



BASF Factbook

Information for investors
and analysts

Published June 2021

 **BASF**

We create chemistry

Cautionary note regarding forward-looking statements

This publication contains forward-looking statements. These statements are based on current estimates and projections of the Board of Executive Directors and currently available information. Forward-looking statements are not guarantees of the future developments and results outlined therein. These are dependent on a number of factors; they involve various risks and uncertainties; and they are based on assumptions that may not prove to be accurate. Such risk factors include those discussed in Opportunities and Risks on pages 158 to 166 of the BASF Report 2020. BASF does not assume any obligation to update the forward-looking statements contained in this publication above and beyond the legal requirements.



The new acetylene plant at the BASF Verbund site in Ludwigshafen has an annual capacity of 90,000 metric tons and replaces an almost 60-year-old plant. Around 20 plants at the Ludwigshafen site use acetylene as a chemical building block and starting material for manufacturing many everyday products, including pharmaceuticals, plastics, solvents, electronic chemicals and highly elastic textile fibers. BASF customers use these products in the automotive, pharma, construction, consumer goods and textile industries. The integration of the plant into BASF's Verbund system offers advantages such as efficient use of resources, excellent production synergies and short supply routes. In this way, BASF is further enhancing the long-term competitiveness of the Ludwigshafen site.

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At a Glance

At BASF, we create chemistry for a sustainable future. We combine economic success with environmental protection and social responsibility. More than 110,000 employees in the BASF Group contribute to the success of our customers in nearly all sectors and almost every country in the world. Our portfolio is organized into six segments: Chemicals, Materials, Industrial Solutions, Surface Technologies, Nutrition & Care and Agricultural Solutions.

Smart Verbund concept

production, technology, market, digitalization

With companies in ~90 countries

we contribute to our customers' success

Broad portfolio

6 segments, 11 operating divisions, 75 strategic business units

Organizational development

for greater customer proximity, increased competitiveness and profitable growth

Structure of BASF

Percentage of total sales in 2020

Segment	Sub-segment	Percentage
1	Chemicals	14%
	– Petrochemicals	
	– Intermediates	
2	Materials	18%
	– Performance Materials	
	– Monomers	
3	Industrial Solutions	13%
	– Dispersions & Pigments	
	– Performance Chemicals	
4	Surface Technologies	28%
	– Catalysts	
	– Coatings	
5	Nutrition & Care	10%
	– Care Chemicals	
	– Nutrition & Health	
6	Agricultural Solutions	13%
	– Agricultural Solutions	
7	Other	4%



Key figures

Million €

	2016	2017	2018	2019	2020
Sales	57,550	61,223 ¹	60,220 ²	59,316	59,149
Income from operations before depreciation, amortization and special items	10,327	10,738 ¹	9,271 ²	8,324 ⁴	7,435
Income from operations before depreciation and amortization (EBITDA)	10,526	10,765 ¹	8,970 ²	8,185 ⁴	6,494
Income from operations (EBIT) before special items	6,309	7,645 ¹	6,281 ²	4,643 ⁴	3,560
Income from operations (EBIT)	6,275	7,587 ¹	5,974 ²	4,201 ⁴	-191
Net income	4,056	6,078	4,707	8,421	-1,060
Return on capital employed (ROCE)	%	15.4	12.0 ²	7.7	1.7
Earnings per share (EPS)	€	4.42	6.62	5.12	9.17
Adjusted earnings per share (EPS)	€	4.83	6.44	5.87	4.00
Dividend per share	€	3.00	3.10	3.20	3.30
Dividend yield ³	%	3.4	3.4	5.3	4.9
Cash flows from operating activities		7,717	8,785	7,939	7,474
Free cash flow		3,572	4,789	4,045	3,650

¹ Figures for 2017 were restated with the presentation of the oil and gas activities as discontinued operations.

² Figures for 2018 were restated with the presentation of the construction chemicals activities as discontinued operations.

³ Based on year-end share price

⁴ The 2019 figures have been restated to reflect the reclassification of income from non-integral companies accounted for using the equity method to net income from shareholdings. For more information, see the BASF Report 2020, pages 232 to 234.

Regional footprint 2020

North America

Sales €15,709 million
Employees 16,948

Europe

Sales €23,129 million
Employees 68,849

Asia Pacific

Sales €15,406 million
Employees 17,753



South America, Africa, Middle East

Sales €4,905 million
Employees 6,752

- Regional centers
- Selected sites
- Verbund sites
- ▨ Planned Verbund site
- Selected research and development sites

Sales by location of customer;
employees as of December 31, 2020

Key facts

- More than 110,000 employees worldwide – including around 10,000 in research and development
- Around 90,000 customers from various sectors in almost every country in the world
- Six world-scale Verbund sites as well as 241 production sites worldwide
- Know-How Verbund with eight academic research alliances, complemented by cooperations with around 250 universities and research institutes as well as collaborations with a large number of companies; around 950 new patents filed in 2020

Management Board

Board of Executive Directors of BASF SE

(Responsibilities as of June 1, 2021)



Dr. Martin Bruder Müller

Chairman of the Board of Executive Directors

60 years old, 33 years at BASF

Responsibilities:

Corporate Legal, Compliance & Insurance; Corporate Development; Corporate Communications & Government Relations; Corporate Human Resources; Corporate Investor Relations



Dr. Hans-Ulrich Engel

Vice Chairman of the Board of Executive Directors, Chief Financial Officer and Chief Digital Officer

62 years old, 33 years at BASF

Responsibilities:

Corporate Finance; Corporate Audit; Corporate Taxes & Duties; Global Business Services; Global Digital Services; Global Procurement



Saori Dubourg

49 years old, 24 years at BASF

Responsibilities:

Agricultural Solutions; Care Chemicals; Nutrition & Health; Europe



Michael Heinz

57 years old, 37 years at BASF

Responsibilities:

Monomers; Performance Materials; Petrochemicals; Intermediates; North America; South America



Dr. Markus Kamieth

50 years old, 22 years at BASF

Responsibilities:

Catalysts; Coatings; Dispersions & Pigments; Performance Chemicals; Greater China; South & East Asia, ASEAN & Australia/New Zealand; Megaprojects Asia



Dr. Melanie Maas-Brunner

Chief Technology Officer, Industrial Relations Director

52 years old, 24 years at BASF

Responsibilities:

Corporate Environmental Protection, Health & Safety; European Site & Verbund Management; Global Engineering Services; Advanced Materials & Systems Research; Bioscience Research; Process Research & Chemical Engineering; BASF New Business

Supervisory Board of BASF SE

Shareholder representatives

Dr. Kurt Bock

Chairman of the Supervisory Board of BASF SE; Former Chairman of the Board of Executive Directors of BASF SE

Franz Fehrenbach

Vice Chairman of the Supervisory Board of BASF SE; Chairman of the Supervisory Board of Robert Bosch GmbH

Prof. Dr. Thomas Carell

Professor for Organic Chemistry at Ludwig Maximilian University Munich

Dame Alison J. Carnwath DBE

Senior Advisor Evercore Partners

Liming Chen

Chairman of IBM Greater China Group

Anke Schäferkordt

Member of supervisory boards

Employee representatives

Sinischa Horvat

Vice Chairman of the Supervisory Board of BASF SE; Chairman of the BASF Works Councils Ludwigshafen Site and Europe, and of BASF's Joint Works Council

Tatjana Diether

Member of the BASF Works Councils Ludwigshafen Site and Europe

Waldemar Helber

Deputy Chairman of the Works Council of BASF SE, Ludwigshafen Site

Denise Schellemans

Full-time trade union delegate at BASF Antwerpen N.V.

Roland Strasser

Regional Manager of the Rhineland-Palatinate/Saarland branch of the Mining, Chemical and Energy Industries Union (IG BCE)

Michael Vassiliadis

Chairman of the Mining, Chemical and Energy Industries Union (IG BCE)

For further information, please refer to basf.com/share/supervisory-board

Two-tier management system of BASF SE

Board of Executive Directors

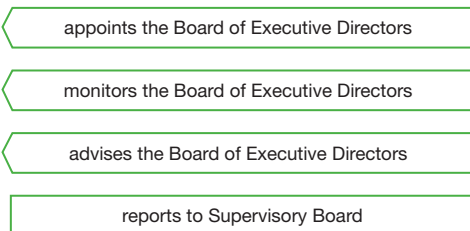


6 members

appointed by the Supervisory Board

Chairman

appointed by the Supervisory Board



Supervisory Board



12 members

6 shareholder representatives elected by the Annual Shareholders' Meeting and 6 employee representatives

Chairman

elected by the Supervisory Board

The Supervisory Board works hand in hand with the Board of Executive Directors to ensure long-term succession planning for the composition of the Board of Executive Directors. BASF aims to fill most Board positions with candidates from within the company. It is the task of the Board of Executive Directors to propose a sufficient number of suitable candidates to the Supervisory Board.

The aim is to enable the Supervisory Board to ensure a reasonable level of diversity with respect to education and professional experience, cultural background, international representation, gender and age when appointing members of the Board of Executive Directors. Irrespective of these individual criteria, a holistic approach will ultimately determine a person's suitability for appointment to the Board of Executive Directors of BASF SE.

For more information on the competence profiles, diversity concepts and composition goals, see BASF Report 2020, page 169 onward.

BASF Verbund

Our unique Verbund concept is one of BASF's greatest strengths. The driving principle of the Verbund concept is to add value through the efficient use of resources. At our Verbund sites, production plants, energy and material flows, logistics, and site infrastructure are all integrated.

BASF currently operates six Verbund sites worldwide: two in Europe, two in North America and two in Asia. Our Verbund site in Ludwigshafen, Germany, is the world's largest chemical complex owned by a single company that was developed as an integrated network. We are building a seventh Verbund site in Zhanjiang, in the Chinese province of Guangdong.

The Verbund system creates efficient value chains that extend from basic chemicals all the way to consumer products. In this system, chemical processes make use of energy more efficiently, achieve higher product yields and conserve resources. By-products of one process are used as starting materials for another process. We thus save on raw materials and energy, minimize emissions, cut logistics costs and realize synergies. BASF operates an additional 241 production sites worldwide, but the six Verbund sites produce more than 50% of our volumes. This is a testament to the importance and strength of the Verbund concept within BASF.

The Verbund creates opportunities to reduce emissions, waste and resource consumption. Around half of the Verbund advantages stem from wastewater, steam and electricity savings compared to BASF's non-Verbund sites as well as compared to publicly available data on industry cost averages. The remaining 50% of the savings are achieved in logistics and material handling due to our chemical integration (using pipelines instead of filling and transporting via truck/railway/ship). These benefits make the Verbund sites our most efficient sites.



Strong sustainability performance

Value chains in integrated Verbund structures can be steered efficiently to conserve resources and reduce CO₂ emissions.

More than 70% of BASF Group's electricity demand is met by gas and steam turbines in our highly efficient combined heat and power plants. Compared with separate methods of generating steam and electricity, we saved 12.0 million MWh of fossil fuels in 2020 and avoided 2.4 million metric tons of carbon emissions. In 2020, internally generated power in the BASF Group had a carbon footprint of around 0.24 metric tons of CO₂ per MWh of electricity, as compared to 0.41 metric tons of CO₂ per MWh for purchased electricity calcu-

lated using a market-based approach. Our carbon intensity was below the national grid factor at most BASF Group locations. As part of our carbon management, we aim to reduce the carbon footprint of purchased electricity.

The Verbund system is an important component of our energy efficiency strategy: Waste heat from one plant's production process is used as energy in other plants. In this way, the Verbund saved us around 18.7 million MWh in 2020, which translates to 3.8 million metric tons less CO₂ released into the environment. With combined power and steam generation as well as our optimized Energy Verbund, we were thus able to avoid a total of 6.2 million metric tons of carbon emissions in 2020.

Verbund effects strengthen portfolio

The Verbund goes beyond **production**. It has several additional dimensions that all contribute across the businesses to strengthen our portfolio and to create value. By managing our **value chains**, we ensure the competitive and flexible supply of key raw materials and products to all segments.

We have strong **technological competence** in production processes but also in research, product development and our customers' applications. This know-how is available to all segments through our technology platforms.

Digitalization is an integral part of our business and we harvest the benefits from the vast amount of data generated across BASF. Using and connecting this data intelligently, we can increase the efficiency of our processes and provide many new opportunities to create additional value for our customers.

By combining the specific expertise of each business, we want to be the preferred supplier for our customers in the different **markets**.

Examples from our Technology Verbund

Expertise in catalysis

Developing and using chemical catalysts that vastly speed up chemical reactions has been a core competence of BASF since the realization of the first large-scale synthesis of ammonia in 1913. Today, catalysis is employed in almost every value chain at BASF. Catalysts are required to make more than 90% of our products in an efficient and sustainable way.

BASF is the global leader in catalyst production for chemical, automotive and refinery applications. The know-how to develop, manufacture and employ catalysts for all these different applications is bundled in one research platform, creating significant synergies

- 6.2 million metric tons of CO₂ emissions avoided globally in 2020
- Integration enables drop-in solutions for bio-based and recycled feedstock for low-carbon products

Production

Value Chains

- Ensure competitive supply of key raw materials and products to all segments while avoiding CO₂ emissions



Technologies

- Leverage technological advantages and innovation across all segments
- Unique expertise in developing and integrating new, low-emission technologies

Digitalization

- Harvest the advantages offered by digitalization across BASF, for example, by calculating product carbon footprints

Markets

- Create customer relevance through size and broad portfolio

across the company. For example, the same principles applied in mobile emissions catalysts to destroy toxic compounds, such as nitrous oxides, can be used in the cleanup of industrial off-gases from upstream plants.

In the future, due to an increasing focus on carbon emissions and waste recycling, even more robust catalysts will be needed to handle the impurities found in, for instance, bio-based raw materials and plastic waste. With our broad experience across many chemical value chains, BASF's catalyst R&D is well equipped to tackle these challenges.

White biotechnology and fermentation technologies

Future growth in many of our markets will be driven by trends like growing consumer awareness and the resulting demand for sustainable product solutions, natural and organic ingredients and their traceability. Innovation will be the key driver here, which is why we

are working on approaches beyond the existing purely chemical solutions with research and development in white biotechnology and fermentation technologies. Our enzymes unit, founded in 2018, centrally steers the research, technology and production of the enzyme businesses at BASF. In addition, this business unit markets enzymes directly.

Verbund flexibility and adaptability

Despite its complexity, the Production Verbund can respond flexibly to fluctuating demand and changing markets. The Verbund Simulator is a proprietary digital tool that helps us optimize the Verbund. Within the Verbund, each business unit must create value for BASF. Therefore, we apply an internal market-based transfer pricing system that avoids cross-subsidization and provides transparency as we actively manage and optimize our value chains.

Strategy

Corporate strategy

At BASF, we are passionate about chemistry and our customers. We want to be the world's leading chemical company for our customers, grow profitably and create value for society. Thanks to our expertise, our innovative and entrepreneurial spirit, and the power of our Verbund integration, we make a decisive contribution to changing the world for the better. This is our goal. This is what drives us and what we do best: We create chemistry for a sustainable future.

The world is facing major challenges. Climate change is advancing, the world's population is growing and so is its need for food. More and more people live in cities and the demand for individual mobility is rising. At the same time, natural resources are limited. More than ever before, we need solutions that make sustainable growth possible. Chemistry plays a key role here. It can help to overcome global challenges in almost all areas of life. By combining our expertise with our customers' competence, we can together develop sustainable and profitable solutions.

Our innovations, products and technologies help to use natural resources more efficiently, produce enough food for everyone, reduce emissions, enable climate-smart mobility, improve the capabilities of renewable energy, and make buildings more energy efficient, among other things. Our purpose reflects what we do and why we do it: We create chemistry for a sustainable future.

Corporate purpose

We create chemistry for a sustainable future

Global trends provide opportunities for growth in the chemical industry

Population growth:

Driven by the emerging markets

+25%
2020 to 2050

Digitalization:

Rapid growth in volume of data

456
zettabytes in 2030

China the largest market:

Share of global chemical market

~50%
by 2030

Climate change:

Required reduction of global greenhouse gas emissions to achieve the 2°C goal

-70%
by 2050 (baseline 1990)

Circular economy:

Non-recycled plastic waste worldwide

~200
million metric tons per year

Electromobility:

Growing demand for battery materials until 2030

~25%
per year

Sources: U.N., IEA, Conversio, UBS Foresight, BASF









We want to continue to grow profitably and make a positive contribution to society and the environment. We see disruptive changes in the chemical industry – like the advance of digitalization, the development of circular economy models or the transformation to climate-neutral production – as an opportunity. We have set ourselves ambitious targets along the entire value chain (see page 10). Our customers and their needs are at the core of our strategy. We want to maintain our leading position in an increasingly competitive environment. To achieve this, we are accelerating our innovation

processes and deepening cooperation with our customers. We are systematically aligning our portfolio with growth areas and integrating sustainability into our value chains even more strongly. Our Verbund structure is the basis for efficient, safe and reliable production both now and in the future. We leverage digital technologies to continuously improve processes and customer relationships, for example.



We create a working environment that best enables our employees to contribute to BASF's success.

Status of Target Achievement in 2020¹





Profitable growth

	Target	2020 status	SDG ²
Achieve a return on capital employed (ROCE) considerably above the cost of capital percentage every year	>9%	1.7%	 
Grow sales volumes faster than global chemical production every year	>-0.4%	-0.5%	 
Increase EBITDA before special items by 3%–5% per year	3%–5%	-10.7%	 
Increase the dividend per share every year based on a strong free cash flow	>€3.30	€3.30	 





Effective climate protection¹

	Target	2020 status	SDG
We want to reduce our absolute CO₂ emissions³ by 25 percent by 2030 (Development of carbon emissions compared with baseline 2018)	≤16.4 million metric tons	20.8 million metric tons	
We aim to achieve net zero CO ₂ emissions ³ by 2050			


Sustainable product portfolio

	Target	2020 status	SDG
Achieve €22 billion in Accelerator sales by 2025	€22.0 billion	€16.7 billion	   



Responsible procurement

	Target	2020 status	SDG
Cover 90% of our relevant spend with sustainability evaluations by 2025	90%	80%	 
Have 80% of our suppliers improve their sustainability performance upon re-evaluation	80%	68%	 

Resource efficiency and safe production

	Target	2020 status	SDG
Reduce worldwide process safety incidents per 200,000 working hours to ≤0.1 by 2025	≤0.1	0.3	 
Reduce the worldwide lost-time injury rate per 200,000 working hours to ≤0.1 by 2025	≤0.1	0.3	
Introduce sustainable water management at our production sites in water stress areas and at our Verbund sites by 2030	100%	46.2%	 

Employee engagement and diversity

	Target	2020 status	SDG
Increase the proportion of women in leadership positions with disciplinary responsibility to 30% by 2030	30%	24.3%	
More than 80% of our employees feel that at BASF, they can thrive and perform at their best	>80%	82%	

 Most important key performance indicators

¹ Targets as published in the BASF Report 2020; CO₂ targets updated on March 26, 2021

² The objective of these targets is to steer our business into a sustainable future and, at the same time, contribute to the implementation of the United Nations' Sustainable Development Goals (SDGs)

³ The goal includes Scope 1 and Scope 2 emissions. Other greenhouse gases are converted into CO₂ equivalents according to the Greenhouse Gas Protocol.

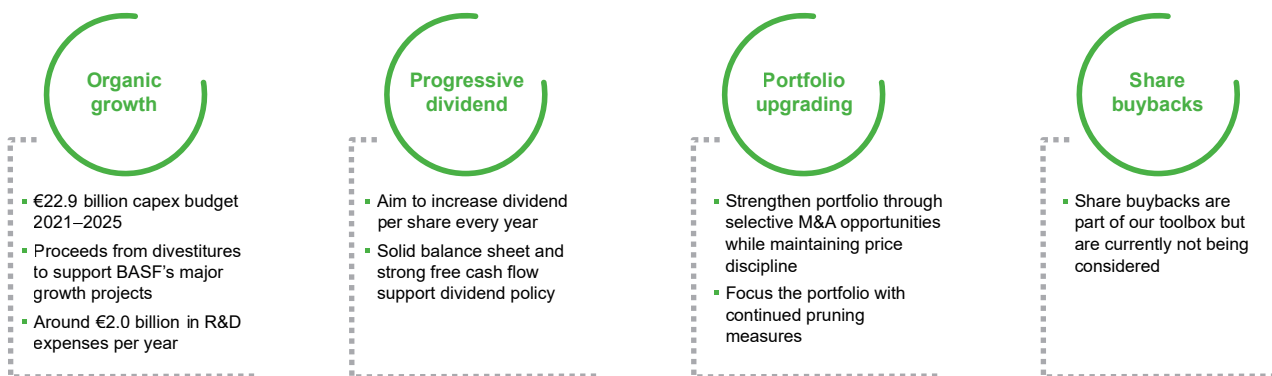
Our strategic action areas

We want to maintain our leading position in an increasingly competitive environment. To achieve this, we are accelerating our innovation processes and deepening cooperation with our customers. We are systematically aligning our portfolio with growth areas and integrating sustainability into our value chains even more strongly. Our Verbund structure is the basis for efficient, safe and reliable production both now and in the future. We leverage digital technologies to continuously improve processes and customer relationships, for example. We create a working environment that best enables our employees to contribute to BASF's success.

Innovation

Innovation is the bedrock of our success. BASF is an innovation leader in the chemical industry, with around 10,000 employees in research and development and R&D spending of around €2.1 billion. We continue to build on these strengths by bringing research and development closer together and making our customers' demands a greater part of our innovation process. We involve them at an earlier stage and are expanding our partnerships with customers and external partners.

Use of cash – clear focus on long-term shareholder value



Sustainability

A key driver for us is sustainability. We want to create value for the environment, society and business with our products, solutions and technologies. We pledged our commitment to sustainability in 1994 and since then, have systematically aligned our actions with the principles of sustainability. We want to further cement our position as a thought leader in sustainability, which is why we are increasing the relevance of sustainability in our steering processes and business models. This establishes us as a key partner supporting our customers, opens up new growth areas and secures the long-term success of our company.

Operations

Our core business is the production and processing of chemicals. Our strength here lies – both now and in the future – in the Verbund and its integrated value chains. The Verbund offers us many technological, market, production-related and digital advantages. Our comprehensive product portfolio, which ranges from basic chemicals to custom system solutions, enables us to meet the increasingly diverse needs of our customers with a differentiated offering. This is complemented by our global presence and decades of experience, which have allowed us to develop an in-depth under-

standing of the needs and landscape of local markets. At the same time, value chains in integrated Verbund structures can be steered efficiently to conserve resources and reduce CO₂ emissions.

Digitalization

Digitalization is an integral part of our business. We want to significantly improve the availability and quality of our process data. To achieve this, we will digitalize processes at more than 420 plants worldwide by 2022. We will systematically analyze this data to further automate processes and in this way, increase efficiency, for example with predictive maintenance. In addition, combining internal and external data provides many new opportunities to manage our businesses more efficiently, improve processes and create value added for our customers.

Portfolio

The acquisitions and divestitures made in the past few years have oriented our portfolio toward innovation-driven growth areas. The acquisition of the integrated polyamide business from Solvay and the purchase of various businesses from Bayer further strengthened our positions in engineering plastics and in the agricultural sector. We completed the divestiture of our construction chemicals business to Lone Star in 2020 as planned and aim to close the sale of our pigments business to DIC, subject to the fulfillment of clearance conditions by DIC.

People

Our employees are key to BASF's success. That is why we believe that it is important to have a working environment that fosters employees' individual talents and enables them and their teams to perform at their best. We are pursuing three action areas to make our high-performance organization even more so: empowerment, differentiation and simplification. We value diversity in people, opinions and experience as being crucial to creativity and innovation. We embrace bold ideas, help our employees to implement them and learn from setbacks.

Customer focus

Our customers are our number one priority. BASF supplies products and services to around 90,000 customers¹ from various sectors in almost every country in the world. Our customer portfolio ranges from major global customers and small and medium-sized enterprises to end consumers. Our comprehensive product portfolio means that we are active in many value chains and value creation networks. We use various business strategies, which we adapt to the needs of individual industries and markets. These range from cost leadership in basic chemicals to tailored, customer-specific system solutions.

We want to be our customers' most attractive partner for all challenges that can be solved with chemistry. This is why we continue to drive forward our focus on customers and their needs. We are refining our organizational structure so that our operating divisions can flexibly address specific market requirements and differentiate themselves from the competition. In addition, we are simplifying and digitalizing our processes to make the way we work more effective, more efficient and more agile.

We are continuously increasing transparency for our customers and improving our customer service with a range of measures. For instance, we have used the Net Promoter System[®] since 2019. We are constantly improving our problem-solving skills, product quality and delivery reliability based on customer feedback. In 2020, we also started the global rollout of Salesforce, a new, integrated IT-based customer relationship management system. The user-friendly application helps sales employees deliver even better customer support and simplifies their work.

Business Segments

Above and beyond this, we want to intensify cooperation with our customers and leverage growth potential together with them. For instance, we have created interdisciplinary teams in our business units to even better and more quickly address the needs of our most important customers. Cooperation and innovation are also the focus at our Creation Centers in Ludwigshafen, Germany; Mumbai, India; Shanghai, China; and Yokohama, Japan. These creative centers bring together our comprehensive materials, design, and – in particular – our digital development expertise in high-performance plastics using the latest visualization and collaboration technologies. This enables us to transform our customers' ideas into tailored products and applications even more quickly – everything in one place, from initial inspiration to solution.

Our customers' satisfaction is the basis for our success, which is why quality management is of vital significance for BASF. We strive to continually improve processes and products. This is also reflected in our Global Quality Policy. The majority of our production sites and business units are certified according to ISO 9001.² In addition, we also meet industry and customer-specific quality requirements such as IATF 16949 certification for the automotive industry.

In 2020, we once again received awards from a number of highly satisfied customers.

[For more information on customer awards, see BASF Report 2020, page 27 and 28](#)

BASF sales by industry 2020

Direct customers	
>20%	Chemicals and plastics Transportation
10%–20%	Agriculture Consumer goods
< 10%	Construction Electronics Energy and resources Health and nutrition

Financials



Ultrasim[®]: Shorter development times thanks to virtual simulation

Technical progress requires innovative materials. This is why engineering plastics are being used in more and more sectors and applications. They are often significantly lighter than conventional materials, are usually easier to process and offer advantages such as heat and impact resistance or mechanical strength. As a leading manufacturer, BASF not only offers a comprehensive portfolio of high-performance plastics, but also has extensive expertise in computer-aided engineering (CAE). Ultrasim, our virtual simulation tool, covers the entire process chain – from the selection of suitable materials and the development of virtual prototypes to the optimal production process for the component. Our customers find out quickly, precisely and reliably how our materials behave in specific applications. This reduces development times and saves costs for complex tests.

[For more information on Ultrasim, see basf.com/en/ultrasim](https://www.basf.com/en/ultrasim)

¹ The number of customers refers to all external companies (sold-to parties) that had contracts with the BASF Group in the business year concerned under which sales were generated.
² ISO 9001 is a standard published by the International Organization for Standardization (ISO) and sets out the requirements for a quality management system.

Innovation

Supplying a fast-growing global population with food, energy and clean water, making the best use of limited natural resources and protecting our climate are among the greatest challenges of our time. Innovations based on chemistry play a pivotal role in overcoming these. New, resource-efficient solutions and business models are needed to decouple growth from the consumption of finite resources. Together with our customers from almost all sectors, we are working on innovative processes, technologies and products for a sustainable future. This is how we ensure our long-term business success and that of our customers.

Innovation has always been the key to BASF's success, especially in a challenging market environment. The knowledge and skills of our highly qualified employees are our most valuable resource here and the source of our innovative strength. We had approximately 10,000 employees involved in research and development worldwide in 2020.

Our three global research divisions are run from our key regions – Europe, Asia Pacific and North America: Process Research & Chemical Engineering (Ludwigshafen, Germany); Advanced Materials & Systems Research (Shanghai, China); and Bioscience Research (Research Triangle Park, North Carolina). Together with the development units in our operating divisions, they form the core of our global Know-How Verbund. BASF New Business GmbH and BASF Venture Capital GmbH supplement this network with the task of developing new technologies, attractive markets and new business models for BASF.

In 2020, we generated sales of around €10 billion with products launched on the market in the past five years that stemmed from research and development activities. In the long term, we aim to continue significantly increasing sales and earnings with new and improved products – especially with Accelerator products, which make a substantial sustainability contribution in the value chain.

Global network

Our global network of outstanding universities, research institutes and companies forms an important part of our Know-How Verbund. It gives us direct access to external scientific expertise, talented minds from various disciplines as well as new technologies, and helps us to quickly develop targeted, marketable innovations, strengthen our portfolio with creative new projects, and in this way, reach our growth targets.

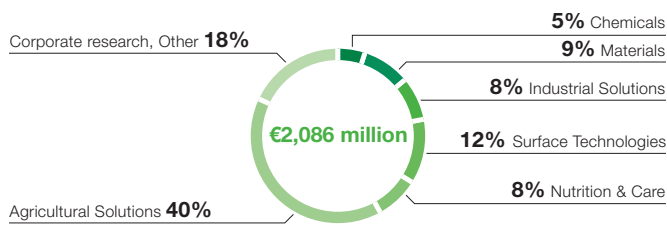
Our eight Academic Research Alliances bundle partnerships with several research groups in a region or with a specific research focus. They are complemented by cooperations with around 250 universities and research institutes as well as collaborations with a large number of companies.

[For more information on our Academic Research Alliances, see BASF Report 2020, page 36](#)

Strategic focus

Research and development expenses amounted to €2,086 million in 2020 (2019: €2,158 million). The operating divisions accounted for 82% of total research and development expenses in 2020. The remaining 18% related to cross-divisional corporate research focusing on long-term topics of strategic importance to the BASF Group.

Research and development expenses by segment 2020



As part of our corporate strategy, we combined research and development at an organizational level, making it better aligned with the needs of our customers. Our aim is to continue to shorten the time to market and accelerate the company's organic growth. A strong customer focus, digitalization, creativity, efficiency and collaboration with external partners are among the most important success factors here. In order to bring promising ideas to market as quickly as possible, we regularly assess our research projects using a multistep process and prioritize our focus areas accordingly.

We are fine-tuning our innovation strategies in all of our business areas to ensure a balanced portfolio of incremental and disruptive innovation, as well as of process, product and business models.

