

The BASF logo, consisting of a white square with a smaller white square inside, followed by the letters "BASF" in a bold, white, sans-serif font.

We create chemistry

BASF in Greater China Report 2018





← **Cover photo:** Two scientists from the new BASF Automotive Application Center, Asia Pacific are observing tested specimens in the application testing lab. Here the coloristic and appearance properties of coatings are tested automatically by robotic arms.

🔗 For more information on the BASF Automotive Application Center, Asia Pacific, see page 18

On this page: Scanning electron microscope image of a lithium-nickel oxide, a component of cathode materials for high-performance lithium-ion batteries.

🔗 For more information on battery materials for electric vehicles, see page 44

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About this Report

The “BASF in Greater China” Report is published annually as a concise document about the performance of our activities across the three dimensions of sustainability – economy, environment and society – in Greater China. The reporting period for this publication is the financial year 2018. This report also carries an overview of BASF Group along with its financial performance, prepared in accordance with the requirements of the International Financial Reporting Standards (IFRS), and, where applicable, the German Commercial Code as well as the German Accounting Standards (DRSC). The emissions, waste, energy and water use of consolidated joint operations are included pro rata, based on our stake. The employee numbers refer to employees within the BASF Group scope of consolidation as of December 31, 2018.



To meet customers' increasing demands and drive new opportunities in the local markets, BASF has been investing in new production and innovation capacities in a broad range of business fields.

BASF Group 2018 at a glance

Key data

	2018	2017	+/-
Sales ¹ million €	62,675	61,223	2.4%
EBITDA before special items ¹ million €	9,481	10,738	(11.7%)
EBITDA ¹ million €	9,166	10,765	(14.9%)
EBIT before special items ¹ million €	6,353	7,645	(16.9%)
EBIT ¹ million €	6,033	7,587	(20.5%)
EBIT after cost of capital ¹ million €	825	2,902	(71.6%)
Net income million €	4,707	6,078	(22.6%)
Earnings per share €	5.12	6.62	(22.7%)
Assets million €	86,556	78,768	9.9%
Investments including acquisitions ² million €	10,735	4,364	146.0%

	2018	2017	+/-
Employees at year-end	122,404	115,490	6.0%
Personnel expenses million €	10,659	10,610	0.5%
Research and development expenses ¹ million €	2,028	1,843	10.0%
Greenhouse gas emissions million metric tons of CO ₂ equivalents	21.8	22.6	(3.5%)
Energy efficiency in production processes kilogram of sales product/MWh	602	625	(3.7%)
Investments in environmental protection million €	277	234	18.4%
Number of on-site sustainability audits of raw material suppliers	100	120	(16.7%)

¹ Figures for 2017 were restated with the presentation of the oil and gas activities as discontinued operations. For more information, see basf.com/report

² Additions to intangible assets and property, plant and equipment

Segment data



Chemicals

million €

Sales	2018	16,501	<div style="width: 85%;"></div>
	2017	16,331	<div style="width: 84%;"></div>
EBIT before special items	2018	3,386	<div style="width: 45%;"></div>
	2017	4,233	<div style="width: 55%;"></div>



Performance Products

million €

Sales	2018	15,812	<div style="width: 80%;"></div>
	2017	16,217	<div style="width: 82%;"></div>
EBIT before special items	2018	1,376	<div style="width: 25%;"></div>
	2017	1,416	<div style="width: 26%;"></div>



Functional Materials & Solutions

million €

Sales	2018	21,435	<div style="width: 95%;"></div>
	2017	20,745	<div style="width: 92%;"></div>
EBIT before special items	2018	1,307	<div style="width: 35%;"></div>
	2017	1,617	<div style="width: 45%;"></div>



Agricultural Solutions

million €

Sales	2018	6,156	<div style="width: 65%;"></div>
	2017	5,696	<div style="width: 60%;"></div>
EBIT before special items	2018	734	<div style="width: 15%;"></div>
	2017	1,033	<div style="width: 20%;"></div>



Welcome

Letter from the President

Dear Stakeholders,

Our business success in China now and in the future is based on not only profit, but also creating value for the economy, the environment and the society. That is why sustainability is firmly anchored into our organization, governance and our business models.

In a year marked by volatility from trade conflicts and the decline of key industries, we have maintained and developed our business: BASF posted sales of over €7.3 billion in 2018 to customers in Greater China.

To meet the growing needs of quality growth in China, we are expanding our innovation scope and enhancing our competencies. From catalysts that reduce mobile emissions to energy-efficient building materials, and to nutrition ingredients that benefit health, chemistry-based solutions from BASF are improving people's quality of life while contributing to the sustainable development of China.

From procurement to production at various plants, and to product delivery to the customers, BASF has introduced a sustainability-oriented supply chain management system. In 2018, we continued to source responsibly via industry initiatives and to strengthen suppliers' awareness. With the implementation of digital technologies, we improved our logistics efficiency and transparency.

Sustainability in production means we produce both safely and efficiently. By doing so, we minimize our impact on the environment. In 2018, we managed to maintain low, stable emissions to air and water, even though we started several new production facilities at several sites. This was achieved with continuous improvements of processes and technologies.

We continue to support the sustainable growth of the local communities where we operate. Therefore, we have regular open communications with our stakeholder groups and we conduct various educational activities to contribute to the society.

We remain committed to investing in China. We plan to invest into a second Verbund site in China, to be located in Zhanjiang, Guangdong, operated under the sole responsibility of BASF. We also plan to further expand the existing 50:50 joint venture, BASF-YPC Company Limited (BASF-YPC) with Sinopec in Nanjing. In addition, we started new plants to strengthen our local production capabilities and offer various products and solutions to the market.

Last year, we launched our updated corporate strategy. According to the strategy, we aim to grow both profitably and sustainably. It sets both financial and non-financial targets, with a renewed focus on customers and well-defined action areas. It also emphasizes the importance of China as the world's largest chemical market and growth engine.

2019 is a year of uncertainty and transformation. Therefore, we will put our customers in the focus of everything we do, collaborate more closely with all stakeholders, and contribute to a sustainable future. We will continue to create shared value for our customers, employees, and society as a whole.

Dr. Stephan Kothrade
President Functions Asia Pacific
President and Chairman Greater China, BASF

The BASF Group

At BASF, we create chemistry for a sustainable future. We combine economic success with environmental protection and social responsibility. The approximately 122,000 employees in the BASF Group work on contributing to the success of our customers in nearly all sectors and almost every country in the world. Until December 31, 2018, our portfolio was arranged into four segments: Chemicals, Performance Products, Functional Materials & Solutions and Agricultural Solutions.¹ Since January 1, 2019, BASF's activities have been grouped into six segments: Chemicals, Materials, Industrial Solutions, Surface Technologies, Nutrition & Care and Agricultural Solutions.

Organization of the BASF Group until December 31, 2018

- **Twelve divisions grouped into four segments**
- **Regional divisions, functional units and corporate and research units support our business**

Until December 31, 2018, our 12 divisions¹ were grouped into four segments based on their business models: Chemicals, Performance Products, Functional Materials & Solutions and Agricultural Solutions. On September 27, 2018 BASF and LetterOne signed a definitive agreement to merge their oil and gas businesses in a joint venture. Since the agreement was signed, we have no longer reported on BASF's oil and gas business as a separate Oil & Gas segment. Following the approval of all relevant authorities, BASF and LetterOne completed the merger of Wintershall and DEA on May 1, 2019. The new joint venture operates under the name Wintershall Dea. Until closing, its earnings were presented as a separate item, income after taxes from discontinued operations. In the Agricultural Solutions segment, we renamed the division from Crop Protection to Agricultural Solutions after the acquisition of significant businesses from Bayer was closed in August 2018, especially for seeds.

Our divisions bear operational responsibility and are organized according to sectors or products. They manage our 54 global and regional business units and develop strategies for the 86 strategic business units.¹

Our regional units are responsible for optimizing local infrastructure, and contribute to tapping our market potential. For financial reporting purposes, we organize the regional divisions into four regions: Europe; North America; Asia Pacific; South America, Africa, Middle East.

Seven functional units and eight corporate units support the BASF Group's business activities. The functional and corporate units provide services in areas such as finance, human resources, engineering and site management, environmental protection, health and safety, investor relations, and communications. Our

global research units safeguard our innovative capacity and competitiveness.

Business processes such as the procurement of raw materials and services, production and transport to customers are the shared responsibility of the divisions and the functional units.

New organization of the BASF Group as of January 1, 2019

As of January 1, 2019, we have 12 divisions grouped into six segments as follows:

- **Chemicals:** Petrochemicals and Intermediates
- **Materials:** Performance Materials and Monomers
- **Industrial Solutions:** Dispersions & Pigments and Performance Chemicals
- **Surface Technologies:** Catalysts, Coatings and Construction Chemicals
- **Nutrition & Care:** Care Chemicals and Nutrition & Health
- **Agricultural Solutions:** Agricultural Solutions

We are considering the possibility of merging our construction chemicals business with a strong partner, as well as the option of divesting this business. The outcome of this review is open. The Construction Chemicals division will be reported under the Surface Technologies segment until signing of a transaction agreement.

BASF's new segment structure will allow a more differentiated steering of our businesses according to their market-specific competitive environment. It will increase transparency regarding the results of our segments and divisions and highlight the importance of the Verbund and value chains to our business success. BASF aims to clearly position its businesses against their relevant competitors and establish a high-performance organization to enable BASF to be successful in an increasingly competitive market environment.

The **Chemicals** segment will remain the cornerstone of our Verbund structure. It supplies the other segments with basic chemicals and intermediates, contributing to the organic growth of our key value chains. Alongside internal accounts, our customers include the chemical and plastics industries. We aim to increase our competitiveness through technological leadership and operational excellence.

The **Materials** 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 aim to grow organically through differentiation via specific technological expertise, industry know-how and customer proximity to maximize value in the isocyanate and polyamide value chains.

The **Industrial Solutions** segment develops and markets ingredients and additives for industrial applications such as polymer dispersions, pigments, resins, electronic materials, antioxidants and admixtures. We aim to drive organic growth in key industries such as automotive, plastics or electronics and expand our position in value-enhancing ingredients

¹ Excluding the oil and gas activities presented as discontinued operations

and solutions by leveraging our comprehensive industry expertise and application know-how.

The **Surface Technologies** segment comprises our businesses that offer chemical solutions on and for surfaces. Its portfolio includes coatings, rust protection products, catalysts and battery materials for the automotive and chemical industries. The aim is to drive organic growth by leveraging our portfolio of technologies and know-how, and to establish BASF as a leading and innovative provider of battery materials as well.

In the **Nutrition & Care** segment, we strive to expand our position as a leading provider of nutrition and care ingredients for consumer products in the area of nutrition, home and personal care. Customers include food and feed producers as well as the pharmaceutical, cosmetics, detergent and cleaner industries. We aim to enhance and broaden our product and technology portfolio. 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.

The **Agricultural Solutions** segment aims to further strengthen our market position as an integrated provider of crop protection products and seeds. Its portfolio comprises fungicides, herbicides, insecticides and biological crop protection products, as well as seeds and seed treatment products. We also offer farmers digital solutions combined with practical advice. Our main focus is on innovation-driven organic growth, targeted portfolio expansion as well as leveraging synergies from the acquired businesses.

In addition, BASF will embed business-critical parts of its functional units – such as engineering services, procurement and logistics – into the divisions to bring its employees closer to its customers and improve customer-specific agility. We will create leaner structures in our functional units, research and development and in governance functions.

Sites and Verbund

- **Six Verbund sites with intelligent plant networking**
- **355 additional production sites worldwide**

BASF has companies in more than 90 countries. We operate six Verbund sites and 355 additional production sites worldwide. 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. This was where the Verbund principle was originally established and continuously optimized before being implemented at additional sites.

The Verbund system is one of BASF's great strengths. We add value by using our resources efficiently. The Production Verbund intelligently links production units and their energy supply so that, for example, the waste heat of one plant provides energy to others. Furthermore, one facility's by-products can serve as feedstock elsewhere. This not only saves us raw materials and energy, it also

avoids emissions, lowers logistics costs and leverages synergies.

We also make use of the intelligent Verbund principle for more than production, applying it for technologies, the market and digitalization as well. Expert knowledge is pooled in our global research platforms.

Procurement and sales markets

- **Over 90,000 customers; broad customer portfolio**
- **More than 70,000 suppliers**

BASF supplies products and services to over 90,000 customers¹ from various sectors in almost every country in the world. Our customer portfolio ranges from major global customers and medium-sized businesses to end consumers.

We work with over 70,000 Tier 1 suppliers from different sectors worldwide. They supply us with important raw materials, chemicals, investment goods and consumables, and perform a range of services. Some of our most important raw materials are naphtha, natural gas, methanol, ammonia and benzene.

Business and competitive environment

BASF's global presence means that it operates in the context of local, regional and global developments and is bound by various conditions. These include:

- Global economic environment
- Legal and political requirements (such as European Union regulations)
- International trade agreements
- Industry standards
- Environmental agreements (such as the E.U. Emissions Trading System)
- Social aspects (such as the U.N. Universal Declaration of Human Rights)

BASF holds one of the top three market positions in around 75% of the business areas in which it is active. Our most important global competitors include Arkema, Clariant, Covestro, DowDuPont, DSM, Evonik, Formosa Plastics, Huntsman, Lanxess, SABIC, Sinopec, Solvay, Wanhua and many hundreds of local and regional competitors. We expect competitors from Asia and the Middle East in particular to gain increasing significance in the years ahead.

Corporate legal structure

As the publicly traded parent company, BASF SE takes a central position: Directly or indirectly, it holds the shares in the companies belonging to the BASF Group, and is also the largest operating company. The majority of Group companies cover a broad spectrum of our business. In the BASF Group Consolidated Financial Statements, 323 companies including BASF SE are fully consolidated. We consolidate eight joint operations on a proportional basis, and account for 35 companies using the equity method.

