and goodwill is available. It is expected that the intangible assets to be recognized separately will primarily reflect technologies and customer relationships. Any goodwill may reflect the expansion of the bioanalytics portfolio and further synergies from the combination as well as intangible assets not recognizable separately, such as the acquired workforce. A goodwill is not expected to be deductible for tax purposes. Expenses directly attributable to the acquisition of €0.1 million were recognized in other operating expenses in 2021. The transaction has not been recognized in the consolidated financial statements for fiscal 2021 as the entity will be consolidated as of the acquisition date.

Acquisition of Chromatography Business of Novasep

On February 7, 2022, the Group closed the acquisition of the Novasep chromatography division. Antitrust approval required for this transaction was granted by the U.S. Federal Trade Commission end of January 2022. The business acquired achieved sales revenue of around €40 million at double-digit profit margins in 2020. As of the acquisition date, approximately 100 employees were taken on as part of the Group workforce. The majority of these currently work at the acquired entity Novasep Equipment Solutions in Pompey in northern France and some in the USA, China, and India.

The chromatography business acquired comprises batch and intensified chromatography systems, and primarily focuses on applications for smaller molecules, such as oligonucleotides, peptides, and insulin. It is complementary to the Group's chromatography offering and will be integrated in the Bioprocess Solutions Division.

The purchase price for the acquired chromatography business amounted to approx. €45 million and was paid in cash. Expenses directly attributable to the acquisition of €6.2 million were recognized in other operating expenses through profit or loss in prior years. In view of the short period between the acquisition and the preparation of the consolidated financial statements, no preliminary revaluation of the acquired net assets and goodwill is available. It is expected that the material assets will be intangible assets for technologies (preliminary estimate: about €18.5 million) and customer relationships (preliminary estimate: about €8 million). Any goodwill may reflect the expansion of the product portfolio as well as intangible assets not recognizable separately, such as the workforce acquired. Goodwill is not expected to be deductible for tax purposes. The transaction was not yet recognized in the consolidated financial statements for fiscal 2021 as the entity will be consolidated as of the acquisition date.

No other material events occurred up to the end of the preparation of these consolidated financial statements.

Declaration According to Section 314 (1) No. 8 of the German Commercial Code (HGB)

The declaration prescribed by Section 161 of the German Stock Corporation Act (AktG) was submitted on December 9, 2021, and made available to the shareholders of Sartorius AG on the company's website at www.sartorius.com.

Members of the Supervisory Board and the Executive Board

The members of the Supervisory Board and the Executive Board are listed at the end of this section as are the further additional disclosures pursuant to Section 285 no. 10 of the German Commerical Code (HGB).

Number of Employees

This table shows the average workforce employed during the fiscal year:

	2021	2020
Bioprocess Solutions	9,536	7,163
Lab Products & Services	2,974	2,730
Total	12,510	9,894

Auditors' Fee

In fiscal 2020 and 2021, the following fees were incurred by the Group for the auditors, KPMG AG:

€ in K	2021	2020
Audits	943	766
Tax consultation services	0	0
Other attestation services	91	63
Other services	0	0
	1,034	829

The fees for statutory audits include the audit review fee of €106 K (prior year: €100 K) for the first-half financial report pursuant to Section 115 (5) of the German Securities Trading Act (WpHG), as well as other services directly prompted by the audit.

Related Companies and Persons

The Group companies included in the consolidated financial statements carry out business activities and transactions in related party relationships as defined by IAS 24. In particular, this concerns transactions with non-consolidated subsidiaries that are generally entered into on an arm's length basis. A long-term service contract exists with an affiliated company. For this contract, expenses of €11.7 million were incurred and reported in the statement of profit or loss in the reporting year (prior year: €8.5 million). Details on the transactions completed in the reporting year and the balances outstanding on the reporting date are provided in the relevant sections of these Notes to the Financial Statements, specifically in Note 29.

According to IAS 24, related persons are those individuals responsible for the planning, management and control of a reporting entity. In particular, such persons include the members of the Executive Board and of the Supervisory Board of Sartorius AG. In the reporting year, the total remuneration of the Supervisory Board members was €1,057 K (prior year: €1,049 K); that of the Executive Board members amounted to €5,606 K (prior year: €4,653 K). The remuneration of former managing directors and members of the Executive Board and their surviving dependents was €853 K (prior year: €1,861 K). The pension obligations to former managing directors and members of the Executive Board and their surviving dependents totaled €9,104 K (prior year: €8,764 K). For details on remuneration, please refer to the Remuneration Report, which is an integral part of the combined Group Management Report. In addition to their Supervisory Board remuneration, the employee representatives who are employees of the Sartorius Group receive compensation that is not related to their service on the Supervisory Board.