We have also identified additional, far-sighted topics that go above and beyond the current focus areas of our divisions. The aim is to use these to leverage new business opportunities within the next few years. In addition, we are working on overarching projects with a high technological, social or regulatory relevance. For instance, one global research and development program, the Carbon Management R&D Program, is focusing on the underlying energy-intensive production processes for basic chemicals. These basic chemicals account for around 70% of the CO₂ emissions produced by the European chemical industry.¹ The program covers topics such as the development of new catalysts for dry reforming methane with CO₂ to produce syngas, and using methane pyrolysis to produce hydrogen from natural gas or biogas.

Our global research and development presence is vital to our success. In Asia in particular, we want to continue advancing our research and development activities with a focus on growth in regional markets. A stronger presence outside Europe creates new opportunities for developing and expanding customer relationships and scientific collaborations as well as for gaining access to talented employees. This strengthens our Research and Development Verbund and makes BASF an even more attractive partner and employer. The Ludwigshafen site in Germany is and will remain the

¹ Sources: JRC (Energy efficiency and GHG emissions: Prospective Scenarios for the Chemical and Petrochemical Industry 2017, Boulamanti A., Moya J.A.); DECHEMA Technology Study (Low carbon energy and feedstock for the European chemical industry, 2017)

largest in our Research Verbund. This was once again underlined with the investment in a combined laboratory building for cleanroom and elemental analysis. The new building is scheduled to open in 2022 and will enable us to continue to drive forward Analytics 4.0 with innovative digitalization and automation solutions.

The number and quality of our patents also attest to our power of innovation and long-term competitiveness. In 2020, we filed around 950 new patents worldwide. The Patent Asset Index, a method that compares patent portfolios, once again ranked us among the leading companies in the chemical industry in 2020.

Innovations in the segments – examples

Chemicals: BASF's **Styrodur® Hybrid** is the next generation of the green insulation boards made from extruded polystyrene for customers in the construction industry. The hybrid version has vertical grooves on one side to bond better with the concrete. The simpler and cleaner processing leads to considerable time and cost savings in construction, for example by eliminating the need for full-surface adhesion. These advantages are in addition to the general benefits offered by Styrodur, such as high compressive strength, low moisture absorption, and excellent thermal insulation properties, which play a significant role in reducing CO₂ emissions and cutting heating costs.

Materials: BASF's new additive for the asphalt industry, **B2Last®**, has been designed for sustainable road construction. It extends pavement life while cutting CO₂ emissions along the production chain. B2Last® meets additional health and safety requirements by enabling asphalt to be produced and processed at significantly lower process temperatures. The innovative additive enables faster completion times and reduces emissions, improving the carbon footprint and making roads more durable.

Industrial Solutions: BASF and IntelliSense.io, a leading industrial artificial intelligence (AI) company, have combined their expertise in

mineral processing, ore beneficiation chemistry and industrial AI technology. The joint offering is called the **BASF Intelligent Mine powered by IntelliSense.io** and delivers AI solutions embedded with BASF's mineral processing and chemical expertise. The solution helps customers to make their mine operations more efficient, sustainable and safe, while offering a real-time decision-making platform. Each mining process, such as grinding, thickening, flotation and pumping, is supported by an Optimization as a Service application that predicts and simulates future performance, generating process-specific recommendations for optimization. This enables customers to realize efficiency gains across the entire value chain.

Surface Technologies: With **Glasurit® 100 Line** and **R-M® AGILIS**, BASF has introduced the most advanced waterborne basecoat technology for refinish coatings, offering outstanding efficiency and environmental advantages. The focus in product development was on sustainability, with the result that volatile organic compound (VOC) levels are consistently below 250g/l. This is the lowest VOC level on the market, making the new product line the eco-friendliest automotive refinish coatings available. The innovative formulation optimizes the processing properties for fast and efficient application, enabling customers to cut process times by up to 35%. Another 20% can be saved from the reduction in material consumption. This allows body shops to reduce their CO₂ emissions through faster application and shorter drying cycles. At the same time, they can increase profitability and improve their environmental footprint.

Nutrition & Care: BASF has launched the new fragrance **Isobionics® Santalol**, an alternative to sandalwood oil. Isobionics® Santalol is produced on a biotechnological basis from renewable raw materials and is 100% free of endangered sandalwood. Our fermentation technology ensures consistent high quality, effective production and year-round availability. Isobionics® Santalol resembles the floral heart of sandalwood oil and is particularly suitable for use in perfumes and exclusive personal care products thanks to its woody odor profile.

Agricultural Solutions: By 2030, more than 30 major R&D projects will complement BASF's connected offer of seeds and seed treatment products, chemical and biological solutions, as well as digital services. This brings the pipeline to an estimated peak sales potential¹ of more than €7.5 billion. In 2020, BASF spent €840 million on R&D in Agricultural Solutions, representing around 11% of the segment's sales.

We leverage the potential of digitalization in agriculture to help farmers grow their business profitably and reduce their environmental footprint. Launched in 2020, the new outcome-based business model **xarvio® HEALTHY FIELDS** provides a tailored, optimized field and season-specific crop protection strategy. By measuring and classifying externally induced plant stress, automatically defining buffer zones and recording biodiversity on and off arable land, it guarantees plant health and enables farmers to achieve agreed yield forecasts. This way, we respond to modern farming challenges, requirements by society and political action plans and contribute to more sustainable farming.

Wheat is one of the most produced crops in the world and demand continues to increase based on the growing world population. Our agricultural innovations for wheat production contribute to food security, which will help to reach the U.N. Sustainable Development Goals (SDGs). Our R&D pipeline comprises solutions that help farmers to achieve better yield – balancing the needs of the environment, society and agriculture.

In 2020, we received the first registration worldwide for the new herbicide active ingredient **Tirexor®**. It will give wheat growers in Australia more choice for effective weed control to combat resistance and enable climate-smart, no-till farming. Further dossier submissions in other countries across Asia and South and North America are planned.

Our recently launched fungicide **Revysol®** will also play a crucial role in future resistance management in wheat, helping growers to better protect their crops, manage resistances and increase their yield in a sustainable way.

¹ Peak sales describes the highest sales value to be expected in one year.

Growth opportunity battery materials

BASF is the largest chemicals supplier to the transportation industry, with more than 20% of sales to this market in 2020 and leading market positions in OEM coatings, engineering plastics and mobile emissions catalysts. In battery materials, BASF focuses on high-energy cathode active materials (CAM). In this business, chemical innovation is the biggest lever to improve energy density, reliability, and safety and to reduce the cost of batteries for electric vehicles. BASF's unmatched access to OEMs and their suppliers enables an early understanding of market needs, leading to product development from a well-established position in the two key CAM technologies, NCA (Nickel-Cobalt-Aluminum) and NCM (Nickel-Cobalt-Manganese).

Headquartered in Shanghai, China, BASF's battery materials business unit currently generates annual sales in the triple-digit million-euro range. Battery materials is a very dynamic market, as OEMs have more than 300 electric vehicle models lined up for introduction in the next three to five years. The lithium-ion battery market is expected to grow at about 25% per year to 2030.¹ For 2030, we anticipate annual production of more than 30 million electric vehicles. Depending on the mix of powertrains and technological progress, the market for cathode active materials could be more than 2,500 kilotons, valued at €50 billion to €65 billion. BASF has the required financial strength and is committed to driving the expansion of a global, cost-competitive asset footprint.

BASF has contracted the required base metal raw material supply with Nor Nickel and is constructing a precursor (PCAM) plant in Harjavalta, Finland, enabling a secure supply of locally sourced nickel and cobalt. The new plant will utilize locally generated renewable energy, including potential use of hydro, wind and biomass sources. Startup is planned for 2022. Additionally, BASF recently announced a collaboration with Eramet in Indonesia to evaluate the potential to build an HPAL (High-Pressure Acid Leaching) refinery in the country as a source for nickel and cobalt intermediates which are critical base metal raw materials for the lithium-ion battery value chain.

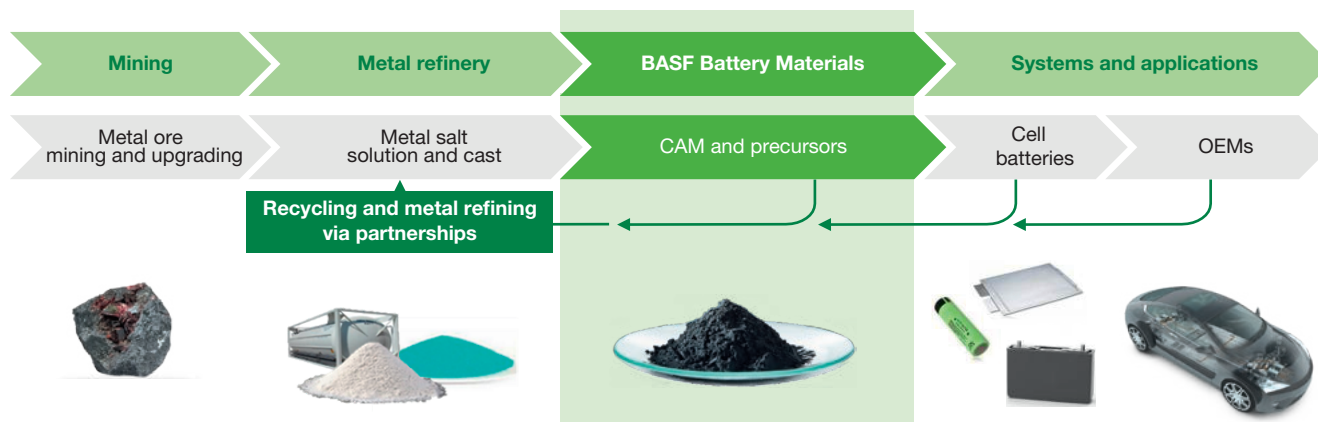
¹ Compounded annual growth rate (CAGR)

In February 2020, BASF announced that Schwarzheide, Germany, would be the location for CAM production in Europe, enabling the supply for around 400,000 electric vehicles per year. The plant in Schwarzheide will use precursors manufactured in the Harjavalta plant. The Schwarzheide production plant will use an industry-leading energy mix with a low CO₂ footprint. Startup is also planned for 2022.

To complement its own assets, BASF collaborates with TODA KOGYO. The partners established two BASF majority-owned and controlled companies, BASF TODA Battery Materials LLC in Japan and BASF TODA America LLC in the United States. In May 2021, BASF announced that it will form a BASF majority-owned joint venture with Shanshan, a leading battery materials supplier, to produce cathode active materials and precursors in China. These entities plus the European plants in Harjavalta and Schwarzheide will make BASF the first company with capacities in all major markets, increasing its annual capacity to 160,000 metric tons by 2022 with further expansions underway.

Electromobility value chain

BASF is well-positioned in the value chain with strategic partnerships to secure high-purity raw materials



The chemistry of cathode active materials is key to addressing electromobility challenges

Around the world, BASF experts are working on innovative cathode materials for lithium-ion batteries to meet the growing demand for powerful, reliable and low-cost electric vehicles. The 2025 goal is to double the on-road range of a mid-size electric vehicle from 300 to 600 kilometers on a single battery charge, halve battery size and reduce charging time to 15 minutes.

The growing demand for electromobility is also increasing the need for recycling. As a leading producer of battery materials, BASF has in-depth expertise in battery chemistry and process technology. Together with our partners, we are leveraging this expertise to develop a closed-loop system for the raw materials used to produce cathode active materials, such as nickel, cobalt, manganese and lithium. The objective is to further increase sustainability in the value chain for batteries by developing an innovative, large-scale process to recycle batteries along the entire value chain – from collecting end-of-life batteries and recovering mineral raw materials to using these in the production of new battery materials.

Sustainability

We achieve long-term business success by creating value added for the environment, society and the economy. Sustainability is at the core of what we do, a driver for growth and value as well as an element of our risk management. That is why sustainability is firmly anchored into the organization as part of governance, compensation systems and business models.

Based on our corporate strategy and the global targets derived from this, we classify two of our sustainability targets (achieving €22 billion in Accelerator sales by 2025 and reducing our CO₂ emissions by 25% by 2030¹) as most important key performance indicators. Carbon management bundles our global activities to reduce greenhouse gas emissions. We use the Sustainable Solution Steering method to manage our product portfolio.

Our products, solutions and technologies help to achieve the U.N. Sustainable Development Goals, especially Zero hunger, Gender equality, Clean water and sanitation, Decent work and economic growth, Industry, innovation and infrastructure, Responsible consumption and production and Climate action.

We evaluate key sustainability topics with our comprehensive materiality analysis. The relevant topics include climate and energy, resource efficiency and waste, health and safety / product stewardship, emissions to air and soil, and responsibility along the value chain.

The Corporate Development unit, which is part of the Corporate Center, steers the integration of sustainability into core business activities and decision-making processes.

The Board of Executive Directors and the Supervisory Board are regularly briefed on the current status of individual sustainability topics. The Board of Executive Directors makes decisions with strategic relevance for the Group and monitors the implementation of strategic plans and target achievement. The Corporate Sustainability Board, which is composed of heads of business and Corporate Center units and regions, supports the Board of Executive Directors on sustainability topics and discusses operational matters. A member of the Board of Executive Directors serves as chair.

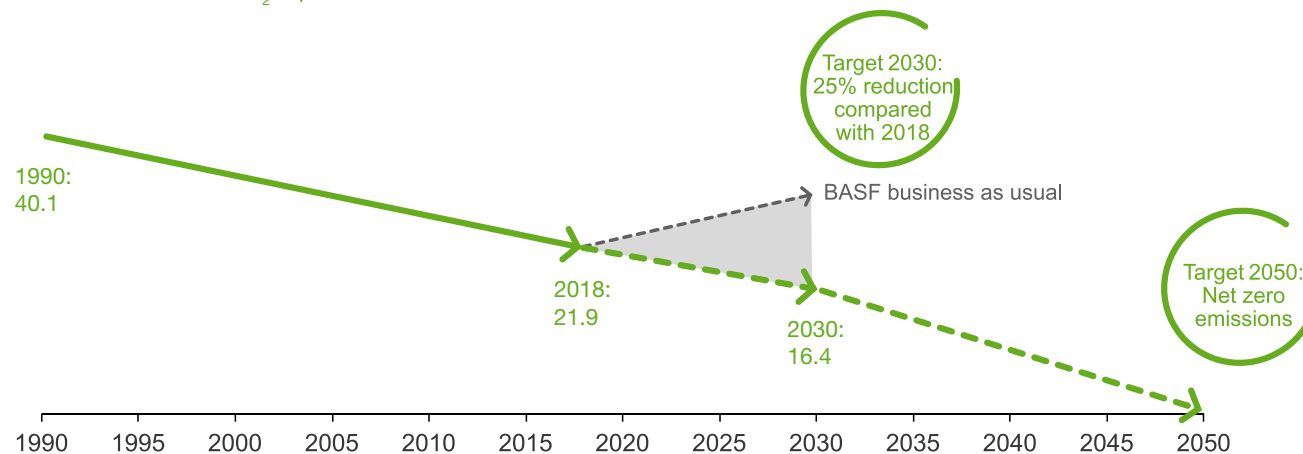
BASF also established an external, independent Stakeholder Advisory Council (SAC) in 2013 and a Human Rights Advisory Council (HRAC) in 2020. In the SAC, international experts from academia and society contribute their perspectives to discussions with BASF's Board of Executive Directors. The HRAC comprises external human rights specialists and internal experts, who advise senior management.

Climate protection with carbon management

At our Capital Markets Day on March 26, 2021, we presented our roadmap to climate neutrality: BASF is setting itself even more ambitious goals than in the past and wants to achieve net zero emissions by 2050. Based on the most recent progress in developing low-emission and CO₂-free technologies, we are also significantly raising our medium-term 2030 target for reductions in greenhouse gas emissions: BASF now wants to reduce its greenhouse gas emissions worldwide by 25% compared with 2018 – and to achieve this despite targeted growth and the construction of an integrated Verbund site in Zhanjiang, China. Excluding the effects of the planned growth, this means halving CO₂ emissions in the current business by the end of this decade. Overall, BASF plans to invest up to €1 billion by 2025 to reach its new climate target and a further €2 billion to €3 billion by 2030.

BASF greenhouse gas emissions

Million metric tons of CO₂ equivalents



¹ The goal includes Scope 1 and Scope 2 emissions, compared to the baseline 2018.

BASF to replace fossil fuels with renewable electricity

At the heart of the long-term transition toward net zero CO₂ emissions by 2050 is the use of new technologies, which will replace fossil fuels, such as natural gas, with electricity from renewable sources. Most of these technologies are being pioneered by BASF in collaboration with partners and are currently in a pilot stage. Broad scaleup of these technologies will only be fully realizable after 2030. In order to accelerate the avoidance of CO₂ emissions prior to that date, BASF also continues to systematically implement continuous improvement processes for existing production plants. In addition, BASF will progressively switch to renewable sources to meet its electricity needs and intends to invest in wind parks to facilitate this.

From around 2035, the BASF Group's electricity demand is expected to be more than three times higher than it is today. To meet our high demand for renewable energy, we will focus on two pillars. Firstly, we will purchase green power from third parties and thereby substitute grey with green power. Secondly, we want to cover our renewable energy demand by selectively investing in own renewable power assets. These two pillars will ensure additivity to effectively contribute to CO₂ reduction. We want to build up a diversified portfolio, taking into account costs, flexibility, and availability.

Number of sites partially or fully powered by emission-free electricity in 2020

19

A broad technology portfolio for decarbonization

One of the most important new technologies BASF is currently developing is electrically heated steam crackers for the production of basic chemicals such as ethylene, propylene and butadiene. These chemicals are building blocks for numerous value chains and are essential for chemical production.

BASF, SABIC and Linde have signed a joint agreement to develop and demonstrate solutions for electrically heated steam cracker furnaces. By using electricity from renewable sources, the fundamentally new technology has the potential to reduce CO₂ emissions by as much as 90%. A multi-megawatt pilot plant at BASF's Ludwigshafen site could start up as early as 2023, subject to a positive public funding decision.

For BASF, the CO₂ emissions reduction potential in ammonia and hydrogen production is roughly the same as for steam cracking. In total, BASF's global hydrogen demand amounts to around 1 million metric tons per year. We currently produce around 0.5 million metric tons ourselves, primarily through steam reforming of methane. To achieve CO₂-free production of hydrogen, BASF is pursuing two processes in parallel: the commercially available water electrolysis and methane pyrolysis, for which BASF has developed a new process technology. In a first step, we want to integrate internally produced green hydrogen into our Verbund production in Ludwigshafen. We want to do this by starting up a large water electrolysis plant in 2024. The methane pyrolysis process requires less than one-fifth the electrical energy of water electrolysis. We are a pioneer in this area and have started up our pilot reactor. The first commercial methane pyrolysis plants are only projected to start up toward the end of the decade.

Another important lever to increase energy efficiency is the use of electrical heat pumps to produce CO₂-free steam from waste heat. BASF's goal is to gradually ramp up this technology to industrial scale in a partnership with Siemens Energy and use it for waste heat recovery at entire sites.

To bridge the periods until new technologies are implemented, we will also consider external offsetting measures to a limited extent. If we purchase certificates, we will use external compensation measures fulfilling high-quality criteria, such as the WWF Gold Standard.

Offering transparency with product carbon footprints

We offer our customers solutions that help prevent greenhouse gas emissions and improve energy and resource efficiency. More than 40% of our annual research and development spending goes toward developing these products and optimizing our processes, as well as toward research projects to make our processes more energy and resource-efficient and to prevent greenhouse gas emissions. With the technology portfolio to reduce BASF's CO₂ emissions, we will be able to offer more and more low-carbon products to our customers. As an integrated company with base chemical production, we are a key enabler in helping our customers decarbonize their value chains.

By the end of 2021, we will provide our customers with carbon footprints for all of our 45,000 sales products. With our proprietary digital solution, we can determine the overall CO₂ emissions for each individual sales product. BASF's customers have shown huge interest in this increased transparency. With our innovative solution, we are a front-runner when it comes to additional customer benefits through CO₂ reduction.

Verbund benefits

The Verbund system is an important component of our energy efficiency strategy: Waste heat from one plant's production process is used as energy in other plants. In this way, the Verbund saved us around 18.7 million MWh in 2020, which translates to 3.8 million metric tons less CO₂ released into the environment. With combined power and steam generation as well as our optimized Energy Verbund, we were thus able to avoid a total of 6.2 million metric tons of carbon emissions in 2020.

CO₂ avoided by the Verbund and combined heat and power generation in 2020

6.2 million metric tons

Chemical recycling

ChemCycling™ is a vital lever in creating a circular economy for plastics. The project covers plastic waste for which high-value processing is not yet available and makes it possible to produce virgin-grade chemical products from recycled feedstocks. At the same time, greenhouse gas emissions are lower than for conventional products made from primary fossil resources as the waste is no longer incinerated. In 2020, we processed around 1,000 metric tons of recycled raw materials in the Verbund, saving the same amount of fossil resources. We plan to successively increase the use of recycled feedstocks over the coming years. The ChemCycling™ project will play a significant part in achieving BASF's target of using 250,000 metric tons of recycled and waste-based feedstocks annually from 2025 onward.

Renewable resources

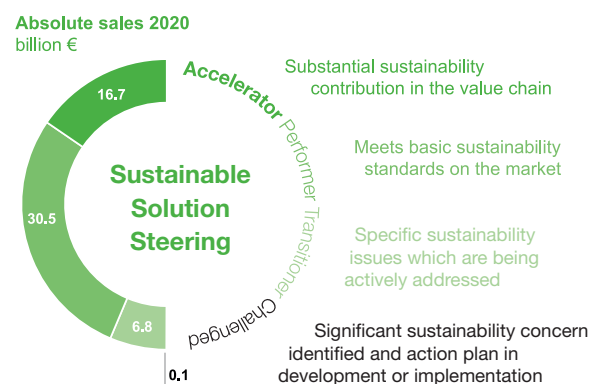
In addition to fossil resources, we employ renewable raw materials, mainly based on vegetable oils, fats, grains, sugar and wood. In 2020, we purchased around 1.2 million metric tons of renewable raw materials. The mass balance approach allows us to allocate the amount of renewable resources used to a wide variety of end products.

Palm oil, palm kernel oil and their derivatives are some of our most important renewable resources. We aim to ensure that palm-based raw materials come from certified sustainable sources and have actively supported the Roundtable on Sustainable Palm Oil (RSPO) since 2004. We purchased more than 227,000 metric tons of certified palm oil and palm kernel oil in 2020. We therefore reached our goal of only sourcing RSPO-certified palm oil and palm kernel oil by 2020.

Portfolio steering based on sustainability performance

A significant steering tool for the product portfolio, based on the sustainability performance of our products, is the Sustainable Solution Steering method. By the end of the 2020 business year, we had evaluated 98.4%¹ of the relevant portfolio². This refers to the BASF Group's sales from products in its strategic portfolio to third parties in the business year concerned. By the end of 2020, sustainability analyses and assessments had been conducted for more than 57,000 specific product applications, accounting for €54.1 billion in sales. These consider the products' application in various markets and sectors. New market requirements arise as a result of the continuous development of new product solutions in the industry or changing regulatory frameworks. This has an effect on comparative assessments, which is why we regularly reassess our product portfolio.

€16.7 billion of BASF Group sales from Accelerator products in 2020



Transparently classifying our products on the basis of their contribution to sustainability enables us to systematically improve them. Accelerator products make a substantial sustainability contribution in the value chain. These include catalysts that reduce emissions to the environment, biodegradable mulch films for agricultural applications, and high-performance insulation materials for higher energy savings and reduced material use in building construction. Based on our corporate strategy, we have set ourselves a global target: We aim to make sustainability an even greater part of our innovation power and achieve €22 billion in Accelerator sales by 2025.

Stakeholder engagement

We engage in worldwide initiatives with various stakeholder groups. For instance, we have been a member of the U.N. Global Compact (UNGC) since its establishment in 2000. As a recognized LEAD company, we contribute to the implementation of the Agenda 2030 and the associated goals. We support UNGC Action Platforms, for example on Good Health and Well-being, and contribute to the UNGC Expert Network. To celebrate the 75th anniversary of the United Nations in 2020, we reaffirmed our commitment to the UNGC and pledged our support for the Women's Empowerment Principles and the CFO Principles on Integrated SDG Investments and Finance. We are also active in 16 local Global Compact networks.

Our political advocacy is conducted in accordance with transparent guidelines and our publicly stated positions. The same applies to our activities in associations. For instance, we published an Industry Associations Review comparing the energy and climate protection positions of BASF and the most important associations of which we are a member, with explanations on our approach.

For more information on the Industry Associations Review, see: [basf.com/corporategovernance](https://www.basf.com/corporategovernance)

¹ Parts of the relevant portfolio have not yet been evaluated, including the integrated polyamide business acquired from Solvay in 2020.

² The definition of the relevant portfolio and further information can be found in the Sustainable Solution Steering manual at [basf.com/en/sustainable-solution-steering](https://www.basf.com/en/sustainable-solution-steering)

Responsibility for human rights

We stipulate binding rules for our employees with standards that apply throughout the Group. In doing so, we consider, respect and promote internationally recognized principles such as the 10 principles of the U.N. Global Compact, the Universal Declaration of Human Rights, or the Core Labor Standards of the International Labor Organization (ILO). We also established a Human Rights Advisory Council (HRAC) in 2020. It comprises external human rights specialists and internal experts, who advise senior management. This helps us to build on our strengths in how we handle human rights and address potential for improvement.

See [basf.com/humanrights](https://www.basf.com/humanrights) for more information

Biodiversity

As a chemical company, we depend on ecosystem services like the availability of renewable resources and air, water and soil quality, while also influencing them. Protecting biodiversity is therefore a key element of our commitment to sustainability.

Thanks to responsible procurement practices, the efficient use of raw materials, our product solutions and involvement in numerous initiatives, our business conduct is consistent with the United Nations' Sustainable Development Goals and we reduce our negative impact on biodiversity.

The business activities of our raw materials suppliers often involve land use and the associated impact on biodiversity, whether it is in natural gas and crude oil production, mineral extraction or cultivation of crops such as oil palms and castor-oil plants. Our expectations

Business Segments

with regard to environmental, labor and social standards in the supply chain are laid down in the Supplier Code of Conduct.

We published our Position on Forest Protection in June 2020. In it, we commit to the preservation of areas of High Conservation Value, High Carbon Stock forest areas and peatlands when procuring renewable raw materials. Our aim is to prevent these areas from being developed for intensive economic use.

Impact valuation

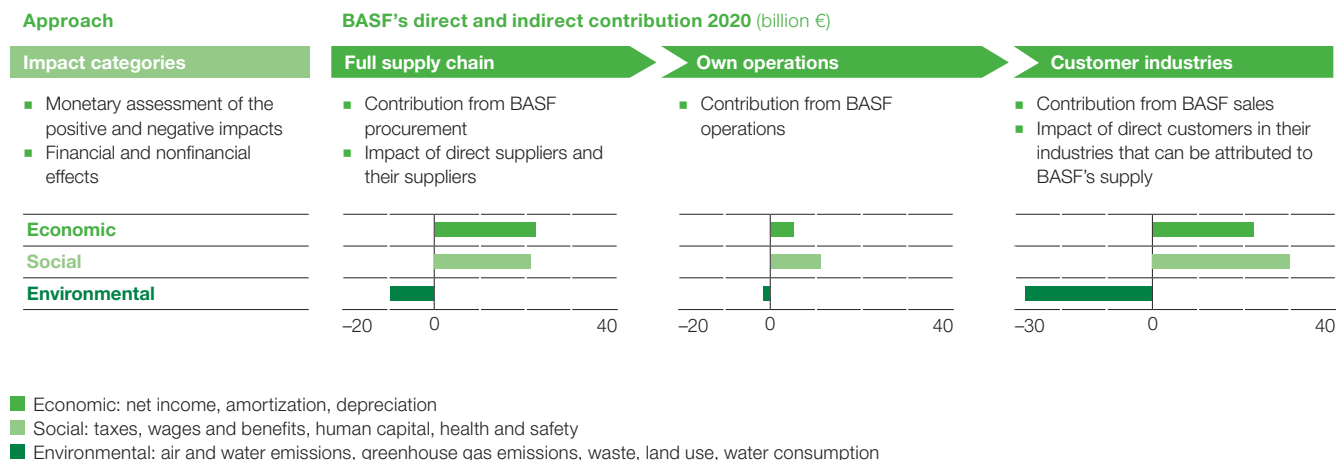
We want to understand the value we contribute to society and make this transparent. Our Value to Society approach, which we developed in 2013 together with external experts, allows us to

Financials

better understand our contribution to a sustainable future. In addition, we can use it to compare the significance of financial and nonfinancial impacts of our business activities on society and show their interdependencies.

The results illustrate the positive contributions and negative effects, both at BASF and in our value chains. Positive factors include taxes paid, wages, social benefits, employee training and our net income¹. Negative contributions include environmental impacts such as carbon emissions, land use and emissions to air, soil and water, as well as health and safety incidents. We aim to increase the positive contributions of our business activities along the value chain and minimize the negative impacts.