¹ The method used to calculate customers in the previous year has been adjusted to "sold-to" parties of our consolidated companies. The updated figure for 2017 is over 80,000 customers.

Corporate Strategy

At BASF, we are passionate about chemistry and our customers. Thanks to our expertise, our innovative and entrepreneurial spirit, and the power of our Verbund integration, our innovations have decisively contributed to changing the world we live in for the better for more than 150 years. To be the world's leading chemical company for our customers, we will grow profitably and add value to society. This is how we create chemistry for a sustainable future.

Today, the world is changing more rapidly than ever before, driven by demographic change and new digital technologies. Our customers in different industries and regions face diverse social and environmental challenges due to limited natural resources and increasing consumer demands. Chemistry is key to solving many of these challenges. By combining our unique expertise with our customers' competence, we will jointly develop profitable, innovative and responsible solutions for these global trends.

**Our purpose reflects what we do and why we do it:
We create chemistry for a sustainable future.**

We pursue this purpose with our corporate strategy, which was updated in 2018. We want to contribute to a world that provides a viable future with enhanced quality of life for everyone. This is why we offer products and solutions that make the best use of available resources.

Our aspiration is to be the world's leading chemical company. With our updated corporate strategy, which was announced in November 2018, we are targeting profitable growth. We aim to grow organically and thus will strengthen our customer focus. The Asian market plays an important role in our growth strategy. With a share of more than 40%, China is already the largest chemical market and drives the growth of global chemical production. By 2030, China's share will increase to nearly 50%, and we want to participate in this growth. To drive forward our growth in this dynamic market, we plan to build an integrated Verbund site in Zhanjiang in the southern Chinese province of Guangdong. We also want to expand our existing joint venture with Sinopec in Nanjing.

As part of our aspiration to be the world's leading chemical company for our customers, we want to strengthen our passion for customers throughout the entire organization. We want to grow profitably and create value for society. To achieve this, we have set ourselves ambitious financial and nonfinancial targets.

New targets from 2019 onward

Business success tomorrow means creating value for the environment, society and business. We have set ourselves new financial and non-financial targets so that our customers, investors, employees and other stakeholders can track our progress.

We want to grow faster than the market and thus be economically successful and profitable. Furthermore, we want to provide answers to

the most pressing challenges of our time. To combat climate change and global warming, we have committed ourselves to growing production volumes without adding further CO₂ emissions until 2030. This means we will decouple greenhouse gas emissions from organic growth. We have also defined targets for a sustainable product portfolio, responsible procurement and engaged employees. Safety for people and the environment, inclusion of diversity and water management will remain a top priority.

The new targets apply from 2019 onward and replace our previous goals. In this way, we want 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).

Our strategic action areas

To reach our goals and be the leading company in the chemical industry for our customers, we want to strengthen our performance in innovation and in operations as the leading chemical producer and plant operator, leverage digital ways of working across the entire company, and integrate sustainability more deeply into our business decisions. We want to strengthen our passion for our customers in all employees. We aim to strengthen our portfolio and further develop our organization to better meet customer needs using the power of our Verbund integration. We have defined six strategic action areas through which we will sharpen our customer focus.¹



Innovation

Our ambition is to be the most attractive partner for our customers whenever they are confronted with challenges that can be approached with chemistry. Our research and development competences are unique in the chemical industry. We aim to build on and leverage our position as a leading innovator to jointly develop innovations for our customers. We will design our innovation chain to be as seamless as possible so that we can bring products to the market more quickly. This means fostering a higher level of excellence throughout the entire innovation process, starting from the lab all the way to the customer.

¹ We defined six strategic action areas in our updated corporate strategy, which was announced in November 2018. They build on the four strategic principles of the "We create chemistry" strategy – we add value as one company; we innovate to make our customers more successful; we drive sustainable solutions; we form the best team – according to global trends and challenges as well as their implications for BASF.

New targets from 2019 onward

Financial targets

Grow sales volumes faster than global chemical production every year

Increase EBITDA before special items by 3% to 5% per year

Achieve a return on capital employed (ROCE)¹ considerably above the cost of capital percentage every year

Increase the dividend per share every year based on a strong free cash flow

Nonfinancial targets

Grow CO₂-neutrally until 2030

Achieve €22 billion in Accelerator sales² by 2025

Cover 90% of our relevant spend³ with sustainability evaluations by 2025, and have 80% of our suppliers improve their sustainability performance upon re-evaluation

More than 80% of our employees feel that at BASF, they can thrive and perform at their best

Existing nonfinancial targets

Reduce the worldwide lost-time injury rate per 200,000 working hours to ≤0.1 by 2025

Reduce worldwide process safety incidents per 200,000 working hours to ≤0.1 by 2025

Introduce sustainable water management at all production sites in water stress areas and at all Verbund sites by 2030

Increase the proportion of women in leadership positions with disciplinary responsibility to 22–24% by 2021

¹ Return on capital employed (ROCE) is a measure of the profitability of our operations. We calculate this indicator as the EBIT generated by the segments as a percentage of the average cost of capital basis.

² Accelerator products are products that make a substantial sustainability contribution in the value chain.

³ We understand relevant spend as procurement volumes with suppliers defined as relevant.

Sustainability

We are successful in the long term when our products, solutions and technologies add value to the environment, society and the economy. We want to be a thought leader in sustainability and increase the relevance of sustainability in our decision-making processes and business models. This secures the long-term success of our company, creates business opportunities and establishes us as a key partner supporting our customers.

Operations

We are committed to running our production safely, efficiently and reliably so that we can deliver products to our customers on spec and on time. We aim to further improve the reliability and availability of our plants, as well as our agility. Above and beyond this, continuous process improvements and effective debottlenecking of our existing asset base are paramount to ensure our competitiveness.

Digitalization

We want to make digitalization an integral part of BASF's business. This will create additional value for our customers, grow our business and improve efficiency. By promoting comprehensive digital skills among our future leaders and our entire workforce, we will ensure that the necessary resources are available.

Portfolio

We will sharpen our portfolio and focus our capital allocation more towards growing business areas. We will focus primarily on organic growth through capital expenditures and innovation, but also make targeted acquisitions where this makes strategic sense and creates value. The new segment structure will create a higher transparency regarding the steering of our businesses, the importance of value chains and the role of our Verbund. The physical, technological, market and digital integration of the Verbund continues to be at the core of our portfolio and our unique strength.

Employees

We aim to clearly position each business against its relevant competitors and establish a high-performance organization to enable us to be successful in an increasingly competitive market environment. We will adapt our business models and organizational structures so that each business unit can optimally serve its market segment. Our people are what will make the implementation of our updated strategy successful. We rely on the engagement of our employees and give them the tools and skills necessary to be able to offer our customers differentiated and customized products and services.

Corporate values

guide our conduct and actions

Creative: We make great products and solutions for our customers. This is why we embrace bold ideas and give them space to grow. We act with optimism and inspire one another.

Open: We value diversity, in people, opinions and experience. This is why we foster feedback based on honesty, respect and mutual trust. We learn from our setbacks.

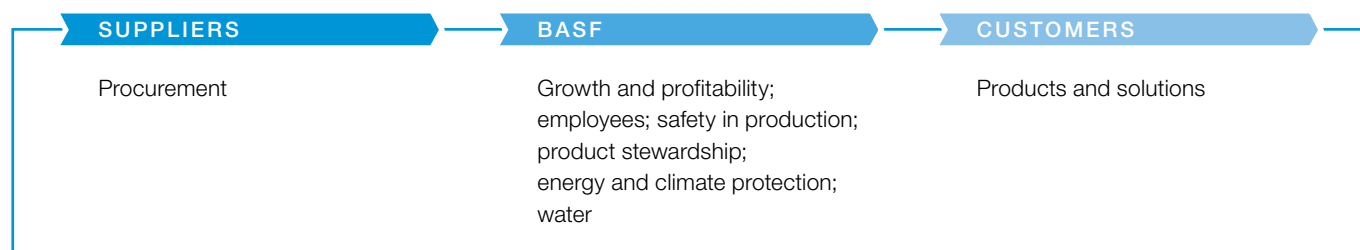
Responsible: We value the health and safety of people above all else. We make sustainability part of every decision. We are committed to strict compliance and environmental standards.

Entrepreneurial: We focus on our customers, as individuals and as a company. We seize opportunities and think ahead. We take ownership and embrace personal accountability.

Goal Achievement in 2018

We carry out our corporate purpose, “We create chemistry for a sustainable future”, by pursuing ambitious goals along our entire value chain. In this way, we aim to achieve profitable growth and take on social and environmental responsibility. This also helps to achieve the United Nations’ Sustainable Development Goals (SDGs).¹ We are focusing on issues where we as a company can make a significant contribution, such as sustainable consumption and production, climate protection or fighting hunger.

Goal areas along the value chain



Procurement

	2020 goal	Status at end of 2018	SDGs
Assessment of sustainability performance of relevant suppliers; ² development of action plans where improvement is necessary	70%	60%	SDG 8, 12, 16, 17

² Our suppliers are evaluated based on risk due to the size and scale of our supplier portfolio. We define relevant suppliers as Tier 1 suppliers showing an elevated sustainability risk potential as identified by our risk matrices and our purchasers’ assessments. We also use further sources of information to identify relevant suppliers such as evaluations from Together for Sustainability (TfS), a joint initiative of chemical companies for sustainable supply chains.

Growth and profitability

As determined in 2015, our aim was, on average, to grow sales slightly faster and EBITDA considerably faster than global chemical production (excluding pharmaceuticals; 2018: 2.7%; average change since 2015: 3.3%), and to earn a significant premium on our cost of capital. Another goal was to achieve a high level of free cash flow each year, either raising or at least maintaining the dividend at the prior-year level.

	2018	Change since 2017	Average change since 2015 ⁴
Sales ³	€62.7 billion	2.4%	3.3%
EBITDA ³	€9.2 billion	(14.9%)	3.8%
Dividends per share paid out	€3.10	€0.10	
Premium on cost of capital	€0.8 billion		
Free cash flow	€4.0 billion		

³ The average change was calculated using the changes in the non-adjusted figures from 2015 to 2017 and the change in the adjusted figures from 2018 to 2017. This gives an approximate average change on a comparable basis in each case. However, the figures do not take into account the structural decline in sales and EBITDA due to the classification of the oil and gas business as a discontinued operation.

⁴ Baseline 2015: excluding the gas trading and storage business transferred to Gazprom

¹ Sustainable Development Goals (SDGs): SDG 1 – No poverty, SDG 2 – Zero hunger, SDG 3 – Good health and well-being, SDG 4 – Quality education, SDG 5 – Gender equality, SDG 6 – Clean water and sanitation, SDG 7 – Affordable and clean energy, SDG 8 – Decent work and economic growth, SDG 9 – Industry, innovation and infrastructure, SDG 10 – Reduced inequalities, SDG 11 – Sustainable cities and communities, SDG 12 – Responsible consumption and production, SDG 13 – Climate action, SDG 14 – Life below water, SDG 15 – Life on land, SDG 16 – Peace, justice and strong institutions, SDG 17 – Partnerships for the goals

Employees

	2021 goal	Status at end of 2018	SDGs
Proportion of women in leadership positions with disciplinary responsibility	22–24 %	21.7 %	SDG 5, 16
	Long-term goals		
International representation among senior executives ⁵	Increase in proportion of non-German senior executives (baseline 2003: 30%)	40.4%	
Senior executives with international experience	Proportion of senior executives with international experience over 80%	85.4%	

⁵ The term "senior executives" refers to leadership levels 1 to 4, whereby level 1 denotes the Board of Executive Directors. In addition, individual employees can attain senior executive status by virtue of special expertise.

Safety in production

	2025 goal	Status at end of 2018	SDGs
Reduction of worldwide lost-time injury rate per 200,000 working hours	≤ 0.1	0.3	SDG 3, 8
Reduction of worldwide process safety incidents per 200,000 working hours	≤ 0.1	0.3	SDG 3, 12, 15
	Annual goal		
Health Performance Index	>0.9	0.96	SDG 3, 8

Product stewardship

	2020 goal	Status at end of 2018	SDGs
Risk assessment of products that we sell in quantities of more than one metric ton per year worldwide	>99%	91%	SDG 3, 12

Energy and climate protection

	2020 goal	Status at end of 2018	SDGs
Coverage of our primary energy demand by certified energy management systems (ISO 50001) at all relevant sites ⁶	90%	73.0%	SDG 7, 12, 13, 14, 15
Reduction of greenhouse gas emissions per metric ton of sales product (excluding the oil and gas business, baseline 2002)	(40%)	(34.2%)	SDG 12, 13, 14, 15

⁶ The selection of relevant sites is determined by the amount of primary energy used and local energy prices; figures relate to BASF operations including the discontinued oil and gas business.