The total remuneration of the Executive Board members according to IFRS is shown in the following table:

€ in K	2021	2020
Short-term benefits (excl. share-based remuneration)	4,218	3,696
Post-employment benefits	490	457
Other long-term benefits	650	323
Share-based payments	2,962	3,111
Total remuneration	8,320	7,587

Partial payments on multi-year variable remuneration of the Executive Board members:

€ in K	2021	2020
Balance as of Jan. 1 of a fiscal year	470	375
Partial payments deducted	-190	-185
Partial payments effected	327	280
Balance as of Dec. 31 of a fiscal year	607	470

The total remuneration of the Supervisory Board members is as follows:

€ in K	2021	2020
Short-term benefits (excl. share-based remuneration)	1,057	1,049
Post-employment benefits	0	0
Other long-term benefits	0	0
Share-based payments	0	0
Total remuneration	1,057	1,049

Proposal for Appropriation of Profit

The Supervisory Board and the Executive Board will submit a proposal to the Annual Shareholders' Meeting to appropriate the retained profit of €198,487,285.16 reported by Sartorius AG for the year ended December 31, 2021, as follows:

	€
Payment of a dividend of €1.25 per ordinary share	42,782,511.25
Payment of a dividend of €1.26 per preference share	43,079,214.78
Unappropriated profit carried forward	112,625,559.13
	198,487,285.16

Declaration of the Executive Board

We declare to the best of our knowledge that the consolidated financial statements for fiscal 2021 present a true and fair view of the actual net worth, financial situation and profitability of the Group in accordance with the accounting standards used in preparing these statements. We also certify that the progress of the Group's business, including its business performance and its situation, are represented accurately in the Group Management Report in all material respects and present the most important opportunities and risks of the Group's future development during the fiscal year.

Göttingen, February 8, 2022

Sartorius Aktiengesellschaft

The Executive Board

Dr. Joachim Kreuzburg Rainer Lehmann Dr. René Fáber John Gerard MacKay

Independent Auditors' Report

Report on the Audit of the Consolidated Financial Statements and of the Group Management Report

Opinions

We have audited the consolidated financial statements of Sartorius Aktiengesellschaft, Göttingen, and its subsidiaries (the Group) – which comprise the consolidated statement of financial position as at December 31st, 2021, the consolidated statement of profit and loss, the consolidated statement of comprehensive income, consolidated statement of cash flows and the consolidated statement of changes in equity for the financial year from 1 January 2021 to 31 December 2021, and notes to the consolidated financial statements, including a summary of significant accounting policies. In addition, we have audited the report on the situation of the Company and the Group (hereinafter referred to as the "group management report") of Sartorius Aktiengesellschaft, including the Remuneration Report contained in the section "Remuneration Report" of the group management report, along with the related disclosures, for the financial year from 1 January 2021 to 31 December 2021.

In accordance with the German legal requirements we have not audited the content of the parts of the group management report mentioned in the section on "Other Information" of our Independent Audit Report.

In our opinion, on the basis of the knowledge obtained in the audit,

- the accompanying consolidated financial statements comply, in all material respects, with the IFRSs as adopted by the EU, and the additional requirements of German commercial law pursuant to Section 315e (1) HGB [Handelsgesetzbuch: German Commercial Code] and, in compliance with these requirements, give a true and fair view of the assets, liabilities, and financial position of the Group as at 31 December 2021, and of its financial performance for the financial year from 1 January 2021 to 31 December 2021, and

- the accompanying group management report as a whole provides an appropriate view of the Group's position. In all material respects, this group management report is consistent with the consolidated financial statements, complies with German legal requirements and appropriately presents the opportunities and risks of future development. Our opinion on the group management report does not cover the content of the group management report mentioned in the section "Other Information."

Pursuant to Section 322 (3) sentence 1 HGB, we declare that our audit has not led to any reservations relating to the legal compliance of the consolidated financial statements and of the group management report.