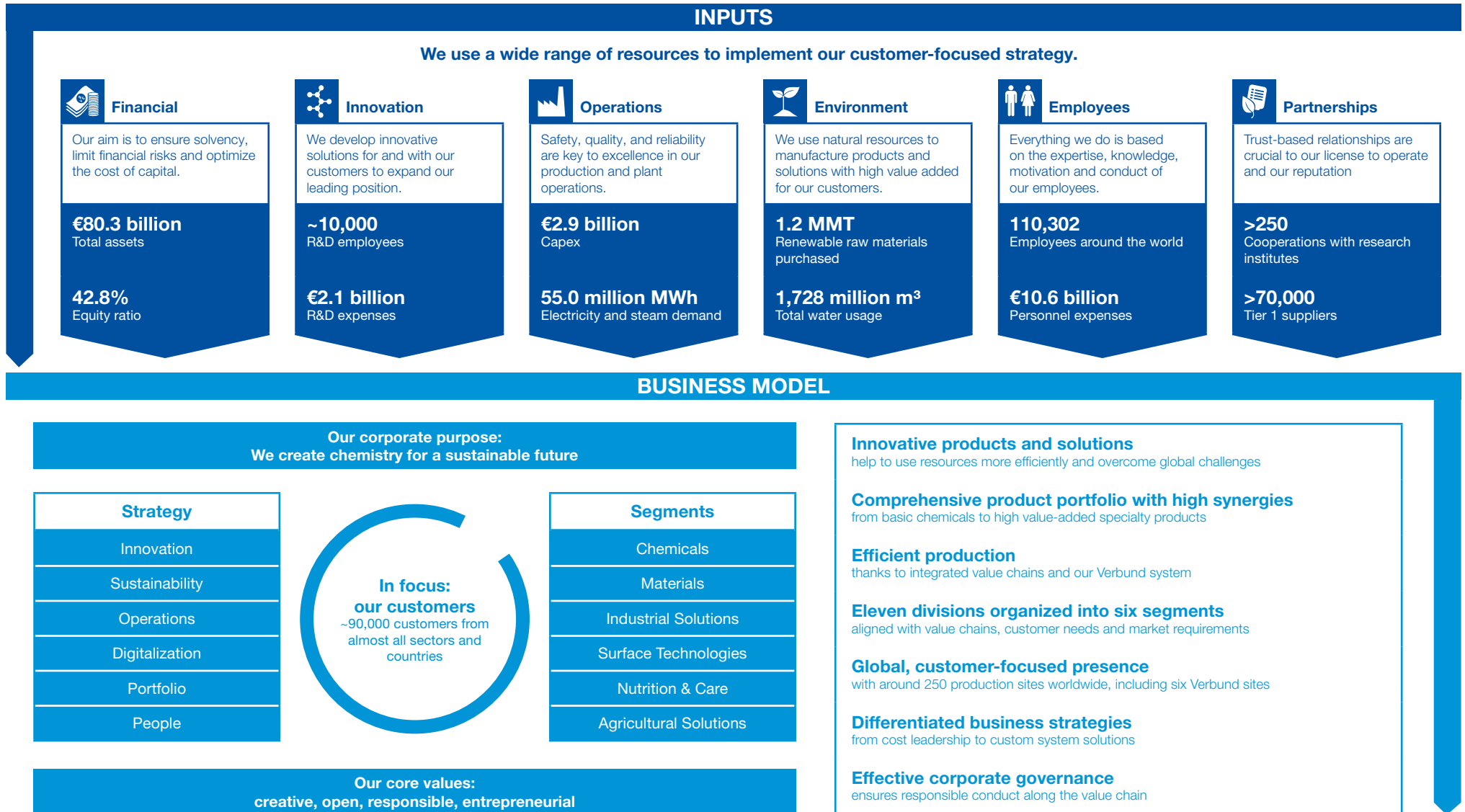
Value to Society: BASF's economic, social and environmental contribution



¹ The net income of BASF's production presented in the Value to Society is calculated using the BASF Group's net income, adjusted for the interest result, the other financial result and noncontrolling interests.

How We Create Value

The overview provides examples of how we create value for our shareholders, our company, the environment and society. It is modeled on the framework of the International Integrated Reporting Council (IIRC).



OUTPUTS

We focus on material sustainability topics and evaluate the opportunities and risks of our actions.



Financial

€59.1 billion
Sales

€3.6 billion
EBIT before special items



Innovation

~950
New patents worldwide

€16.7 billion
Sales from Accelerator products



Operations

~45,000
Sales products

6.2 MMT CO₂
avoided by the Verbund and combined heat and power generation



Environment

43.4%
Share of our waste recycled or thermally recovered

80.7%
Cooling water recirculated



Employees

24.3%
Women in leadership positions

82%
Engagement index according to 2020 employee survey



Partnerships

678
Suppliers screened through Together for Sustainability

61
Internal audits on our compliance standards

OUTCOMES

We want to increase our positive contributions, reduce negative impacts and carefully assess conflicting goals¹

Economic

We make positive contributions by

- Driving forward growth, progress and value creation
- Strengthening our customers' competitiveness and innovative strength with products and technologies
- Accelerating the digital transformation of the industry
- Offering our investors an attractive dividend yield

Potential negative impacts

- Weaker contributions to growth and value creation due to reduced demand from our customer industries as a result of the coronavirus pandemic
- A weaker share performance on the capital market

We limit negative impacts through

- The disciplined implementation of our corporate strategy
- Active portfolio management
- The acceleration of our Excellence Program
- Systematic cost management
- Reducing the cost of capital

Environmental

We make positive contributions by operating our plants efficiently and creating products that

- Help to use natural resources more efficiently
- Enable climate-smart mobility
- Improve the capabilities of renewable energy
- Reduce emissions and resource consumption

Negative impacts

- The emission of CO₂ and other gases that damage the climate
- The consumption of raw materials and the creation of non-recyclable waste in our production
- The potential misuse of our products

We limit negative impacts through

- Our carbon management
- Our Circular Economy Program
- Sustainable water and energy management
- Our Responsible Care management
- Product stewardship and training

Social

We make positive contributions because we

- Offer products that improve people's quality of life
- Provide attractive jobs, train young people and promote lifelong learning, health and diversity
- Pay taxes and competitive wages and salaries
- Help to solve challenges (for example, COVID-19)

Potential negative impacts

- The risk of our suppliers violating labor, environmental and social standards in the production of raw materials
- Lower demand for employees in some areas as a result of digitalization and efficiency gains

We limit negative impacts through

- Our sustainability-oriented supply chain management
- Projects to improve sustainability in the supply chain
- Our compliance program and our Code of Conduct
- Our training programs for employees

IMPACT

We achieve long-term business success by creating value for our shareholders, our company, the environment and society.

¹ The outcomes category shows examples of positive contributions as well as negative impacts and the measures we take to mitigate them.

Portfolio

In addition to innovations, investments make a decisive contribution toward achieving our ambitious growth goals. By investing in our plants, we create the conditions for the profitable growth we strive for while constantly improving the efficiency of our production processes. We use targeted acquisitions to supplement our organic growth.

With a world market share of more than 40%, China is today the largest chemical market and drives the growth of global chemical production. We expect China's share to increase to around 50% by 2030. To continue to participate in this growth in Asia in the future, we plan to build an integrated Verbund site in Zhanjiang in the southern Chinese province of Guangdong. Construction of the first plants started in 2020. We also plan to expand the site we operate together with our partner Sinopec in Nanjing, China.

In addition, we are refining our portfolio through acquisitions that promise above-average profitable growth as part of the BASF Verbund to help reach a relevant market position. A key consideration is that these are innovation-driven or offer a technological differentiation, and make new, sustainable business models possible. Investments and acquisitions alike are prepared by interdisciplinary teams and assessed using various criteria. In this way, we ensure that economic, environmental and social concerns are included in strategic decision-making.

Investments

Investments in property, plant and equipment amounted to €3,516 million in 2020 (2019: €3,839 million). Capex¹ accounted for €2,878 million of this amount (2019: €3,349 million). Our investments in 2020 focused on the Chemicals, Materials, Surface Technologies and Nutrition & Care segments.

Business Segments

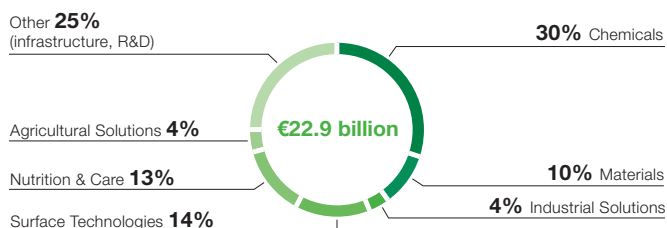
In Europe, construction continued for another production plant for vitamin A at the Ludwigshafen site in Germany. It is scheduled for startup in 2021. We are expanding the ethylene oxide complex in Antwerp, Belgium, and building production plants for battery materials in Schwarzheide, Germany, and their precursors in Harjavalta, Finland.

In North America, we continued the expansion of the MDI production in Geismar, Louisiana.

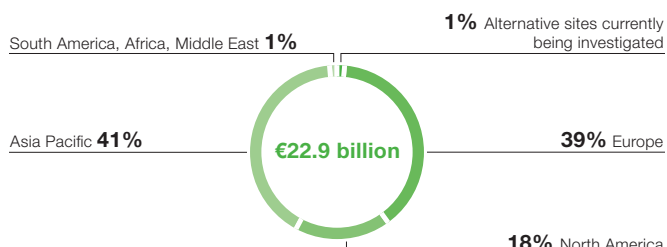
In Asia, we continued to drive forward construction of the new integrated Verbund site in Zhanjiang, China, in 2020. The first production facilities are scheduled for completion in 2022. We started up a plant for emissions catalysts in Shanghai, China.

[For more information on the planned Verbund site in Zhanjiang, see page 24.](#)

Capex by segment 2021–2025



Capex by region 2021–2025



Financials

Capex: selected projects

Location	Project
Antwerp, Belgium	Capacity expansion: integrated ethylene oxide complex Gradual capacity expansion: alkoxyates
Geismar, Louisiana	Capacity expansion: MDI plant
Harjavalta, Finland, and Schwarzheide, Germany	Investment: battery materials
Ludwigshafen, Germany	Construction: production plant for vitamin A
Zhanjiang, China	Planned construction: integrated Verbund site

We are planning capital expenditures (additions to property, plant and equipment excluding acquisitions, IT investments, restoration obligations and right-of-use assets arising from leases) of around €3.6 billion for the BASF Group in 2021. For the period from 2021 to 2025, we have planned capex totaling €22.9 billion worldwide. The investment volume in the next five years will thus be below that of the planning period 2020 to 2024 (€23.6 billion). A focus area is our investment project in Zhanjiang, China, to expand our businesses in Asia.

Acquisitions

We also look into opportunities to selectively acquire businesses or assets to strengthen distinct growth areas or segments. We added €559 million worth of property, plant and equipment through acquisitions in 2020. Additions to intangible assets including goodwill amounted to €691 million.

On January 31, 2020, BASF closed the acquisition of Solvay's integrated polyamide business, which was agreed in September 2017. The acquisition broadens BASF's polyamide capabilities with innovative and well-known products and enhances access to growth markets in Asia as well as in North and South America. Through the backward integration into the key raw material adiponitrile (ADN),

¹ Additions to property, plant and equipment excluding acquisitions, restoration obligations, IT investments and right-of-use assets arising from leases

BASF now has production plants along the entire value chain for polyamide 6.6. The transaction includes production sites in Germany, France, China, India, South Korea, Brazil and Mexico; research and development centers and technical consultation centers; and shares in Butachimie SNC and Alsachimie S.A.S. BASF acquired the polyamide business for a purchase price of €1.3 billion (on a cash and debt-free basis) and integrated it into the Performance Materials and Monomers divisions within the Materials segment.

Divestitures

On September 30, 2020, we closed the divestiture of our construction chemicals business to an affiliate of Lone Star, a global private equity firm, as agreed in December 2019. The purchase price on a cash and debt-free basis was €3.17 billion. The divested construction chemicals business had around 7,500 employees and operated production sites and sales offices in more than 60 countries. It generated sales of around €2.6 billion in 2019.

Agreed transactions

On August 29, 2019, we reached an agreement with DIC, Tokyo, Japan, on the acquisition of BASF's global pigments business. The purchase price on a cash and debt-free basis is €1.15 billion. The assets and liabilities to be divested were reclassified to a disposal group in the Dispersions & Pigments division as of this date. The transaction is expected to close subject to the fulfillment of clearance conditions by DIC.

On May 20, 2021, BASF and Shanshan, a leading lithium-ion battery materials supplier serving both the e-mobility and the consumer electronics market, have agreed to form a BASF majority-owned joint venture (BASF: 51%; Shanshan: 49%) to produce cathode active materials and precursors in China. Closing of the transaction is targeted for later this summer following the approval of the relevant authorities.

Strategic acquisition criteria

We want to acquire businesses which

- create more value as part of BASF's Verbund
- help achieve relevant market positions
- drive innovation or technological differentiation
- enable new and sustainable business models

Selected, closed transactions 2010 – May 2021

Acquisitions

- Functional crop care
- Personal care and food ingredients
- Omega-3 fatty acids
- Enzymes
- Battery materials
- Specialty plastics
- Refinish coatings
- Surface treatment
- Seeds and crop protection
- Polyamide business

~€8.8 billion sales
in emerging and innovation-driven businesses

Financial acquisition criteria

We want to acquire businesses which

- provide a return on capital employed above the WACC after full integration into BASF Group
- are EPS accretive by year three at the latest
- contribute to growth of EBITDA before special items

Divestitures

- Styrenics
- Fertilizers
- Natural gas trading and storage
- Custom synthesis business
- Textile chemicals
- Polyolefin catalysts
- Industrial coatings
- Leather chemicals
- Water and paper chemicals
- Oil & gas
- Construction chemicals

~€28.7 billion sales
in businesses with decreased differentiation potential

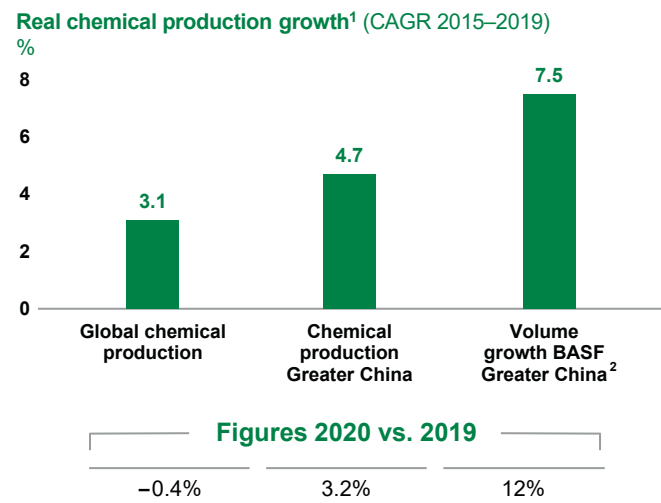
New Verbund site in Zhanjiang

In recent years, market growth in China has been driven by increased domestic consumption, higher standards of living as well as more local value creation. With a world market share of more than 40%, China is the largest chemical market and drives the growth of global chemical production.

BASF is very well prepared to capture future growth in China. We have built an extensive network throughout the country. The following sites are the backbone of our activities in the region:

- Shanghai is home to our Greater China headquarters and the Innovation Campus as well as the Caojing production site.
- Nanjing is the location of our Verbund site in a joint venture with Sinopec as well as a wholly owned site.
- In Chongqing, we operate a wholly owned MDI production complex.

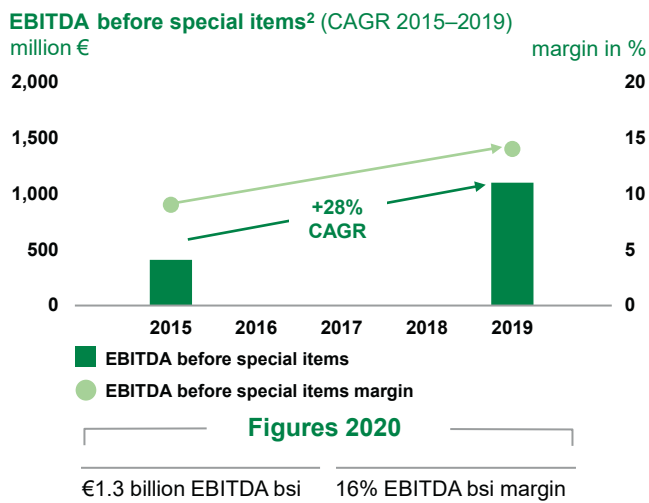
BASF's volume growth outpaced Greater China's chemical production



At the end of December 2020, BASF had 8,948 employees in Greater China and 27 production sites. During the last five years, we have generated strong earnings and healthy margins in Greater China. EBITDA before special items increased on average by 28% per year.

To continue to participate in the growth in Asia, BASF officially launched its smart Verbund project in Zhanjiang in the southern Chinese province of Guangdong in 2019. Subject to currency effects and planning uncertainties, we continue to expect an investment in Zhanjiang of around \$10 billion until 2030. The implementation will happen in phases. The project will include a wholly owned steam cracker with an industrial cluster that will ensure the highly efficient use of resources in production, logistics and infrastructure. Construction of the first plants started in 2020. They will produce engineering plastics and thermoplastic polyurethane (TPU) to serve the increasing needs of various growth industries in the southern

Strong earnings development of BASF in Greater China



The photo shows a 3D simulation of the first plants of the Verbund site in Zhanjiang.

China market and throughout Asia. The startup of the first plant is expected for 2022 and the upstream plants are expected to begin operations around 2025.

Guangdong is home to fast-growing industries that are key customers for chemicals. For example, it is the province with the largest automotive production in China. Automotive, high-speed railway and aviation companies form a strong customer base. Many internationally active electronics producers also have their production facilities there. Chemistry has been recognized by Guangdong authorities as a driving force for numerous downstream industries, with BASF's new integrated site contributing to the industrial transformation of the province. The new BASF Verbund site will benefit from Zhanjiang's natural resources, deep-water port, excellent transportation links and engaged workforce, as well as its cultural heritage and commitment to sustainable development.

BASF is committed to building the Zhanjiang Verbund site as a model for sustainable production. The first plants will be 100% powered with renewable energy. Circular economy concepts will be incorporated into the new Verbund site to support customers in the region with sustainably produced solutions. As BASF's first implementation of a fully digital smart Verbund concept in a large-scale project globally, the site will be built on the basis of cutting-edge technologies that maximize resource and energy efficiency and reduce environmental impact.

¹ Source: BASF, real chemical production excluding pharmaceuticals (base year 2015); as of February 2021

² Restated figures due to reporting of construction chemicals as discontinued operation. Not included: BASF-YPC Company Limited as BASF's share is accounted for at-equity

People

Our employees are key to the successful implementation of BASF's strategy. We want to attract and retain talented people for our company and support them in their development. To do so, we cultivate a working environment that inspires and connects people. It is founded on inclusive leadership based on mutual trust, respect and dedication to top performance.

Strategy

We are convinced of the value of excellent employees, leaders and working conditions, and strive to give our employees the tools and skills necessary to be able to offer our customers products and services with an even greater level of differentiation and customization. Our corporate strategy promotes a working atmosphere based on mutual trust, in which employees are given the space to optimally develop their individual talents and potential. This positions us to meet the challenges of an increasingly rapidly changing environment, demographic change and the digital workplace. In everything we do, we are committed to complying with internationally recognized labor and social standards. We want our working conditions to be a motor for innovation, and one way of achieving this is through inclusion of diversity.

For us, diversity means, among other things, having people from different backgrounds working at our company who can draw on their individual perspectives and skills to grow our business. By valuing and promoting employee diversity, we boost our teams' performance and power of innovation, and increase creativity, motivation and employees' identification with the company.

After achieving our original target for women in leadership positions ahead of schedule, BASF set a new, more ambitious target in 2020 to further strengthen diversity. By 2030, we aim to increase the proportion of women in leadership positions to 30%. We have made

¹ At BASF, the apprenticeship program trains students for technical, scientific and business vocations as well as for trade and craft professions.

Business Segments

important progress toward this goal. In the BASF Group, the global proportion of female leaders with disciplinary responsibility was 24.3% at the end of 2020 (2019: 23.0%).

BASF can rely on the engagement of its employees. Global employee surveys and pulse checks are an established feedback tool in the BASF Group, and are used to involve employees in shaping their working environment. As part of the BASF strategy, we set ourselves the following goal in 2018: More than 80% of our employees feel that at BASF, they can thrive and perform at their best. We regularly calculate the employee engagement level as an index score based on five questions on set topics in our employee surveys. The 2020 survey revealed an engagement index of 82% (2019: 79%).

We act responsibly toward our employees. Part of this is our voluntary commitment to respecting international labor and social standards, which we have embedded in our global Code of Conduct. This encompasses internationally recognized labor norms as stipulated in the United Nations' Universal Declaration of Human Rights, the OECD Guidelines for Multinational Enterprises, and the Tripartite Declaration of Principles Concerning Multinational Enterprises and Social Policy of the International Labour Organization (ILO). BASF is committed to complying with these standards worldwide.

Number of employees

As of December 31, 2020, the number of employees decreased to 110,302 employees compared with 117,628 employees as of December 31, 2019. The decrease was due primarily to the sale of the construction chemicals business, which affected around 7,500 employees. An offsetting factor was the acquisition of Solvay's polyamide business due to which around 1,200 employees joined the BASF Group including the employees of the Butachimie SNC and Alsachimie S.A.S. joint operations, both in Chalampé, France, which were counted on a pro rata basis. We employed 3,120 apprentices¹ (2019: 3,161). 2,128 employees were on temporary contracts (of whom 44.0% were women).

Financials

BASF Group employees by region

	December 31, 2020	%
Europe	68,849	62.4
of which Germany	51,961	47.1
North America	16,948	15.4
Asia Pacific	17,753	16.1
South America, Africa, Middle East	6,752	6.1
Total	110,302	100.0

The BASF Group hired 6,340 new employees in 2020. The percentage of employees who resigned during their first three years of employment – the early turnover rate – was 1.0% worldwide in 2020. This turnover rate was 0.7% in Europe, 1.5% in North America, 1.8% in Asia Pacific and 1.8% in South America, Africa, Middle East. Our early turnover rate is therefore at a desirable low level.

Compensation and benefits

We want to attract engaged and qualified employees, retain them and motivate them to achieve top performance with an attractive package including market-oriented compensation, individual development opportunities and a good working environment so that they contribute to the company's long-term success. Our employees' compensation is based on global compensation principles according to position, market and performance. As a rule, compensation comprises fixed and variable components as well as benefits that often exceed legal requirements. In many countries, these benefits include company pension benefits, supplementary health insurance and share programs. We regularly review our compensation systems at local and regional levels.

We want our employees to contribute to the company's long-term success. This is why the compensation granted to the vast majority of our employees includes variable compensation components, with which they participate in the success of the BASF Group as a whole and are recognized for their individual performance.

We use the BASF Group's return on capital employed (ROCE) to measure economic success for the purposes of variable compensation. This links variable compensation to our ROCE target.¹ Individual performance is assessed as part of a globally consistent performance management process.

BASF Group personnel expenses

Million €	2020	2019	+/-
Wages and salaries	8,416	8,825	-4.6%
Social security contributions and assistance expenses	1,424	1,545	-7.8%
Pension expenses	736	554	32.9%
Total personnel expenses	10,576	10,924	-3.2%

Compliance Program and Code of Conduct

BASF's Compliance Program is based on our corporate values and our voluntary commitments, as well as international standards. It describes our commitment to responsible conduct and expectations around how all BASF employees interact with business partners, officials, coworkers and the community.

At the core of our Compliance Program is the global, standardized Code of Conduct. All employees and managers are obligated to adhere to its guidelines, which cover topics ranging from corruption and antitrust laws to human rights, labor and social standards, conflicts of interest and trade control, and protection of data privacy.

BASF's global Code of Conduct from 2013 was thoroughly revised and republished in June 2020. It has been supplemented with specific additional topics. New sections include "Digital Responsibility" and "How We Make Decisions."

The structure of BASF's Code of Conduct

<p>We Care</p> <ul style="list-style-type: none"> - Our Code of Conduct - How We Make Decisions - We Always Speak Up - We Lead Integrity 	<p>We Earn Trust</p> <ul style="list-style-type: none"> - Anti-Corruption - Trade Control - Anti-Money Laundering 	<p>We Play Fair</p> <ul style="list-style-type: none"> - Antitrust Laws - Gifts and Entertainment - Conflicts of Interest 	<p>We Respect</p> <ul style="list-style-type: none"> - Human Rights, Labor and Social Standards - Environmental Protection, Health and Safety 	<p>We Protect</p> <ul style="list-style-type: none"> - Sensitive Company Information - Personal Data - Digital Responsibility - Company Property - Accurate Books and Records
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Abiding by compliance standards is the foundation of responsible leadership. This has also been embedded in our values. We are convinced that compliance with these standards will play a key role in securing our company's long-term success. Our efforts are principally aimed at preventing violations from the outset.

We perform a systematic risk assessment to identify the risk of compliance violations, including corruption risks. These are conducted at divisional, regional and country levels. The regular compliance audits performed by the Corporate Audit department are another source of information for the systematic identification of risks. These risks are documented in the relevant risk or audit report. The same applies to specific risk minimization measures as well as the time frame for their implementation.

One key element in the prevention of compliance violations is compulsory training and workshops held as classroom or online courses. All employees are required within a prescribed time frame to take part in basic compliance training, refresher courses and special tutorials dealing with, for example, antitrust legislation, taxes or trade control regulations. In addition, the new Code of Conduct contains a section dedicated to leading with integrity. Newly

appointed senior executives therefore receive special training on compliance. Course materials and formats are constantly updated, taking into account the specific risks of individual target groups and business areas. In total, more than 42,000 participants worldwide received around 54,000 hours of compliance training in 2020.

[For more information on the BASF Code of Conduct, see basf.com/code_of_conduct](https://www.basf.com/code_of_conduct)

Code of Conduct
is the core of our Compliance Program

More than 42,000
participants in compliance training

61 internal audits
conducted on compliance

¹ In calculating ROCE, adjustments are made for negative and positive special items resulting from acquisitions and divestitures (for example, integration costs in connection with acquisitions and gains or losses from the divestiture of businesses) when these exceed a corridor of +/-1% of the average cost of capital basis. An adjustment of the ROCE (in the first 12 months after closing) therefore only occurs in cases of exceptionally high special items resulting from acquisitions and divestitures.

2

Business Segments

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Business Segments

Since January 1, 2019, BASF's 11 divisions are grouped into six segments: Chemicals, Materials, Industrial Solutions, Surface Technologies, Nutrition & Care and Agricultural Solutions. This segment structure sharpens our portfolio and increases transparency. Businesses are clustered to improve customer experience and to fully realize Verbund synergies as exemplified by the "connectors" in the graphic below:

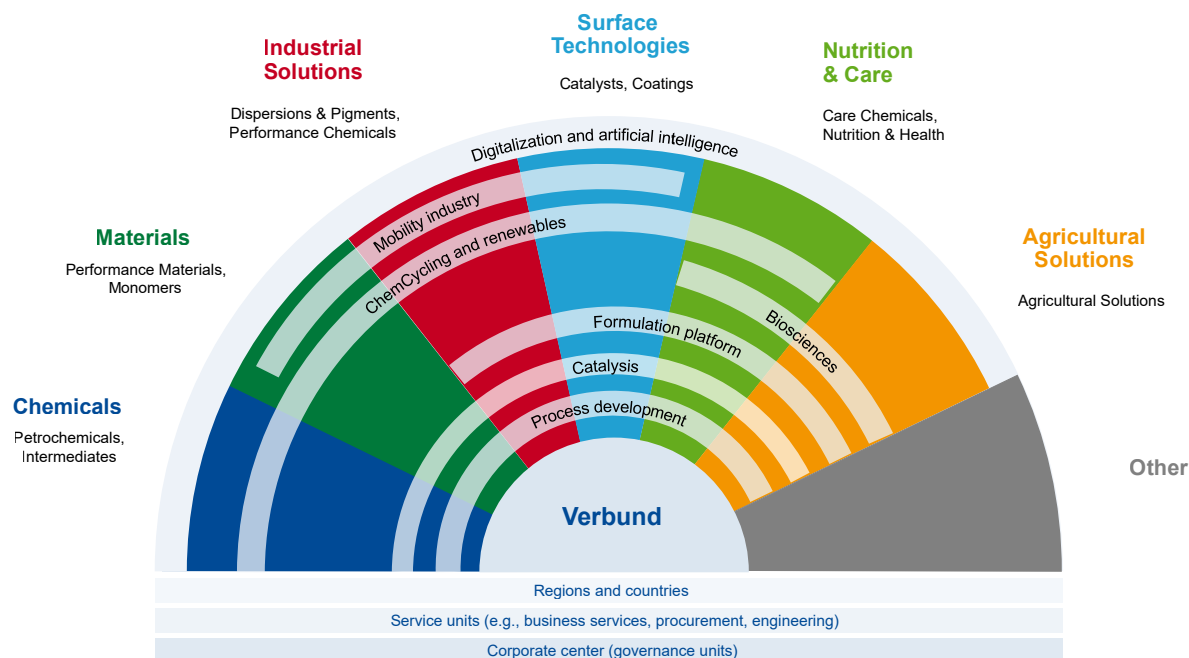
- We develop our production processes using a central R&D platform. As a result, plants in different businesses can benefit from the experiences of others.
- Catalysis is a core technology that is fundamental to more than 90% of our production.

- We have unique formulation know-how that is used in many businesses and allows us to support customers.
- Biosciences and the markets for nutritional products combine elements of the Nutrition & Care segment and the Agricultural Solutions segment.
- In many cases, different businesses supply the same customer industry. The most prominent example is the automotive industry.
- We are building up a Digital Verbund to harvest advantages from the vast amount of data we collect across all segments.

Information on the business development of the segments in 2021 can be found in BASF's quarterly statements.

Key facts

- Six segments comprising 11 operating divisions with 75 strategic business units
- Our portfolio ranges from basic petrochemicals to agricultural solutions
- The divisions and strategic business units are organized according to business models and value chains
- Distinct roadmaps for each segment to step up growth



Organization of the BASF Group

We take a differentiated approach to steering our businesses according to market-specific requirements and the competitive environment. We provide a high level of transparency around the results of our segments and show the importance of the Verbund and value chains to our business success. We aim to differentiate our businesses from competitors and establish a high-performance organization to enable BASF to be successful in an increasingly competitive market environment.

The **Chemicals** segment comprises the Petrochemicals and Intermediates divisions and is the cornerstone of BASF's Verbund structure. It supplies the other segments with basic chemicals and intermediates, contributing to the organic growth of our key value chains. Alongside internal transfers, customers include the chemical and plastics industries. The segment's competitiveness is strengthened by technological leadership and operational excellence.

The **Materials** segment is composed of the Performance Materials division and the Monomers division. The segment offers advanced materials and their precursors for new applications and systems. Its product portfolio includes isocyanates and polyamides as well as inorganic basic products and specialties for plastics and plastics processing.

The **Industrial Solutions** segment consists of the Dispersions & Pigments and the Performance Chemicals divisions. The segment develops and markets ingredients and additives for industrial applications, such as polymer dispersions, pigments, resins, electronic materials, antioxidants and additives. Its customers come from key industries such as automotive, plastics and electronics.

The **Surface Technologies** segment bundles chemical solutions for surfaces with the Catalysts and Coatings divisions. Its product spectrum includes catalysts and battery materials for the automotive and chemical industries, surface treatments, colors and coatings.

Business Segments

Business Segments

The **Nutrition & Care** segment comprises the Care Chemicals division and the Nutrition & Health division. The segment produces ingredients and solutions for consumer applications in the areas of nutrition, home and personal care. Its customers include food and feed producers as well as the pharmaceutical, cosmetics, and the detergent and cleaner industries.

The **Agricultural Solutions** segment consists of the division of the same name. As an integrated provider, its portfolio comprises fungicides, herbicides, insecticides and biological crop protection products, as well as seeds and seed treatment products. Furthermore, Agricultural Solutions offers farmers innovative solutions, including those based on digital technologies, combined with practical advice.

Activities that are not allocated to any of the segments are recorded under **Other**. These include other businesses, which comprise commodity trading, engineering and other services, rental income and leases. Discontinued operations and certain activities remaining after divestitures are also reported here.