Water

	2025 goal	Status at end of 2018	SDGs
Introduction of sustainable water management at all production sites in water stress areas and at all Verbund sites (excluding the oil and gas business)	100%	50.0%	SDG 3, 6, 12, 14, 15


Products and solutions

	2020 goal	Status at end of 2018	SDGs
Increase the proportion of sales generated by products that make a substantial contribution to sustainable development (Accelerator products)	28%	27.7%	SDG 3, 8, 9, 12, 13

BASF in the Regions

BASF Group sales 2018: €62,675 million;
EBIT 2018: €6,033 million

North America



16,659
Sales¹ (in million €)

802
EBIT (in million €)

20,069
Employees²

South America,
Africa, Middle East

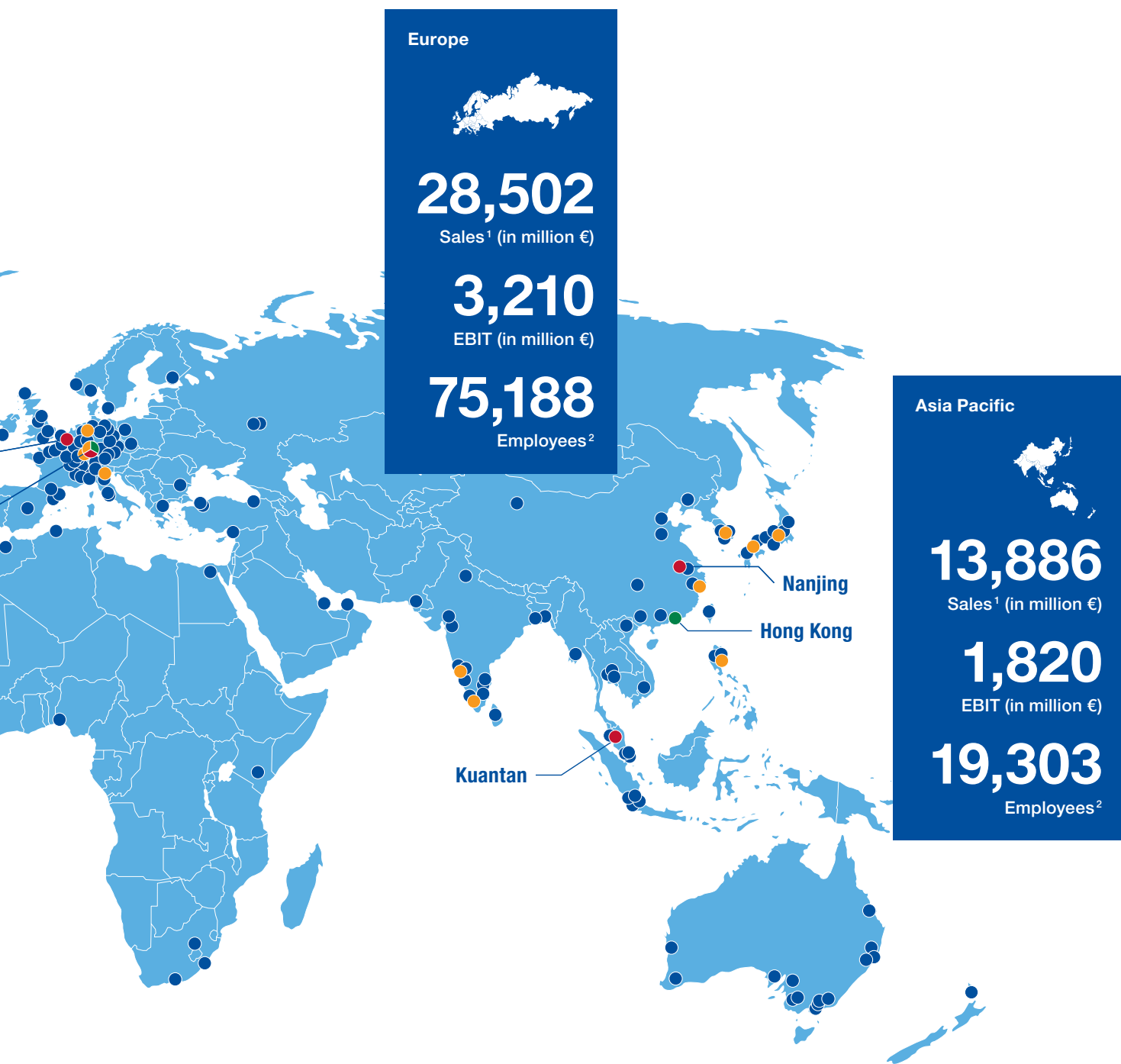


3,628
Sales¹ (in million €)

201
EBIT (in million €)

7,844
Employees²





Europe

28,502
Sales¹ (in million €)

3,210
EBIT (in million €)

75,188
Employees²

Asia Pacific

13,886
Sales¹ (in million €)

1,820
EBIT (in million €)

19,303
Employees²

Nanjing

Hong Kong

Kuantan

- Regional centers
- Selected sites
- Verbund sites
- Selected research and development sites

¹ In 2018, by location of company
² At year-end 2018

BASF on the Capital Market

In 2018, the stock markets were characterized by long periods of uncertainty as a result of geopolitical tensions and trade conflicts, especially between the United States and China. The BASF share price declined considerably over the course of the year. We stand by our ambitious dividend policy and we paid a dividend of €3.20 per share – an increase of 3.2% compared with the previous year.

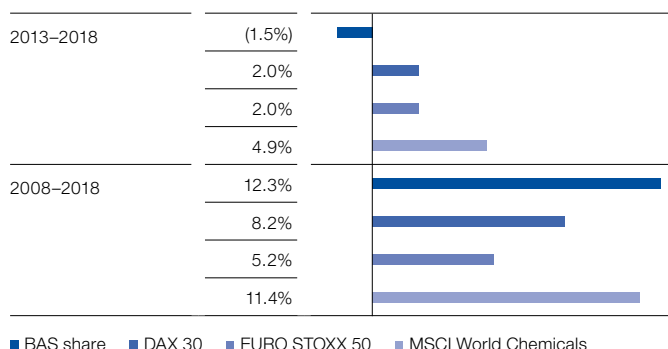
BASF share performance

- BASF share declines 34.2% in 2018
- Long-term performance continues to clearly exceed benchmark indexes

The BASF share closed the 2018 stock market year with a closing price of €60.40, a decrease of 34.2% compared with the previous year's closing price. The considerable year-on-year decline in the BASF Group's earnings was primarily attributable to considerably lower earnings in the Chemicals segment, mainly as a result of lower margins for isocyanates and steam cracker products. The segment's earnings were also negatively impacted by the low water levels on the Rhine River in the second half of 2018. In addition, geopolitical tensions and trade conflicts, especially between the United States and China, led to a slowdown in economic growth over the course of the year particularly in Asia, and there mainly in China. The ensuing downturn in demand from significant customer industries, in particular the automotive industry, further weighed on BASF's share performance.

Long-term performance of BASF shares compared with indexes

Average annual increase with dividends reinvested



Weighting of BASF shares in important indexes as of December 31, 2018

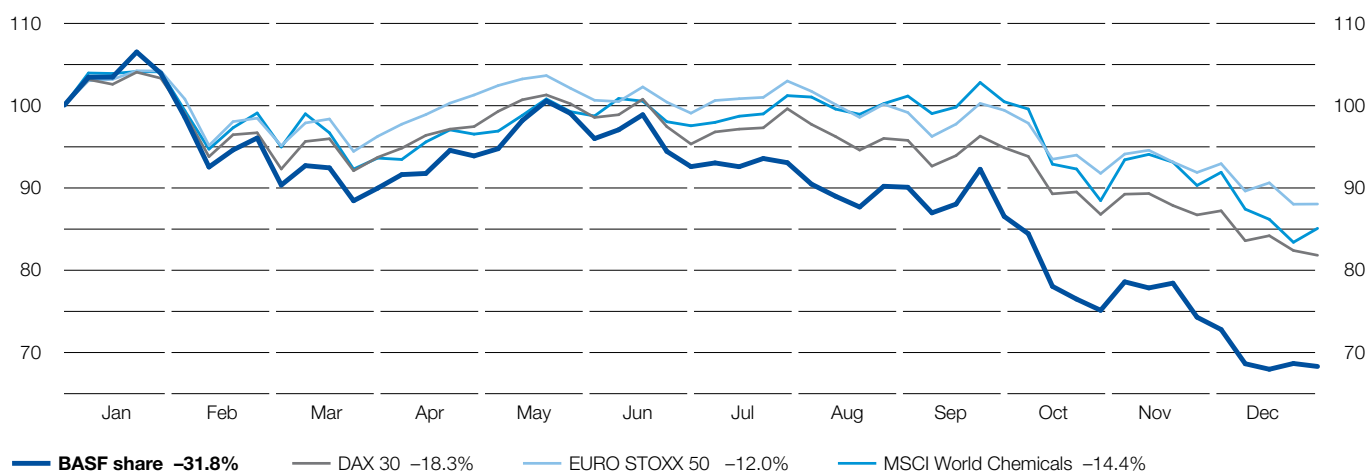
DAX 30	6.3%
EURO STOXX 50	2.6%
MSCI World Chemicals	7.0%

Assuming that dividends were reinvested, BASF's share performance declined by 31.8% in 2018. The benchmark indexes of the German and European stock markets – the DAX 30 and the EURO STOXX 50 – lost 18.3% and 12.0% over the same period, respectively. The global industry index MSCI World Chemicals fell by 14.4%.

Viewed over a 10-year period, the long-term performance of BASF shares still clearly surpasses the German, European and global benchmark indexes. The assets of an investor who invested €1,000 in BASF shares at the end of 2008 and reinvested the dividends in additional BASF shares would have increased to €3,201 by the end of 2018. This represents an annual yield of 12.3%, placing BASF shares above the returns for the DAX 30 (8.2%), EURO STOXX 50 (5.2%) and MSCI World Chemicals (11.4%) indexes.

Change in value of an investment in BASF shares in 2018

With dividends reinvested; indexed



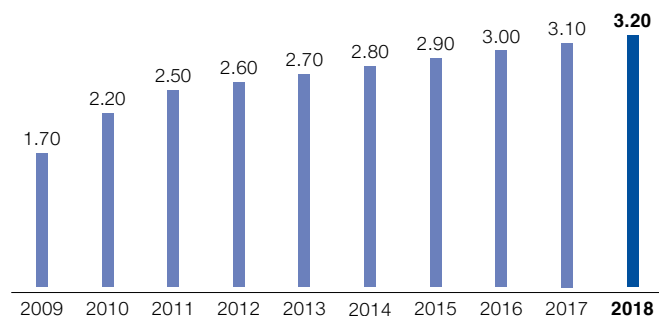
Dividend of €3.20 per share

For 2018, BASF paid a dividend payment of €3.20 per share. We stand by our ambitious dividend policy of increasing our dividend each year and plan to pay out €2.9 billion to our shareholders.

Based on the year-end share price for 2018, BASF shares offer a high dividend yield of around 5.3%. 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

€ per share

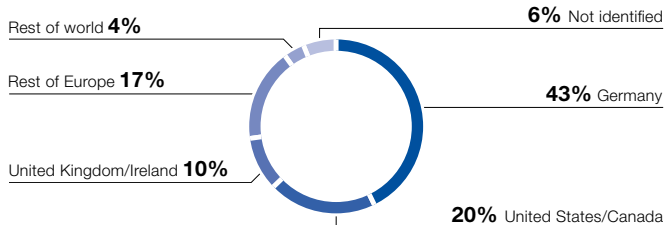


Broad base of international shareholders

With over 600,000 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 2018 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 13%. Shareholders from the United Kingdom and Ireland hold 10% of BASF shares, while investors from the rest of Europe hold a further 17% of capital. Approximately 30% 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 2018, for example, 25,000 employees (2017: 23,700) purchased employee shares worth €79 million (2017: €63 million).



BASF currently operates two Verbund sites in Asia Pacific. The Verbund site in Nanjing, China, established in 2000, is a 50:50 joint venture with Sinopec.

BASF in Asia Pacific

At a glance

Economy

Sales by location of customer in the Asia Pacific region rose by 2% to €14,646 million in 2018 (2017: €14,343 million).

Sales at companies headquartered in the Asia Pacific region rose by 2% to €13,886 million in 2018 (2017: €13,658 million). In local currency terms, sales rose by 5% year on year. The positive development was mainly driven by the Functional Materials & Solutions segment. We also increased sales in the Agricultural Solutions segment.

All segments increased volumes; Functional Materials & Solutions and Performance Products also achieved higher prices. By contrast, sales were consistently weighed down by currency effects. Portfolio measures had no effect on sales development in 2018. The trade conflict between the United States and China dampened economic sentiment across Asia, leading to lower prices and volumes year on year in the fourth quarter of 2018.

EBIT in the region decreased by 18% year on year to €1,820 million. This was primarily due to the lower contribution from the Chemicals segment as a result of narrower margins in the isocyanates business, as well as for steam cracker products at our joint venture. Lower fixed costs were unable to compensate for these effects.

As part of our regional strategy, we aim to further increase the proportion of sales from local production in Asia Pacific. We once again made progress toward this goal: For instance, we started commercial production of polyoxymethylene (POM) in Gimcheon, South Korea, in October 2018. We started production of citral, citronellol and menthol at our new aroma ingredients complex in Kuantan, Malaysia.

Our investments in production facilities as well as in research and development serve to bring products to market for our local and global customers in this fast-growing region. We therefore plan to build an integrated Verbund site in Zhanjiang in the southern Chinese province of Guangdong and expand our existing joint venture with Sinopec in Nanjing, China.

BASF sales in Asia Pacific (By location of customer)

Million €

Year	Sales (Million €)
2018	14,646
2017	14,343
2016	12,165

BASF EBIT in Asia Pacific (By location of company)

Million €

Year	EBIT (Million €)
2018	1,820
2017	2,209
2016	1,098

Environment

From procurement at the supplier end, to production at production plants to the product delivery to the customers, we are committed to energy efficiency and global climate protection along the value chain, around the world and in Asia Pacific.

In India, BASF and the Navi Mumbai Municipal Corporation collaborated on an innovative safe water and sanitation project. A solar powered, cashless community water treatment plant, commonly referred to as a "water ATM", will dispense potable drinking water at just Rs. 8 (USD 0.11) per 20 liters when accessed with a debit card. Water is harvested from rain and other sources, and is purified with BASF's ultrafiltration solution. This innovative social business model offers clean and affordable drinking water to 10,000 people.

At production sites throughout Asia Pacific, we adopted various measures to reduce emissions along the value chain. These include efficient technologies for generating steam and electricity, energy-efficient production processes, and comprehensive energy management systems.