Basis for the Opinions

We conducted our audit of the consolidated financial statements and of the group management report in accordance with Section 317 HGB and the EU Audit Regulation No. 537/2014 (referred to subsequently as "EU Audit Regulation") and in compliance with German Generally Accepted Standards for Financial Statement Audits promulgated by the Institut der Wirtschaftsprüfer [Institute of Public Auditors in Germany] (IDW). Our responsibilities under those requirements and principles are further described in the "Auditor's Responsibilities for the Audit of the Consolidated Financial Statements and of the Group Management Report" section of our auditor's report. We are independent of the group entities in accordance with the requirements of European law and German commercial and professional law, and we have fulfilled our other German professional responsibilities in accordance with these requirements. In addition, in accordance with Article 10 (2) point (f) of the EU Audit Regulation, we declare that we have not provided non-audit services prohibited under Article 5 (1) of the EU Audit Regulation. We believe that the evidence we have obtained is sufficient and appropriate to provide a basis for our opinions on the consolidated financial statements and on the group management report.

Key Audit Matters in the Audit of the Consolidated Financial Statements

Key audit matters are those matters that, in our professional judgment, were of most significance in our audit of the consolidated financial statements for the financial year from 1 January 2021 to 31 December 2021. These matters were addressed in the context of our audit of the consolidated financial statements as a whole, and in forming our opinion thereon, we do not provide a separate opinion on these matters.

Recoverability of the Carrying Amount of Goodwill

The accounting policies as well as the assumptions made are disclosed in the notes to the consolidated financial statements in note 15. Disclosure of the amount of goodwill is provided in the notes to the consolidated financial statements in note 15.

THE FINANCIAL STATEMENT RISK

As at 31 December 2021, goodwill totaled EUR 1,362 million, thereby comprising 24% of the balance sheet total.

Goodwill is tested for impairment annually at the level of the operating segments Bioprocess Solutions (Goodwill EUR 1,011 million) and Lab Products & Services (Goodwill EUR 351 million). The carrying amount is thereby compared with the recoverable amount of the respective operating segments. If the carrying amount exceeds the recoverable amount of the respective operating segment, an impairment is recorded. The recoverable amount is the higher of the fair value less the costs to sell and value in use of the operating segment. The impairment test was carried out as at 30 November 2021.

The goodwill impairment test is complex and is based on a number of judgemental assumptions. These include, among others, the expected business and earnings development of the operating segments for the upcoming 4 years, the assumed long-term growth rates and the discount rate used.

Given the amount of goodwill and the complexity of the impairment test, there is the risk for the financial statements that an impairment has not been identified. In addition, there is the risk that the disclosures in the notes associated herewith are not appropriate.

OUR AUDIT APPROACH

With the support of our valuation specialists, we assessed, among other things, the appropriateness of the significant assumptions as well as the Company's valuation model. This included a discussion of the expected development of the business and results as well as of the assumed underlying long-term growth rates with those responsible for the planning process so as to gain an understanding of the assumptions made by the Company. In addition, reconciliations were made with the budget 2021 prepared by the Executive Board and approved by the Supervisory Board, as well as with the planning prepared by the Executive Board for the next 4 years. Furthermore, we assessed the consistency of the assumptions with external market assessments.

We also assessed the Company's planning accuracy by comparing projections for previous financial years with the actual results realized and analyzed deviations. As small changes in the discount rate can have a substantial impact on the results of the impairment test, we have compared the discount rate with our own assumptions and publicly available information.

To provide for the mathematical accuracy of the valuation model utilized, we validated the Company's calculations on the basis of our own calculations.

To reflect the existing uncertainty with respect to forecasts as well as the earlier valuation date for the impairment test, we have assessed the effect of possible changes in the discount rate, sales revenue and earnings development and the long-term growth rate on the recoverable amount (sensitivity analysis) by calculating alternative scenarios and comparing these with the Company's valuation results.

Finally, we assessed whether the disclosures in the notes with respect to the recoverability of the carrying amount of the goodwill are appropriate.

OUR OBSERVATIONS

The underlying valuation model used in the impairment test of goodwill is appropriate and consistent with the applicable accounting principles.

The Company's assumptions and parameters underlying the valuation are within an acceptable bandwidth and are, on the whole, balanced.

The disclosures in the notes associated herewith are appropriate.

Other Information

Management and the Supervisory Board are responsible for the other information. The other information comprises the following parts of the group management report, the content of which has not been audited:

- the non-financial statement, contained in the section on the non-financial statement of the group management report,

- the corporate governance statement, contained in the section on the corporate governance statement of the group management report.

The other information additionally covers the remaining parts of the annual report.

The other information does not comprise the audited consolidated financial statements and group management report and our respective auditor's report.