The following activities are also presented under Other:

- The steering of the BASF Group by corporate headquarters.
- Cross-divisional corporate research, which includes plant biotechnology research, works on long-term topics of strategic importance to the BASF Group. Furthermore, it focuses on the development of specific key technologies, which are of central importance for the divisions.
- Results from currency translation that are not allocated to the segments; earnings from the hedging of raw materials prices and foreign currency exchange risks; and gains and losses from the long-term incentive programs (LTI programs).
- Remanent fixed costs resulting from organizational changes or restructuring; function and region-related restructuring costs not allocated to a division; idle capacity costs from internal human resource platforms; and consolidation effects that cannot be allocated to the divisions.

	Chemicals	Materials	Industrial Solutions	Surface Technologies	Nutrition & Care	Agricultural Solutions
% of sales 2020 ¹	14%	18%	13%	28%	10%	13%
EBITDA bsi 2020 ¹	€1.3 billion	€1.7 billion	€1.2 billion	€1.0 billion	€1.2 billion	€1.7 billion
Core theme	Verbund	Advanced	Additives platform	Surface modification platform	Consumer ingredients	Integrated offering of crop protection, seeds & traits, digital solutions
Innovation focus	Improved or new processes	Applications, biomaterials	Formulations	Battery materials, surface effects	Biotechnology, formulations	Crop protection, seeds & traits, digital farming
Capex relevance						
M&A relevance						
Sustainability	ChemCycling™	Bio-based materials	More from less	Low-emission mobility	Bio-based and natural, traceability	Better with less

¹ Other, not depicted in this graphic, accounted for 4% of 2020 sales (€2.4 billion) and EBITDA before special items of -€609 million.

Chemicals

The Chemicals segment consists of the Petrochemicals and Intermediates divisions. It supplies the other segments with basic chemicals and intermediates, contributing to the organic growth of our key value chains. Alongside internal transfers, our customers mainly come from the chemical and plastics industries. We aim to expand our competitiveness through technological leadership and operational excellence.

Divisions

Petrochemicals

Broad portfolio of high-quality basic chemicals and specialties tailored to the needs of internal and external customers that serve as starting materials for products such as dispersions, paints, coatings, plastics, insulating materials and hygiene products

[page 32](#)

Intermediates

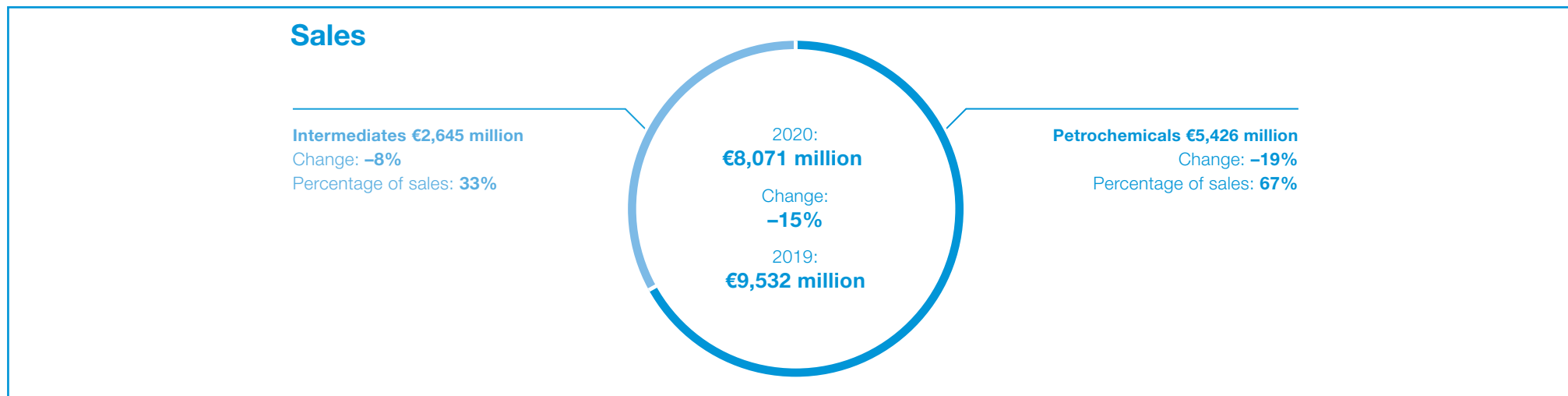
Comprehensive portfolio of intermediates and specialties, which are used as precursors for products such as coatings, plastics, textile fibers, pharmaceuticals and crop protection products

[page 34](#)



The steam crackers at the BASF site in Ludwigshafen cover an area of around 100,000 square meters, the size of 14 soccer fields. The crackers are the core of the Verbund. They separate naphtha into ethylene and propylene at 850 degrees Celsius. Ethylene and propylene are indispensable building blocks for the production of many products. By using renewable feedstocks such as bio-methane or bio-naphtha, the subsequent product carbon footprint can be lowered substantially. BASF is also exploring electric heating concepts, which could further reduce greenhouse gas emissions (see page 33).

Segment Chemicals



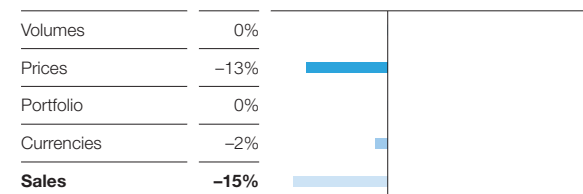
Segment data Chemicals

Million €

	2020	2019	2018
Sales to third parties	8,071	9,532	11,694
Share of total BASF sales	% 14	16	19
of which Petrochemicals	5,426	6,670	8,561
Intermediates	2,645	2,862	3,133
Income from operations before depreciation and amortization (EBITDA) before special items	1,305	1,574	2,245
Income from operations before depreciation and amortization (EBITDA)	1,237	1,545	2,234
EBITDA margin	% 15	16	19
Income from operations (EBIT) before special items	445	791	1,587
EBIT before special items margin	% 6	8	14
Income from operations (EBIT)	-192	622	1,573
EBIT margin	% -2	7	13
Return on capital employed (ROCE)	% -2.2	6.8	17.7

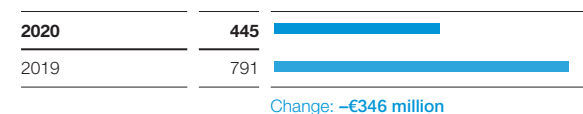
Factors influencing sales

2020 versus 2019



EBIT before special items

Million €



Petrochemicals

The Petrochemicals division is the cornerstone of BASF's petrochemical-based value chains throughout the regions. The division manufactures and markets a broad portfolio of high-quality basic chemicals and tailored specialties for internal and external customers.

Portfolio

Cracker products

BASF produces the entire range of cracker products from ethylene and propylene to butadiene, butenes and benzene. Propylene is the most important starting product for BASF's value chains.

Acrylic monomers and superabsorbent polymers

BASF is a technology leader in acrylic acid and the world's largest and most widespread producer of acrylic monomers, which are sold to internal and external customers in the form of acrylic acid, acrylic esters and specialty acrylates. Acrylic monomers are used as precursors to manufacture acrylic polymers and polymer dispersions for various applications such as:

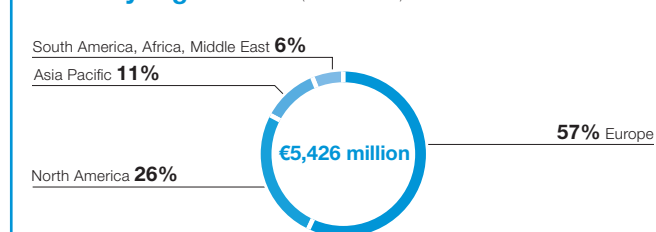
- Superabsorbent polymers
- Adhesives
- Flocculants
- Coatings
- Surfactants

Superabsorbent polymers (SAP) are used in various hygiene applications, such as baby diapers, adult incontinence products and feminine hygiene articles. With our global production network, we are close to our customers. Through our market knowledge and R&D expertise, we aim to foster trusted relationships with customers and partners in the global hygiene industry.

Business Segments

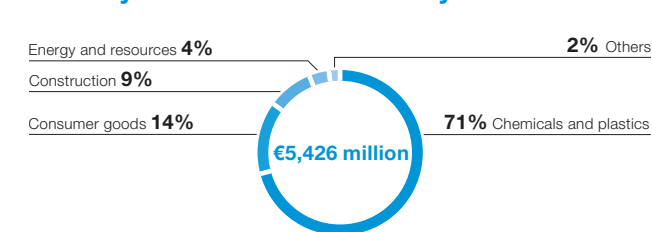
Chemicals

Sales by region 2020 (location of customer)



Financials

Sales by direct customer industry 2020



Alkylene oxides and glycols

Ethylene oxide derived from ethylene is used mainly to produce surfactants, ethanolamines, glycols, glycol ethers and polyols. Ethylene glycol is used in antifreeze applications and the production of fibers, films and PET (polyethylene terephthalate) plastic bottles.

Alcohols and solvents

BASF is the world's largest producer of oxo alcohols and is also a major producer of oxygenated solvents in Europe, including acetates, glycol ethers, glycol ether acetates and specialty solvents. Major customer industries are paints and coatings, pharmaceuticals and cosmetics.

Plasticizers

BASF manufactures general purpose and special purpose plasticizers, which are used to make rigid PVC flexible. We also offer part of our plasticizer portfolio based on circular feedstocks. For this purpose, either renewable or chemically recycled feedstock is used instead of virgin fossil resources at the beginning of the value chain.

Styrenics

The styrenics value chain of BASF comprises styrene monomer, polystyrene, extruded polystyrene (XPS, with the brand Styrodur®) and expandable polystyrene (EPS, with the brands Styropor® and Neopor®). The most important industries for BASF's styrenics business are packaging and construction, where the unique properties

of styrenic polymers allow customers to realize various eco-efficient solutions, for example, as insulation material.

BASF's market position

- Acrylic monomers: No. 1 globally
- Oxo alcohols: No. 1 globally
- Ethylene oxide and ethylene glycols: No. 2 in Europe
- Solvents: No. 2 in Europe
- Plasticizers: No. 3 in Europe
- Superabsorbents: No. 2 globally
- Expandable polystyrene: No. 1 (grey), No. 2 (white) in Europe

Main competitors

- Cracker products: SABIC, Dow, ExxonMobil, Sinopec, LyondellBasell, Lotte Chemicals, LG Chem, Ineos
- Acrylic monomers: Dow, Satellite, Tasnee, Arkema
- Ethylene oxide and glycols: Dow, SABIC, Sinopec, INEOS Oxide, Shell, Lotte Chemicals, Reliance, Sanjiang Fine Chemicals
- Alcohols and solvents: Dow, Eastman, ExxonMobil, Oxea, Evonik, Sasol, Luxy, Wanhua
- Plasticizers: ExxonMobil, Eastman, Evonik
- Superabsorbents: Nippon Shokubai, Evonik, LG Chem, Sanyo
- Expandable polystyrene: Loyal, Wuxi Xingda, Synthos

Focus of research and development

We aim to set the benchmark for cost competitiveness and environmental footprint. The focus is on developing new processes and optimizing our existing ones. We want to be a thought and action leader in sustainability with a special focus on CO₂ reduction and the circular economy. In terms of product innovation, we advance research in the field of superabsorbent polymers and styrenics.

Key capabilities of BASF

- Strong Verbund sites with world-scale production facilities
- Leading process technology and operational excellence
- Capabilities for greenhouse gas emission reduction
- Strong global market position with regional production
- Outstanding market knowledge and technical capabilities

Acquisitions/JVs/investments/divestitures

from 2018 onward

Product group	Description	Year
Ethylene, propylene	Feedstock flexibilization of steam cracker in Antwerp, Belgium	2019
Ethylene oxide	Expansion of integrated EO complex in Antwerp, Belgium	2022
Superabsorbent polymers	Closure of superabsorbent production in Mannheim, Germany	2022
Superabsorbent polymers	Investment in excellence center in Antwerp, Belgium	2023
Cracker products and downstream	Establishment of an integrated Verbund site in Zhanjiang, Guangdong, China	until 2030

Innovation



Electrical heating concepts for steam crackers

Steam crackers play a central role in the production of basic chemicals and require a significant amount of energy. Today, steam cracker furnaces are heated by burning fossil fuels. BASF has joined forces with SABIC and Linde to realize concepts for electrically heated steam cracker furnaces. By using electricity from renewable sources, the fundamentally new technology has the potential to reduce CO₂ emissions by as much as 90%.

Major nameplate capacities of BASF

thousand metric tons per year

Product group	Location													Total
	Antwerp, Belgium	Camaçari, Brazil	Cornwall, Canada	Freeport, Texas	Geismar, Louisiana	Rayong, Thailand	Kuantan, Malaysia	Ludwigshafen, Germany	Nanjing, China	Pasadena, Texas	Port Arthur, Texas	Tarragona, Spain	Ulsan, South Korea	
Ethylene	1,080	–	–	–	–	–	–	620	740 ¹	–	1,040 ⁴	–	–	3,480
Propylene	650	–	–	–	–	–	–	350	370 ¹	–	890 ⁴	370 ³	–	2,630
Butadiene	155	–	–	–	–	–	–	105	130 ¹	–	290 ⁴	–	–	680
Benzene	280	–	–	–	–	–	–	300	130 ¹	–	200 ⁴	–	–	910
Cyclohexane	–	–	–	–	–	–	–	130	–	–	–	–	–	130
Ethylene oxide (equivalents)	500	–	–	–	220	–	–	345	380 ¹	–	–	–	–	1,445
Oxo C4 alcohols	–	–	–	300	–	–	330 ²	560	305 ¹	130	–	–	–	1,625
Plasticizers (incl. Hexamoll® DINCH)	–	–	35	–	–	–	–	500	–	60	–	–	–	595
Acrylic acid	320	160	–	230	–	–	160 ²	320	320 ¹	–	–	–	–	1,510
Superabsorbents	210	60	–	215	–	20	–	25	60 ¹	–	–	–	–	590
Styropor/Neopor	–	–	–	–	–	–	–	460	–	–	–	–	85	545

All capacities in the table illustrate 100% capacity of the operations. BASF's share might be lower.

1 BASF 50%; Sinopec 50%

2 BASF 60%; PETRONAS 40%

3 BASF 51%; Sonatrach 49%

4 BASF 60%; Total 40%

Intermediates

The Intermediates division manufactures about 600 products, which are sold worldwide. These include butanediol and its derivatives, amines, organic acids, polyalcohols, life science intermediates, solvents and OASE® gas treatment solutions. They are generally quite resilient to economic cycles and are often the result of multistep production processes within BASF. Customers typically purchase them as precursors for their downstream chemicals, and they are widely used for BASF's own downstream products. The Intermediates division focuses primarily on the C1 and C2 value chains.

Portfolio

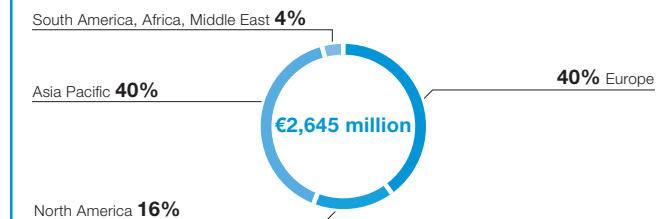
Butanediol and its derivatives

BASF is the world's largest manufacturer of 1,4-butanediol, which is a chemical building block for products such as polyesters and polyurethanes. Its derivatives are used to manufacture products ranging from fibers to paints and pharmaceuticals, and include tetrahydrofuran (THF), PolyTHF® and gamma-butyrolactone (GBL) as well as N-methylpyrrolidone (NMP).

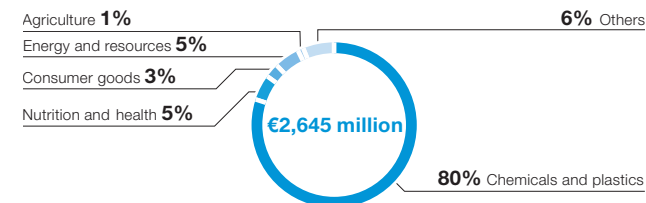
Amines

With about 300 different amines, we have the world's most diverse portfolio of this type of chemical intermediates. Along with alkyl-, alkanol-, alkoxyalkylamines and ethylene amines, we offer heterocyclic and aromatic as well as specialty amines. The range is completed by a portfolio of chiral amines of high optical and chemical purity. The versatile products are used mainly to manufacture process chemicals, pharmaceuticals and crop protection agents, as well as cosmetic products and detergents. They also serve to produce coatings, specialty plastics, composites and specialty fibers.

Sales by region 2020 (location of customer)



Sales by direct customer industry 2020



Acids and polyalcohols

BASF is the world's leading manufacturer of polyalcohols such as neopentylglycol (NPG) and 1,6 hexanediol (HDO), carbonates and carboxylic acids, such as formic and propionic acid. Carboxylic acids are used as preservatives for the feed and food industries, as auxiliaries for textile and leather applications and as deicing agents. The portfolio also includes higher carboxylic acids such as 2-ethylhexanoic acid (2-EHA) and isononanoic acid (iNA), which are primarily utilized in synthetic lubricants, paint dryer and PVC plasticizer applications. Polyalcohols are mainly offered for the production of a wide range of coatings. Carbonates serve as building blocks for superabsorbent polymers. They are also used for the formulation of battery electrolytes and as solvents for lubricants.

Acetylenics and carbonyl derivatives

These specialty intermediates are based on raw materials from BASF's Verbund, such as acetylene and chlorine. Among the acetylene derivatives are vinyl monomers, acetylenic alcohols and higher alkyllpyrrolidones. Chlorine-based intermediates include acid chlorides and chloroformates. Further specialty intermediates are glyoxal, cyclododecanone (CDon), imidazoles and triphenylphosphine. The products serve as building blocks for crop protection

agents and pharmaceuticals or as monomers and performance additives for polymers, coatings and printing inks.

Innovation pipeline

We follow a differentiated innovation strategy to further grow the different businesses. Sustainability is a major driver. We strive to expand our product portfolio as well as the application fields of our existing products where appropriate. At the same time, we are looking for opportunities to improve the efficiency of our processes:

- New products: We are expanding our portfolio of biomass balance (BMB)¹ products with a particularly favorable product carbon footprint. In addition to our methanol BMB, we enabled one of our customers to produce one of their fragrance products in a more sustainable way using monomethylamine (MMA). MMA proves itself in numerous other applications, for example, in the production of crop protection agents, solvents and pharmaceuticals.
- In 2020, we started a cooperation with the German firm JenaBatteries GmbH for the production of an electrolyte for a battery technology that is particularly suitable for stationary storage of electricity from renewable energy sources and for

¹ The biomass balance approach allows fossil fuels to be replaced by renewable raw materials in BASF's Production Verbund.

stabilizing conventional transmission grids. As part of the collaboration we supply one of the two electrolytes, based on an amine from our broad portfolio.

- Improved processes: The new acetylene plant at the Ludwigshafen Verbund site uses about 10% less fossil resources per ton of product and produces fewer by-products compared to the old process. In addition, we use the excess heat to generate energy, further increasing the efficiency of the process.

BASF's market position

BASF's Intermediates division is among the top three producers worldwide of its products in all strategic business units.

Main competitors

- Amines: Dow, Eastman, Shandong Liangmeng, Huntsman, Ineos, Nouryon
- Butanediol/derivatives: Dairen, LyondellBasell, Xinjiang Lanshan Tunhe
- Acids and polyalcohols: Eastman, Perstorp, Oxea
- Acetylenics and carbonyl derivatives: Evonik, Ashland, Altivia, Weylchem

Focus of research and development

The main aim of process innovation is to optimize existing production technologies and develop new, highly efficient processes offering considerable sustainability contributions and cost advantages.

Key capabilities of BASF

- World-scale plants based on leading process technology
- Competitive raw material sourcing and/or backward integration
- Operational, logistical as well as commercial excellence
- Strong market position with regional setup

Innovation



New gas treatment technology improving carbon footprint

In 2020, we launched a new, energy-efficient gas treatment technology developed in cooperation with ExxonMobil Catalysts and Licensing LLC. The amine-based technology branded OASE® sulfexx™ helps refiners and gas processors to meet their sulfur removal targets, while reducing their carbon footprint. It ensures the highly selective removal of hydrogen sulfide (H₂S) from gas streams, while minimizing carbon dioxide (CO₂) co-absorption. Thus it provides a competitive advantage by increasing plant capacity and lowering investment and production costs.

Acquisitions/JVs/investments

from 2018 onward

Product group	Description	Year
Acetylene	Replacement of plant in Ludwigshafen, Germany	2019
Propionic acid	Capacity expansion in Nanjing, China	2019
Specialty amines	New plant in Nanjing, China	2019
Neopentylglycol	Capacity expansion in Nanjing, China	2020
<i>tert</i> -Butylamine	Capacity expansion in Nanjing, China	2022

Divestitures/shutdowns

from 2018 onward

Product group	Description	Year
Specialty intermediates	Closure of site in Zachary, Louisiana	2019
1,4-Butanediol	Closure of production line in Chiba, Japan	2020
	Closure of production line in Kuantan, Malaysia	2021

Major nameplate capacities of BASF

thousand metric tons per year

Product group	Capacity
Alkylamines	250
Ethanolamines and derivatives	440
Specialty amines	>100
Butanediol equivalents	550
PolyTHF®	350
Neopentylglycol (Neol®)	255
Formic acid	305
Propionic acid	180

Materials

The Materials segment is composed of the Performance Materials division and the Monomers division. The segment's portfolio comprises advanced materials and their precursors for new applications and systems. These include isocyanates and polyamides as well as inorganic basic products and specialties for the plastics and plastics processing industries. We want to focus primarily on organic growth through differentiation via specific technological expertise, industry know-how and customer proximity to maximize value in the isocyanate and polyamide value chains.

Divisions

Performance Materials

Polyurethanes, thermoplastics and foam specialties for sectors such as the transportation, construction and consumer goods industries, as well as for industrial applications

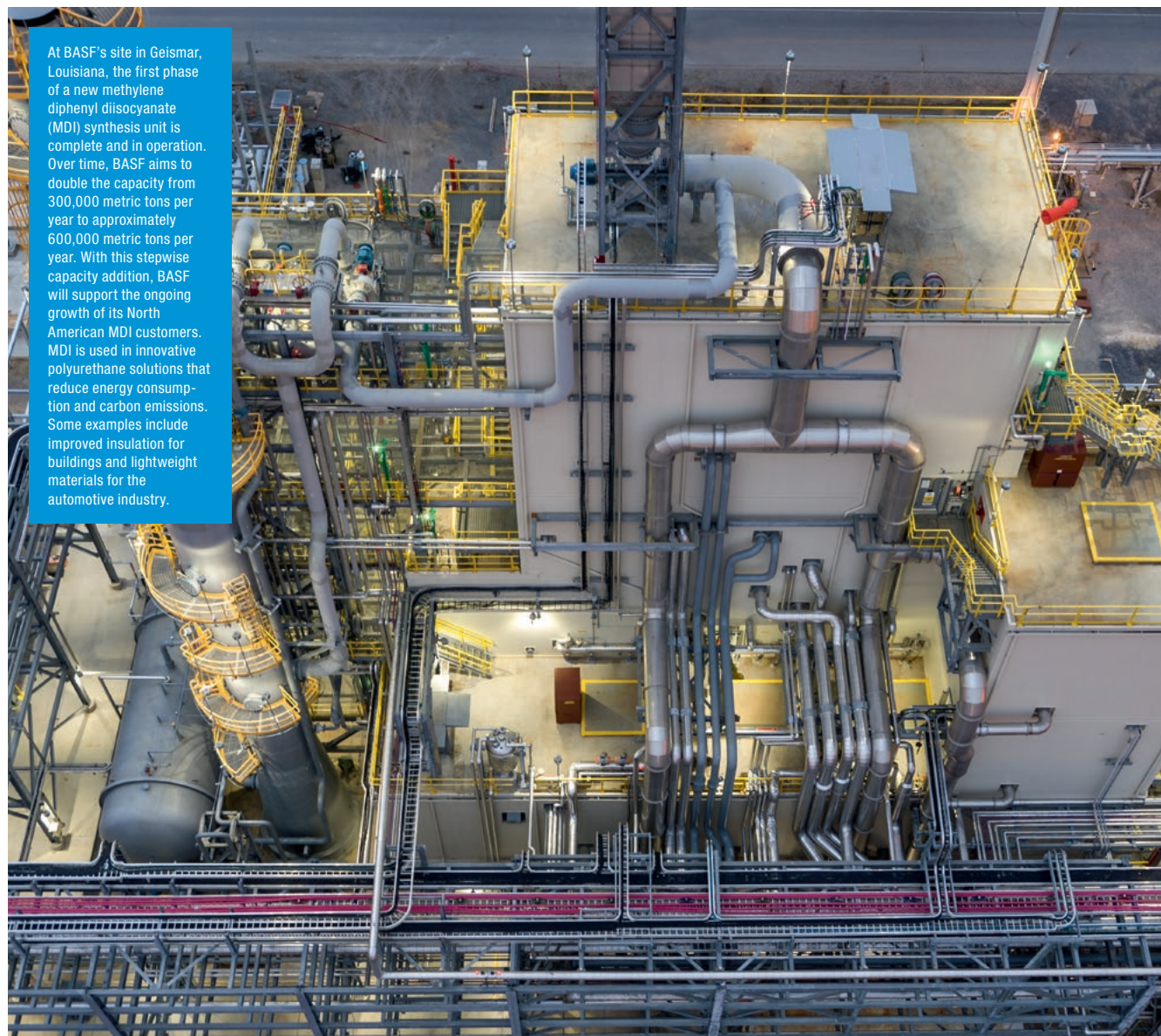
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Monomers

Isocyanates and polyamides as well as inorganic basic products and specialties for sectors such as the plastics, automotive and construction industries

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Materials



At BASF's site in Geismar, Louisiana, the first phase of a new methylene diphenyl diisocyanate (MDI) synthesis unit is complete and in operation. Over time, BASF aims to double the capacity from 300,000 metric tons per year to approximately 600,000 metric tons per year. With this stepwise capacity addition, BASF will support the ongoing growth of its North American MDI customers. MDI is used in innovative polyurethane solutions that reduce energy consumption and carbon emissions. Some examples include improved insulation for buildings and lightweight materials for the automotive industry.

Segment Materials

Sales

Monomers €5,101 million
Change: **-6%**
Percentage of sales: **48%**

2020:
€10,736 million

Change:
-6%

2019:
€11,466 million

Performance Materials €5,635 million
Change: **-7%**
Percentage of sales: **52%**

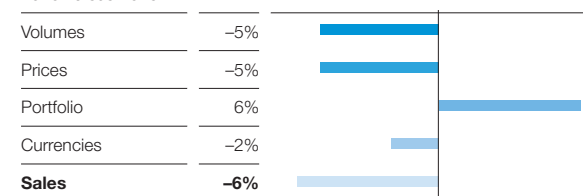
Segment data Materials

Million €

	2020	2019	2018
Sales to third parties	10,763	11,466	13,270
Share of total BASF sales	% 18	20	22
of which Performance Materials	5,635	6,064	6,517
Monomers	5,101	5,402	6,753
Income from operations before depreciation and amortization (EBITDA) before special items	1,714	1,719	3,020
Income from operations before depreciation and amortization (EBITDA)	1,556	1,691	2,993
EBITDA margin	% 14	15	23
Income from operations (EBIT) before special items	835	1,003	2,400
EBIT before special items margin	% 8	9	18
Income from operations (EBIT)	-109	973	2,374
EBIT margin	% -1	8	18
Return on capital employed (ROCE)	% -1.1	10.7	26.1

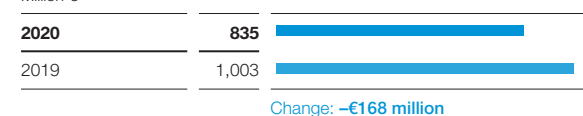
Factors influencing sales

2020 versus 2019



EBIT before special items

Million €



Performance Materials

The Performance Materials division brings together BASF's entire materials know-how regarding innovative, customized plastics under one roof. Active in four major industry sectors – transportation, consumer goods, industrial applications and construction – the division has a strong portfolio of products and services combined with a deep understanding of application-oriented system solutions.

Portfolio

Polyurethanes

Polyurethane solutions make life more comfortable, safer and more pleasant, while helping to save energy. They contribute towards improved insulation of buildings and household appliances, light-weight design of cars, and other consumer products. Several industry fields use the unique advantages of polyurethanes provided with the knowledge and experience of BASF's polyurethane experts worldwide. This product group includes PU (polyurethane) systems, TPU (thermoplastic polyurethanes) and MPU (microcellular polyurethane or Cellasto®) technologies.

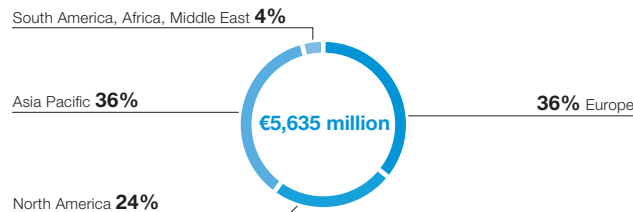
Engineering plastics

Engineering plastics are used in numerous applications, such as automotive engineering, the electrical and electronics sectors, household appliances and precision technology as well as in medical technology. This product group includes Ultraform® based on polyoxymethylene (POM), Ultradur® based on polybutylene terephthalate (PBT) and Ultramid® based on polyamide (PA).

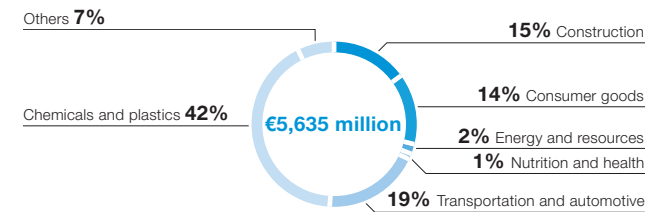
Specialty plastics

Specialty plastics include biodegradable co-polyesters, mainly used in various packaging applications and sold under the ecovio® and ecovio® brands, as well as Ultrason®, a high-temperature plastic based on polyarylsulfone (PPSU, PSU, PESU).

Sales by region 2020 (location of customer)



Sales by direct customer industry 2020



Functional foams

Functional foams include Basotect®, a flexible, open-cell foam made from melamine resin, as well as the particle foam Neopolen®. Basotect® is used for sound and thermal insulation in the construction and transportation industries and as a cleaning sponge in the consumer industry.