Our products make an important contribution toward helping our customers avoid emissions. In 2018, Nippon Paint launched an interior paint in China, Infinite Air, made with BASF dispersions derived from renewable resources. With the TÜV SÜD-certified biomass balance approach from BASF, fossil resources are replaced with renewable feedstock. The launch of this new paint helps save fossil resources and reduce greenhouse gas emissions while providing excellent product performance and minimizing odor.

Employees and society

As of the end of 2018, BASF employed 19,303 people in the Asia Pacific region (2017: 18,256). Of these, 25.7% were female (2017: 25.9%). There were 2,094 new hires in the region in 2018, 31.1% of which were female (2017: 24.9% of 2,141).

Number of employees (as of December 31)

Year	Total	% of which female
2018	19,303	25.7%
2017	18,256	25.9%
2016	18,156	26.6%

Number of new hires¹ (as of December 31)

Year	Total	% of which female
2018	2,094	31.1%
2017	2,141	24.9%
2016	1,733	32.1%

¹ Excluding employees of the businesses acquired from Bayer

Throughout the region, BASF developed customized campaigns and activities to support employee engagement, impactful leadership, and inclusion of diversity. These initiatives help to support and engage employees, fostering a safe, inclusive and inspiring working environment.

Innovation

Innovation in chemistry enables economic, environmental, and social development, and thus plays a key role in meeting the needs of Asia Pacific's growing population in a period of rapid urbanization. BASF is committed to fostering innovation in this dynamic region by constantly enhancing its local research capabilities. In the future, around a quarter of BASF's global research and development (R&D) activities will be in Asia Pacific.

Growing R&D capabilities in Asia Pacific

- **New Regional Automotive Application Center enables collaborative innovation with automotive customers**
- **New Process Catalysis R&D Center complements manufacturing capabilities**

BASF has been continuously expanding its research and development footprints in Asia Pacific, to drive innovation by integrating customer and market needs at an early stage. With major R&D sites located in China, India, Japan and Korea, BASF had 1,285 (2017: 1,160) R&D employees in Asia Pacific by the end of 2018.

BASF operates two Innovation Campuses, in Shanghai, China, and Mumbai, India. This concept is unique to Asia Pacific and brings all parties, including R&D, business and production units, to a single integrated site. Each Innovation Campus is an integral part of BASF's global Know-How Verbund, and houses global, regional and local R&D projects. Innovation Campus Shanghai, located at BASF Shanghai Pudong Innovation Park in Shanghai, China, was inaugurated in 2012 and expanded in 2015 and 2019.

The Innovation Campus Shanghai is the global headquarters of Advanced Materials & Systems Research. It has a broad research portfolio in the areas of advanced materials, chemical process engineering and environmental catalysts. Combining technical development capabilities of the operating divisions, as well as industrial design expertise featured in the Creation Center, the Innovation Campus Shanghai serves the innovation demand of almost all major industries.

In 2019, BASF further enhanced its regional innovation capabilities with new facilities at the Innovation Campus Shanghai, to further strengthen collaboration with the automotive industry and to offer new process catalysts to the chemical industry. With an investment of approximately €34 million, the new 5,000-square-meter facilities include the Automotive Application Center and the Process Catalysis Research & Development (R&D) Center.



With an investment of approximately €34 million, the new 5,000-square-meter building includes the Automotive Application Center and the Process Catalysis Research & Development (R&D) Center.

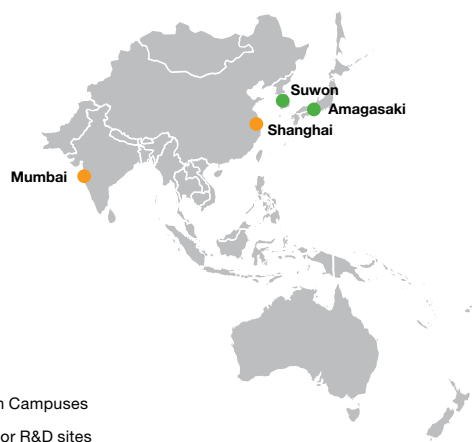
The Innovation Campus Mumbai, with complementary research focusing on crop protection and specialty chemicals, is an important pillar of BASF's growing R&D network in Asia Pacific. It includes state-of-the-art laboratories for chemical synthesis, application and process development, as well as analytics. The Innovation Campus Mumbai brings all new and existing R&D activities in Mumbai under one roof, located next to the office buildings and production plants at BASF's Thane site in Navi Mumbai.

In 2018, the Innovation Campus Mumbai contributed to the successful launch of the new insecticide Sefina. The new insecticide from BASF helps farmers to protect crops (e.g. cotton) and increase yields. The pioneering solution is powered by BASF's new active ingredient, Inscalis®, the first of its kind from a novel chemical class, Pyropenes. Offering a new mode of action for the control of key insect pests, Sefina gives farmers a powerful new tool to combat resistance, as part of integrated pest management programs.



The BASF Automotive Application Center Asia Pacific can simulate nearly any situation on a customer's paint line.

BASF R&D setup in Asia Pacific



Asia Pacific R&D sites

Innovation Campus Shanghai

- Focus: Advanced Materials, Process Engineering, Catalysts

Innovation Campus Mumbai

- Focus: Crop Protection, Specialty Chemicals

R&D Center Amagasaki

- Focus: Electronics, Battery Materials

R&D Center Suwon

- Focus: Electronics

Across Asia Pacific, BASF R&D centers with specialized focus areas contribute to developing innovative solutions that address the region's challenges of resource efficiency, food and nutrition, and quality of life. BASF's R&D Center in Amagasaki, Japan, focuses on developing innovative materials to improve battery performance, while covering other R&D activities in electronics, plastic additives, packaging and adhesives. The company's R&D Center in Suwon, Korea, specializes in electronic materials development in close collaboration with major customers in Korea and across the region.



At the new Process Catalysis R&D Center, scientists develop new catalytic materials for both new and existing process catalysis applications.

Open innovation with academia and industry

■ Network for Asian Open Research (NAO) expands topic scope with more partners

BASF places great value on open innovation through close collaboration with academic and industry partners around the world. It maintains a global network of partners from universities, institutes and companies, forming a key pillar of BASF's global Know-How Verbund. In Asia Pacific, the Network for Asian Open Research (NAO) has been a joint platform directed by BASF and leading universities and institutes in the region since 2014.

NAO has expanded to include a broader range of university partners and research areas in 2017. The network currently consists of 10 partners from China, Japan and Korea. Areas of collaboration have been extended to cover all technologies under BASF's three global technology platforms: Advanced Materials & Systems Research; Bioscience Research; and Process Research & Chemical Engineering.

Since its establishment, BASF and its partners have completed more than 29 joint research projects, with 11 postdoctoral students joining BASF after the projects' completion. Currently, NAO projects cover research areas including new monomers and polymers, surfaces and interfaces, zeolites, hybrid materials, coatings, as well as digitalization in R&D. For example, BASF is partnering with Sichuan University and is exploring improved solutions for important market needs like high chemical resistance of polyamide blends.



Located in Gaoqiao, Pudong, Shanghai, BASF Shanghai Pudong Innovation Park is home to the BASF Greater China headquarters since 2004.



BASF in Greater China

At a glance

BASF has been a committed partner to Greater China since 1885. With larger production sites in Shanghai, Nanjing and Chongqing, BASF is a major foreign investor in the country's chemical industry, and operates the Innovation Campus Shanghai, a global and regional research and development hub. BASF posted sales of more than €7.3 billion in 2018 to customers in Greater China and employed 9,317 people as of the end of the year. Greater China is currently BASF's third largest market after Germany and the United States.

BASF currently operates 25 major wholly-owned subsidiaries, nine major joint ventures, and maintains 24 sales offices in Greater China. BASF's business in Greater China includes petrochemicals, intermediates, performance materials, monomers, dispersions and pigments, performance chemicals, catalysts, coatings, care chemicals, nutrition and health, agricultural solutions and construction chemicals.

These chemicals are used in almost all areas of daily life such as in houses, cars, food, agriculture, pharmaceuticals, textile, household goods, electronic equipment and packaging. BASF has invested more than €6 billion in Greater China (more than €9 billion with partners) to build a locally competitive production, marketing, sales, technical service and innovation network.

Our sites



- Regional headquarters
- Greater China headquarters
- Selected sales offices
- Selected production sites
- Verbund site
- R&D/Technical centers

Some sites are not shown in the map due to scale. Site and office numbers refer to the companies of significant size where BASF holds a stake greater than 50%.
 Map reference: GS(2016)2923, Ministry of Natural Resources of China

BASF Shanghai Pudong Innovation Park

An integrated site with global, regional and local activities for research and development, production, sales and marketing, and functional units

- Location: Gaoqiao, Pudong, Shanghai
- Products: Advanced materials including Ultramid® (polyamide / PA), Ultradur® (polybutylene terephthalate / PBT), polyurethane systems, Elastollan® thermoplastics polyurethane elastomers (TPU) and Cellasto® (microcellular polyurethane), acrylic dispersions & copolymers colorants, detergents, metal complex dyes, leather auxiliaries and polyvinylpyrrolidone (PVP)
- Key milestones:
 - Established in 1994
 - Became a wholly-owned BASF entity in 2000
 - Home to the BASF Greater China headquarters since 2004
 - Innovation Campus Shanghai established in 2012
 - Operating eight production plants and a wastewater treatment plant as of the end of 2018

BASF Shanghai Caojing site

A major production site with one wholly-owned company and three joint ventures

- Location: Shanghai Chemical Industry Park in Caojing, Shanghai
- Products: Polytetrahydrofuran (PolyTHF), TDI (toluene diisocyanate), MDI (methylene diphenyl diisocyanate), polyisocyanate (Basonat®), precious metals-based salts and solutions, automotive coatings, resins and electrocoat, polyamide polymerization and process catalysts
- Key milestones:
 - Established in 2002
 - First PolyTHF® production in 2003
 - Operating 12 production plants as of the end of 2018
- Major companies:
 - BASF Chemicals Co. Ltd. (wholly-owned)
 - BASF Shanghai Coatings Co. Ltd. (joint venture with Shanghai Huayi Fine Chemical Co., Ltd)
 - Shanghai BASF Polyurethane Company Limited and Shanghai Lianheng Isocyanate Co. Ltd. (two joint ventures with several partners)

BASF Nanjing Verbund site

An integrated Verbund site jointly run by BASF and Sinopec (50-50)

- Location: Nanjing Jiangbei New Materials High-Tech Park, Nanjing
- Products: low density polyethylene, ethylene-vinyl acetate, ethylene glycol, polystyrene, acrylic acid and acrylic esters, non-ionic surfactants, superabsorbent polymers, n-butanol, iso-butanol, 2-propyl-heptanol, butadiene, polyisobutene, etc.
- Key milestones:
 - Established in 2000
 - Commercial production since 2005
 - Inauguration of its second phase in 2012
 - Operating 32 production plants by end of 2018
- Published 2018 facts and figures:
 - Total investment of \$5.2 billion
 - 1,893 employees
 - Sales in 2018: about CNY 21.6 billion

BASF Chongqing site

BASF wholly-owned production site of MDI

- Location: Changshou Economic & Technological Development Area, Chongqing
- Product: methylene diphenyl diisocyanate (MDI) with annual capacity: 400,000 metric tons
- Key milestones:
 - First MDI production in 2015
 - Steam methane reformer completed in 2018
 - Total investment: approximately CNY 8 billion

BASF in Greater China

Sales in 2018 (by location of customer)

more than
€ 7.3 billion

Employees (as of December 31, 2018)

9,317

Business Development

BASF grew its sales in Greater China to more than €7.3 billion in 2018. To meet customers' increasing demands and drive new opportunities in the local markets, we have been investing in new production and innovation capacities in a broad range of business fields. Such commitment supports the growth of numerous downstream industries.

Sales (By location of customer)

Million €		
2018	7,303	
2017	7,273	
2016	5,931	

Strategic investment in Greater China

- **Second Verbund site in China planned, in the city of Zhanjiang**
- **Cooperation with Sinopec to be expanded**

China – with a global share of around 40% – is the largest chemical market, and dominates the growth of chemical production worldwide. To enhance the growth in this dynamic market, BASF is further investing in the country.

In July 2018, BASF announced its intention to construct a new “Verbund” site in Zhanjiang, in the southwestern part of Guangdong Province. The site would be BASF’s largest investment and would be operated under the sole responsibility of BASF. The total investment is estimated to reach up to \$10 billion upon completion and will be implemented in phases. The project will include a steam cracker with



A new liaison office is opened in Zhanjiang to support the development of the planned Verbund site.



BASF and Sinopec signed a Memorandum of Understanding to expand the two companies' cooperation in China.

a planned capacity of 1 million metric tons of ethylene per year, as well as several plants for consumer-oriented products and solutions. BASF is developing a smart manufacturing concept for the new site based on cutting-edge technologies that maximize resource and energy efficiency and reduce environmental impact.

In October 2018, BASF and Sinopec signed a Memorandum of Understanding to expand their long-standing cooperation in China. According to the MoU, BASF-YPC Company, Limited (BASF-YPC) will invest in a 50% stake to build a second steam cracker with a capacity of 1,000,000 metric tons of ethylene per year. Sinopec Yangtzi Petrochemical (YPC) will invest the other 50%. Both BASF-YPC and YPC will have access to all of the products of the new steam cracker to develop their downstream product portfolios. The partners are also jointly exploring new business opportunities in battery materials in China.

New facilities and production expansion

- **New projects across the region**
- **Strengthened local capacity to meet local demands**

BASF is investing in the expansion of its production capacity and product portfolio to meet local customer needs.

At its Shanghai Pudong Innovation Park, a new 30,000-square-meter production facility for mobile emissions reduction catalysts is under construction. The plant will manufacture innovative catalysts for gasoline and diesel vehicles to help automotive customers meet more stringent emission control requirements in China.