Our opinions on the consolidated financial statements and on the group management report do not cover the other information, and consequently we do not express an opinion or any other form of assurance conclusion thereon.

In connection with our audit, our responsibility is to read the other information and, in so doing, to consider whether the other information

- is materially inconsistent with the consolidated financial statements, with the group management report or our knowledge obtained in the audit, or

- otherwise appears to be materially misstated.

Responsibilities of Management and the Supervisory Board for the Consolidated Financial Statements and the Group Management Report

Management is responsible for the preparation of the consolidated financial statements that comply, in all material respects, with IFRSs as adopted by the EU and the additional requirements of German commercial law pursuant to Section 315e (1) HGB and that the consolidated financial statements, in compliance with these requirements, give a true and fair view of the assets, liabilities, financial position, and financial performance of the Group. In addition, management is responsible for such internal control as they have determined necessary to enable the preparation of consolidated financial statements that are free from material misstatement, whether due to fraud or error.

In preparing the consolidated financial statements, management is responsible for assessing the Group's ability to continue as a going concern. They also have the responsibility for disclosing, as applicable, matters related to going concern. In addition, they are responsible for financial reporting based on the going concern basis of accounting unless there is an intention to liquidate the Group or to cease operations, or there is no realistic alternative but to do so.

Furthermore, management is responsible for the preparation of the group management report that, as a whole, provides an appropriate view of the Group's position and is, in all material respects, consistent with the consolidated financial statements, complies with German legal requirements, and appropriately presents the opportunities and risks of future development. In addition, management is responsible for such arrangements and measures (systems) as they have considered necessary to enable the preparation of a group management report that is in accordance with the applicable German legal requirements, and to be able to provide sufficient appropriate evidence for the assertions in the group management report.

The Supervisory Board is responsible for overseeing the Group's financial reporting process for the preparation of the consolidated financial statements and of the group management report.

Management and the Supervisory Board are also responsible for the preparation of the Remuneration Report, along with the related disclosures, which is contained in a separate section of the group management report and complies with the requirements of Section 162 of the German Stock Corporation Law (AktG). In addition, they are responsible for such internal control as they consider necessary to enable the preparation of a Remuneration Report, including the related disclosures, that is free from material misstatement, whether due to fraud or error.

Auditor's Responsibilities for the Audit of the Consolidated Financial Statements and of the Group Management Report

Our objectives are to obtain reasonable assurance about whether the consolidated financial statements as a whole are free from material misstatement, whether due to fraud or error, and whether the group management report as a whole provides an appropriate view of the Group's position and, in all material respects, is consistent with the consolidated financial statements and the knowledge obtained in the audit, complies with the German legal requirements and appropriately presents the opportunities and risks of future development, as well as to issue an auditor's report that includes our opinions on the consolidated financial statements and on the group management report.

Reasonable assurance is a high level of assurance, but is not a guarantee that an audit conducted in accordance with Section 317 HGB and the EU Audit Regulation and in compliance with German Generally Accepted Standards for Financial Statement Audits promulgated by the Institut der Wirtschaftsprüfer (IDW) will always detect a material misstatement. Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of these consolidated financial statements and this group management report.

We exercise professional judgment and maintain professional skepticism throughout the audit. We also:

- Identify and assess the risks of material misstatement of the consolidated financial statements and of the group management report, whether due to fraud or error, design and perform audit procedures responsive to those risks, and obtain audit evidence that is sufficient and appropriate to provide a basis for our opinions. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control.

- Obtain an understanding of internal control relevant to the audit of the consolidated financial statements and of arrangements and measures (systems) relevant to the audit of the group management report in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of these systems.

- Evaluate the appropriateness of accounting policies used by management and the reasonableness of estimates made by management and related disclosures.

- Conclude on the appropriateness of management's use of the going concern basis of accounting and, based on the audit evidence obtained, whether a material uncertainty exists related to events or conditions that may cast significant doubt on the Group's ability to continue as a going concern. If we conclude that a material uncertainty exists, we are required to draw attention in the auditor's report to the related disclosures in the consolidated financial statements and in the group management report or, if such disclosures are inadequate, to modify our respective opinions. Our conclusions are based on the audit evidence obtained up to the date of our auditor's report. However, future events or conditions may cause the Group to cease to be able to continue as a going concern.

- Evaluate the overall presentation, structure and content of the consolidated financial statements, including the disclosures, and whether the consolidated financial statements present the underlying transactions and events in a manner that the consolidated financial statements give a true and fair view of the assets, liabilities, financial position and financial performance of the Group in compliance with IFRSs as adopted by the EU and the additional requirements of German commercial law pursuant to Section 315e (1) HGB.