Industry focus

Performance Materials approaches the market with a strong industry orientation, focusing on innovation to address important needs of key market segments. We work jointly with our customers and stakeholders in the industries to introduce innovative solutions by combining our comprehensive portfolio of products with application, engineering, simulation and manufacturing know-how. Customer intimacy and close collaboration are the basis for our solution-selling approach, which is a key driver for profitable growth.

Product/Industry	Transportation	Construction	Consumer	Industrial
PU systems	■	■	■	■
TPU	■	■	■	■
MPU	■		■	■
Engineering plastics	■	■	■	■
Polysulfones	■		■	■
Functional foams	■	■	■	
Biodegradable plastics			■	

BASF's market position

- TPU: No. 1 globally
- MPU: No. 1 globally
- Polyamide 6 and 6.6 compounds: No. 1 globally
- PBT compounds: No. 1 globally

Main competitors

- Polyurethanes: Covestro, Dow, Huntsman
- Polyamide 6 and 6.6 compounds: Lanxess, Dow, EMS

Focus of research and development

Our innovation focus is on developing new products and applications in key target industries to improve existing solutions and find new ones. Development is driven by local market needs and is coordinated globally to ensure leveraging of key capabilities across regions. Our innovation pipeline focuses on creating solutions for unmet market needs, particularly in developing markets with strong growth potential.

Key capabilities of BASF

- Close collaboration with key customers in target industries worldwide
- Innovation in products, applications, processes and business models
- Technical, engineering and application competence
- Operational excellence ensuring reliability and consistent quality
- Focused specialty businesses

Innovation



A new level of puncture resistance thanks to Elastollan®

Together with our partner Schwalbe, we have developed a new generation of bicycle tubes based on the thermoplastic polyurethane (TPU) Elastollan®. The new Aerothan® bicycle tube offers exceptional performance, puncture resistance and stable handling thanks to the special mechanical properties of Elastollan®. It is around 40% lighter than the established alternatives on the market, is easy to assemble and has a small packing size. Another advantage of the Aerothan bicycle tubes is that they are recyclable. They are made entirely of thermoplastic polyurethane and can be returned to the manufacturer easily and free of charge, via the tube recycling program. The material of the old tubes is processed and then reused as sealing or insulating material.

Acquisitions/JVs/investments

from 2018 onward

Product group	Description	Year
Polyurethanes	Cellasto capacity expansion in Wyandotte, Michigan	2018
	TPU capacity expansion in Lemförde, Germany	2019
	MPU capacity expansion in Dahej, India	2019
Engineering plastics	Ultraform® (POM) 50-50 production JV with Kolon Plastics in Gimcheon, South Korea	2018
	Acquisition of Solvay's polyamide business	2020
Specialty plastics	Expansion of Ultrason capacity in Yeosu, South Korea	2018

Divestitures/shutdowns

from 2018 onward

Product group	Description	Year
Engineering plastics	Shutdown of Ultraform® (POM) production plant in Ludwigshafen, Germany	2018
	Planned closure of Ultramid® compounding site in Leuna, Germany	2022

Major nameplate capacities of BASF

thousand metric tons per year

Product group	Capacity
Engineering plastics	885

Monomers

The Monomers division supplies a broad portfolio of large-volume monomers, basic polymers and inorganic chemicals. Major products include MDI (methylene diphenyl diisocyanate), TDI (toluene diisocyanate), propylene oxide, caprolactam, adipic acid, hexamethylenediamine, ammonia, polyamide 6 and 6.6, nitric acid, sulfur and chlorine products, inorganic salts, urea, melamine, glues and impregnating resins. The products are used in a broad spectrum of industries, such as the automotive, furniture, construction, wood-working, food, feed, solar, packaging and textile industries.

Portfolio

Isocyanates and propylene oxide

The portfolio of isocyanates consists of MDI and TDI. BASF is the world leader in isocyanates, which are key components to produce soft or rigid foams. MDI is a versatile isocyanate that can be used to make flexible foams as well as semi-rigid and rigid polyurethane plastics. Its primary applications are construction, consumer appliances, automotive components and shoe soles. TDI is an isocyanate used primarily in the manufacturing of flexible foams. Its main applications include mattresses and cushions for furniture and automotive seating.

The portfolio also includes propylene oxide, the main raw material for polyether polyols. Polyols are – together with isocyanates – the second key component for polyurethane foams. Other applications for propylene oxide are propylene glycols, surfactants and amines.

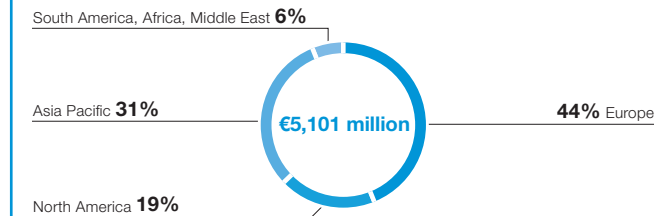
Polyamides and precursors

BASF is the world's leading supplier of high-quality polyamides, with the trade name Ultramid®, and polyamide precursors such as caprolactam, hexamethylenediamine or adipic acid. BASF started manufacturing Ultramid® polyamides over 50 years ago. Today, BASF offers a wide product range of polyamides for injection mold-

Business Segments

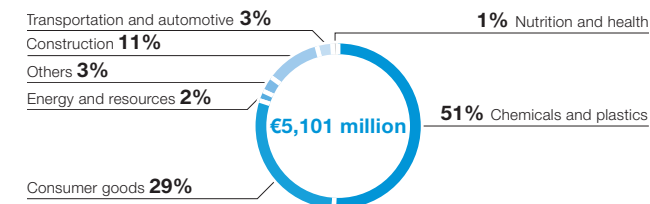
Materials

Sales by region 2020 (location of customer)



Financials

Sales by direct customer industry 2020



ing and extrusion. The product range includes PA 6 grades (Ultramid® B), PA 6.6 grades (Ultramid® A) and special grades based on copolyamides (Ultramid® C).

BASF's polyamides are the materials of choice for many applications:

- **Engineering plastics:** Ultramid® is used to produce molding compounds. Due to their outstanding properties, these materials have become indispensable in almost all fields of engineering for the most varied components and machine parts, as high-quality electrical insulating materials and for many special applications.
- **Films for food packaging:** Ultramid® is especially well-suited for the packaging sector due to its high strength, outstanding thermoformability, high thermal stability and very good barrier properties towards gases, especially oxygen, flavors and aromas.
- **Textiles and carpets:** The variety of Ultramid® grades for textiles enables the manufacturing of superior quality textiles for hosiery, swimwear and high-tech outdoor garments as well as high-end polyamide carpets and technical fiber applications.

Inorganic chemicals

Inorganic chemicals are mainly used as precursors for plastics, amines and other high-value chemicals. The product portfolio ranges from basic chemicals to inorganic salts:

- Ammonia
- Chlorine
- Caustic soda
- Nitric acid
- Sulfuric acid
- Standard alcoholates
- Ammonium salts

More than half of these products are for captive use within BASF's Verbund. The remaining products are sold primarily to other chemical companies. We are also one of the leading suppliers of sodium nitrate (used as a component for solar thermal power plant storage media), sodium methylate (a catalyst used for the production of biodiesel) and a variety of inorganic salts for different industries such as food, feed, textiles and paper.

Glues and impregnating resins

BASF, the inventor of Kaurit® and Kauramin® glues is the no. 1 producer and seller of glues and impregnating resins for different types of panel boards and laminated flooring. The portfolio encompasses liquid and powder glues specifically developed to produce a broad range of wood-based materials that meet low-emission standards. Powder glues are also used in other industries,

for example, to produce clutch linings in vehicles. BASF's impregnating resins have been designed for the treatment of various papers, including for overlay, counterbalance and décor papers for the flooring or furniture industry. Additionally, the unit produces AdBlue®, a high-purity urea solution that is used in trucks and passenger cars to reduce NOx emissions from diesel engines.

BASF's market position

- Isocyanates – TDI: No. 1 globally, MDI: No. 2 globally
- Polyamide film: No. 1 globally
- Glues and impregnating resins: No. 1 in glues in Europe
- Inorganic chemicals: No. 1 in inorganic salts in Europe and South America

Main competitors

- Isocyanates: Covestro, Wanhua, Dow, Huntsman
- Polyamide film: DSM, Ube, YueYang, AdvanSix
- Glues and impregnating resins: Dynea, Sadepan
- Inorganic chemicals: Evonik, Esseco
- Polyols: Dow, Covestro, Shell

Focus of research and development

The main aim of process innovation is to optimize existing production technologies and develop new, highly efficient processes offering considerable cost advantages.

Key capabilities of BASF

- World-scale plants based on leading process technology
- Competitive raw material sourcing and/or backward integration
- Operational, logistical as well as commercial excellence
- Strong market position with regional setup

Innovation



Sustainable roof insulation with biomass balanced raw material

With BauderECO, the German company Bauder has developed a sustainable roof insulation material that is largely made from biomass, recyclable and near-natural starting materials. Lupranat® M70R/MB – an isocyanate from BASF – makes up a large part of this. Biomethane is used in the production of Lupranat via the certified biomass balance process in the Production Verbund. In this way, the renewable raw material can be assigned to the product. The roof insulation material BauderECO offers maximum insulation performance with minimum raw material and energy input. BASF thus makes an important contribution to climate protection.

Acquisitions/JVs/investments

from 2018 onward

Product group	Description	Year
Ammonia	New world-scale ammonia plant in Freeport, Texas, JV with Yara	2018
Polyamide	Acquisition of Solvay's polyamide business	2020
MDI	Expansion of MDI JV in Caojing, China	2018
	Expansion of MDI production in Geismar, Louisiana	2020–2021
Sodium methylate	Expansion of sodium methylate plant in Guaratinguetá, Brazil	2020

Divestitures/shutdowns

from 2018 onward

Product group	Description	Year
TDI	Shutdown of TDI plant in Schwarzheide, Germany	2020

Major nameplate capacities of BASF

thousand metric tons per year

Product group	Capacity
Ammonia	1,765
Adipic acid ¹	720
Chlorine	595
Glues and impregnating resins	750
Sulfuric acid	920
Urea	545
Caprolactam	700
Polyamide	925
MDI	1,830
TDI	780
Propylene oxide	675

¹ Including joint ventures

Industrial Solutions

The Industrial Solutions segment consists of the Dispersions & Pigments and the Performance Chemicals divisions. It develops and markets ingredients and additives for industrial applications, such as fuel and lubricant solutions, polymer dispersions, pigments, resins, electronic materials, antioxidants, light stabilizers, oilfield chemicals, and mineral processing and hydrometallurgical chemicals. We aim to grow organically in key industries such as automotive, plastics, electronics, and energy and resources, and expand our position in value-enhancing additives and solutions by leveraging our comprehensive industry expertise and application know-how.

Divisions

Dispersions & Pigments

Raw materials used to formulate products in the coatings, construction, paper, printing and packaging, adhesives and electronics industries

[page 44](#)

Performance Chemicals

Customized products for various customer industries such as chemicals, plastics, consumer goods, energy and resources, as well as automotive and transportation

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The complexity of engine thermal management has increased with the varying requirements of electric vehicles (EV), fuel cell vehicles (FCV), hybrid technologies as well as internal combustion engines. BASF is specifically addressing and helping to enable these developments through its innovative coolant technology. With GLYSANTIN® FC G20 Ready Mix, BASF is already offering a coolant especially for FCVs. BASF is developing a dedicated product family for EVs with GLYSANTIN® ELECTRIFIED™ G22, specifically designed to meet critical requirements in safety, performance and lifetime.

Segment Industrial Solutions

Sales

Performance Chemicals €2,775 million
Change: **-14%**
Percentage of sales: **36%**

2020:
€7,644 million

Change:
-9%

2019:
€8,389 million

Dispersions & Pigments €4,869 million
Change: **-6%**
Percentage of sales: **64%**

Segment data Industrial Solutions

Million €

	2020	2019	2018
Sales to third parties	7,644	8,389	9,120
Share of total BASF sales	% 13	14	15
of which Dispersions & Pigments	4,869	5,178	5,292
Performance Chemicals	2,775	3,211	3,828
Income from operations before depreciation and amortization (EBITDA) before special items	1,189	1,249	1,090
Income from operations before depreciation and amortization (EBITDA)	1,099	1,327	1,076
EBITDA margin	% 14	16	12
Income from operations (EBIT) before special items	822	820	668
EBIT before special items margin	% 11	10	7
Income from operations (EBIT)	630	889	653
EBIT margin	% 8	11	7
ROCE	% 9.3	12.5	8.7

Factors influencing sales

2020 versus 2019

Volumes	-2%
Prices	-4%
Portfolio	-1%
Currencies	-2%
Sales	-9%

EBIT before special items

Million €

2020	822
2019	820

Change: **€2 million**

Dispersions & Pigments

The Dispersions & Pigments division is the leading global supplier of raw materials used in formulations for a number of industries, including coatings, construction, adhesives, printing and packaging, electronics and paper. Our portfolio encompasses dispersions, pigments, resins and a broad range of additives, such as performance and formulation additives as well as electronic materials. We put a strong emphasis on environmentally friendly systems, such as low-VOC (volatile organic compound) water-based coatings.

Portfolio

Dispersions

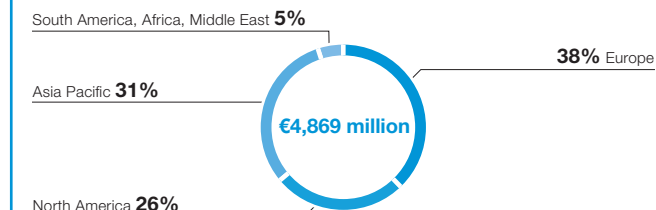
Polymer dispersions are water-based systems used in formulations for adhesives, sealants, architectural coatings, paper coatings, construction and fiber bonding materials. Our strength lies in our backward integration into acrylics, strong technical expertise and application know-how. In addition, our worldwide presence is a key advantage in serving our global customer base.

Pigments

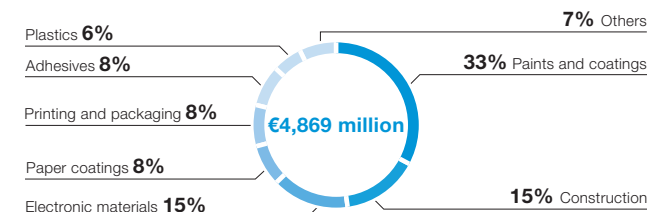
Pigments are insoluble coloring and iridescent materials used in paints, inks and special applications. BASF is the leading pigment supplier worldwide, with a particular strength in high-performance pigments. Our product portfolio comprises a wide range of organic and inorganic pigments, effect pigments and pigment preparations.

On August 29, 2019, BASF and DIC, a chemical company headquartered in Tokyo, Japan, reached an agreement on the acquisition of BASF's global pigments business. The assets and liabilities to be divested were reclassified to a disposal group in the Dispersions & Pigments division as of this date. The transaction is expected to close subject to the fulfillment of clearance conditions by DIC.

Sales by region 2020 (location of customer)



Sales by direct customer industry 2020



Resins

Resins are film-forming components used in industrial, automotive and wood coatings as well as in printing and packaging for ink formulations and barrier coatings. The comprehensive product portfolio includes water-based resins, acrylic oligomers, polyisocyanates, amino resins, aldehyde resins, vinyl chloride copolymers and high-solid polyols. Our portfolio offers customers a wide range of environmentally friendly water-based technologies that fulfill regulatory requirements regarding VOC.

Additives

BASF offers a broad range of performance and formulation additives that significantly improve the quality and performance of paints and coatings. BASF is a market leader for performance additives, particularly in light stabilizers. Light stabilizers protect paint films against degradation and a number of undesirable effects, including changes in appearance from long-term exposure to UV radiation. Our formulation additives offer solutions in the range of defoamers, dispersing agents, film-forming agents, rheology modifiers as well as wetting agents and surface modifiers to improve the properties of coatings. Our unique portfolio is based on a broad technology platform and helps performance-driven products to meet the latest and most stringent environmental regulations.

Electronic materials

BASF is able to deliver fully customized solutions for next-generation semiconductor and display manufacturing processes and metal systems. Our portfolio includes ultra-pure process chemicals, advanced materials for semiconductor manufacturing, high-end formulations for displays as well as Catamold® and carbonyl iron powder for metal systems. We provide reliable services and innovative solutions to customers in the fast-paced electronics industry.

BASF's market position

- Dispersions: No. 1 globally for water-based dispersions in the focus industries architectural coatings, adhesives, construction, fiber bonding materials and paper coatings
- Pigments: No. 1 globally; broadest portfolio of colors and effect pigments
- Resins: No. 3 globally in high-performance resins technologies
- Additives: No. 3 globally in performance and formulation additives
- Electronic materials: leading market position in ultra-pure materials for the semiconductor industry

Main competitors

- Dispersions: Dow, Synthomer, Trinseo, Wacker, Arkema, Wanhua
- Pigments: Clariant, DIC/Sun, Sudarshan
- Resins: Covestro, Allnex, Indulor
- Additives: ALTANA (Byk), Dow, Everlight, Evonik (Tego), Elementis, Rianlon
- Electronic materials: DuPont, Entegris, Merck, CMC Materials

Focus of research and development

We invest in research and development to create innovative, differentiating and more sustainable products and solutions. Our innovations allow our customers to offer environmentally friendly solutions with dispersions for applications in the coatings, printing, adhesives and construction industries. In addition, customers benefit from new and improved resins, pigments and formulation additives, which enable them to upgrade the performance of their product portfolio. In electronic materials, the focus is on developing innovative solutions for the electronics industries, for example, for semiconductors. We advance digital and automation solutions in our laboratory environment to optimize our efficiency.

Key capabilities of BASF

- Leading technology and cost position enable consistent product quality, reliability and competitiveness
- Comprehensive portfolio of raw materials for coatings, printing and packaging inks, adhesives and construction materials
- Strong technical and application know-how, professional service, close to our customers
- Global production footprint close to relevant markets

Business Segments

Industrial Solutions

Innovation



Financials

Enabling environmentally friendly paints

Demand for environmentally compatible products with high scrub resistance and low levels of volatile organic compounds (VOC) has become a driving force in the European market for water-based interior paints in recent years. For 20 years, the market has been dominated by ethylene vinyl acetate dispersions. BASF offers an attractive alternative: Acronal® 6292. Acronal® 6292 is a styrene-acrylate binder that makes it possible to produce environmentally friendly, biocide-free and low-VOC paints.

Acquisitions/JVs/investments

from 2018 onward

Product group	Description	Year
Dispersions	Capacity expansion in Ludwigshafen, Germany	2018
	Capacity expansion in Pasir Gudang, Malaysia	2021
	Capacity expansion in Castellbisbal, Spain	2020
	Capacity expansion in Dahej, India	2021
Dispersions and resins	Capacity expansion in Huizhou, China	2020
Resins	Capacity expansion in Ludwigshafen, Germany	2016–2019
Additives	Capacity expansion in Nanjing, China	2020
Electronic materials	New plant in Jiaxing, China	2018

Divestitures/shutdowns

from 2018 onward

Product group	Description	Year
Dispersions	Divestiture of the Pischelsdorf site, Austria	2018
	Closure of plant in Callao, Peru	2020
Resins and additives	Closure of plant in West Memphis, Arkansas	2021
Pigments	Divestiture of the pigments business	2021

Major production sites

BASF's dispersions, pigments, resins, additives and electronic materials are produced at 67 sites worldwide. Our most important sites for each product group are listed below.

Product group	Site
Dispersions	Ludwigshafen, Germany; Monaca, Pennsylvania; Shanghai, China; Guaratinguetá, Brazil; Cengkareng, Indonesia; Chattanooga, Tennessee; Wyandotte, Michigan; Heerenveen, Netherlands; Hamina, Finland; Dagang, China; Freeport, Texas; Tarragona, Spain; Dahej, India; Huizhou, China
Pigments	Ludwigshafen, Besigheim and Cologne, Germany; Monthey, Switzerland; Newport, Delaware; Ulsan, South Korea; Peekskill, New York; North Charleston, South Carolina; Hartwell, Georgia; Huningue, France; Maastricht, Netherlands; Shanghai, China; Guaratinguetá, Brazil
Resins	Ludwigshafen and Schwarzeide, Germany; Shanghai, China
Additives	Heerenveen, Netherlands; Schweizerhalle, Switzerland; Nanjing, China
Electronic materials	Ludwigshafen, Germany; Singapore; Taichung and Kuan Yin, Taiwan; Shanghai, China; Yeosu, South Korea

Performance Chemicals

As an innovative partner, BASF's Performance Chemicals division offers chemicals for various customer industries, such as plastics, automotive, refineries, lubricants, oilfield and mining. Our highly qualified and experienced team with outstanding market knowledge as well as our innovation platform and application know-how ensure our technological competence to provide excellent solutions to our customers.

Portfolio

Plastic additives

BASF is a globally leading supplier for stabilizers and additive blends to the plastics and rubber industries. The product range includes high-performance light and thermal stabilizers, antioxidants, process stabilizers, UV absorbers and other specialty additives for those industries. The main fields of application are:

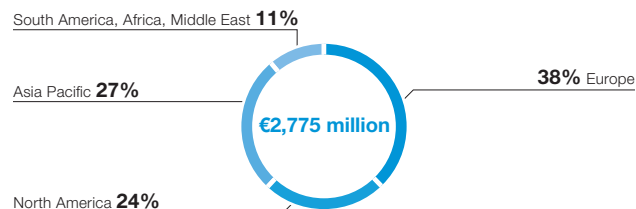
- Automotive
- Agriculture
- Building and construction
- Packaging
- Electronics and consumer goods
- Textiles and fibers

Fuel and lubricant solutions

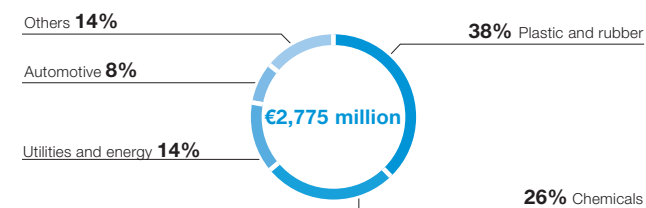
BASF is one of the leading suppliers of performance chemicals for the automotive and mineral oil industries. Our portfolio includes:

- Brake fluids and engine coolants
- Fuel and refinery additives, lubricant additives and additive packages, base stocks, lubricants
- Low, medium and high molecular weight polyisobutene (PIB)

Sales by region 2020 (location of customer)



Sales by direct customer industry 2020



Kaolin minerals

Kaolin is a naturally occurring white mineral that BASF converts to a high-performance material for automotive, construction, printing and agricultural applications. BASF is one of the largest calcined kaolin producers and a leading global supplier to segments such as paints, inks, coatings, plastics and rubber, thermal paper and catalytic substrates.

Oilfield chemicals and mining solutions

For the oilfield industry, we offer a wide range of products that help our customers develop efficient formulations for the oil and gas industry. Our product portfolio includes:

- Additives for drilling, cementing and stimulation for the completion of production wells
- Production additives to ensure an efficient flow of valuable oil and gas resources
- Standard surfactants and polymers as well as next-generation products for enhanced oil recovery

For the mining industry, our offer includes reagents, equipment and process technologies focusing on applications such as solid/liquid separation, solvent extraction, tailings management, flotation, materials handling and grinding. Our mineral processing expertise can help to achieve operational, economic and environmental benefits.

BASF's market position

BASF's Performance Chemicals business holds a leading market position in most industry segments: BASF is the global market leader in plastic additives and is market leading in major segments of the fuel and lubricant solutions business. In our mining and oilfield business as well as in kaolin, we hold leading positions in attractive segments.

Main competitors

- Plastic additives: Sabo, Cytec, Addivant, Songwon, Adeka
- Fuel and lubricant solutions: OWI, CCI, Shell, Lanxess, Afton, TPC Group
- Kaolin minerals: KaMin, Burgess, Imerys
- Oilfield chemicals and mining solutions: Dow, Solvay, SNF, ChampionX, Baker Hughes

Focus of research and development

Developing solutions together with our customers and ensuring technology leadership to improve our cost position are key to the success of Performance Chemicals. By leveraging the breadth of our competencies, we develop products that help improve the performance of our customers' products and processes. We utilize advances in data analytics, modelling and automation to accelerate development and enable faster implementation of innovations. With sustainability as a key growth driver for our businesses, we focus our innovation pipeline on solutions that will enable the transformations in the end markets. Key fields are resource efficiency, emissions reduction and the circular economy.

Key capabilities of BASF

- Excellent innovation platform and application know-how
- Customer proximity and market focus
- Technological competence to provide excellent solutions to our customers
- Continuous improvements in cost competitiveness in production

Major production sites

Product group	Site
Plastic additives	Lampertheim, Germany; Kaisten, Switzerland; Pontecchio Marconi, Italy; Puebla, Mexico; McIntosh, Alabama; Singapore; Manama, Bahrain; Shanghai, China
Fuel and lubricant solutions	Ludwigshafen and Lampertheim, Germany; Kaisten, Switzerland; Antwerp, Belgium; Meaux, France; McIntosh, Alabama; Geismar, Louisiana; Cincinnati, Ohio; Puebla, Mexico; Shanghai and Nanjing, China; Dahej, India; Singapore; Kuantan, Malaysia; Guaratinguetá and Jacarei, Brazil
Oilfield chemicals and mining solutions	Cork, Ireland; Nanjing, China; Ludwigshafen and Trostberg, Germany; Jacarei, Brazil
Kaolin minerals	Several sites in Middle Georgia, United States

Innovation



Solution based on BASF Irgatec® technology for advanced hygiene applications

Filter and personal hygiene products such as face masks, tissues and disposable gowns are made with different layers of polypropylene (PP) fleece materials. The barrier layer is created by a meltblown process, which entails blowing a melted polymer onto a moving collector to form a nonwoven fabric, which acts as a barrier to liquids or aerosols whilst maintaining breathability. BASF plastic additives experts and a global polymer producer jointly developed an alternative solution to the standard technology. The new technology improves the molecular design of a meltblown PP grade, thereby fulfilling the high sensorial standards required by personal hygiene producers. The solution, built on Irgatec® proprietary technology, can be easily added during the polymer production process.

Acquisitions/JVs/investments

from 2018 onward

Product group	Description	Year
Plastic additives	Global investments in capacity expansions and operational excellence	2016–2021
	New world-scale antioxidants plant in Shanghai, China	2019
	Capacity expansion for antioxidants in Pontecchio Marconi, Italy	2021
Fuel and lubricant solutions	Capacity expansion for engine coolants in Shanghai, China	2018
	Capacity expansion for antioxidants in Puebla, Mexico	2018
	Investment for engine coolants in Cincinnati, Ohio	2019
Mining solutions	New production line for polyacrylamide powder in Nanjing, China	2019

Divestitures/shutdowns

from 2018 onward

Product group	Description	Year
Paper and water chemicals	Transfer of BASF's paper wet-end and water chemicals business to Solenis	2019
Ultrafiltration membrane business	Transfer to DuPont Safety & Construction, including the shares of Inge GmbH	2019

Surface Technologies

The Surface Technologies segment comprises the Catalysts and Coatings divisions, which offer chemical solutions for surfaces. Its portfolio serves the automotive and chemical industries and includes automotive OEM and refinish coatings, surface treatment, catalysts, battery materials, and precious and base metal services. We improve our customers' applications and processes with tailored products, technologies and solutions, and support them through geographical proximity and supply reliability across all regions. The aim is to drive BASF's growth by leveraging our portfolio of technologies and expanding our position as a leading and innovative provider of battery materials and surface coatings solutions.

Divisions

Catalysts

Mobile emissions catalysts, chemical catalysts and adsorbents, refining catalysts, battery materials, precious and base metal products and services, precious metal trading, recycling, clean air technologies

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Coatings

Automotive OEM coatings, automotive refinish coatings and services, decorative paints, surface-applied treatments for metal, plastic and glass substrates for a wide range of industries

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Globally, BASF is conducting research into innovative cathode materials that make electromobility a reality. BASF's innovations for high-performance lithium-ion batteries will help double the driving range of a mid-size car from 300 to 600 km by 2025 and significantly reduce the charging time of electric vehicles. The photo shows a scientist filling a climate chamber with small test batteries at the Innovation Campus Shanghai, China. The batteries are investigated for several weeks under well-controlled temperature conditions. Small test batteries already provide very precise data to evaluate the performance over the entire lifespan of the battery in an electric car.



Segment Surface Technologies

Sales

Coatings €3,089 million
Change: **-18%**
Percentage of sales: **19%**

2020:
€16,659 million

Change:
27%

2019:
€13,142 million

Catalysts €13,570 million
Change: **44%**
Percentage of sales: **81%**

Segment data Surface Technologies

Million €

	2020	2019	2018
Sales to third parties	16,659	13,142	11,199
Share of total BASF sales	% 28	22	19
of which Catalysts	13,570	9,396	7,469
Coatings	3,089	3,746	3,730
Income from operations before depreciation and amortization (EBITDA) before special items	966	1,173	995
Income from operations before depreciation and amortization (EBITDA)	900	1,120	953
EBITDA margin	% 5	9	9
Income from operations (EBIT) before special items	484	722	617
EBIT before special items margin	% 3	5	6
Income from operations (EBIT)	-587	663	574
EBIT margin	% -4	5	5
Return on capital employed (ROCE)	% -4.8	5.7	5.3

Factors influencing sales

2020 versus 2019

Volumes	-1%
Prices	32%
Portfolio	0%
Currencies	-4%
Sales	27%

EBIT before special items

Million €

2020	484
2019	722
Change: -€238 million	

Catalysts

BASF's Catalysts division is the global market leader in catalyst technologies. The division develops and produces mobile emissions catalysts as well as process catalysts and technologies. It is also the home of BASF's battery materials business and provides precious and base metals sourcing, recycling and management services. BASF expands its leading role in catalyst technology through continuous process and product innovation.