At its Shanghai Caojing site, BASF inaugurated a new, world-scale antioxidants manufacturing plant with an annual capacity of



Inauguration of the first phase of the new antioxidants manufacturing plant in Caojing, Shanghai

42,000 tons in January 2019. Antioxidants help prevent thermal oxidation reactions when plastics are processed at high temperatures.

At its Shanghai Jinshan site, BASF is expanding its APG® (alkyl polyglucosides) production capacity to add value to customers' formulations with mild surfactants based on renewable feedstocks, for personal and home care applications.

At BASF's Verbund site in Nanjing, the expansion of propionic acid production to 69,000 metric tons per year went on stream, to meet the growing demand of food and feed grain preservation, contributing to food safety in China.

In Jiaxing, Zhejiang Province, BASF started operations at a new electronic-grade sulfuric acid plant in May 2018 to serve the growing semiconductor manufacturing industry.



In 2018, BASF inaugurated a new electronic-grade sulfuric acid plant in Jiaxing, Zhejiang Province.

In Pinghu, Zhejiang Province, BASF will invest in a state-of-the-art surface treatment site for its Chemetall brand to benefit diverse market segments, such as automotive, auto components, coil, general industry, cold forming, aerospace, aluminum finishing and glass.

At the Changhua site in Taiwan, a new production facility was launched in September 2018 to support growing demand for Expanded Thermoplastic Polyurethane (E-TPU) Infinergy® from multiple industries, including transportation, furniture, construction and sports equipment.

Global acquisitions and partnerships

- Acquisition of Bayer's assets strengthens market position in agricultural solutions
- 3D printing expansion in Asia Pacific

BASF is continuously expanding partnerships and optimizing its portfolio around the globe as well as in China in order to further grow and gain access to new market segments.



BASF closed acquisition of businesses and assets from Bayer.

In August 2018, BASF closed the acquisition of a range of businesses and assets from Bayer to complement our activities in crop protection, biotechnology and digital farming. The transaction also marks the company's entry into seeds, non-selective herbicides and nematocidal seed treatments business.

Meanwhile, BASF is expanding into the 3D printing market in Asia Pacific, with a broad portfolio of material and system solutions, including plastic and metal filaments, plastic powders and photopolymers. In February 2019, BASF collaborated with the 3D printing solution provider HeyGears on the development of new photopolymers for mass production of industrial components and consumer goods. We also partnered with SoonSolid (Xunshi Technology) to offer dental applications. In November 2018, BASF invested in PrismLab, a leading provider of 3D printing processes and 3D printers, headquartered in China. In March 2018, BASF's subsidiary Innofil3D, the leading producer of high-value customized filaments, and Beijing Tiertime, a leading fused filament fabrication 3D printer manufacturer, set up a partnership to distribute high quality filaments. By doing so, we aim to meet the rising demand for 3D printing technology and to support the growth of key industries in the region.

Digital business models

- Enhancing e-commerce strategy in China

Over the past year, BASF has deployed a variety of customer-focused digital platforms in China. BASF's flagship store on 1688.com enables the company to reach new customers, explore business opportunities online, and serve small and medium or remote enterprises in a more flexible and timely manner. The BASF flagship store on JD.com is an e-shop for consumer goods that enables end-users to access our solutions directly online. A WeChat service account was launched to provide product information and sample application, while a formulation finder app was developed as a new channel to customize solutions to address different needs.



At our production sites and along the value chain with our partners, we strive to continuously reduce greenhouse gas emissions from our business activities.

Integration of Sustainability

Business success tomorrow means creating value for the environment, society and business. This is why sustainability has been reinforced as a cornerstone of our updated corporate strategy. Using the various tools of our sustainability management, we carry out our company purpose: “We create chemistry for a sustainable future.” We systematically incorporate sustainability into our business. We understand future sustainability trends and derive appropriate measures for our business to seize business opportunities and minimize risks along the value chain.

Strategy

We achieve long-term business success by creating value for the economy, the environment and society. Sustainability is at the core of what we do, a driver for growth as well as an element of our risk management. That is why sustainability is firmly anchored into the organization to guide our day-to-day operations and business development. We support our customers to become more sustainable and create new business opportunities that grow our customer relationships. Conducting our business in a responsible,

safe, efficient and respectful way promotes societal acceptance of our business activities.

Our products, solutions and technologies contribute to achieving the United Nations' Sustainable Development Goals (SDGs), for example, on sustainable consumption and production, climate action or fighting hunger. In this way, we want to make a lasting contribution to a viable future.

We have defined sustainability focus areas in our corporate strategy to position ourselves in the market and at the same time, meet the growing challenges along the value chain:

- We source responsibly
- We produce safely for people and the environment
- We produce efficiently
- We value people and treat them with respect
- We drive sustainable products and solutions

Relevant topics resulting from these commitments – such as energy and climate protection, portfolio management, supply chain responsibility, employee engagement, resource efficiency, responsible production and water – form the focal points of our global reporting. We also provide transparent information on our sustainability performance at a local level in Greater China. We integrate these topics into our long-term steering processes to increase societal acceptance and take advantage of business opportunities.

BASF Corporate Commitments



Our Corporate Commitments cover every part of our value chain and operations to deliver long-term business success.

Supplier Management

From suppliers to production at various plants to the product delivery to the customers, the principle of aligning economic goals with environmental and social responsibility is applied throughout our value chain. We create added value together with partners that goes above and beyond procurement.

BASF Corporate Commitment

We source responsibly

Ensuring sustainable procurement

- **Together for Sustainability initiative standardizes supplier audits in China**
- **Supplier training with a leading university**

BASF is a founding member of the Together for Sustainability (TfS) initiative of leading chemical companies for the global standardization of supplier evaluation and auditing. With the implementation of TfS, we promote sustainability in the supply chain. The initiative aims to develop and implement a global program for the responsible supply of goods and services and improve suppliers' environmental and social standards. The evaluation process is simplified for both suppliers and TfS member companies through a globally uniform questionnaire. Globally, members of the initiative conducted a total of 3,767 sustainability assessments and 358 audits in 2018, including a large number in Greater China. Several hundred suppliers attended sustainability training in Shanghai as part of the TfS initiative in 2018.

We continued our collaboration with the East China University of Science and Technology to instruct suppliers on sustainability practices. More than a hundred suppliers received training in 2018.

Building a smart supply chain

- **Improving logistics visibility via digital logistics tools**
- **Cooperating with Shanghai Customs on a pilot big data platform for fast clearance**

Digital technologies are providing opportunities to improve efficiency and better support our customers with proactive location and delivery information.

Since 2018, a number of digital tools have been deployed to track and trace logistic status in Greater China. The Elementum system enables a close tracking of maritime and air shipment of imported cargos. Using Global Positioning System (GPS) technology, the

Weika system allows users to access real-time truck locations within mainland China via a WeChat-based application. Several key customers have signed up as pilot users in 2018.

Domestic intermodal transportation is a common yet highly complex route, with a single journey of more than 1,000km going through multiple transport modes such as rail, road and ship. A cross-functional team from BASF worked together with G7, a location-based-service (LBS) solutions provider, to develop a digital asset tracking system for ISO tanks. With an LBS tracker installed in the container, the system improves ISO tank utilization and increases the logistics visibility for customers. The system finished its trial successfully at BASF Markor Chemical Manufacturing (Xinjiang) Co., Ltd. in Korla, Xinjiang in 2018.



The digital asset tracking system for ISO tanks can identify delays or abnormal move in a timely manner to ensure timely delivery and product safety.

In order to improve customs clearance efficiency of goods while ensuring effective supervision, Shanghai Customs developed a big data platform for cross-border trade in 2018, which contains the complete trade chain, logistics chain and other information. Relying on digital technologies such as cloud computing and the Internet of Things, the platform realizes the immediate release of goods with transparent data and authentic verification.

BASF supports Shanghai Customs in promoting and implementing this rapid customs clearance model. As a pilot enterprise, BASF has actively participated in discussions and dialog with Shanghai Customs, put forward suggestions, and timely adjusted internal processes. At present, BASF declares online two days before the goods arrive at the port. Once data comparison and customs verification on the platform are completed, the goods will be released directly upon arrival. With this model, the customs clearance time of goods has been reduced from 48 hours to a few hours, improving delivery efficiency and saving logistics costs.

Environmental Protection, Health and Safety

Health and Safety

At BASF, we never compromise on safety. Our global safety and security concepts serve to protect our employees, contractors and neighbors, as well as information, company assets and the environment. For occupational and process safety as well as health and environmental protection, corporate security and emergency response, we rely on comprehensive preventive measures. In doing so, we expect the cooperation of all employees and contractors.

BASF Corporate Commitment

We produce safely for people and the environment

Product stewardship

- **Extensive chemical safety information for all people who handle the products**
- **Cooperation with industry partners to promote product stewardship**

We review the safety of our products from research and development through production and all the way to our customers' application. We continuously work to ensure that our products pose no risk to people or the environment when they are used responsibly and in the manner intended.

BASF provides extensive information on all our chemical sales products to our customers with safety data sheets in around 40 languages, including Chinese. It also incorporates the latest regulatory requirements in China in its product safety system to ensure its Chinese safety data sheets and product safety labels are in compliance with China's regulatory framework.

Working closely with industry associations, academia and local authorities, BASF actively promotes product stewardship code and



For BASF, safety of employees and contractors is of vital importance.

practices in Greater China. We have contributed our expertise in setting up a task force on product stewardship under the Responsible Care working group of the China Petroleum and Chemical Industry Federation (CPCIF) and shared our best practices to support local companies in establishing their own product stewardship systems. As a leader in new chemical notification, we contribute our expertise and experience in developing regulations and guidelines for chemical management and food contact materials management in China. We have also been working with partners to promote computational toxicology in China. Leveraging expert resources from the Ministry of Ecology and Environment of the People's Republic of China and the China Food Safety Assessment Center, we are extending this initiative from chemical management to food safety management.



Safety labels are marked clearly on the tank.

Transportation and distribution safety

■ Risk minimization along the entire transportation chain

We want our products to be safely loaded, transported, handled and stored. This is why we depend on reliable logistics partners, global standards and an effective organization. Our goal is to minimize risks along the entire transportation chain - from loading and transportation to unloading at our customers' sites. We have defined global guidelines and requirements for the storage of our products, and we regularly monitor to ensure full compliance.

We regularly assess the safety and environmental risks of transporting and storing raw materials and products with high hazard potential, using our global guidelines which are based on the guidelines set by the European Chemical Industry Council (Cefic). Some of them even go beyond national and international dangerous goods requirements. We stipulate worldwide requirements for our logistics service providers (LSPs) and assess them in terms of safety and quality. In 2018, we evaluated several dozen LSPs across Greater China, using our own evaluation and monitoring tools as well as internationally approved schemes.

In addition, we systematically implement our measures to improve transportation safety and report, in particular, on goods spillages that could lead to significant environmental impact.

Process safety

- Regular review of plant protection plans and performance of safety inspections and safety-related measures
- Global initiatives to reduce process safety incidents

BASF's global process safety standards provide the framework for the safe planning, construction and operation of the plants as well as the protection of people and the environment. Our experts have developed a protection plan for every plant that considers the key aspects of safety, health and environmental protection – from conceptualization to startup – and stipulated specific protection measures for each.

To maintain the highest level of safety at plants across their entire life cycle, BASF reviews the implementation of the protection plan in all facilities at regular intervals according to risk potential, as well as the on-time performance of the required safety inspections and any resulting safety-related measures. In 2018, we introduced Stature Software at all sites in Greater China to record plant safety concepts and implementation checks, so that all actions are tracked and related documents are kept despite personnel changes.

In 2018, BASF adapted its global reporting on accidents and process safety incidents, using the number of process safety incidents per 200,000 working hours as a key performance indicator¹. Globally, we have set ourselves the goal of reducing process safety incidents to a rate of no more than 0.1 per 200,000 working hours by 2025. In Greater China, we continue to improve process safety by investigating incidents in detail, analyzing root causes and using the findings to derive suitable measures.



A gate inspector conducts regular gate checks via the digital gate inspection system.



An operator inspects the pressure in the production facility.

¹ The 2018 adaptation follows the recommendations of the International Council of Chemical Associations (ICCA), the European Chemical Industry Council (Cefic) and the German Chemicals Industry Association (VCI).

Emergency response

- Regular reviews of emergency response systems in case of incidents
- Cooperation with industry associations and local authorities to share best practices

BASF prepares rigorously for incidents and crises. In the event of an incident, our global, regional or local emergency response plans and crisis management mechanism will be triggered, depending on the scope of the incident. In Greater China, we regularly perform fire prevention inspections at all sites, review emergency response plans and hold emergency drills.

BASF continues to work with CPCIF and the Association of International Chemical Manufacturers to share our emergency response experience with other members through workshops, and to support local authorities in improving their own emergency response expertise.



The fire brigade at BASF Caojing site is the first corporate-established fire brigade of an international company in Shanghai.



An emergency drill is conducted at BASF Shanghai Pudong Innovation Park.

Security

- Comprehensive protection measures against third-party interference
- Enhanced risk awareness among employees

We analyze potential safety and security risks associated with investment projects and strategic plans and define appropriate safety and security concepts. Our guiding principle is to identify risks for the company at an early stage, assess them properly and derive appropriate safeguards.

BASF protects its employees, sites and company knowledge against third-party interference. This includes, for example, potential terrorist risks in the communities surrounding our production sites and addressing the issue of cybersecurity. BASF has a comprehensive program in place to continually improve its ability to prevent, detect and react to cybersecurity incidents as technology advances. By establishing a global Cyber Security Defense Center, BASF has made its cybersecurity experts available around the clock, including to teams in Greater China.

We work to sensitize all employees about protecting information and our know-how. In 2018, we provided a range of information protection training sessions to increase our employees' awareness about this topic.