- Obtain sufficient appropriate audit evidence regarding the financial information of the entities or business activities within the Group to express opinions on the consolidated financial statements and on the group management report. We are responsible for the direction, supervision and performance of the group audit. We remain solely responsible for our opinions.

- Evaluate the consistency of the group management report with the consolidated financial statements, its conformity with German law, and the view of the Group's position it provides.

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- Perform audit procedures on the prospective information presented by management in the group management report. On the basis of sufficient appropriate audit evidence we evaluate, in particular, the significant assumptions used by management as a basis for the prospective information, and evaluate the proper derivation of the prospective information from these assumptions. We do not express a separate opinion on the prospective information and on the assumptions used as a basis. There is a substantial unavoidable risk that future events will differ materially from the prospective information.

We communicate with those charged with governance regarding, among other matters, the planned scope and timing of the audit and significant audit findings, including any significant deficiencies in internal control that we identify during our audit.

We also provide those charged with governance with a statement that we have complied with the relevant independence requirements, and communicate with them all relationships and other matters that may reasonably be thought to bear on our independence, and where applicable, the related safeguards.

From the matters communicated with those charged with governance, we determine those matters that were of most significance in the audit of the consolidated financial statements of the current period and are therefore the key audit matters. We describe these matters in our auditor's report unless law or regulation precludes public disclosure about the matter.

Other Legal and Regulatory Requirements

Report on the Assurance in accordance with Section 317 (3A) HGB on the Electronic Reproduction of the Consolidated Financial Statements and the Group Management Report Prepared for Publication Purposes

We have performed an assurance engagement in accordance with Section 317 (3a) HGB to obtain reasonable assurance about whether the electronic reproduction of the consolidated financial statements and the group management report (hereinafter the "ESEF documents") contained in the provided file ("sartoriusag. zip"; (SHA256-algorithm: 2f3e62534f4898c951688de56871ac6d2f8848828078153132b62110da20abc5 hash value) and prepared for publication purposes complies in all material respects with the requirements of Section 328 (1) HGB for the electronic reporting format ("ESEF format"). In accordance with German legal requirements, this assurance engagement only extends to the conversion of the information contained in the consolidated financial statements and the group management report into the ESEF format and therefore relates neither to the information contained in this reproduction nor any other information contained in the above-mentioned electronic file.

In our opinion, the reproduction of the consolidated financial statements and the group management report contained in the above-mentioned electronic file and prepared for publication purposes complies in all material respects with the requirements of Section 328 (1) HGB for the electronic reporting format. We do not express any opinion on the information contained in this reproduction nor on any other information contained in the above-mentioned file beyond this reasonable assurance conclusion and our audit opinion on the accompanying consolidated financial statements and the accompanying group management report for the financial year from 1 January 2021 to 31 December 2021 contained in the "Report on the Audit of the Consolidated Financial Statements and of the Group Management Report" above.

We conducted our assessment of the reproduction of the consolidated financial statements and the group management report contained in the above-mentioned electronic file in accordance with Section 317 (3a) HGB and the Exposure Draft of the IDW Assurance Standard: Assurance in accordance with Section 317 (3a) HGB on the Electronic Reproduction of Financial Statements and Management Reports Prepared for Publication Purposes (ED IDW AsS 410 (10/2021)) and the International Standard on Assurance Engagements

3000 (Revised). Accordingly, our responsibilities are further described below. Our audit firm has applied the IDW Standard on Quality Management 1: Requirements for Quality Management in Audit Firms (IDW QS 1).

The Company's management is responsible for the preparation of the ESEF documents including the electronic reproduction of the consolidated financial statements and the group management report in accordance with Section 328 (1) sentence 4 item 1 HGB and for the tagging of the consolidated financial statements in accordance with Section 328 (1) sentence 4 item 2 HGB.

In addition, the Company's management is responsible for the internal controls they consider necessary to enable the preparation of ESEF documents that are free from material non-compliance with the requirements of Section 328 (1) HGB for the electronic reporting format, whether due to fraud or error.

The Supervisory Board is responsible for overseeing the process of preparation of the ESEF documents as part of the financial reporting process.