Portfolio

Mobile emissions catalysts

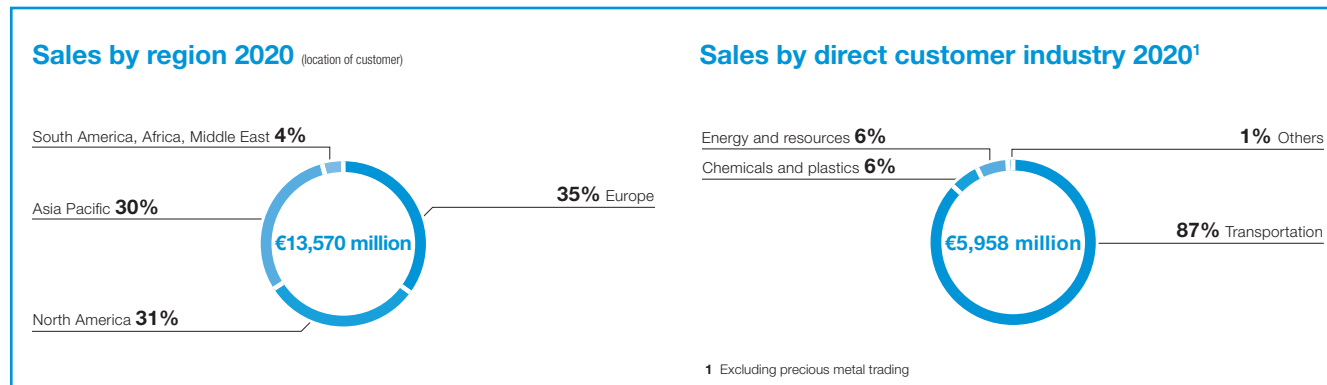
BASF's mobile emissions catalysts enable cost-effective regulatory compliance, providing technologies that control emissions from gasoline and diesel-powered passenger cars, trucks, buses, off-road vehicles and motorcycles.

Process catalysts and technologies

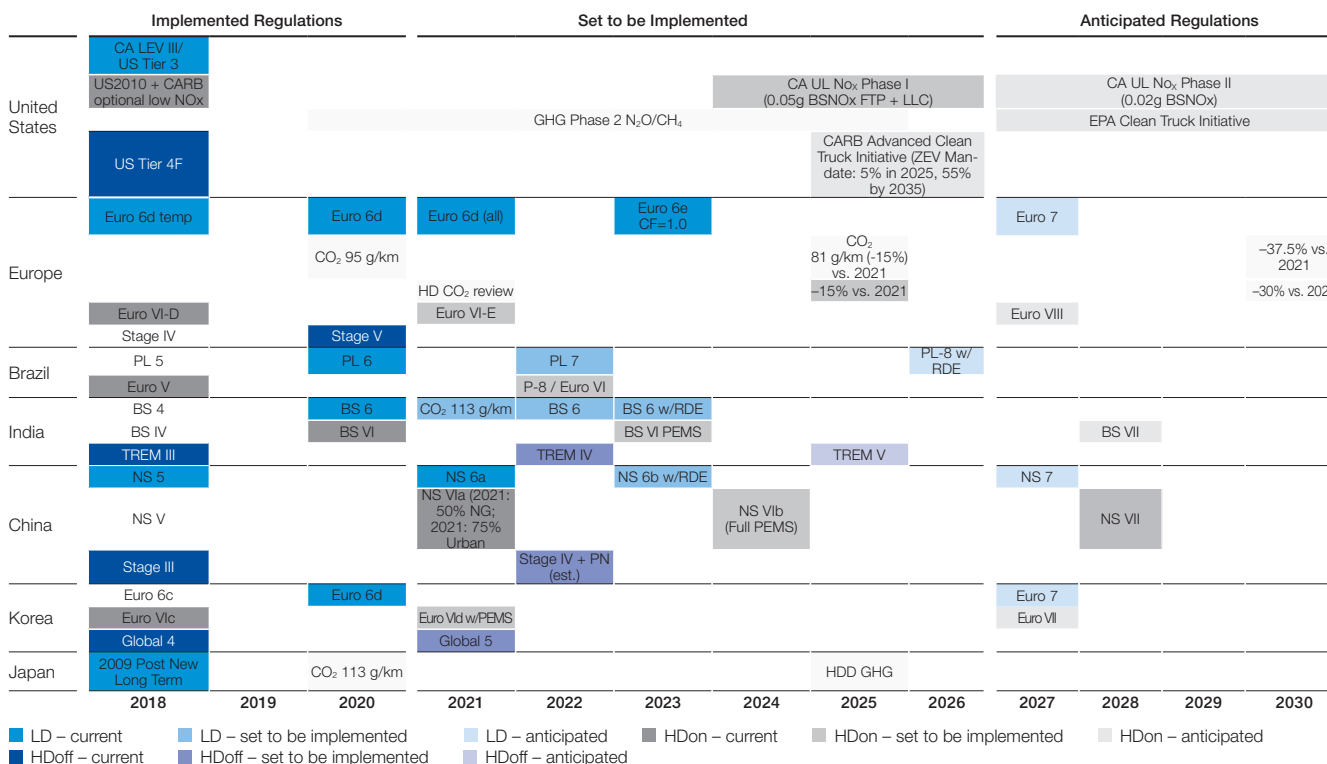
BASF is the leading global manufacturer of catalysts for the chemical industry, with solutions across the chemical value chain. The business also provides oil refining technology catalysts, including fluid catalytic cracking (FCC) catalysts, co-catalysts and additives. It also offers adsorbents, which are used for purification, moisture control and sulfur recovery.

Battery materials

BASF is a leading global supplier of advanced cathode active materials (CAM) for the lithium-ion batteries market, providing high-energy density CAM to the world's largest cell producers and for leading platforms of OEMs. BASF has a global presence with R&D and production capacity operating or announced in all regions, often leveraging partnerships. BASF is a frontrunner in developing innovative solutions and conducting next-generation battery materials research.



Emissions catalysts market – regulation remains primary demand driver



Precious and base metal services

The global business unit precious and base metal services supports BASF's mobile emissions catalysts and battery materials businesses and their customers with services related to precious and base metals sourcing and management. It purchases, refines, sells, distributes, stores and offers transportation services for metals. The business produces precious metals chemicals and is a global leader in precious metals recycling and refining. In addition, it also provides a variety of pricing and delivery arrangements to meet logistical, financial and price-risk management requirements.

BASF's market position

- Mobile emissions catalysts: No. 2 globally
- Chemical catalysts: No. 2 globally
- FCC refinery catalysts: No. 2 globally

Main competitors

- Mobile emissions catalysts: Johnson Matthey, Umicore
- Chemical catalysts: Clariant, Johnson Matthey, Haldor Topsoe
- FCC refinery catalysts: W.R. Grace, Albemarle
- Battery materials: Umicore, LG Chem, Posco, Easpring

Focus of research and development

For mobile emissions catalysts, the focus is on improved products to meet future vehicle emission standards. In the process catalysts business, priority is given to developing new and improved products. For battery materials, the focus is on offering comprehensive products meeting customers' requirements for e-mobility applications, including improving energy density to extend driving range as well as stability, safety and cost.

Innovation



Next generation of BASF's four-way conversion catalyst for highly efficient particulate removal

The conventional four-way conversion catalysts used in gasoline engines filter out ultrafine particles and chemically remove substances such as carbon monoxide (CO), unburned hydrocarbons (HC) and nitrogen oxides (NOx) in exhaust gas. This exhaust purification technology was significantly improved with the development of the FWC+ catalyst – the next generation of the four-way conversion catalyst. The FWC+ catalyst is a highly efficient filter that reduces particulates in exhaust gas emissions by up to 95%. The technology was initially introduced to the Chinese passenger car market in 2019 before being launched in Europe in 2020.

Key capabilities of BASF

- Global R&D footprint covering catalysts and battery materials
- Technology leadership in mobile emissions catalysts, process catalysts and battery materials
- Recognized precious metals expertise
- Strong and growing position in Asia through fully owned entities and joint ventures
- Operational excellence in catalyst and battery materials production and use

Divestitures/shutdowns

from 2018 onward

Product group	Description	Year
Process catalysts	Closure of the Erie, Pennsylvania, production site	2021

Acquisitions/JVs/investments

from 2018 onward

Product group	Description	Year
Mobile emissions catalysts	New manufacturing plant in Rayong, Thailand	2018
	New specialty zeolites manufacturing plant in Ludwigshafen, Germany	2019
	New manufacturing plant in Shanghai, China	2019
	Capacity expansion in Środa Śląska, Poland	2020
Battery materials	BASF TODA America LLC formed in the United States	2018
	BASF and Shanshan to form joint venture (BASF 51%) for the production of cathode active materials and precursors in China	2021
	New cathode material precursor manufacturing plant in Harjavalta, Finland	2022
	New cathode material manufacturing plant in Schwarzhilde, Germany	2022

Coatings

BASF's Coatings division offers innovative and ecologically viable solutions for the automotive industry, including both the original equipment manufacturer (OEM) and refinish markets, as well as surface treatment solutions for a variety of markets. BASF also develops and markets decorative paints in Brazil for interior and exterior use in residential and commercial buildings. We combine protection and aesthetics with eco-efficiency in tailor-made customer products and processes.

Portfolio

Automotive OEM coatings solutions

BASF provides complete automotive coatings solutions, including a product portfolio of:

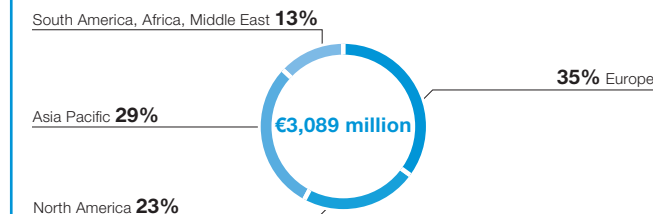
- E-coats
- Primers
- Basecoats
- Clearcoats

In addition to offering extensive technical support, BASF is a valued innovation and design partner for nearly all leading automobile manufacturers worldwide.

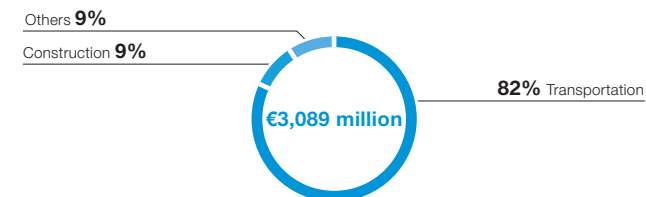
Automotive refinish coatings solutions

For the refinishing of passenger cars and trucks, BASF offers top- and undercoat materials sold under the global premium brands Glasurit® and R-M® as well as the value-for-money brands baslac®, LIMCO®, Norbin® and Yinfan®, which are sold to paint distributors and automotive repair shops. BASF is a leader in the fields of waterborne coatings and high-solid systems, enhanced by value-added services and tools for end users.

Sales by region 2020 (location of customer)



Sales by direct customer industry 2020



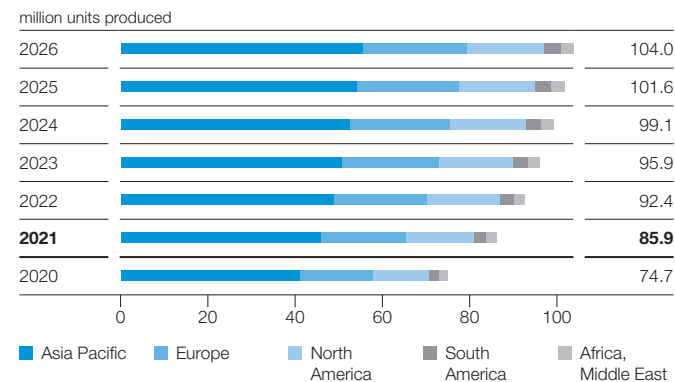
Surface treatment solutions

BASF is a globally leading solution provider for applied surface treatment. Under our Chemetall brand, we offer customized technology and system solutions to protect metals from corrosion, facilitate forming and machining, allow parts to be optimally prepared for the painting process and ensure proper coating adhesion. These products are used in a wide range of industries and markets, such as automotive, aerospace, aluminum finishing and metal forming.

Decorative paints

For interior and exterior use in buildings, BASF offers decorative paints, marketed, for example, under the premium brand Suviniil®, which is one of Brazil's best-known brands. With constant innovation launches, such as super-concentrated premium interior and exterior paint, Suviniil® continues to strengthen its role as a pioneer in the area of innovative paints.

Passenger car and light commercial vehicle production



Source: Global automotive production forecast May 2021 (LMCA)

Automotive is the most important customer industry for BASF's coatings business. The number of cars and light commercial vehicles produced globally is expected to grow in the medium term. The main growth driver is Asia – in particular China – where BASF is well-positioned to participate in the growth opportunities.

BASF's market position

- Automotive OEM coatings: No. 2 globally
- Automotive refinish coatings: No. 3 globally
- Surface treatment: No. 2 globally
- Decorative paints: No. 1 in Brazil

Main competitors

- Automotive OEM coatings: PPG, Axalta, Kansai Paint, Nippon Paint
- Automotive refinish coatings: Axalta, PPG, AkzoNobel, Sherwin Williams
- Surface treatment: Henkel, PPG, Nihon Parkerizing, Nippon Paint
- Decorative paints South America: AkzoNobel, Sherwin Williams

Focus of research and development

Our innovation efforts for the automotive industry are focused on close partnerships with our customers in order to formulate, for instance, new coatings solutions for integrated processes, unique eco-efficient coatings and clearcoats with extremely improved durability by using the latest crosslinking technologies. Additional research topics include improved products for new technology markets, such as functional films, and environmentally friendly applications.

Key capabilities of BASF

- Innovative long-term cooperation with leading OEM customers
- Technical on-site support at customer locations, creating additional value and long-term relationships
- Services and tools within automotive industry to deal with color complexity
- Leveraging strong market position and application know-how from mature markets into growing markets
- Global production and market presence

Innovation



Sustainable cleaners for plastics recycling

Chemetall offers a range of products to improve the sustainability, quality, productivity and safety of PET recycling processes. The integrated cleaning solutions Gardoclean®, Gardobond® additives, Gardo® Pure and Gardofloc® cover the entire washing and wastewater treatment process for PET recycling and comply with the strictest quality regulations, thus supporting customers to close material cycles and reduce CO₂ emissions. Compatible with food-industry standards, these cost-effective technologies are also suitable for LDPE and HDPE multilayer packaging films and can thoroughly remove all types of adhesives. Chemetall supports its customers to increase the quality of PET flake output and reduce energy and resource consumption.

Acquisitions/JVs/investments

from 2018 onward

Product group	Description	Year
Automotive OEM	Waterborne capacity expansion in Tultitlán, Mexico	2019
	Construction of automotive application center in Shanghai, China	2019
	Resin capacity expansion in Caojing, China	2020
	Expansion of e-coat production in Greenville, Ohio	2020
	Spraybooth capacity upgrade in Windsor, Canada	2020
	Upgrade of e-coat application center in Münster, Germany	2021
	Application center upgrade in Guadalajara, Spain	2022
Refinish	Acquisition of UBench BV, Turnhout, Belgium	2019
	New laboratory facility in Münster, Germany	2021
	Capacity expansion in Jiangmen, China	2022

Acquisitions/JVs/investments (continued)

from 2018 onward

Product group	Description	Year
Surface treatment	Capacity increase for Naftoseal® aircraft sealant production in Langelsheim, Germany	2019
	New surface treatment site in Pinghu, China	2021
New business development	New production for functional films in Münster, Germany	2020

Major production sites

BASF Coatings manufactures its products at more than 70 sites worldwide. The most important sites are listed below.

Product group	Site
Automotive OEM	Münster, Germany; Guadalajara, Spain; Shanghai, China; Greenville, Ohio; Tultitlán, Mexico
Refinish	Münster, Germany; Clermont de l'Oise, France; Windsor, Canada; Jiangmen, China
Surface treatment	Langelsheim, Germany; Sens, France; Guissano, Italy; Boksburg, South Africa; Shanghai, China; Blackman Township, Michigan
Decorative paints	Demarchi and Jabotão, Brazil

Nutrition & Care

In the Nutrition & Care segment – consisting of the Care Chemicals and Nutrition & Health divisions – we serve the growing and increasingly sophisticated demands for fast-moving consumer goods. Our customers include food and feed producers as well as the pharmaceutical, cosmetics, detergent and cleaner industries. We also offer solutions for technical applications and for crop protection and plant nutrition. We strive to expand our position as a leading provider of ingredients and solutions for consumer applications in the areas of nutrition, home and personal care. Our goal is to drive organic growth by focusing on emerging markets, new business models and sustainability trends in consumer markets, supported by targeted acquisitions.

Divisions

Care Chemicals

Ingredients for the cosmetics, detergent and cleaner industries, agrochemical and technical applications

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Nutrition & Health

Products for the food and feed industries, the flavor and fragrance industry, the pharmaceutical industry and the bioethanol industry

[page 58](#)

Individualization of personal care products is a global key trend. BASF has launched a variety of technologies that allow our customers to create a digitalized, data-driven consumer experience. Offerings that focus on matching this consumer need for personalized cosmetics include:

Emuage – Customized personal care products

In a partnership with the French startup company B2B Cosmetics, BASF is offering a technology, Emuage, that allows users to create their own individualized personal care products, for example, for hair, sun or skin care.

siHealth – Analyzing the skin and the environment

Apps providing individualized data on topics such as skin condition and environmental factors, such as UV radiation, have been developed and launched in collaboration with siHealth, an emerging company based in the United Kingdom.

By combining data from apps, formulation expertise and a broad range of personal care ingredients and actives, we are driving innovations digitally and enhancing customer experience.



Segment Nutrition & Care

Sales

Nutrition & Health €2,030 million
Change: 4%
Percentage of sales: 34%

2020:
€6,019 million

Change:
-1%

2019:
€6,075 million

Care Chemicals €3,989 million
Change: -3%
Percentage of sales: 66%

Segment data Nutrition & Care

Million €

	2020	2019	2018
Sales to third parties	6,019	6,075	5,940
Share of total BASF sales	% 10	10	10
of which Care Chemicals	3,989	4,118	4,244
Nutrition & Health	2,030	1,957	1,696
Income from operations before depreciation and amortization (EBITDA) before special items	1,190	1,214	1,128
Income from operations before depreciation and amortization (EBITDA)	1,152	1,189	1,107
EBITDA margin	% 19	20	19
Income from operations (EBIT) before special items	773	793	736
EBIT before special items margin	% 13	13	12
Income from operations (EBIT)	688	644	715
EBIT margin	% 11	11	12
Return on capital employed (ROCE)	% 10.6	10.0	11.8

Factors influencing sales

2020 versus 2019

Volumes	3%	
Prices	-1%	
Portfolio	0%	
Currencies	-3%	
Sales	-1%	

EBIT before special items

Million €

2020	773	
2019	793	

Change: **-€20 million**

Care Chemicals

BASF's Care Chemicals division is a globally leading supplier to the cosmetics, detergent and cleaner industries. We also offer solutions for technical applications and for crop protection and plant nutrition. Together with our customers, we create innovative solutions to meet the current and future needs of society more sustainably. We contribute to the long-term success of our customers' brands with a broad range of products and concepts via our global network of production and development sites.

Portfolio

Personal care

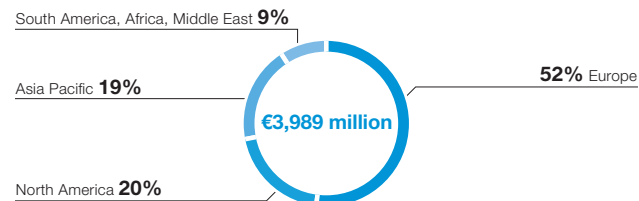
We offer high-quality, added-value ingredients for the personal care industry. Our focus on consumer trends and our ability to innovate and bring new products rapidly to market contribute strongly to the success of our customers. We take into consideration the entire value chain in order to develop sustainable solutions. The personal care product range includes surfactants and emulsifiers, polymers, emollients, cosmetic active ingredients and UV filters.

Our business approach draws its inspiration for products and concepts from consumers and society. This is exemplified by our Care Creations® brand which clearly expresses our strengths of scientific excellence, market knowledge and agility, making BASF's personal care business a valued partner for the industry.

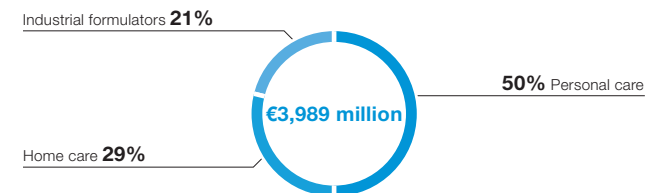
Home care and industrial & institutional cleaning

We develop, produce and market a wide range of ingredients for detergents and cleaning solutions worldwide. As the innovation leader in this market, we offer choices to our customers and provide the best-possible solutions to successfully cater to today's and tomorrow's market needs and changing regulatory requirements. Our strong R&D base and in-depth market and application expertise set us apart from the competition and make us the partner of choice

Sales by region 2020 (location of customer)



Sales by direct customer industry 2020



for formulators of efficient, convenient, sustainable and safe-to-use detergents and other cleaning products. Our portfolio, which is constantly being further developed, includes surfactants, enzymes, water-soluble polymers, chelating agents, biocides, optical effect products, stabilizers and methane sulfonic acid.

Industrial formulators

We develop and commercialize a broad portfolio of processing aids, differentiating additives and surface-active building blocks for a wide range of industrial applications and further downstream processing. With our formulation know-how and understanding of the physico-chemical properties of our products, we enable customer-specific solutions. In addition, we market an extensive portfolio of performance enhancers to crop protection and plant nutrition specialists. Our product portfolio includes dispersants, emulsifiers, surface modifiers, solvents, chelating agents, biocides, micronutrients and methane sulfonic acid.

BASF's market position

We are a leading supplier globally for the personal care and home care industries.

Main competitors

- Personal care: Ashland, Clariant, Croda, DSM, Evonik, Nouryon, Solvay
- Home care and industrial & institutional cleaning: Dow, DuPont, IFF, Nouryon, Novozymes
- Industrial formulators: Clariant, Sasol, Solvay

Focus of research and development

We are committed to delivering innovative and sustainable products and solutions in close collaboration with customers in our core markets, with a strong focus on bio-based and biodegradable ingredients. With process innovation in our core technologies, we target continuous capacity and yield improvement to ensure competitiveness and shrink carbon footprints to support the decarbonization of our customers. We systematically identify and establish new technologies to best support our customers in driving innovation for end consumers.

Key capabilities of BASF

- Customer proximity and industry focus across regions and industries
- Innovative and sustainable solutions through BASF's global R&D network
- State-of-the-art formulation technologies
- Strong global production footprint close to our customers, also in emerging markets

Innovation



Tough on stains and gentle to the environment

Enzymes are essential ingredients in modern detergent formulations and help to meet consumer needs for products that are tough on stains and gentle to the environment. The innovative combination of Lavergy® C Bright 100 L with selective ingredients from BASF creates a powerful performance-differentiated solution that keeps clothes from turning gray even after multiple washes. This sustainable one-fits-all solution is suitable for use with many types of fabric – whether whites or colors, cotton or synthetic fibers. Lavergy® C Bright 100 L is also certified according to the standards of various ecolabeling systems including EU Ecolabel and Blue Angel.

Acquisitions/JVs/investments

from 2018 onward

Product group	Description	Year
Alkoxylates	Gradual capacity expansion in Antwerp, Belgium	2018–2022
	Capacity expansion in Jinshan, China	2020
Alkyl polyglucosides	Capacity expansion in Cincinnati, Ohio, and Jinshan, China	2018–2019
Silicates	Plant modernization in Düsseldorf-Holthausen, Germany	2019
Polyacrylates	Capacity expansion in Ludwigshafen, Germany	2019
Pearlizers and opacifiers	Capacity expansion in Mauldin, South Carolina	2020
Methane sulfonic acid	Capacity expansion in Ludwigshafen, Germany	2021
Optical brighteners	Capacity expansion in Monthey, Switzerland	2022
UV filters	Capacity expansion in Kaohsiung, Taiwan	2022

Divestitures/shutdowns

from 2018 onward

Product group	Description	Year
Surfactants	Divestiture of oleochemical surfactants business in Mexico, including production site in Ecatepec, Mexico	2018
	Divestiture of anionic surfactants business in Kankakee, Illinois	2021
Optical brighteners	Divestiture of stilbene-based optical brightening agents in Ankleshwar, India	2019

Major nameplate capacities of BASF

thousand metric tons per year

Product group	Location	Capacity ¹
Chelating agents	Europe, North America, South America	170
Methane sulfonic acid	Europe	30
Non-ionic surfactants	Europe, North America, Asia Pacific	635
Anionic surfactants	Europe, North America, South America, Asia Pacific	600

¹ All capacities (including joint ventures) included at 100%

Nutrition & Health

BASF's Nutrition & Health division develops, produces and markets ingredients and solutions for the nutrition and health industries. Our products fulfill the highest safety, regulatory and sustainability standards. Together with our customers, we play an active part in enhancing the nutrition and health of consumers all over the world.

Portfolio

Aroma ingredients

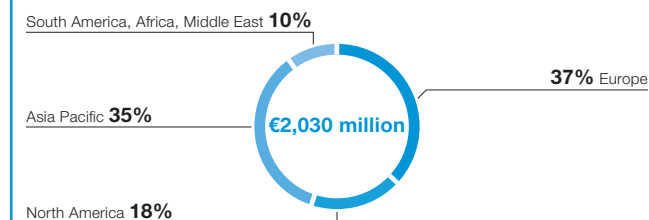
BASF offers a variety of aroma ingredients, such as L-menthol, geraniol, citronellol and linalool, which are part of our citral value chain. Through the acquisition of Isobionics and the partnership with Conagen, we broadened our portfolio with biotech-based natural ingredients. Our aroma ingredients are sold to the flavor and fragrance industry for use mainly in home and personal care products, in fine fragrances and in the food industry:

- Rose scents: geraniol, citronellol, dihydrorosan
- Citrus scents: citral, citronellal
- Mint scents: L-menthol, DL-menthol
- Lavender scents: linalool, tetrahydrolinalool
- Muguet scents: lysmeral, pyranol

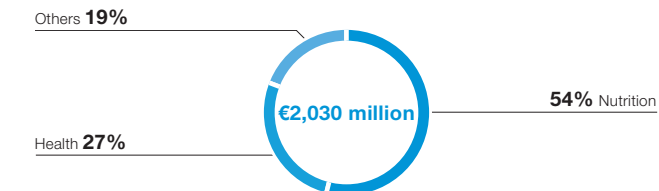
Animal nutrition

BASF is a leading supplier of feed additives and digital solutions for animal nutrition. High-quality feed additives, pioneering innovations and a global presence close to our customers have made BASF a leader in the animal nutrition industry. Our science-based, sustainable solutions approach is designed to help the feed industry meet the challenges it is facing and improve its environmental impact.

Sales by region 2020 (location of customer)



Sales by direct customer industry 2020¹



¹ Aroma ingredients business is included in the customer industries nutrition and others.

Our product portfolio for livestock and companion animals includes:

- Vitamins
- Carotenoids
- Enzymes
- Organic acids
- Mycotoxin binders
- Organically bound trace elements
- Omega-6 fatty acids and more

Human nutrition

Our health ingredients are based on solid scientific foundations and contribute to a longer, healthier and more active life. Used for a wide range of applications in market segments, including early life nutrition, dietary supplements, functional nutrition and food colors, our product range comprises:

- Vitamins
- Carotenoids
- Human milk oligosaccharides: 2'-fucosyllactose
- Plant-based peptides
- Omega-3 natural oils and powders
- Plant sterols

In our food fortification initiative, our health ingredients help fortify staple foods to combat micronutrient deficiencies across the world. Furthermore, we offer a comprehensive performance ingredient portfolio for the beverage and food industry.

Our products are used as stabilizers or colorants in various applications and include:

- Emulsifiers
- Enzymes
- Specialty compounds
- Filtration aids

BASF human nutrition application labs around the world combine expert knowledge with a deep understanding of local needs and the regional preferences of our customers.

Pharma solutions

In pharma solutions, we produce innovative excipients and active ingredients of outstanding quality and performance. With digital solutions, such as the Virtual Pharma Assistants, and a global team of industry experts, BASF supports its customers in developing efficient, cost-effective, and reliable formulations. Equipped with an in-depth understanding of multiple technologies and applications, we have the knowledge and resources to make biologics and drug manufacturing as well as delivery safer and more sustainable.

Enzymes

BASF develops, produces and markets a comprehensive selection of high-performance enzymes for a wide range of industries. By harnessing the power of nature and leveraging our unique, patented technology, we create a broad range of specialty products that meet high-value commercial needs. Our enzyme solutions are designed

to generate revenue in a sustainable way by maximizing efficiency while improving environmental performance. We offer industrial enzymes for the following markets:

- Animal nutrition
- Human nutrition
- Home care and industrial & institutional solutions
- Bioethanol
- Biopolymers
- Pulp and paper

BASF's market position

BASF's Nutrition & Health division is among the top three suppliers in all important product groups worldwide.

Main competitors

- Aroma ingredients: DSM, NHU, Symrise, IFF
- Animal nutrition: various Chinese companies, DSM, IFF
- Human nutrition: DSM, IFF, various Chinese companies
- Pharma solutions: Ashland, Evonik, Croda, KD Pharma, Huatai, Solara, IOL, Nippon Suisan Kaisha
- Enzymes: Novozymes, IFF, DSM, Advanced Enzyme Technologies

Focus of research and development

Together with our partners, we continuously work on translating ideas into innovations. Ongoing process innovation ensures technological and cost leadership in our major product lines.

Key capabilities of BASF

- Cost leadership through integration into the Verbund
- Value-driven innovation to support customer needs
- Deep understanding of the nutrition and health market
- High expertise in a complex regulatory environment
- Sustainability and quality management

Innovation



Supporting more sustainable animal feed

Sustainably produced food is playing an increasingly important role for consumers. With Opteinics™, BASF's animal nutrition experts have developed a digital solution to help customers minimize the environmental impact of animal protein with an emphasis on animal feed production. The composition of feed alone can positively influence up to 80% of the total carbon footprint of animal protein such as milk, meat and eggs. Opteinics stands for "Optimizing Protein Analytics" and is integrated into the compound feed formulation software. The platform is based on globally recognized environmental impact methodologies such as the UN Food & Agriculture Organization Livestock Environmental Assessment & Performance (LEAP) Partnership guidelines and draws its data from impartial databases like the Global Feed LCA Institute (GFLI).