We inform our business travelers and transferees to and from Greater China about appropriate protection measures prior to and during travel in countries with elevated security risks. After any major incident such as a terrorist attack or a natural catastrophe, we can use a standardized global travel tracking system to locate and contact employees in the affected regions.

Aspects of human rights related to site security, such as the right to liberty and security of person, are a component of the global qualification requirements of our security personnel. Respect for human rights is a mandatory element of any contract with service providers in Greater China.

Occupational health

- Global standards for corporate occupational health management
- 2018 global Health Campaign focusing on cardiopulmonary resuscitation

Our global corporate health management serves to promote and maintain the health and productivity of our employees. Our worldwide standards for occupational health are specified in a directive that is implemented by a global network of experts. This was once again supported by numerous emergency drills and health promotion measures in 2018.

BASF's 2018 Global Health Campaign focused on cardiopulmonary resuscitation (CPR). CPR significantly increases a person's chances of survival in case of a cardiac arrest. We therefore briefed our employees about the issue, with the ultimate aim of increasing the rate of CPR initiated by laypersons. In Greater China, the Health Campaign took place at almost all production sites and offices in the form of videos, lectures and hands-on practice.

To prevent work-related accidents, BASF promotes risk-conscious behavior and safe working practices for every individual by learning from incidents and regular exchange of experiences. We are constantly refining and enhancing our requirements. In 2018, complementary training sessions on safe procedures were held to strengthen risk awareness among employees and contractors and to prevent work-related accidents.



Employees learn to perform CPR during 2018 Global Health Campaign.

We also carried out a Chemical Health Risk Assessment Program covering all chemicals at production areas in 2018 as a complement to the regular employee health checks and chemical management at the workplace.

In 2018, BASF audited several sites with respect to occupational health in Greater China. In addition, health performance control visits were conducted at sites with low to medium health risks.

For more information on occupational medicine and health promotion campaigns, see basf.com/health

Occupational safety

- Global standards for safety at all sites
- Strengthening risk awareness among employees

The safety of our employees, contractors, neighbors and the public is our top priority: we never compromise on safety. For this reason, we have set ourselves ambitious goals for occupational safety, and regularly monitor progress toward our goals with a set of comprehensive preventive measures.

Digital tools improve risk assessment

In Greater China, BASF initiated digital solutions and applications for the e-Permit to Work system to further support risk assessment for daily non-routine activities at one pilot site in 2018.

Guided by the global safety initiative, BASF has been cultivating a safety culture through various campaigns. The 2018 Global Safety Days, held under the theme "Understand risk, take action", aimed to enable participants to identify and eliminate threats before they become a danger. Around 7,600 employees and contractors participated in the campaign in Greater China.

Since 2018, we have adapted our incident reporting and goals according to the recommendations of the International Council of Chemical Associations (ICCA), the European Chemical Industry Council (Cefic) and the German Chemicals Industry Association (VCI), and combined the hours of BASF employees, leased personnel and contractors. Our aim is to reduce the worldwide lost-time injury rate to no more than 0.1 per 200,000 working hours by 2025. In 2018, 0.06 work-related accidents per 200,000 working hours¹ and no fatality occurred at BASF sites in Greater China.

Lost-time injury rate¹

Per 200,000 working hours		
2018	0.06	<div style="width: 60%;"></div>
2017	0.06	<div style="width: 60%;"></div>
2016	0.09	<div style="width: 80%;"></div>

Fatalities

Total		
2018	0	<div style="width: 0%;"></div>
2017	1	<div style="width: 100%;"></div>
2016	1	<div style="width: 100%;"></div>

¹ Hours worked by BASF employees, leased personnel and contractors. Previously, we reported worldwide on the number of lost-time injuries per one million working hours. In 2017, the lost-time injury rate per million working hours (BASF employees and leased personnel) at BASF sites in Greater China was 0.3, while the rate for contractors was 0.5 in 2017. The restated figure for work-related accidents for 2017, according to the new definition, is 0.06 per 200,000 working hours.

Promoting Responsible Care® in Greater China

- **Global directives and standards for safety, security, health and environmental protection**
- **Continuous implementation of Responsible Care in Greater China**

Responsible Care® is the global chemical industry's environmental, health, safety and security performance initiative. BASF is a long-standing member. We have set up a Responsible Care Management System to systematically address risks, which is comprehensively implemented in Greater China. This system comprises global directives, standards and procedures for safety, security, health and environmental protection for the various stations along our value chain. Our regulations cover the transportation of raw materials, activities at our sites and warehouses, and distribution of our products as well as our customers' application of the products.

In Greater China, BASF actively promotes the Responsible Care concept among its value chain partners, including customers and raw material suppliers. We introduce tools such as self-assessments for continuous improvement and gate checks for all trucks before entering and leaving chemical production and storage facilities.

As an active member of the China Petroleum and Chemical Industry Federation (CPCIF) since 2013, we have taken a leading role in

supporting regulatory advocacy, communication and emergency response. For example, in 2018, we held a CPCIF Emergency Response workshop in Shanghai. We also chaired the emergency response sub-committee of the Association of International Chemical Manufacturers and organized two workshops to share best practices among member companies. We foster further cooperation within China's Transport Accident Information and Emergency Response System. We have also been cooperating with Ministry of Emergency Management of the People's Republic of China to support emergency management in China, especially on building national training bases for emergency rescue in chemical incidents.

BASF is also one of the key contributors to China's new "Regulation Concerning on Dangerous Goods Road Transportation" (JT/T 617), which has been effective since December 2018. We worked together with the National Road Transport Service Alliance for Dangerous Goods and other companies to develop the new "Chemical road transportation safety assessment system". The new system went live in July 2018, and has been applied by various chemical and logistics companies in China.

These efforts have been recognized by local authorities. In 2018, two sites in Jiangsu and Chongqing were awarded as Green Credit Companies by the local governments. Several sites in Shanghai received the Award of Advanced Enterprise for their excellent safety, environment, fire-fighting and security performance.



Environmental protection, health and safety, as well as security, communication, and energy efficiency are embedded in our global Responsible Care® policy.

Energy Efficiency and Environmental Protection



An operator conducts a routine inspection at BASF Nanjing Verbund site. Production plants are linked together via a network of pipelines. This saves costs and increases energy efficiency.

As an energy-intensive company, we are committed to energy efficiency and global climate protection. We want to reduce emissions along the value chain and ensure high efficiency by employing advanced technologies and processes, and constantly upgrading our facilities.

BASF Corporate Commitment

We produce efficiently

Energy

- Stable energy consumption
- Measures to improve energy efficiency

In 2018, total energy consumption of BASF sites in Greater China remained relatively stable. Electricity consumption totaled 711,766 MWh (2017: 706,897 MWh), and steam consumption totaled 3,168,231 metric tons (2017: 3,272,701 metric tons). Fuel consumption for central energy supply totaled 974,394 MWh (2017: 892,587 MWh).

Electricity consumption

MWh		
2018	711,766	<div style="width: 100%;"></div>
2017	706,897	<div style="width: 99%;"></div>
2016	733,384	<div style="width: 103%;"></div>

Steam consumption

Metric tons		
2018	3,168,231	<div style="width: 97%;"></div>
2017	3,272,701	<div style="width: 100%;"></div>
2016	3,266,606	<div style="width: 99.5%;"></div>

Fuel consumption (central power plants and boilers)

MWh		
2018	974,394	<div style="width: 109%;"></div>
2017	892,587	<div style="width: 100%;"></div>
2016	890,191	<div style="width: 99.8%;"></div>

In 2018, many sites in Greater China took efforts to save energy. For example, one site in Shanghai set up a new absorption refrigerator to drive the cooling system, using heat recovered from low-pressure steam. As a result, both electricity and steam were saved. One site in Shanghai optimized the utility consumption during shutdown and startup. Another site in Shanghai used condensate to heat water in a raw materials tank farm, thus saving steam consumption. Several sites in Jiangsu and Shanghai replaced or optimized motors and pumps which had a high energy demand. A site in Jilin improved its distillation tower. Several sites in Shanghai and Shenyang optimized their steam pipelines and steam supply systems.

In Greater China, BASF continuously reduces carbon emissions through energy optimization, advanced technology and improvements in the production process. Six sites in Shanghai have been actively participating in the local pilot carbon emissions trading scheme (ETS). We also work closely with industry associations such as the China Petroleum and Chemical Industry Federation and the Association of International Chemical Manufacturers in preparing for the national ETS and conducting dialogues with relevant authorities.

BASF has set the goal of introducing certified energy management systems (DIN EN ISO 50001) at all relevant production sites by 2020. Since 2016, several sites in Greater China have been ISO 50001 certified. All energy efficiency measures are recorded in a global database, available as best practices for all our sites worldwide.

Emissions to air

- Decrease in greenhouse gas emissions
- Slight increase in emissions to air

In 2018, emissions of greenhouse gases from BASF's chemical operations in Greater China decreased to 1.129 million metric tons (2017: 1.193 million metric tons). To reduce greenhouse gas emissions, several sites saved energy consumption via process optimization such as reusing and recycling waste heat from condensation or adjustments of the dryer temperature. Some sites also plan for further projects including the efficiency improvement of de-N₂O catalyst and high energy consumption systems upgrade.

Greenhouse gas emissions

Metric tons of CO₂ equivalents¹

Year	Metric tons of CO ₂ equivalents	Bar
2018	1,128,620	<div style="width: 94%;"></div>
2017	1,193,221	<div style="width: 100%;"></div>
2016	1,191,714	<div style="width: 99.8%;"></div>

¹ CO₂ equivalents consist of CO₂, N₂O, CH₄, HFC, PFC, SF₆

Aside from greenhouse gas emissions, BASF also measures emissions of other air pollutants, including inorganic compounds such as carbon monoxide (CO), sulfur oxides (SO_x), nitrogen oxides (NO_x) and ammonia as well as dust or non-methane volatile organic compounds (NMVOC). In 2018, absolute emissions of air pollutants from BASF's chemical operations in Greater China totaled 328 metric tons (2017: 306 metric tons). The increase mainly resulted from the expansion of production at several sites. For example, the startup of a new production facility at one site in Shanghai created more tail gas emissions. Some other sites in Shanghai and Jiangsu Province also reported higher emissions due to new production lines or process adjustments.

However, in 2018 several sites upgraded non-methane volatile organic compound (NMVOC) treatment facilities, in order to meet the increasingly stringent VOC emission standards in China. Some sites in Shanghai and Jiangsu Province installed online monitoring facilities and set internal alarms to avoid any potential emissions beyond the limit. Several sites in Guangdong, Jilin and Xinjiang conducted a Leakage Detection and Repair (LDAR) program for fugitive NMVOC emissions, resulting in significant emission reductions.

Air pollutants² (without CH₄)

Metric tons

Year	Metric tons	Bar
2018	328	<div style="width: 106%;"></div>
2017	306	<div style="width: 100%;"></div>
2016	359	<div style="width: 117%;"></div>

² Air pollutants consist of: CO, NO, SO_x, NMVOC (Non-methane volatile organic compounds), dust, NH₃, and other inorganic compounds



Two operators inspect the off-gas emission point (the orange pipe). The gas has been treated within the facility before being released at this point.

Water

- Sustainable water management with mandatory protection plans
- Stable emissions of water pollutants
- Using water responsibly

Water is of fundamental importance in chemical production. It is used as a coolant, solvent and cleaning agent, as well as to make our products. BASF is committed to responsible use along the entire value chain and especially in its production sites' water catchment areas. Therefore, we have set ourselves a global goal for sustainable water management.

We aim to use water as sparingly as possible and further reduce emissions to water. To do so, we have set out a Group directive with globally applicable standards. BASF sites in Greater China follow the Group directive and are implementing related measures. A total of 16 BASF sites in water stressed areas in Greater China have completed the European Water Stewardship project until 2018, and one more site is scheduled in 2019.

To avoid unanticipated emissions and pollution of surface or groundwater, we have developed water protection strategies for

each production site, as a mandatory part of the global Responsible Care® initiative. The water protection plans involve evaluating wastewater in terms of risk and drawing up suitable monitoring approaches. We use audits to check if these measures are being implemented and complied with.

Wastewater risk assessment helps to identify potential risks of unexpected wastewater emissions. In 2018, an online monitoring system for wastewater was introduced in several sites in Greater China to record relevant pollutants in a timelier manner.

Emissions to water

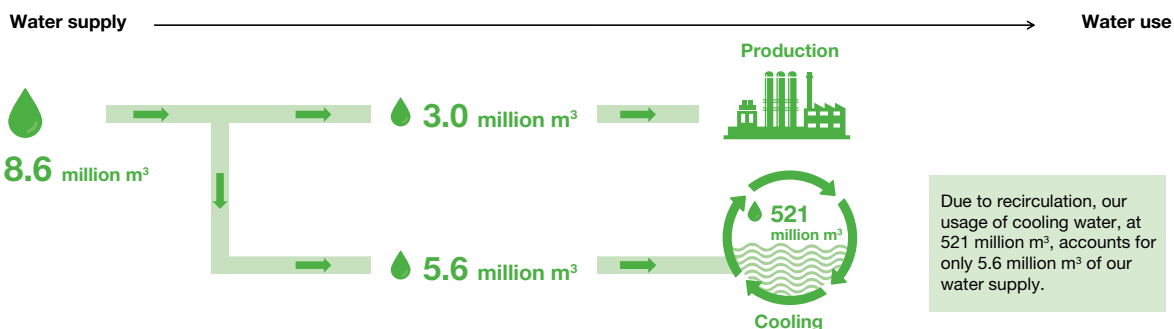
Metric tons			
Organic substances (COD)	2018	120	<div style="width: 100%; height: 10px; background-color: #4CAF50;"></div>
	2017	120	<div style="width: 100%; height: 10px; background-color: #4CAF50;"></div>
	2016	170	<div style="width: 150%; height: 10px; background-color: #4CAF50;"></div>
Nitrogen	2018	11	<div style="width: 100%; height: 10px; background-color: #4CAF50;"></div>
	2017	10	<div style="width: 90%; height: 10px; background-color: #4CAF50;"></div>
	2016	9	<div style="width: 80%; height: 10px; background-color: #4CAF50;"></div>
Heavy metals	2018	0.03	<div style="width: 10%; height: 10px; background-color: #4CAF50;"></div>
	2017	0.1	<div style="width: 30%; height: 10px; background-color: #4CAF50;"></div>
	2016	0.1	<div style="width: 30%; height: 10px; background-color: #4CAF50;"></div>



Wastewater treatment station at BASF Shanghai Pudong Innovation Park

Water use in Greater China

Million cubic meters



Due to recirculation, our usage of cooling water, at 521 million m³, accounts for only 5.6 million m³ of our water supply.