Our objective is to obtain reasonable assurance about whether the ESEF documents are free from material non-compliance with the requirements of Section 328 (1) HGB, whether due to fraud or error. We exercise professional judgment and maintain professional skepticism throughout the assurance engagement. We also:

- Identify and assess the risks of material non-compliance with the requirements of Section 328 (1) HGB, whether due to fraud or error, design and perform assurance procedures responsive to those risks, and obtain assurance evidence that is sufficient and appropriate to provide a basis for our assurance conclusion.

- Obtain an understanding of internal control relevant to the assessment of the ESEF documents in order to design assurance procedures that are appropriate in the circumstances, but not for the purpose of expressing a conclusion on the effectiveness of these controls.

- Evaluate the technical validity of the ESEF documents, i.e. whether the electronic file containing the ESEF documents meets the requirements of Commission Delegated Regulation (EU) 2019/815 in the version applicable on the reporting date relating to the technical specification for this electronic file.

- Evaluate whether the ESEF documents enable an XHTML reproduction with content equivalent to the audited consolidated financial statements and the audited group management report.

- Evaluate whether tagging the ESEF documents with Inline XBRL technology (iXBRL) in accordance with Articles 4 and 6 of Commission Delegated Regulation (EU) 2019/815 in the version applicable on the reporting date provides an appropriate and complete machine-readable XBRL copy of the XHTML reproduction.

Further Information pursuant to Article 10 of the EU Audit Regulation

We were elected as group auditor by the annual general meeting on 26 March 2021. We were engaged by the Supervisory Board on 9 December 2021. We have been the group auditor of the Sartorius AG without interruption since the financial year 2015.

We declare that the opinions expressed in this auditor's report are consistent with the additional report to the audit committee pursuant to Article 11 of the EU Audit Regulation (long-form audit report).

We provided the following services not specified in the consolidated financial statements or in the group management report in addition to auditing the annual financial statements of the Company and the Group companies controlled by it:

In addition to the consolidated financial statements, we audited the annual financial statements of Sartorius Aktiengesellschaft and carried out various audits of annual financial statements of subsidiaries. Reviews of interim financial statements and project-accompanying audits of IT-based accounting-related systems were also performed. In addition, contractual audits have been carried out, such as the review of the non-financial consolidated statement.

Other Matters – Use of the Auditor's Report

Our auditor's report must always be read in connection with the audited consolidated financial statements, the audited group management report and the audited ESEF documents. The consolidated financial statements and group management report converted into the ESEF format – including the versions to be published in the German Federal Gazette (Bundesanzeiger) – are only electronic reproductions of the audited consolidated financial statements and the audited group management report and do not replace them. In particular, the ESEF report and our opinion in it must be used only in conjunction with the audited ESEF documents provided in electronic form.

German Public Auditor Responsible for the Engagement

The German Public Auditor responsible for the engagement is Frank Thiele.

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Original German version signed by:

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Executive Board and Supervisory Board

During Fiscal 2021

Executive Board

Dr. Joachim Kreuzburg
Dipl.-Ingenieur (Graduate Engineer)
CEO and Chairman
Executive for Labor Relations
Corporate Strategy, Human Resources, Corporate Research, Legal Affairs & Compliance and Corporate Communications
Born April 22, 1965
Resident of Göttingen, Germany
Member since November 11, 2002
"Sprecher" (Spokesman) from May 1, 2003, to November 10, 2005
Chairman since November 11, 2005
Appointed until November 10, 2025

Rainer Lehmann
Dipl.-Kaufmann (Graduate in Business Administration)
Finance, IT and Business Processes
Born March 2, 1975
Resident of Brightwaters, New York, USA
Member since March 1, 2017
Appointed until February 28, 2025

Dr. René Fáber
Dipl.-Chemiker (Graduate Chemical Engineer)
Bioprocess Solutions Division
Born July 18, 1975
Resident of Göttingen, Germany
Member since January 1, 2019
Appointed until December 31, 2026

John Gerard Mackay
B.Sc. Honors Degree in Biochemistry
Master of Education
Lab Products & Services Division
Born May 11, 1962
Resident of Glasgow, Scotland, UK
Member since January 1, 2019
Appointed until December 31, 2023

Supervisory Board

Dr. Lothar Kappich
Dipl.-Ökonom (Graduate Economist)
Chairman
Freelance Consultant, formerly Managing Director of ECE Projektmanagement GmbH & Co. KG
in Hamburg, Germany
Resident of Hamburg, Germany

Manfred Zaffke
Dipl.-Volkswirt (Graduate Political Economist)
Vice Chairman
First Authorized Representative of the German Metalworkers' Union (IG Metall) in the southern
Lower Saxony/Harz region in Northeim, Germany
Resident of Osterode am Harz, Germany