Acquisitions/JVs/investments

from 2018 onward

Product group	Description	Year
Animal nutrition	Acquisition of Cloudfarms, Slovakia	2020
	New vitamin A production plant in Ludwigshafen, Germany	2021
Aroma ingredients	New integrated aroma ingredients complex in Kuantan, Malaysia	2017-2018
	Acquisition of Isobionics, Netherlands	2019
Enzymes	Capacity expansion of enzyme plant in Ludwigshafen, Germany	2021
	Investment in production setup for bacterial enzymes and biotechnology products, Kundl/Schafftenau, Austria	2021
Human nutrition	Capacity expansion for high-grade vitamin E in Ludwigshafen, Germany	2018
Pharma solutions	Expansion of PVP value chain: extension of capacities in Ludwigshafen, Germany; Shanghai, China; Geismar, Louisiana	2016-2019
	Expansion of ibuprofen production in Bishop, Texas	2020

Divestitures, shutdowns

from 2018 onward

Product group	Description	Year
Human nutrition	Divestiture of site in Kankakee, Illinois, and associated businesses of vegetable-oil-based pharmaceutical raw material sterols, natural vitamin E, anionic surfactants and esters	2021
Pharma solutions	Divestiture of Kalundborg site, Denmark, Omega-3 production	2020

Major production sites

Product group	Site
Animal nutrition	Ludwigshafen, Germany; Shenyang, China; Gunsan, South Korea
Aroma ingredients	Ludwigshafen, Germany; Kuantan, Malaysia; Geleen, Netherlands
Human nutrition	Illertissen and Ludwigshafen, Germany; Ballerup, Denmark; Boussens, France; Hutt Lagoon, Whyalla and Cheltenham, Australia; Gunsan, South Korea
Pharma solutions	Sandefjord, Norway; Callanish, United Kingdom; Bishop, Texas

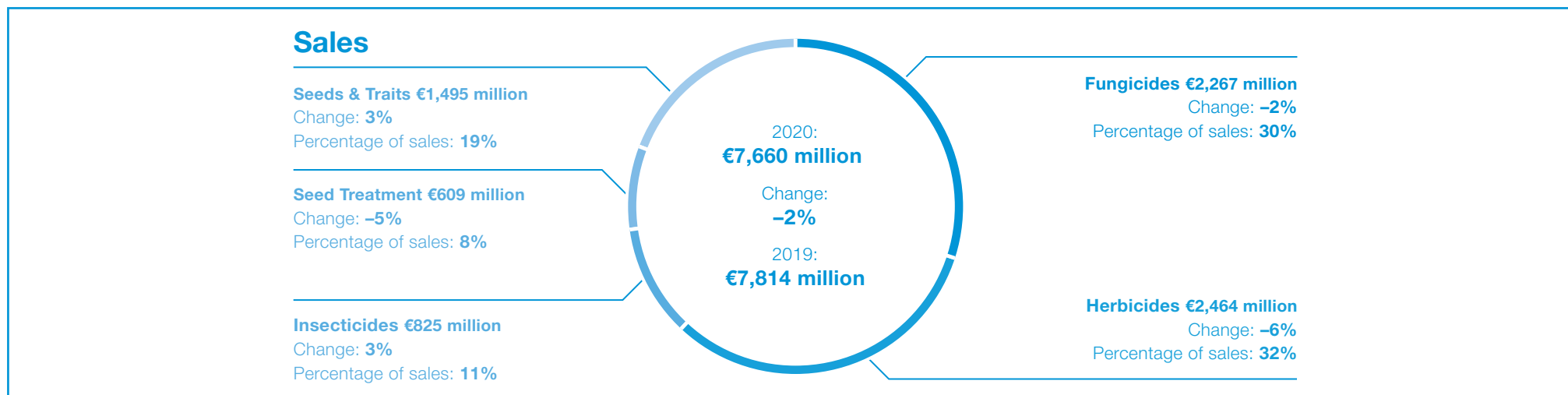
Agricultural Solutions

In the Agricultural Solutions segment, we aim to further strengthen our market position as an integrated provider of seeds, crop protection and digital solutions. Our connected offer comprises fungicides, herbicides, insecticides and biological solutions, as well as seeds and seed treatment products, complemented by digital products to help farmers achieve better yield. Our strategy is based on innovation-driven organic growth and targeted portfolio expansion through acquisitions. Customer needs, societal expectations and regulatory requirements are our innovation drivers.



In 2020, we announced BASF's sustainability commitments in agriculture, focusing on four areas to help farmers find the right balance: climate-smart farming, sustainable solutions, digital farming and smart stewardship. By 2030, we will launch more than 30 major projects from our R&D pipeline across all business areas. These will provide sustainable solutions to help farmers achieve better yield in their farm operations and promote healthy eating, balancing economic, environmental and societal demands.

Segment Agricultural Solutions



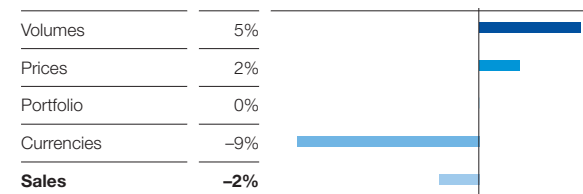
Segment data Agricultural Solutions

Million €

	2020	2019	2018
Sales to third parties	7,660	7,814	6,156
Share of total BASF sales	% 13	13	10
Income from operations before depreciation and amortization (EBITDA) before special items	1,680	1,809	1,128
Income from operations before depreciation and amortization (EBITDA)	1,582	1,647	985
EBITDA margin	% 21	21	16
Income from operations (EBIT) before special items	970	1,095	734
EBIT before special items margin	% 13	14	12
Income from operations (EBIT)	582	928	591
EBIT margin	% 8	12	10
Return on capital employed (ROCE)	% 3.6	5.3	5.1

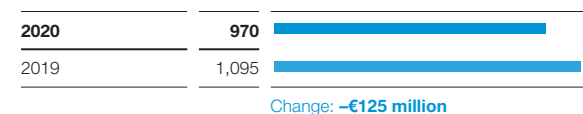
Factors influencing sales

2020 versus 2019



EBIT before special items

Million €



Agricultural Solutions

Agriculture is a key enabler in providing enough healthy, affordable food for a growing population and responding to changing consumer behavior while reducing the impact on the environment. As one of the world's leading agricultural solutions companies, we want to help shape a sustainable future for farming. At BASF, we believe that the way forward for agriculture is to find the right balance – for farmers, agriculture and future generations.

Portfolio

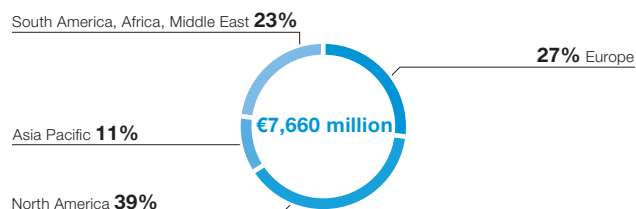
Our innovation-driven strategy for agriculture focuses on selected crop combinations, known as crop systems: soy, corn (maize) and cotton in the Americas; wheat, canola (oilseed rape) and sunflowers in North America and Europe; rice in Asia; and fruit and vegetables globally. We steer our connected offer, including seeds, traits, crop protection and digital products, for farmers and the agricultural industry toward sustainable solutions.

Field crop seeds

Research capabilities for traits and breeding, as well as corresponding commercial activities and brands:

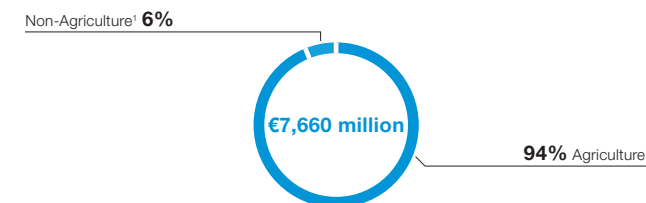
- InVigor® canola (oilseed rape) sold in North America, Europe and Australia offers high yielding hybrids. In North America, InVigor® is also combined with the LibertyLink® trait, enabling weed management and pod-shatter resistance, facilitating greater harvest flexibility and reducing risk due to storm losses.
- FiberMax® and Stoneville® cotton, available with herbicide tolerance and insect resistance trait brands LibertyLink®, GlyTol®, TwinLink® and TwinLink® Plus, brings value with yield and high-quality fiber.
- The e3 sustainable cotton program connects ginners, spinners and millers to the farmers' special agronomic practices.

Sales by region 2020 (location of customer)



¹ Aquaculture, forestry, home and garden, industrial weed control, ornamentals, public health, turf, urban pest control

Sales by direct customer industry 2020



Vegetable seeds

Developing solutions to make healthy eating enjoyable and sustainable, by creating improved varieties and working closely with partners throughout the value chain. Under the Nunhems® brand, BASF markets more than 1,200 vegetable varieties for 24 crops.

- Artichoke – more than 10 hybrids enable growers to cultivate more efficiently by sowing seeds, replacing the labor intensive and vulnerable practice of transplanting root cuttings.

Fungicides

Conducting pioneering research to find new active ingredients and provide our customers new options to control fungal diseases:

- Xemium® is a key component of BASF's fungicides portfolio due to its broad-spectrum disease control. It has excellent mobility in the plant and long-lasting residual action. Xemium® is available in more than 70 countries for over 140 different crops.
- Revysol® is our latest compound. It meets the highest level of regulatory standards and offers outstanding biological performance against difficult-to-control pathogens in specialty and row crops. The active ingredient has received registrations in all regions. The first Revysol®-based products have been launched in all key regions and countries around the world.

Herbicides

Reducing competition from weeds for nutrients, water and sunlight to secure yield and harvest quality, enabling no-till farming practices:

- Luximo® and Tirexor®, herbicides to manage difficult-to-control grasses and broadleaf weeds, received first approvals in Australia and entered the market in 2020. Additional country approvals are expected from 2021 onward.
- Liberty® and Basta® herbicides, based on glufosinate-ammonium, control weeds in a wide variety of row and specialty crops. Liberty® is designed for LibertyLink®-enabled canola, corn, cotton and soybeans, while Basta® is particularly effective on some of the most damaging and hard-to-control weeds in horticulture.

Insecticides

Combating insect pests in agriculture and beyond:

- Inscalis®¹ is a new insecticide for resistance and integrated pest management. Derived from a natural fermentation process, the active ingredient offers a favorable environmental profile to beneficial insects.
- Broflanilide®² offers a novel mode of action to control chewing pests with market launch in the United States, Canada and China in 2021. Seed treatment applications, marketed under the

¹ Co-developed with Meiji Seika Pharma Co. Ltd

² Co-developed with Mitsui Chemicals Agro, Inc.

Teraxxa™ brand, will target difficult to manage wireworms from 2021 onward.

- Alpha-cypermethrin controls a broad spectrum of insect pests in agriculture, forestry and public health. The formulation Fendona® is a valuable public health tool recommended by the WHO to combat malaria and other insect-borne diseases.

Seed treatment¹

Biological and chemical crop protection, functional coatings and colorants to improve seed performance:

- Poncho®/Votivo® is a systemic insecticide and biological seed treatment for use on a wide range of crops to control insect pests and protect against soil plant pathogenic nematodes.
- ILEVO® seed treatment for soybeans provides broad-spectrum nematode protection against soybean sudden death syndrome and cyst nematode, two of the top yield robbers.

Digital farming

With xarvio® Digital Farming Solutions, we enable precision farming and help growers optimize crop yield with fewer natural resources and crop inputs.

- Together with Bosch, we developed the Smart Spraying solution. This technology recognizes weeds and allows precise application of herbicides, maximizing productive land-use and reducing the environmental impact.

BASF's market position

- Agricultural Solutions: No. 4 globally

Main competitors

- Agricultural Solutions: Bayer, Corteva, Syngenta, FMC

Innovation



Natural partners

BioSolutions by BASF, as part of our portfolio for sustainable agriculture, provide flexible pest and disease control for a wide range of field and specialty crops. Developed through in-house expertise and strategic partnerships and based on natural mechanisms like beneficial nematodes, these natural partners can be used in organic farming or as a complement to conventional crop protection products. Beneficial nematodes like Nemasys® C provide effective and flexible control when other crop protection products cannot reach pests, such as overwintering larvae of codling moths in apple orchards.

Research and development

With estimated peak sales of more than €7.5 billion, our innovation pipeline comprises products and solutions across all business areas, to be launched throughout the next decade. We focus on offering farmers more sustainable agricultural innovations that help them achieve better yield, while balancing economic, environmental and societal demands. Until 2030, we will launch more than 30 major projects, including further products based on Revysol® fungicide and Tirexor® herbicide. Unique traits and high-performing seeds, such as hybrid wheat, will further strengthen our innovation pipeline.

Key capabilities of BASF

- Strong customer orientation with a connected offer for strategic crop systems
- Strengthened R&D pipeline for sustainable agriculture helping farmers balance environmental and economic challenges as well as meeting consumers' demand for more sustainably produced food
- Stringent patent management
- Innovative digital farming solutions
- Strong integration into the Production and Know-How Verbund

Selected acquisitions/JVs/investments/divestitures

from 2018 onward

Product group	Description	Year
Seeds/Crop protection/Digital farming	Acquisition of businesses and assets from Bayer	2018
Seeds	Divestiture of HILD Samen business to Graines Voltz	2020
	Expansion of tomato breeding facilities	2021
	Acquisition of melon breeding company ASL	2023
Crop protection/active ingredients	Commissioning of glufosinate-ammonium precursor in Europe	2018
	New Revysol® production capacity in North America	2018
	Streamlining of global glufosinate-ammonium production network	2020
Formulation capacities	Acquisition of proprietary technology for L-glufosinate-ammonium from AgriMetis™	2020
	New formulation facility in Singapore	2022
	New production facility for seed treatment formulations (United States)	2020
Digital farming	New formulation capacities for glufosinate-ammonium (United States, Europe, Asia)	2020
	Founding of BOSCH BASF Smart Farming GmbH	2021

¹ Functional crop care has been renamed seed treatment

Other

Activities that are not allocated to any of the segments are recorded under Other. These include other businesses, which comprise commodity trading, engineering and other services, rental income and leases. Discontinued operations and certain activities remaining after divestitures are also reported here.

The following activities are also presented under Other:

- The steering of the BASF Group by corporate headquarters.
- Cross-divisional corporate research, which includes plant biotechnology research, works on long-term topics of strategic importance to the BASF Group. Furthermore, it focuses on the development of specific key technologies, which are of central importance for the divisions.
- Results from currency translation that are not allocated to the segments; earnings from the hedging of raw materials prices and foreign currency exchange risks; and gains and losses from the long-term incentive programs (LTI programs).
- Remanent fixed costs resulting from organizational changes or restructuring; function and region-related restructuring costs not allocated to a division; idle capacity costs from internal human resource platforms; and consolidation effects that cannot be allocated to the divisions.

Sales in Other declined by €538 million compared with 2019 to €2,360 million. This was mainly due to the sales decrease in commodity trading and the remaining activities of BASF's paper and water chemicals business, which were not part of the transfer to Solenis and are reported under Other.

At –€769 million, **EBIT before special items** in Other was €188 million below the prior-year figure. This is largely attributable to lower contributions from other businesses and to positive effects in 2019, primarily from changes to pension benefits in the United States.

Financial data – Other¹

Million €	2020	2019	+/-
Sales	2,360	2,898	-19%
Income from operations before depreciation, amortization and special items ²	-609	-414	-47%
Income from operations before depreciation and amortization (EBITDA) ²	-1,032	-334	.
Depreciation and amortization ³	171	184	-7%
Income from operations (EBIT) ²	-1,203	-518	.
Special items ²	-434	63	.
EBIT before special items ²	-769	-581	-32%
of which costs for cross-divisional corporate research	-364	-397	8%
costs of corporate headquarters	-214	-231	7%
other businesses	143	179	-20%
foreign currency results, hedging and other measurement effects	-58	-89	35%
miscellaneous income and expenses	-276	-43	.
Assets ⁴	24,131	27,585	-13%
Investments including acquisitions ⁵	156	299	-48%
Research and development expenses	385	411	-6%

¹ Information on the composition of Other can be found in the BASF Report 2020 from page 241 onward.

² The 2019 figures have been restated to reflect the reclassification of income from non-integral companies accounted for using the equity method to net income from shareholdings.

³ Depreciation and amortization of property, plant and equipment and intangible assets (including impairments and reversals of impairments)

⁴ Contains assets of businesses recognized under Other as well as reconciliation to assets of the BASF Group

⁵ Additions to property, plant and equipment and intangible assets

EBIT in Other declined by €685 million year on year, from –€518 million to –€1,203 million. The costs for cross-divisional corporate research decreased by €33 million to –€364 million, and the costs of corporate headquarters were €17 million lower at –€214 million. Income from other businesses rose by €5 million to €169 million. The line item foreign currency results, hedging and other measurement effects improved by €30 million to –€59 million. In addition to currency effects, the improvement was due mainly to earnings from hedging transactions. The line item miscellaneous income and expenses decreased by –€770 million from €35 million to –€735 million. This was due especially to expenses

related to the realignment of the Global Business Services unit and to positive effects in 2019 primarily from adjustments to pension benefits in the United States and gains from the sale of BASF's share of the Klybeck site in Basel, Switzerland.

Non-Integral Shareholding in Wintershall Dea

With the merger of Wintershall Holding GmbH and DEA Deutsche Erdoel AG in May 2019, two successful companies with a long tradition have formed Europe's leading independent natural gas and oil company: Wintershall Dea.

The company with German roots and headquarters in Kassel and Hamburg explores for and produces gas and oil in 13 countries worldwide in an efficient and responsible manner. With activities in Europe, Russia, Latin America and the MENA region (Middle East and North Africa), Wintershall Dea has a global upstream portfolio. Furthermore, with its participation in natural gas transport, it is also active in the midstream business.

Wintershall Dea stands for over 125 years of experience as an operator and project partner along the entire E&P value chain. The company employs around 2,500 people worldwide from over 60 nations.

The merger and the shareholders of Wintershall Dea

Following the approval of all relevant authorities, BASF and LetterOne successfully completed the merger of Wintershall and DEA on May 1, 2019. BASF holds 67% and LetterOne 33% of Wintershall Dea's ordinary shares, reflecting the value of the respective exploration and production businesses of Wintershall and DEA. To reflect the value of Wintershall's gas transportation business, BASF received additional preference shares. This resulted in BASF having a total initial shareholding in Wintershall Dea of 72.7%. No later than 36 months after closing but definitely before an Initial Public Offering (IPO), these preference shares will be converted into ordinary shares of Wintershall Dea. BASF and LetterOne envisage to list Wintershall Dea via an IPO in the second half of 2021, subject to market conditions.

Business Segments

Non-Integral Shareholding in Wintershall Dea

Key financials of Wintershall Dea on a like-for-like basis

Million €	2020	2019 ³
Revenues and other income	3,892	5,930
EBITDAX ¹	1,643	2,801
Adjusted net income ²	195	512

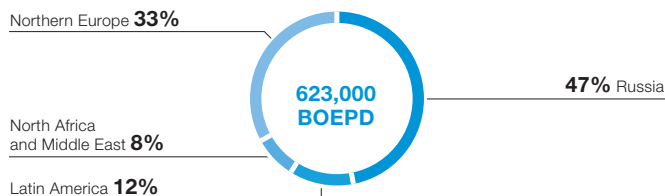
- EBITDAX is defined as revenues and other income, less production and operating expenses, less production and similar taxes, less general and administrative expenses and less cost of sales midstream, adjusted for special items.
- Adjusted net income is derived from EBITDAX less depreciation and amortization, less exploration expenses, plus financial income, less financial expenses and less income taxes, adjusted for special items and tax effects on adjusted special items and disregarded items (e.g., impairments on assets).
- The 2019 figures have been revised in accordance with the adjusted definitions of EBITDAX and adjusted net income adopted as of Q4 2020 (see footnotes 1 and 2).

Operating and financial performance of Wintershall Dea

In 2020, Wintershall Dea had revenues and other income of €3.9 billion, income from operations before depreciation, amortization and exploration (EBITDAX) of €1.6 billion and adjusted net income of €195 million. Total production of Wintershall Dea (excluding Libya onshore) was 623,000 barrels of oil equivalent per day (BOEPD). As of December 31, 2020, proven and probable reserves stood at 3.6 billion barrels of oil equivalent (BOE), corresponding to a reserve to production ratio of 16 years. The integration of the former Wintershall and Dea businesses was completed and Wintershall Dea expects to achieve annual pre-tax cash synergies of at least €200 million by 2022.

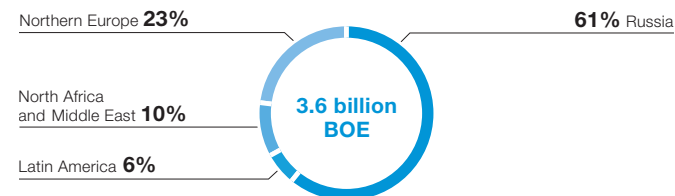
Wintershall Dea

Production 2020 by region



Financials

Proven reserves (2P) 2020 by region



Activities by region



Germany

In Germany, Wintershall Dea has been active in the exploration and production business for more than eight decades. Wintershall has now concentrated its production to the Mittelplate and Emlichheim oil fields and the Völkersen gas field. Production in Germany requires particular expertise, which the company can apply in its operations globally. The company's operations in Mittelplate are considered exemplary and regarded internationally as a benchmark for safe oil production in an environmentally sensitive area. Concessions in the South of Germany and smaller participations in other licenses have been divested in the course of portfolio optimization measures.

Norway

Norway is Europe's most important supplier of natural gas and oil besides Russia. Wintershall Dea has operated on the Norwegian continental shelf for more than 45 years and is now one of the leading oil and gas companies there. Wintershall Dea is operator of many of its approximately 100 concessions, such as for the producing fields Brage and Vega.

The Netherlands

Wintershall Dea has been active in the Dutch North Sea for more than 50 years. As a shareholder of Wintershall Noordzee (50% Wintershall Dea, 50% Gazprom), the company is currently one of the major producers of natural gas in the region.

Denmark

The southern North Sea plays a major role in Europe's energy supply, as demonstrated by new projects. For example, the company commenced production as a shareholder of Wintershall Noordzee (50% Wintershall Dea, 50% Gazprom) at Ravn, its first self-operated oil field, in 2017. It has a stake in three other oil fields in Denmark and participates in a Carbon Capture and Storage (CCS) project in the Nini field, which is currently in the pilot phase.

United Kingdom

Wintershall Dea holds six concessions off the British coast as a shareholder of the operator Wintershall Noordzee (50% Wintershall Dea, 50% Gazprom). The most important projects in the British North Sea are the self-operated natural gas field Wingate, discovered in 2008, and the Silliminate field, which is partly in the Dutch North Sea.

Russia

Russia is one of the world's most resource-rich countries. It has the sixth-largest oil reserves and around one-fifth of all known natural gas reserves. The country is the most important supplier of gas to the E.U. Wintershall Dea is involved with Russian partners in explor-

Business Segments

Non-Integral Shareholding in Wintershall Dea

ing and producing hydrocarbons in Western Siberia. The joint projects are supplying energy to Europe. Wintershall Dea is involved in three onshore projects in Russia: The Urengoy field – one of the world's largest gas and condensate reserves – is located some 3,500 kilometers northeast of Moscow, near the Western Siberian city of Novy Urengoy. There, the Achimgaz joint project produces natural gas from the technically complex Achimov Formation. Another joint venture, Achim Development, is developing blocks 4A and 5A and commissioning for commercial production has commenced. A little further south and also in the Yamalo-Nenets Autonomous Okrug is the Yuzhno-Russkoye field, in which Wintershall Dea has a stake via the Severneftegazprom joint venture.

Argentina

Wintershall Dea has been active in Argentina for more than 40 years. Today, the company has a stake in 20 onshore and offshore fields. It acts as operator for three of them. Argentina has large amounts of conventional resources and is one of the most important growth regions in the area of unconventional shale resources.

Mexico

Mexico has some of the world's largest proven reserves. After entering the country's oil and gas market in 2017, Wintershall Dea established a major position there in just one year. This includes being operator of the producing onshore Ogarrio oil field and partner in the offshore development Zama. The company also holds shares in promising exploration licenses.

Brazil

Brazil is one of the most attractive growth regions for the oil and gas industry. The coastal region in particular, with its undeveloped offshore basins, is considered especially promising. Wintershall Dea aims to set up a resource base there in the next few years. In 2018 and 2019, the company secured a number of promising licenses. Initial exploration activities in the assigned blocks started in 2019.

Financials

Egypt

Wintershall Dea has been active in Egypt for more than 40 years. Several oil fields in the Gulf of Suez have been developed – and production is now being stepped up again. The same holds true for gas production in the onshore Nile Delta, where Wintershall Dea was awarded a new exploration license in 2019. In both areas, the company is the operator. It is also a partner in the major West Nile Delta project, where five fields are now in production, most recently Raven, which started production in January 2021.

Libya

Through its affiliate Wintershall Aktiengesellschaft (WIAG), Wintershall Dea participates in crude oil production from nine oil fields across contract areas 91 (former concession 96) and 107 (former concession 97) in the Eastern Sirte Basin. After 54 years of own operatorship, WIAG in October 2020 handed over operatorship of contract areas 91 and 107 to Sarir Oil Operations, a joint venture between NOC (51%) and WIAG (49%) that has been established following the conversion of the former concession agreements to the EPSA IV contractual standard. Wintershall Dea also holds a minority stake in offshore oil production from Al-Jurf offshore platform in contract areas 15, 16 and 32 (former block C137).

Algeria

Wintershall Dea is collaborating in Reggane Nord, a geologically and logistically challenging natural gas project in the Sahara.

United Arab Emirates

The United Arab Emirates have the seventh-largest oil reserves in the world. Wintershall Dea has operated there since 2010. In 2018, the national oil company ADNOC awarded it a 10% stake in the Ghasha concession. Ghasha is one of the most promising gas and condensate projects that has yet to be developed in the Emirates. The Ghasha concession offshore Abu Dhabi consists of several major gas and condensate development projects in different phases over the 40-year concession period.

3

Financials

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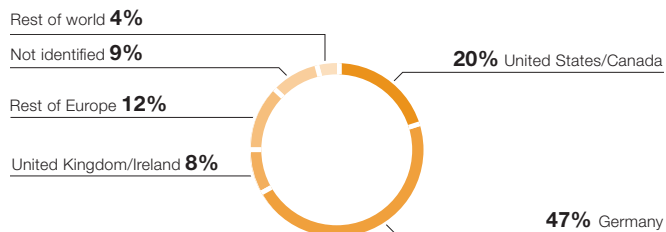
BASF on the Capital Market

Broad base of international shareholders

With over 700,000 shareholders, BASF is one of the largest publicly owned companies with a high free float. An analysis of the shareholder structure carried out at the end of 2020 showed that, at around 20% of share capital, the United States and Canada made up the largest regional group of institutional investors. Institutional investors from Germany accounted for around 11%. Shareholders from the United Kingdom and Ireland hold 8% of BASF shares, while investors from the rest of Europe hold a further 12% of capital. Approximately 36% of the company's share capital is held by private investors, nearly all of whom reside in Germany. BASF is therefore one of the DAX 30 companies with the largest percentage of private shareholders.

Shareholder structure

By region, rounded



Employees becoming shareholders

In many countries, we offer share purchase programs that turn our employees into BASF shareholders. In 2020, for example, around 27,600 employees (2019: around 25,400) purchased employee shares worth €61.1 million (2019: €70.5 million).

BASF – a sustainable investment

BASF has participated in the program established by the international organization CDP (formerly the Carbon Disclosure Project) for reporting on data relevant to climate protection since 2004. CDP is an international organization representing around 515 investors with over \$106 trillion in assets and more than 150 major organizations with \$4 trillion in purchasing power. In 2020, BASF again scored an A– on CDP's Climate List, giving it Leadership status. In the scoring framework used by CDP in 2020, BASF was ranked among the best 25% of the participating chemical companies. To achieve its climate targets, BASF is continually optimizing existing processes and is increasingly using energy from renewable sources. BASF is also developing completely new low-emission production processes. The company bundles this work in its ambitious carbon management.

In the CDP assessment for sustainable water management, BASF again achieved the top grade of A and thus Leadership status. The assessment takes into account how transparently companies report on their water management activities and how they reduce risks such as water scarcity. CDP also evaluates the extent to which product developments can contribute to sustainable water management for customers of the companies assessed. BASF continues to implement its sustainable water management target at all relevant production sites (Verbund sites and sites in water stress areas).

BASF participated in the CDP's "Forest" assessment for the first time in 2020 and was ranked A–. As a participant in various value

chains, BASF is committed to ending deforestation in these supply chains. One of BASF's measures to protect the forests is its voluntary commitment to source 100% of its palm oil and palm kernel oil from certified sustainable sources by 2020. We met this target in 2020.

In its 2021 ranking, Sustainalytics listed BASF among the top 10% of performers in diversified chemicals. The raters positively highlighted that sustainability targets are reflected in board compensation, underlining an overall strong management of ESG issues.

BASF share performance

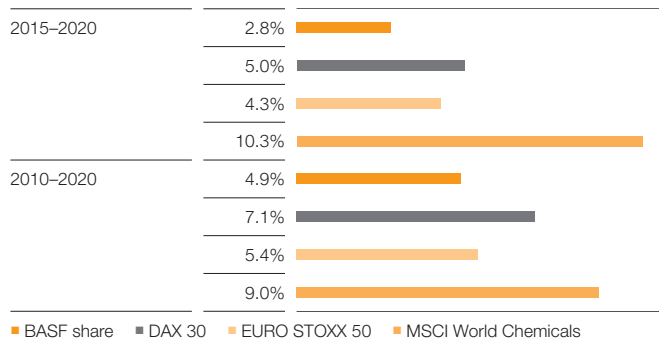
The BASF share closed the 2020 stock market year at €64.72, a decrease of 3.9% compared with the previous year's closing price (€67.35). After the significant downturn in share prices caused by the pandemic in the first half of 2020, BASF's share price recovered and stabilized over the second half of the year but remained slightly below the prior-year closing price.

Assuming that dividends were reinvested, BASF's share performance rose by 2.3% in 2020. The DAX 30, the benchmark index of the German stock market, rose by 3.5% over the same period, while the European EURO STOXX 50 index lost 3.2%. The global industry index MSCI World Chemicals gained 14.8%.

The assets of an investor who invested €1,000 in BASF shares at the end of 2010 and reinvested the dividends in additional BASF shares would have increased to €1,614 by the end of 2020. This represents an annual yield of 4.9%.

Long-term performance of BASF shares compared with indexes

Average annual increase with dividends reinvested



American depositary receipts

American depositary receipts (ADRs) allow U.S. institutional and retail investors to trade and own non-U.S. companies directly through the U.S. equity markets. BASF has a sponsored level 1 program, which is traded on OTC-QX, the platform for international quality companies on OTC markets. BASF's ADR (Symbol: BASFY) is part of the OTC-QX30 index, which comprises the 30 largest ADR programs listed on OTC markets.