Water supply

Million cubic meters

Year	Water supply (Million cubic meters)
2018	8.6
2017	8.1
2016	7.2

Water use

Million cubic meters

	Production	Cooling
2018	3.0	521
2017	2.6	498
2016	2.5	477

In 2018, we were able to maintain the low amount of emissions of water pollutants that was achieved in 2017. Emissions of organic substances (COD) totaled 120 metric tons (2017: 120 metric tons). Nitrogen emissions were at 11 metric tons (2017: 10 metric tons), and heavy metals emissions decreased to 0.03 metric tons (2017: 0.1 metric tons). In 2018, one site in Shanghai increased the efficiency of COD removal by separating wastewater based on the concentration. Another site in Zhejiang Province achieved COD reduction through wastewater recycling.

In 2018, BASF used 8.6 million cubic meters of water in Greater China (2017: 8.1 million cubic meters). The increase of water use mainly resulted from the expansion of production facilities in 2018, as well as the ongoing projects in Jiangsu and Shanghai. Meanwhile, several sites in Greater China carried out water-saving measures. For example, one site in Shanghai upgraded its water supply pipe system to avoid potential leakage. Several sites reused wastewater from the scrubber tower, chilling tower or steam condensate.

We predominantly use water for cooling purposes, after which we recirculate it back to our supply sources. Water for cooling at BASF's Greater China sites amounted to 521 million cubic meters in 2018 (2017: 498 million cubic meters). The slight increase mainly resulted from opening a new plant in Shanghai. Meanwhile, one site in Guangdong optimized its production process to reduce the running time of its cooling system, thus decreasing cooling water consumption.

Waste

- Slight increase in waste volume
- Audits on external waste management companies

BASF aims to avoid waste as far as possible. If waste is unavoidable, we review the options for recycling or energy recovery to close materials cycles using BASF's existing Verbund structures for efficient waste management. Waste generated from our chemical operations in Greater China totaled 87,352 metric tons in 2018 (2017: 83,006 metric tons), while the recovery rate was 65% (2017: 67%). One site in Guangdong upgraded its sludge press filter to reduce water content in residues and to decrease the amount of hazardous waste. Another site in Shanghai reduced waste generation through process optimization and a facility upgrade.

Meanwhile, we regularly audit external waste management companies, ensuring in particular that our hazardous waste is properly disposed of. Since 2013, we have closely monitored soil and groundwater status at our sites in Greater China and documented the information in a global database.

Waste

Metric tons

Year	Total amount of waste	Recycling and thermal recovery (%)
2018	87,352	65%
2017	83,006	67%
2016	73,162	72%

■ Total amount of waste ■ Recycling and thermal recovery (%)

Smart Manufacturing



A number of digital technologies and applications have been introduced to BASF sites in Greater China.

BASF strives to harness the power of digital technologies to improve the efficiency and effectiveness of production processes, which contributes to higher productivity and safety at plants. BASF has developed a range of digital solutions in smart manufacturing, such as predictive maintenance, augmented reality and person positioning systems.

Several BASF sites in Greater China participated in these initiatives in 2018. We are also actively developing specific digital applications for local conditions.

Augmented reality technology

- **Combining centralized data with mobile devices to augment the physical world of production plants with the virtual world of data and information**

Augmented reality equips production staff on daily routing and safety inspection trips with updated reference data and task information, which is readily accessible via industrial mobile devices such as smartphones and tablets. Onsite workers can quickly check the facilities according to instructions, get measurement details and even implement solutions with less effort and greater accuracy. They

can generate paperless reports directly, with higher efficiency and less human error. The consolidated information is fed to analytical tools, which in turn show trends for timely detection in the field. In 2018, augmented reality was successfully launched at 18 BASF plants in Greater China.



An operator conducts a regular check on a valve, with the help of augmented reality technology.



An operator records voltage condition with the help of tablet. This increases the efficiency and accuracy in regular inspection.

Predictive maintenance

- **Forecasting maintenance needs of critical parts and units**
- **Striking a more efficient balance between regular repair and production**

With thousands of sensors generating live data on operating conditions, and using historical data as a reference, predictive maintenance provides methods for the detection and prediction of anomalies in critical production assets, such as compressors, turbines, pumps and heat exchangers, and process groups such as heavy-duty rotating equipment. The goal is to predict the optimal time for maintenance and avoid failures while reducing the need for unplanned repairs. In 2018, more than ten predictive maintenance projects were implemented at several BASF plants in Greater China.

Person positioning system

- **Enhancing personnel safety management and evacuation during emergencies**

Person positioning system helps prevent people from entering into restricted zones if they do not have relevant entry training or permits, or if they are not using personal protective equipment. This enhances work safety and efficiency during critical turnaround projects. It also provides real-time tracking during emergencies, helping to locate all personnel during evacuation.

BASF Greater China began development of the system in June 2017, and completed a number of pilot projects in 2018. The system has been applied at the BASF Shanghai Caojing site and the Rudong site in Jiangsu Province, where the application has been recommended by local authorities for several chemical industry parks in the province.

Predictive emission management system

- **Forecasting environment emission data using artificial neural networks**

In Greater China, BASF has also developed a predictive emission management system. It uses artificial neural networks to process and forecast environment emission data. Once there is any abnormality, relevant personnel can make instant adjustments and controls. One site already started trials for off-gas and wastewater emissions prediction in 2018.



We act responsibly, and value the health and safety of people and the environment.

Sustainable Solutions for Customers

Mobility

China's automotive industry is currently undergoing transformation. Both the government and China's drivers are demanding more efficient and cleaner vehicles, as well as modernized and appealing designs. As a leading chemical partner for major automotive manufacturers, BASF supports China's auto industry with a broad range of innovative solutions.

BASF Corporate Commitment

We drive sustainable products and solutions

Lower emissions for China's vehicle fleet

- Supporting automotive manufacturers with leading pollutant removal catalyst technologies
- Fighting ground-level smog with high capacity evaporative hydrocarbons absorbents
- New waterborne refinish paints are fast, flexible and easy to apply
- Air quality inside cars improved with new isocyanate processing technology

To further reduce air pollution caused by vehicles, China will phase in its new emission standard China 6 for both light-duty cars and heavy diesel-fueled trucks between 2020 and 2023, with some cities to implement the rules in advance in 2019. These measures are in line with China's "Blue Sky" initiative, released in 2018, which aims to improve air quality in dozens of cities within three years by setting strict pollution standards for industry and transportation.

BASF is committed to driving sustainability in the automotive market. One core technology for abating emissions is BASF's four-way



Our research and innovations are driving the development of automotive solutions to help automakers address current and future challenges.



The copper-based selective catalytic reduction catalyst reduces NOx emissions in diesel cars by up to 95%.

conversion catalyst (FWC™). The system uses only one component to remove all four types of pollutants from gasoline engines, including carbon monoxide, hydrocarbons, nitrogen oxides (NOx) and particulate matter. The FWC system thus enables compliance of cars with the strictest China 6b emission limits while minimizing negative effects on the engine's performance and fuel consumption.

For diesel vehicles, BASF introduces a copper-based selective catalytic reduction catalyst with a patented copper-based zeolite technology. This system reduces NOx emissions by up to 95%, works in a wide temperature range and provides excellent durability.

Evaporative hydrocarbons emitted from cars are triggered by sunlight to react with NOx, creating ground level smog. With the high capacity hydrocarbon absorber technology EvapTrap™ MX, BASF is helping the leading local auto maker BYD to meet the new Zero EVAP Standard included in China 6. The technology is applied onto the surface of the air intake housing, helping auto makers meet stringent standards with minimal impact on vehicle design and performance.

Another source of air pollution from vehicles is volatile organic compounds (VOCs). These can be emitted during automotive production, while painting or repairing the car, or in car interiors. In October 2018, BASF launched a new waterborne basecoat coating system under the NORBIN® brand in China. Developed locally in Jiangmen for the Asian market, NORBIN® 66 offers superior color-matching technology, easy application, fast drying, and flexible delivery times. It also helps bodyshops reduce VOCs at competitive prices, thus meeting stringent government regulations and industry standards.

To enhance air quality inside cars, a new processing technology from BASF, based on an improved isocyanate – a core raw material of polyurethane foam – is now available. Seating cushions produced with the improved isocyanate have been tested by Centre Testing International (Shanghai) Co., Ltd. The results show that the volatile aldehyde emissions, including formaldehyde, are reduced by 30-40%, and acetaldehyde and acrolein are reduced by 20-25%.

Global commitment to battery materials for electric vehicles

BASF is intensifying its activities in cathode active materials to meet the fast-growing demand for battery materials driven by e-mobility. As a leading supplier of high energy density cathode active materials in terms of both technology and capacity, BASF has established a global cathode active materials R&D and production network, including China. BASF’s cathode active materials have already been successfully adopted by global leading electric vehicle manufacturers.



A BASF scientist in Shanghai works with small test batteries, which can provide precise data on battery lifetime performance for electric vehicles.

Color expert for eco-friendly automotive coatings

- Comprehensive coating solutions for BYD
- Co-developing colors with NIO for its latest electric car model



BASF introduced the Emperor Red coating for BYD’s 7-seater SUV model, “Tang”.

For many years, BASF has been bringing vibrant colors to China’s automotive industry. Our coating solutions not only meet the expectations for a new automotive generation but also help car manufacturers increase productivity and improve the balance between energy consumption and environmental conservation.

Since 2014, BASF has been cooperating with BYD, a local pioneer in electric vehicles. In 2018, BASF introduced the Emperor Red coating for BYD’s new 7-seater SUV model, “Tang”. During the year, BASF also supplied its CathoGuard® 800, an eco-efficient e-coat with low VOC and free of heavy metal and HAP (hazardous air pollutants), waterborne primer and some basecoat products to BYD’s new paint shop in Shenzhen. Other BASF colors used by BYD include Crystal White and Amber Gold for the “Song Max”. In August 2018, BASF introduced two new colors to BYD which will be applied to two of its forthcoming new models.

New premium Automotive Refinish Competence Center launched in Foshan

BASF continues to expand its global network of Automotive Refinish Competence Centers (RCCs). To this end, BASF, together with its long-term partner and customer, Guangdong TGPM Automotive Industry Group Co. Ltd., inaugurated the new BASF-TGPM Automotive RCC in December 2018. The new premium training platform and brand experience center, located in Foshan, Guangdong, will serve customers from around Asia with enhanced experience and improved industry standards.



BASF is also the exclusive automotive coatings supplier for the electric vehicle startup NIO, with a partnership started in 2015. It provided surface pre-treatment and coating solutions to NIO's second smart electric SUV ES6 launched in December 2018. During the design process, BASF experts worked together with NIO's design team in Germany and co-developed ES6's eight colors, that were inspired by various color tones of the sky, such as Stratospheric Blue or Cloud White, and particularly speak for youth and vitality. In 2017, NIO had already used BASF's coating solutions for the surface pre-treatment and all coatings layers of its first vehicle, the seven-seater SUV ES8.

Concepts cars for the future of mobility

- **Three electric concept cars co-developed with GAC R&D Center to meet drivers' diverse needs**
- **Innovative motorcycle design supported by advanced materials**

BASF supports new mobility trends with its broad range of innovative solutions for the automotive industry. To meet future needs of drivers

in China, we co-create and co-develop various kinds of new mobility vehicles with our customers.

BASF and Research and Development Center of Guangzhou Automobile Group Co. Ltd. (GAC R&D Center) have co-developed three futuristic two-seat electric concept cars for distinct target groups, including female drivers, senior drivers and car-sharing companies. The cars all showcase unique design features, created by the GAC R&D Center, with advanced prototyping support from Creation Center, BASF's touch-point for engaging and inspiring designers. They were presented at the 16th Guangzhou International Automobile Exhibition in November 2018.

BASF also presented a concept motorcycle co-created with CFMOTO, using innovative material solutions from BASF in various applications and assemblies. In the lamp bezel application and switching assembly, BASF's material solution enables a light translucent effect which enhances the sophisticated design appearance of the motorcycle. BASF's polyurethane Spray Skin technology Elastoskin® also provides design flexibility including multi-colored designs, various surface textures and comfortable and durable solution for the motorcycle's saddle.



GAC concept cars

The 2U model (left) is designed to appeal to women with a unique seat design with translucent trim parts made of BASF's Ultramid® Vision. The fur-like surface of the passenger seat is created with BASF's Adsint® TPU 3D printing solution.

The 2ALL model (middle) designed for car sharing, addresses the needs of easy operation and low maintenance. Its front bumper, made from BASF's Elastollan® HPM, has an outstanding anti-scratch elastomer pad design. The seat back and pan cushion are made with BASF's Infinergy® E-TPU particle foams and perfectly combine comfort with robustness.

The 2US model (right), designed for senior drivers, has a rotational seat base that enables elderly drivers and passengers get into and out of the vehicle with ease. The plastic gears made from BASF Ultramid® Advanced N, ensure a smooth operation of the rotation mechanism.