Annette Becker
Personalfachkauffrau (HR Specialist)
Chairwoman of the Employees' Council of Sartorius Corporate Administration GmbH
in Göttingen, Germany
Chairwoman of the Group Employees' Council of Sartorius AG in Göttingen, Germany
Resident of Göttingen, Germany

Hermann Jens Ritzau
Chairman of the Employees' Council of Sartorius Lab Instruments GmbH & Co. KG in Göttingen, Germany
Member since March 1, 2021
Resident of Katlenburg-Lindau, Germany

Dietmar Müller
Betriebswirt (VWA Göttingen) (Business Economist)
Chairman of the Employees' Council of Sartorius Stedim Biotech GmbH in Göttingen, Germany
Resident of Gleichen, Germany

Dr. Daniela Favoccia
Attorney and Partner of the Hengeler Mueller partnership of lawyers in Frankfurt am Main, Germany
Resident of Frankfurt am Main, Germany

Petra Kirchhoff
Dipl.-Volkswirtin (Graduate Political Economist)
Head of Corporate Communications and Investor Relations
Sartorius Corporate Administration GmbH in Göttingen, Germany
Resident of Göttingen, Germany

Karoline Kleinschmidt
Dipl.-Sozialwirtin (Graduate Social Economist)
Secretary and First Authorized Representative of the
German Metalworkers' Union (IG Metall) in the Alfeld-Hameln-Hildesheim region in Hameln, Germany
Resident of Hanover, Germany

Professor David Raymond Ebsworth, Ph.D.
B.Sc. in Chemistry and German; Ph.D. in Comparative Industrial Relations
Consultant, especially in the Healthcare and Financial Investment Industry
Resident of Overath, Germany

Ilke Hildegard Panzer
M.Sc. in Engineering, Computer and Systems Engineering
Chief Executive Officer of Assurance Laboratories LLC in Milwaukee, Wisconsin, USA
Resident of Fredonia, Wisconsin, USA

Prof. Dr. Thomas Scheper
Dipl.-Chemiker (Graduate Chemical Engineer)
University professor and deputy director of the Institute of
Technical Chemistry, Gottfried Wilhelm Leibnitz University in Hanover, Germany
Resident of Hanover, Germany

Prof. Dr. Klaus Rüdiger Trützschler
Dipl.-Wirtschaftsmathematiker (Graduate Business Mathematician)
and Dipl.-Mathematiker (Graduate Mathematician)
Resident of Essen, Germany

Uwe Bretthauer
Dipl.-Ingenieur (Graduate Engineer)
Member of the Employees' Council of Sartorius Lab Instruments GmbH & Co. KG in Göttingen, Germany
Member until February 28, 2021
Resident of Göttingen, Germany

Committees of the Supervisory Board

Executive Task Committee

Dr. Lothar Kappich (Chairman)
Manfred Zaffke
Annette Becker (member since March 26, 2021)
Prof. Dr. Klaus Rüdiger Trützschler

Uwe Bretthauer (member until February 28, 2021)

Audit Committee

Prof. Dr. Klaus Rüdiger Trützschler (Chairman)
Manfred Zaffke
Dietmar Müller (member since March 26, 2021)
Dr. Lothar Kappich

Uwe Bretthauer (member until February 28, 2021)

Conciliation Committee

Dr. Lothar Kappich (Chairman)
Manfred Zaffke
Annette Becker (member since March 26, 2021)
Prof. Dr. Klaus Rüdiger Trützschler

Uwe Bretthauer (member until February 28, 2021)

Nomination Committee

Dr. Lothar Kappich
Dr. Daniela Favoccia
Prof. Dr. Klaus Rüdiger Trützschler

Positions Held by the Members of the Executive Board as of December 31, 2021

Dr. Joachim Kreuzburg

Positions held within the Group:
Président-Directeur Général (CEO) of:

- Sartorius Stedim Biotech S.A., France

On the Supervisory Board of:

- Sartorius Stedim Biotech GmbH, Germany, Chairman

On the Beirat (Advisory Board) of:

- LabTwin GmbH, Germany, Chairman

On the Board of Directors of:

- Sartorius North America, Inc., USA, Chairman

External positions:
On the Supervisory Board of:

- Carl Zeiss AG, Germany

On the Verwaltungsrat (Administrative Board) of:

- Ottobock Management SE, Germany

On the Wirtschaftsbeirat (Economic Advisory Board) of:

- Norddeutsche Landesbank, Germany

Rainer Lehmann

Positions held within the Group:
On the Board of Directors of:

- Sartorius Corporation, USA
- Sartorius North America, Inc., USA
- Sartorius Stedim North America, Inc., USA
- Essen Instruments, Inc., USA
- Sartorius BioAnalytical Instruments, Inc., USA
- Sartorius Stedim Filters, Inc., Puerto Rico

External positions:
On the Unternehmerbeirat (Employers' Advisory Board) of:

- Gothaer Versicherungsbank VVaG, Germany

On the Regionalbeirat (Regional Advisory Board) of:

- Commerzbank AG, Germany

Dr. René Fáber
Positions held within the Group:
On the Conseil d'Administration (Board of Directors) of:

- Sartorius Stedim Biotech S.A., France

On the Supervisory Board of:

- Xell AG, Germany, Chairman
- Sartorius Stedim Biotech GmbH, Germany, Vice Chairman

On the Beirat (Advisory Board) of:

- Sartorius CellGenix GmbH, Germany, Chairman

On the Board of Directors of:

- Sartorius Stedim (Shanghai) Trading Co., Ltd., China
- Sartorius Stedim Japan K.K, Japan
- Sartorius Korea Biotech Co., Ltd., South Korea
- Sartorius Korea Operations LLC, South Korea

On the Comité Exécutif (Executive Committee) of:

- Sartorius Stedim FMT S.A.S., France, Chairman

On the Advisory Board of:

- BIA SEPARATIONS d.o.o., Slovenia, Chairman

External positions:
On the Beirat (Advisory Board) of:

- Curexsys GmbH, Germany

John Gerard Mackay
Positions held within the Group:
On the Board of Directors of:

- Essen Instruments, Inc., USA
- Sartorius BioAnalytical Instruments, Inc., USA
- Sartorius Biohit Liquid Handling Oy, Finland
- Sartorius Stedim BioOutsource Ltd., Scotland, UK
- Sartorius Scientific Instruments (Beijing) Co., Ltd., China, Vice Chairman
- Sartorius Hong Kong Ltd., China
- Sartorius ForteBio (Shanghai) Co., Ltd., China
- Sartorius (Shanghai) Trading Co., Ltd., China
- Sartorius Japan K.K, Japan
- Sartorius Korea Ltd., South Korea

External positions:
None

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Positions Held by the Members of the Supervisory Board as of December 31, 2021

Dr. Lothar Kappich
Positions held within the Group:
On the Conseil d'Administration (Board of Directors) of:

- Sartorius Stedim Biotech S.A., France

External positions:
None

Manfred Zaffke
Positions held within the Group:
None

External positions:
On the Supervisory Board of:

- Demag Cranes & Components GmbH, Germany
- Konecranes Holding GmbH, Germany

Annette Becker
None

Hermann Jens Ritzau
None

Dietmar Müller
Positions held within the Group:
On the Supervisory Board of:

- Sartorius Stedim Biotech GmbH, Germany

External positions:
Deputy member of the General Assembly of:

- Gesellschaft für Gemeindeentwicklung und Wirtschaftsförderung Gleichen mbH (company for community and business development), Germany

Dr. Daniela Favoccia
None

Petra Kirchhoff
Positions held within the Group:
None

External positions:
On the Stock Exchange Council (Börsenrat) of:

- The Hanover Stock Exchange of Lower Saxony (Niedersächsiche Börse zu Hannover), Germany

Karoline Kleinschmidt
None

Professor David Raymond Ebsworth, Ph.D.
Positions held within the Group:
None

External positions:
On the Board of Directors of:

- Verona Pharma plc, UK, Chairman
- Actimed Therapeutics Ltd., UK, Chairman
- Kyowa Kirin International plc, UK
- Interpharma Investments Ltd., British Virgin Islands

On the Supervisory Board of:

- Synlab AG, Germany, Chairman

On the Verwaltungsrat (Administrative Board) of:

- Opterion Health AG, Switzerland, Chairman

Ilke Hildegard Panzer
None

Prof. Dr. Thomas Scheper
None

Prof. Dr. Klaus Rüdiger Trützschler
Positions held within the Group:
None

External positions:
On the Supervisory Board of:

- Zwiesel Kristallglas AG, Germany, Chairman

On the Beirat (Advisory Board) of:

- Odenwald Faserplatten GmbH, Germany

- SHGS Beteiligungs GmbH, Germany (member until December 31, 2021)