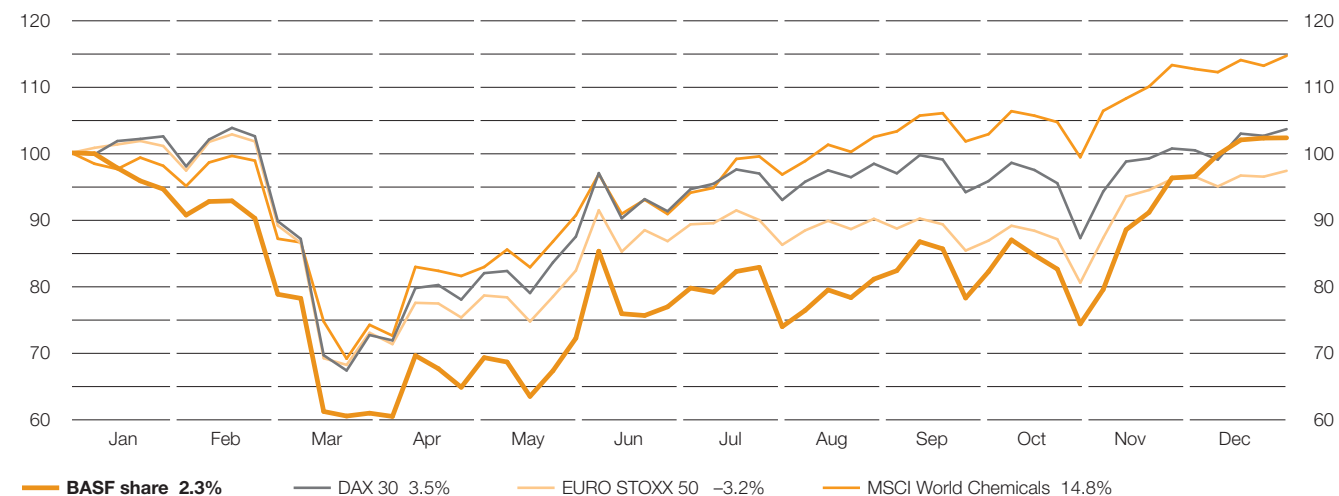
For further information, please see basf.com/share

Analysts' recommendations

Around 30 financial analysts regularly publish studies on BASF. The latest analyst recommendations for our shares as well as the average target share price ascribed to BASF by analysts can be found online at basf.com/analystestimates.

Change in value of an investment in BASF shares in 2020

With dividends reinvested; indexed



Shareholder return

		2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Dividends	million €	2,296	2,388	2,480	2,572	2,664	2,755	2,847	2,939	3,031	3,031
Dividend per share	€	2.50	2.60	2.70	2.80	2.90	3.00	3.10	3.20	3.30	3.30
Share price at year-end	€/share	53.89	71.15	77.49	69.88	70.72	88.31	91.74	60.40	67.35	64.72
Dividend yield ¹	%	4.6	3.7	3.5	4.0	4.1	3.4	3.4	5.3	4.9	5.1
Payout ratio	%	37	50	52	50	67	68	47	62	36	.
Price-earnings ratio (P/E ratio)		8.0	13.6	14.8	12.5	16.3	20.0	13.9	11.8	7.3	.
Free cash flow yield ²	%	7.5	4.0	4.5	2.6	5.6	4.4	5.7	7.3	5.9	3.8

¹ Based on year-end share price

² Free cash flow per share at year-end divided by share price at year-end

Dividend

For 2020, BASF paid a dividend of €3.30 per share. Due to the exceptionally high economic burden caused by the coronavirus pandemic, we kept the dividend stable and paid out €3.0 billion to our shareholders as in the previous year. Based on the year-end share price for 2020, BASF shares offer a high dividend yield of around 5.1%. BASF is part of the DivDAX share index, which contains the 15 companies with the highest dividend yield in the DAX 30.

Dividend per share

€3.30

Dividend yield

5.1%

Dividend policy:

We aim to increase the dividend per share every year.

Close dialog with the capital market

Our corporate strategy aims to create long-term value. We support this strategy through regular and open communication with all capital market participants. In light of the coronavirus pandemic, we mainly used virtual formats such as video or conference calls for dialog in 2020. We engage with institutional investors and rating agencies in numerous one-on-one meetings, as well as at roadshows and conferences worldwide, and give private investors an insight into BASF at informational events.

In 2020, we offered special events aimed at investors who base their investment decisions on sustainability criteria. We outlined in particular our programs to reduce CO₂ emissions and on the circular economy. In addition, we issued our first green bond in 2020 and took this opportunity to inform credit analysts and creditors about our targets and measures for a more sustainable future. The bond has a term of seven years, a volume of €1.0 billion and an annual coupon of 0.25%; it serves to finance sustainable projects and the development of sustainable products in the BASF Group.

Analysts and investors have confirmed the quality of our financial market communications. The Investor Relations Society recognized BASF with the Best Practice Award 2020 in the categories “Best Communication of ESG” and “Most Effective Use of Digital Communications.” In the annual survey conducted by Britain’s IR Magazine, we were named the best company for IR in the materials sector. Institutional Investor magazine also honored BASF with first place in the categories “Best Investor Day” and “Best IR Program” in the chemicals sector.

Further information on BASF share

Securities code numbers

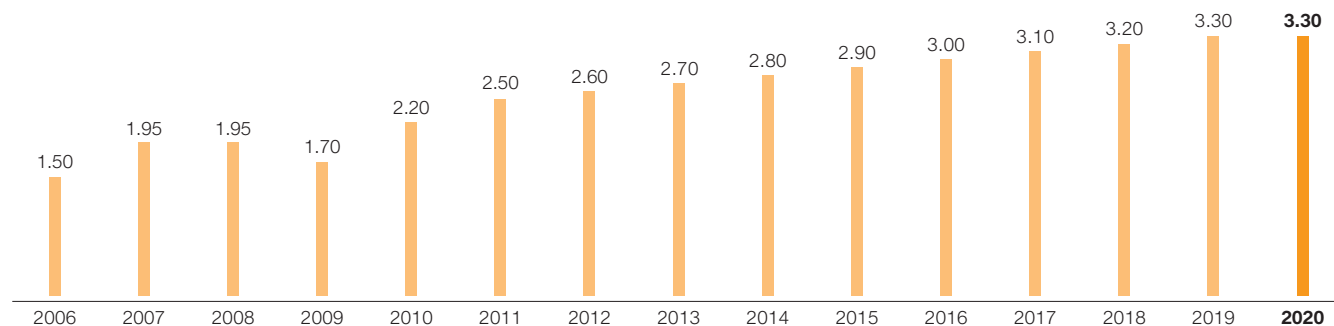
Germany	BASF11
United States (CUSIP number)	055262505
ISIN International Securities Identification Number	DE000BASF111

International ticker symbols

Deutsche Börse	BAS
Pink Sheets / OTCQX	BASFY (ADR)
Bloomberg (Xetra trading)	BAS GY
Reuters (Xetra trading)	BASFn.DE

Dividend per share

€ per share



Business Review by Segment¹

Segment overview

Million €

	Sales		EBITDA before special items		EBITDA		EBIT before special items	
	2020	2019	2020	2019	2020	2019	2020	2019
Chemicals	8,071	9,532	1,305	1,574	1,237	1,545	445	791
Materials	10,736	11,466	1,714	1,719	1,556	1,691	835	1,003
Industrial Solutions	7,644	8,389	1,189	1,249	1,099	1,327	822	820
Surface Technologies	16,659	13,142	966	1,173	900	1,120	484	722
Nutrition & Care	6,019	6,075	1,190	1,214	1,152	1,189	773	793
Agricultural Solutions	7,660	7,814	1,680	1,809	1,582	1,647	970	1,095
Other	2,360	2,898	-609	-414	-1,032	-334	-769	-581
BASF Group	59,149	59,316	7,435	8,324	6,494	8,185	3,560	4,643

Segment overview

Million €

	EBIT		Assets		Investments including acquisitions ²		Research and development expenses	
	2020	2019	2020	2019	2020	2019	2020	2019
Chemicals	-192	622	7,896	8,978	871	1,108	96	108
Materials	-109	973	9,118	8,782	1,957	784	182	193
Industrial Solutions	630	889	6,402	6,903	331	426	177	192
Surface Technologies	-587	663	11,691	11,773	585	565	246	214
Nutrition & Care	688	644	6,214	6,399	510	595	160	161
Agricultural Solutions	582	928	14,840	16,530	459	320	840	879
Other	-1,203	-518	24,131	27,585	156	299	385	411
BASF Group	-191	4,201	80,292	86,950	4,869	4,097	2,086	2,158

¹ The segment data for 2019 has been restated to reflect the reclassification of non-integral equity-accounted companies.

² Additions to property, plant and equipment (of which from acquisitions: €559 million in 2020 and €3 million in 2019) and intangible assets (of which from acquisitions: €691 million in 2020 and -€37 million in 2019)

Regional Results

Sales by location of company

Million €	2011	2012 ³	2013	2014	2015	2016	2017 ²	2018	2019	2020
Europe	41,036	41,445	43,335	42,854	38,675	27,221	28,045	27,526	25,706	24,223
of which Germany	28,816	29,320	31,571	32,241	28,229	17,540	18,663	17,767	14,049	10,296
North America	14,727	14,441	14,573	15,467	15,665	14,682	15,937	15,900	16,420	16,440
Asia Pacific	13,316	11,694	11,679	11,643	11,712	11,512	13,658	13,454	13,384	14,895
South America, Africa, Middle East	4,418	4,549	4,386	4,362	4,397	4,135	3,583	3,340	3,806	3,591
BASF Group	73,497	72,129	73,973	74,326	70,449	57,550	61,223	60,220	59,316	59,149

Sales by location of customer

Million €	2011	2012 ³	2013	2014	2015	2016	2017 ²	2018	2019	2020
Europe	39,124	39,428	41,221	40,911	36,897	26,039	26,507	25,589	23,827	23,129
of which Germany	14,705	15,210	14,446	15,126	13,483	7,412	7,159	6,687	6,123	5,510
North America	13,995	13,992	14,272	15,213	15,390	14,042	15,357	15,388	15,948	15,709
Asia Pacific	14,410	12,546	12,450	12,341	12,334	12,165	14,343	14,210	14,203	15,406
South America, Africa, Middle East	5,968	6,163	6,030	5,861	5,828	5,304	5,016	5,033	5,338	4,905
BASF Group	73,497	72,129	73,973	74,326	70,449	57,550	61,223	60,220	59,316	59,149

Income from operations (EBIT) by location of company

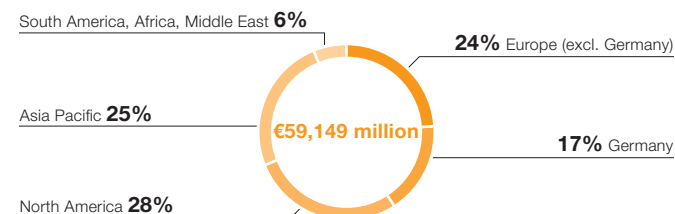
Million €	2011	2012 ³	2013	2014	2015	2016	2017 ²	2018	2019	2020
Europe	5,668	4,557	4,485	5,010	4,174	3,632	4,090	3,210	2,125 ¹	-1,005
of which Germany	3,249	2,249	2,164	1,894	2,303	1,582	1,838	1,146	504 ¹	-1,712
North America	1,314	969	1,488	1,548	1,295	1,113	1,236	794	692	-201
Asia Pacific	1,133	855	817	673	445	1,098	2,209	1,793	1,082	768
South America, Africa, Middle East	471	361	370	395	334	432	52	177	302	247
BASF Group	8,586	6,742	7,160	7,626	6,248	6,275	7,587	5,974	4,201¹	-191

¹ Figures for 2019 have been restated to reflect the reclassification of non-integral equity-accounted companies.

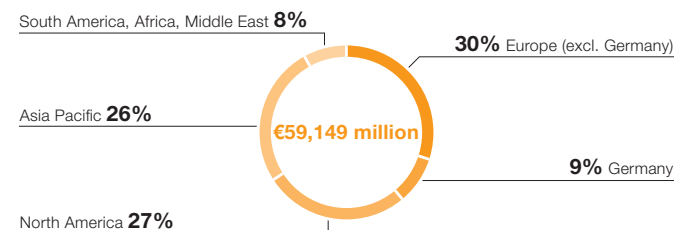
² Figures for 2017 were restated with the presentation of the oil and gas activities as discontinued operations.

³ We have applied International Reporting Standards IFRS 10 and 11 as well as International Accounting Standard 19 (revised) since January 1, 2013. Figures for 2012 have been restated; no restatement was made for 2011 and earlier.

Sales by location of company 2020



Sales by location of customer 2020



Factors Influencing Sales and Currency Impact

Factors influencing sales of the BASF Group

Million €	2011	2012 ³	2013 ²	2014	2015	2016	2017	2018 ¹	2019	2020
Volumes	0%	1%	5%	4%	3%	2%	4%	1%	-3%	-1%
Prices	12%	1%	0%	-3%	-9%	-4%	8%	4%	-3%	3%
Currencies	-2%	3%	-3%	-1%	6%	-1%	-1%	-4%	2%	-3%
Acquisitions/divestitures	5%	-1%	1%	0%	-5%	-15%	1%	1%	2%	1%
Total	15%	4%	3%	0%	-5%	-18%	12%	2%	-2%	0%

¹ Figures for 2018 were restated with the presentation of the oil and gas activities as discontinued operations; no restatement was made for 2017 and earlier.

² Figures for 2013 have been adjusted to reflect the dissolution of the natural gas trading business disposal group.

³ We have applied International Reporting Standards IFRS 10 and 11 as well as International Accounting Standard 19 (revised) since January 1, 2013. Figures for 2012 have been restated; no restatement was made for 2011 and earlier.

Factors influencing sales

Sales amounted to €59,149 million in 2020, on a level with 2019. The sales performance was positively impacted by higher price levels overall, mainly as a result of higher precious metal prices in the Surface Technologies segment and portfolio effects in the Materials segment from the acquisition of Solvay's integrated polyamide business. This was offset by negative currency effects and lower volumes, especially in the Materials and Industrial Solutions segments.

Currency impact

Our competitiveness on global markets is influenced by fluctuations in exchange rates. For BASF's sales, opportunities and risks arise in particular when the U.S. dollar exchange rate fluctuates. A full-year appreciation of the U.S. dollar against the euro by \$0.01, which could result from a macroeconomic slowdown, would increase the BASF Group's EBIT by around €30 million, assuming other conditions remain the same. On the production side, we counter exchange rate risks by producing in the respective currency zones.

Financial currency risks result from the translation of receivables, liabilities and other monetary items in accordance with IAS 21 at the closing rate into the functional currency of the respective Group company. In addition, we incorporate planned purchase and sales transactions in foreign currencies in our financial foreign currency risk management. These risks are hedged using derivative instruments, if necessary.

Annual impact of US\$/€ exchange rate change on BASF Group

(exchange rate: - \$0.01 per €)

Sales

€190 million

EBIT

€30 million

Financing

Our financing policy aims to ensure our solvency at all times, limiting the risks associated with financing and optimizing our cost of capital. We preferably meet our external financing needs on the international capital markets. We strive to maintain a solid A rating, which ensures unrestricted access to financial and capital markets. Our financing measures are aligned with our operational business planning as well as the company's strategic direction and also ensure the financial flexibility to take advantage of strategic options.

Financing policy

Corporate bonds form the basis of our medium to long-term debt financing. These are issued in euros and other currencies with different maturities as part of our €20 billion debt issuance program.

For short-term financing, we use BASF SE's global commercial paper program, which has an issuing volume of up to \$12.5 billion. As of December 31, 2020, commercial paper with a carrying amount of €1,290 million was outstanding under this program. A firmly committed, syndicated credit line of €6 billion was taken out in January 2019 to cover the repayment of outstanding commercial paper. It can also be used for general company purposes. In the second quarter of 2020, we took out a one-year credit line with several banks with a total volume of €3 billion. Neither credit line was used at any point in 2020. Our external financing is therefore largely independent of short-term fluctuations in the credit markets.

BASF Group's most important financial contracts contain no side agreements with regard to specific financial ratios (financial covenants) or compliance with a specific rating (rating trigger).

To minimize risks and leverage internal optimization potential within the Group, we bundle the financing, financial investments and foreign currency hedging of BASF SE's subsidiaries within the BASF

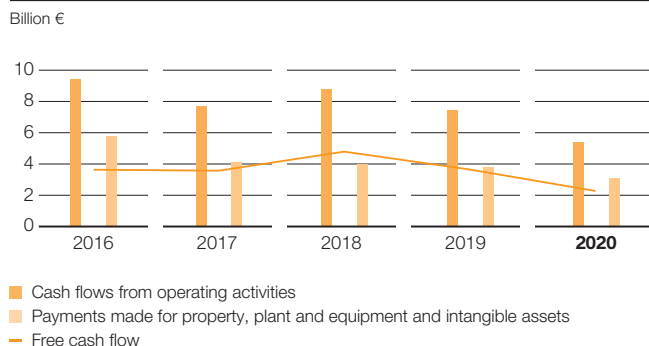
Group where possible. Foreign currency risks are primarily hedged centrally using derivative financial instruments in the market.

Cash flows from operating activities and free cash flow

Cash flows from operating activities amounted to €5,413 million, compared with €7,474 million in the previous year. The decrease in cash flows from operating activities was largely due to the cash tied up in receivables, especially in trade accounts receivable. The development of trade accounts receivable tied up cash of €994 million in 2020, compared with cash released of €1,208 million in the previous year. This could not be offset by the €370 million increase in cash released from reduction in inventories.

Free cash flow, which remains after deducting payments made for property, plant and equipment and intangible assets from cash flows from operating activities, represents the financial resources remaining after investments. It declined to €2,284 million compared with €3,650 million in the previous year due to the decrease in cash flows from operating activities.

Cash flow



Good credit ratings and solid financing

BASF enjoys good credit ratings, especially compared with competitors in the chemical industry. Fitch confirmed its rating for BASF of A/F1/outlook stable on May 20, 2021. On March 4, 2021, Standard & Poor's confirmed its long and short-term ratings for BASF of A/A-1/outlook negative. Moody's confirmed its rating for BASF of A3/P-2/outlook stable on February 12, 2021.

Credit Ratings

Agency	Rating
Fitch	A/F1/outlook stable
Moody's	A3/P-2/outlook stable
Standard & Poor's	A/A-1/outlook negative

Ten-Year Summary

Million €

	2011	2012 ⁵	2013 ⁴	2014	2015	2016	2017 ³	2018	2019	2020
Statement of income										
Sales	73,497	72,129	73,973	74,326	70,449	57,550	61,223	60,220 ²	59,316	59,149
Income from operations (EBIT)	8,586	6,742	7,160	7,626	6,248	6,275	7,587	5,974 ²	4,201 ¹	-191
Income before income taxes	8,970	5,977	6,600	7,203	5,548	5,395	6,882	5,233 ²	3,302	-1,562
Income after taxes from continuing operations	-	-	-	-	-	-	5,592	4,116 ²	2,546	-1,471
Income after taxes from discontinued operations	-	-	-	-	-	-	760	863 ²	5,945	396
Income after taxes	6,603	5,067	5,113	5,492	4,301	4,255	6,352	4,979	8,491	-1,075
Net income	6,188	4,819	4,792	5,155	3,987	4,056	6,078	4,707	8,421	-1,060
Income from operations before depreciation and amortization (EBITDA)	11,993	10,009	10,432	11,043	10,649	10,526	10,765	8,970 ²	8,185 ¹	6,494
EBIT before special items	8,447	6,647	7,077	7,357	6,739	6,309	7,645	6,281 ²	4,643 ¹	3,560
Capital expenditures, depreciation and amortization										
Additions to property, plant and equipment and intangible assets	3,646	5,263	7,726	7,285	6,013	7,258	4,364	10,735	4,097	4,869
of which property, plant and equipment	3,199	4,084	6,428	6,369	5,742	4,377	4,028	5,040	3,842	4,075
Depreciation and amortization of property, plant and equipment and intangible assets	3,407	3,267	3,272	3,417	4,401	4,251	4,202	3,750 ²	4,146	6,685
of which property, plant and equipment	2,618	2,594	2,631	2,770	3,600	3,691	3,586	3,155 ²	3,408	5,189
Number of employees										
At year-end	111,141	110,782	112,206	113,292	112,435	113,830	115,490	122,404	117,628	110,302
Annual average	110,403	109,969	111,844	112,644	113,249	111,975	114,333	118,371	119,200	115,973
Personnel expenses	8,576	8,963	9,285	9,224	9,982	10,165	10,610	10,659	10,924	10,576
Research and development expenses	1,605	1,732	1,849	1,884	1,953	1,863	1,843	1,994²	2,158	2,086

¹ Figures for 2019 have been restated to reflect the reclassification of non-integral equity-accounted companies.

² Figures for 2018 were restated with the presentation of the construction chemicals activities as discontinued operations.

³ Figures for 2017 were restated with the presentation of the oil and gas activities as discontinued operations.

⁴ Figures for 2013 have been adjusted to reflect the dissolution of the natural gas trading business disposal group.

⁵ We have applied International Reporting Standards IFRS 10 and 11 as well as International Accounting Standard 19 (revised) since January 1, 2013. Figures for 2012 have been restated; no restatement was made for 2011 and earlier.

		2011	2012 ⁵	2013 ⁴	2014	2015	2016	2017 ³	2018	2019	2020
Key data											
Earnings per share	€	6.74	5.25	5.22	5.61	4.34	4.42	6.62	5.12	9.17	-1.15
Adjusted earnings per share	€	6.26	5.64	5.31	5.44	5.00	4.83	6.44	5.87	4.00	3.21
Cash flows from operating activities	million €	7,105	6,602	8,100	6,958	9,446	7,717	8,785	7,939	7,474	5,413
EBITDA margin	%	16.3	13.9	14.1	14.9	15.1	18.3	17.6	14.9 ²	13.8 ¹	11.0
Return on assets	%	16.1	11.0	11.5	11.7	8.7	8.2	9.5	7.1	4.5	-1.2
Return on equity after tax	%	27.5	19.9	19.2	19.7	14.4	13.3	18.9	14.1	21.6	-2.8
Return on capital employed (ROCE)	%	-	-	-	-	-	-	15.4	12.0 ²	7.7	1.7
Appropriation of profits											
Net income of BASF SE ⁶	million €	3,506	2,880	2,826	5,853	2,158	2,808	3,130	2,982	3,899	3,946
Dividend	million €	2,296	2,388	2,480	2,572	2,664	2,755	2,847	2,939	3,031	3,031
Dividend per share	€	2.50	2.60	2.70	2.80	2.90	3.00	3.10	3.20	3.30	3.30
Number of shares as of December 31	million	918.5	918.5	918.5	918.5	918.5	918.5	918.5	918.5	918.5	918.5

1 Figures for 2019 have been restated to reflect the reclassification of non-integral equity-accounted companies.

2 Figures for 2018 were restated with the presentation of the construction chemicals activities as discontinued operations.

3 Figures for 2017 were restated with the presentation of the oil and gas activities as discontinued operations.

4 Figures for 2013 have been adjusted to reflect the dissolution of the natural gas trading business disposal group.

5 We have applied International Reporting Standards IFRS 10 and 11 as well as International Accounting Standard 19 (revised) since January 1, 2013. Figures for 2012 have been restated; no restatement was made for 2011 and earlier.

6 Calculated in accordance with German GAAP

Balance sheet (IFRS)

Million €	2011	2012 ³	2013 ²	2014	2015	2016	2017 ¹	2018	2019	2020
Intangible assets	11,919	12,193	12,324	12,967	12,537	15,162	13,594	16,554	14,525	13,145
Property, plant and equipment	17,966	16,610	19,229	23,496	25,260	26,413	25,258	20,780	21,792	19,647
Integral investments accounted for using the equity method	1,852	3,459	4,174	3,245	4,436	4,647	4,715	2,203	1,885	1,878
Non-integral investments accounted for using the equity method	–	–	–	–	–	–	–	–	13,123	10,874
Other financial assets	848	613	643	540	526	605	606	570	636	582
Deferred tax assets	941	1,473	1,006	2,193	1,791	2,513	2,118	2,342	2,887	3,386
Other receivables and miscellaneous assets	561	911	877	1,498	1,720	1,210	1,332	886	1,112	912
Noncurrent assets	34,087	35,259	38,253	43,939	46,270	50,550	47,623	43,335	55,960	50,424
Inventories	10,059	9,581	10,160	11,266	9,693	10,005	10,303	12,166	11,223	10,010
Accounts receivable, trade	10,886	9,506	10,233	10,385	9,516	10,952	10,801	10,665	9,093	9,466
Other receivables and miscellaneous assets	3,781	3,455	3,714	4,032	3,095	3,078	3,494	3,139	3,790	4,673
Marketable securities	19	14	17	19	21	536	52	344	444	207
Cash and cash equivalents	2,048	1,647	1,827	1,718	2,241	1,375	6,495	2,300	2,427	4,330
Assets of disposal groups	295	3,264	–	–	–	–	–	14,607	4,013	1,182
Current assets	27,088	27,467	25,951	27,420	24,566	25,946	31,145	43,221	30,990	29,868
Assets	61,175	62,726	64,204	71,359	70,836	76,496	78,768	86,556	86,950	80,292

¹ As of January 1, 2018, receivables from bank acceptance drafts are no longer reported under trade accounts receivable, but under the item other receivables and other assets. The 2017 figures have been restated accordingly.

² Figures for 2013 have been adjusted to reflect the dissolution of the natural gas trading business disposal group.

³ We have applied International Reporting Standards IFRS 10 and 11 as well as International Accounting Standard 19 (revised) since January 1, 2013. Figures for 2012 have been restated; no restatement was made for 2011 and earlier.

Balance sheet (IFRS)

Million €	2011	2012 ³	2013 ²	2014	2015	2016	2017	2018	2019	2020
Subscribed capital	1,176	1,176	1,176	1,176	1,176	1,176	1,176	1,176	1,176	1,176
Capital reserves	3,203	3,188	3,165	3,143	3,141	3,130	3,117	3,118	3,115	3,115
Retained earnings	19,446	23,708	26,102	28,777	30,120	31,515	34,826	36,699	42,056	37,911
Other comprehensive income	314	-3,461	-3,400	-5,482	-3,521	-4,014	-5,282	-5,939	-4,850	-8,474
Noncontrolling interests	1,246	1,010	630	581	629	761	919	1,055	853	670
Equity	25,385	25,621	27,673	28,195	31,545	32,568	34,756	36,109	42,350	34,398
Provisions for pensions and similar obligations	3,189	5,421	3,727	7,313	6,313	8,209	6,293	7,434	7,683	8,566
Deferred tax liabilities ¹	2,628	2,234	2,894	3,420	3,381	3,317	2,731	1,787	1,764	1,447
Tax provisions ¹	-	-	-	-	-	-	-	559	516	587
Other provisions ¹	3,335	2,925	3,226	3,502	3,369	3,667	3,478	1,301	1,340	1,484
Financial indebtedness	9,019	8,704	11,151	11,839	11,123	12,545	15,535	15,332	15,015	15,819
Other liabilities	1,142	1,111	1,194	1,197	869	873	1,095	705	1,678	1,711
Noncurrent liabilities	19,313	20,395	22,192	27,271	25,055	28,611	29,132	27,118	27,996	29,614
Accounts payable, trade	5,121	4,502	5,153	4,861	4,020	4,610	4,971	5,122	5,087	5,291
Provisions	3,210	2,628	2,670	2,844	2,540	2,802	3,229	3,252	2,938	2,825
Tax liabilities	1,038	870	968	1,079	1,082	1,288	1,119	695	756	988
Financial indebtedness	3,985	4,094	3,256	3,545	4,074	3,767	2,497	5,509	3,362	3,395
Other liabilities	3,036	2,623	2,292	3,564	2,520	2,850	3,064	2,998	3,427	3,440
Liabilities of disposal groups	87	1,993	-	-	-	-	-	5,753	1,034	341
Current liabilities	16,477	16,710	14,339	15,893	14,236	15,317	14,880	23,329	16,604	16,280
Equity and liabilities	61,175	62,726	64,204	71,359	70,836	76,496	78,768	86,556	86,950	80,292

¹ Tax provisions are reported separately as of January 1, 2020. Figures for the years 2018 and 2019 have been restated. In 2017 and earlier, tax provisions are included in other provisions.

² Figures for 2013 have been adjusted to reflect the dissolution of the natural gas trading business disposal group.

³ We have applied International Reporting Standards IFRS 10 and 11 as well as International Accounting Standard 19 (revised) since January 1, 2013. Figures for 2012 have been restated; no restatement was made for 2011 and earlier.

Investor Relations Team



Dr. Stefanie Wettberg
Senior Vice President IR
+49 621 60-48002
stefanie.wettberg@basf.com



Dr. Lars Budde
Deputy Head of IR
Institutional Investors in Europe (Austria, France, Italy, Spain, Switzerland), Creditor Relations worldwide
+49 621 60-91386
lars.budde@basf.com



Alexander Köhler
Institutional Investors in Europe (Benelux, Germany, Ireland, UK), Middle East
+49 621 60-48382
alexander.koehler@basf.com



Nirath Perakath
Institutional Investors in Asia Pacific
+852 2731 0143
nirath.perakath@basf.com



Dr. Alex Sokolowski
Institutional Investors in North America
+1 973 245 6232
alex.sokolowski@basf.com



Benjamin Solms-Rusch
SRI Investors worldwide
Institutional Investors in Europe (Poland, Scandinavia)
+49 621 60-47016
benjamin.rusch@basf.com



Evelyn Ungen
Annual Shareholders' Meeting, Share Register
SRI Investors worldwide
+49 621 60-95664
evelyn.ungen@basf.com



Andrea Wentscher
Retail Investors
+49 621 60-42296
andrea.wentscher@basf.com



Thomas Wolf
Retail Investors
+49 621 60-43263
thomas.b.wolf@basf.com



Nicole Krawietz
Event Management
+49 621 60-40308
nicole.krawietz@basf.com



Sandra Hoffmann
Event Management
+49 621 60-95023
sandra.hoffmann@basf.com

General contact

BASF SE Investor Relations

COI – D 100
67056 Ludwigshafen
Germany

Phone: +49 621 60-48230
Fax: +49 621 60-22500

Email: ir@basf.com
Internet: basf.com/share

BASF East Asia Regional Headquarters Limited Investor Relations Asia Pacific

45/F Jardine House, No. 1
Connaught Place, Central
Hong Kong

Phone: +852 2731 0143

BASF Corporation Investor Relations North America

100 Park Avenue, Florham Park
NJ 07932, United States

Phone: +1 973 245 6232

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October 27, 2021

BASF Report 2021

February 25, 2022

Quarterly Statement Q1 2022 / Annual Shareholders' Meeting 2022

April 29, 2022

Half-Year Financial Report 2022

July 27, 2022

Contact

BASF Investor Relations

Phone: +49 621 60-48230

Fax: +49 621 60-22500

Email: ir@basf.com

Internet: basf.com/share

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