Construction



A number of BASF construction solutions are used in the the Hong Kong-Zhuhai-Macau bridge, the world's longest sea bridge.

Urban construction in China is developing and innovating rapidly. From unprecedented large-scale projects like the world's longest sea bridge, to the renovation of ancient village houses in the hinterland, BASF supports China to take on new challenges from both the past and the future with efficient and durable construction materials and solutions.

Supporting infrastructure

- **Efficient and sustainable materials for the longest sea bridge**
- **Grouting solution empowers wind energy development in areas with low wind speeds**
- **High-performance flooring system for the aerospace factory**
- **Backing China-aided project in Senegal with fast-installed flooring system**

After nine years of construction, the Hong Kong-Zhuhai-Macau bridge opened to traffic in 2018. Connecting three major areas in the Pearl River Delta, the 55-kilometer-long bridge is comprised of a series of bridges, an undersea tunnel and artificial islands. It is envisaged to cut traffic time by 60 percent, boosting business in the Greater Bay Area. The massive transportation project called for

many innovations, a number of which came from BASF. The polyurea coatings solution MasterSeal® 678 protects bridge piers from corrosion, water and wear with a rapid curing, elastomeric and waterproof membrane of high tensile strength and tear resistance; MasterEmaco® T 2900 facilitated the construction with resilient polyurethane mortar that enables the pavement to safely absorb traffic loads; MasterTop® flooring system created a durable floor in the parking garages, with exceptional mechanical resistance.

As the wind energy industry in China grows, new designs are being created for a variety of wind conditions. These also require innovations in construction. In 2018, BASF cooperated with China Shipbuilding Industry Corp (CSIC) Wind Power Equipment Co. Ltd. in the successful installation of a 120 meter high concrete-steel hybrid tower. This tower forms the mainstay of the wind turbine in a low wind speed area in Henan Province, a milestone in the history of wind energy. With its concrete segment exceeding 80 meters, the tower demands high absorption capacity for dynamic forces and a more effective load distribution of bearings between the column and the base. BASF MasterFlow® grouting solution rose to the challenge. The material demonstrates excellent long-term durability with its ultra-high strength and fatigue resistance. BASF also brought on-site technical support to ensure a quick and safe installation.



BASF grouting solutions enabled the construction of a 120m concrete-steel hybrid tower, a milestone in the history of wind power.

BASF materials are also crucial to the aerospace industry. The rocket assembly factory at the Tianjin aerospace base is responsible for the transportation, assembly and testing of all types of material used in rockets for space shuttles. These special tasks demand a safe and efficient work environment that can comfortably handle constant mechanical shocks, heavy impact loads and chemical exposure, as well as frequent vehicle and foot traffic. BASF's Ucrete® MF polyurethane resin flooring system meets these needs. It provides a high durability floor surface with excellent resistance to slip, erosion, wear and thermal shock.

BASF backed the construction of Senegal Athletic Wrestling Field project, the largest China-aided project in Senegal, Africa, with the supply and application of MasterTop® 1324, a resilient polyurethane flooring system. With the accurate understanding of the venue's engineering conditions and flooring performance needs, BASF helped the main contractor, Hunan Construction Engineering to facilitate the on-schedule completion of project within two years, despite environmental and technical challenges.

Building better homes

- Sustainable solutions to support China's rural revitalization plan
- Light stabilizer improves durability of TPO roofing membranes

In 2018, China released its first five-year plan on rural revitalization, which aims to improve living conditions and social development in rural areas.

In line with this new national strategy, BASF and Tongji University worked together to reconstruct buildings in China's vast rural areas. The cooperation combines the university's research capabilities and BASF's advanced materials and technologies.

In the pilot project, the two parties have been working together to revamp an old granary in Huangyan, a 900-year-old model village



Using BASF's sustainable construction solutions, the granary will be transformed into a multi-purpose, efficient and modern guesthouse.

in the southeastern part of Zhejiang Province. The granary is being reconstructed into a modern guesthouse, using BASF's sustainable construction solutions such as the Finestone® wall system. The houses will be renovated with a range of environmentally friendly features, including a sunroof and a rainwater-collecting-and-reuse-system, as well as energy-saving walls and windows.

Chinese properties developers and architects are looking for more durable building materials. In 2018, China Building Materials Academy Suzhou Waterproof Research Institute (SZWRI), a leading waterproofing materials research center in China, included BASF Chimassorb® light stabilizer in the standard package of its thermoplastic polyolefin (TPO) compounds for roofing membranes, designed to protect flat roofs from leakage from heavy rains. With the stabilization technology based on Chimassorb, BASF is able to ensure the roofing polymer's ultraviolet (UV) resistance and prolong the product's lifespan by mitigating the chance of premature degradation due to the membrane's exposure to UV radiation and heat.



BASF's light stabilizer improves durability of China's TPO roofing membranes.

Quality of Life



BASF helps to build a healthy indoor environment.

By 2050, nearly 10 billion people will live on this planet. Already, consumption habits are changing rapidly, as people increasingly pay attention to the environmental and safety performance of the products they buy. BASF's chemistry-based innovations can contribute to meeting these demands, protecting our global environment, and helping to feed the growing population, while simultaneously improving quality of life.

Improving indoor air quality

- Oxidizing formaldehyde for fresher indoor air
- PremAir® BLD catalyst removes ozone pollution
- Low-odor interior paint made with dispersions derived from renewable resources

Chinese consumers are increasingly embracing a more conscientious lifestyle, focusing on the health, safety and environmental

performance of their chosen products. As we spend most time indoors, improving indoor air quality is vital. BASF, as a leading chemical supplier of ingredients for household applications, provides innovative and sustainable solutions to meet this demand for a healthy indoor environment.

Formaldehyde is a common indoor air pollutant found in homes and buildings. At elevated levels it can be highly irritating to the eyes, nose and lungs. Formaldpure™ is a catalyst solution that oxidizes formaldehyde into carbon dioxide and water, thus purifying the air. It can be applied in a wide range of portable and large-scale air purification equipment, while maintaining a high level of performance over a longer period of time than existing technologies on the market.

Breathing high concentrations of ozone can trigger a variety of health problems, particularly for children, the elderly, and people with respiratory diseases, such as asthma. PremAir® BLD is the latest

catalyst innovation to address the market need for a thorough and long-life mitigation technology to remove indoor ozone pollution. Field trials have shown that the catalyst can rapidly remove ozone at room temperature with a high conversion efficiency. PremAir BLD and Formaldpure catalyst can be applied simultaneously in air-purification equipment.

In May 2018, Nippon Paint, Asia's leading coatings manufacturer and service provider, launched a new premium interior paint, *Infinite Air* made with BASF's biomass balance dispersions. The dispersions are produced according to BASF's biomass balance approach, using raw materials derived from renewable resources. This helps save fossil resources and reduce greenhouse gas emissions, while providing excellent product performance including low odor.



The use of sustainable raw materials in Nippon Paint's Infinite Air is certified by global verification organization TÜV SÜD.

Biomass Balance Approach

The TÜV SÜD-certified biomass balance approach is a sustainability concept developed by BASF. At the beginning of the production process, fossil resources are replaced with sustainability certified renewable feedstock, such as bio-naphtha or biogas derived from biomass. The formulation and quality of the corresponding end products remain unchanged. The method is applied for many BASF products, such as superabsorbents, dispersions, plastics and intermediates.

For more information, please visit [basf.com/biomassbalance](https://www.basf.com/biomassbalance)

Supporting future electronic devices

- **Advanced material solutions ready for 5G smart devices**
- **Healthier light for indoor environments**

According to the Ministry of Industry and Information Technology (MIIT), China will commercialize the Fifth Generation (5G) telecommunications networks by 2020. As users demand smarter and higher performance devices on ever faster networks, manufacturers are seeking innovative solutions to tackle the challenges ahead. With its advanced material solutions, BASF is supporting leading Chinese smart device manufacturers to develop products ready for the 5G era.

5G networks demand a substrate material with low impact on circuit performance. BASF's NMT PBT Ultradur® Low Dk/Df solution allows device frames to achieve better overall performance on radiation efficiencies of antennas with a lower cost, compared with conventional PPS materials.

Future smartphones are expected to be thinner, with flexible/foldable screens and a more complicated inner structure, requiring higher-strength metal substances for parts such as the camera deco, hinge and middle frame. With Catamold®, a ready-to-use material for metal injection molding that allows metal to be molded like plastic, geometrically complex parts on smart phones can be manufactured economically, easily and reliably.



A number of smartphone parts can be produced with Catamold®.

BASF offers a series of functional coatings solutions, including water-borne coatings, special visual effects products, anti-finger print solutions for matte surfaces, and stain resistant coatings with a soft touch. These help the next generation of electronic devices meet consumers' expectations for functionality, aesthetics and design.



BASF Sunvue® lighting products reduce blue light and protect the eyes, while retaining brightness and color close to natural sunlight.

BASF also provides solutions for interior lighting. Conventional LED lights tend to release a high amount of blue light that can be harmful to the eyes. With our patented organic light conversion materials, BASF's Sunvue® lighting products reduce blue light ratios and show the real color of objects with a high color rendering index. The Sunvue product range, with a series of LED desk lamps, light tubes and light bulbs, was launched in China on major e-commerce platforms in 2018.

Better yields and healthier bodies

- Drone sprayer services to save labor cost
- Sports nutrition to modulate inflammation
- Joint research with By-health on eye care product

Mechanization and digitalization are cost-effective alternatives to solve rising labor cost and realize better field management for Chinese farmers. In 2018, the Agricultural Solutions division launched the "Fly with BASF" project in China. It combines BASF's innovative fungicides such as Opera® and Seltima® with unmanned aerial vehicle applications to provide drone sprayer services to farmers in China's rice and wheat-producing areas. This helps farmers to save labor costs, maximize efficiency and thus achieve better yields. By year end, over 6,600 hectares of rice and wheat fields in China were covered by the project.

Consumers today are looking for innovative, plant-based solutions to help them better regulate sports-related inflammation. In 2018, BASF launched PeptAlde™, a sports nutrition ingredient containing a unique set of plant-based peptides identified using artificial intelligence (AI). PeptAlde is vegan and does not use allergenic materials. It also delivers a natural taste profile for flexible use in various sports nutrition formats. It is now available for China market.



BASF launches sports nutrition ingredient PeptAlde™ in China to support modulation of inflammation in post-workout recovery.

Eye damage has become an increasingly important issue in light of rapidly changing lifestyles. Lutein is very important for the eyes, since it selectively accumulates in the retina at the back of the eye, where it absorbs UV radiation and protects the eye from damage. With its health benefits, By-health, a leading supplement brand in China, has developed an eye protection supplement using BASF's Xangold® lutein ester. Xangold is a natural lutein ester available, extracted and purified from marigold flowers, the richest natural source of lutein. With quality control from crop to finished product, it meets high regulatory and quality requirements. By-health and BASF will also conduct joint clinical research on lutein intervention in China for product upgrade in 2019.

Home care and skincare

- Co-creating cleaning technology with innovative dishwasher manufacturers in China
- Antimicrobial ingredient for effective and long-lasting hygiene
- Anti-aging active ingredient helping skin stay firm

Automatic dishwashers are becoming more popular in China. However, Chinese households require machines to fit a wide variety of different kitchen needs, including innovations to tackle food residues such as oil and soy sauce stains. It thus needs new designs in both dishwashers and cleaning solutions. With its global expertise, BASF cooperated with leading local dishwasher manufacturers to develop specialized cleaning technologies to meet local market demands. This resulted in a localized detergent formulation containing chelating agent Trilon® M, which provided high performance at lower water temperatures and with shorter washing times. In 2018, it was applied in several best-selling dishwashers in China.



The chelating agent Trilon® M is a high-performance phosphate alternative for automatic dishwashing detergent.

Maintaining hygiene and freshness in fabrics is important for Chinese consumers, especially those who live in areas with high temperature and humidity. Antimicrobial ingredients can help to avoid bad odors and infection. BASF's Tinosan® HP 100 meets this



Tinosan® HP 100 is suitable for liquid detergents and fabric softeners as well as hard surface cleaning applications.

need in the home care industry. This broad-spectrum antimicrobial covers both gram-positive and gram-negative bacteria. It reduces germ transfer even in fibers, thus providing long-lasting hygiene and freshness along with antibacterial protection and odor control.

To meet consumers' growing demands for natural beauty ingredients and the rapid growth of anti-aging cosmetics, BASF presented a new active ingredient for the China skincare market in 2018. Based on the latest findings from BASF's epigenetics platform, the new active ingredient RNAge™ regulates proteins by rebalancing microRNA Let-7b and rebuilding dermal architecture. It restores the skin structure for a denser and firmer dermis, reducing sagging. Extracted from sea buckthorn, RNAge is approved by COSmetics Organic Standard (COSMOS) and is listed in the Inventory of Existing Cosmetic Ingredient in China (IECIC).

Sustainable textiles

■ Synthetic leather material without solvents used by a leading fast-fashion brand

Synthetic leather is widely used in the fashion industry. As consumers pay increasing attention to the environmental performance of the products they select, solutions without solvents are preferred by more and more manufacturers. Haptex® from BASF is a polyurethane system for synthetic leather which does not use any organic solvents. Its dry production process significantly reduces emissions of volatile organic compounds. It also offers strong stitching, high peel strength and soft haptics, just like real leather, bringing more freedom to designers. Haptex was applied by a well-known fast fashion brand in its backpack and shoe series in 2018. At customer's request, BASF was also able to ensure that no organotin compounds were present in the material.



Haptex® is a sustainable PU (polyurethane) for synthetic leather.



In line with our corporate purpose, our 9,317 employees in Greater China contribute to the success of our customers in nearly all sectors.

Employees and Society

Employees

Employees are key to the successful implementation of BASF's strategy. We want to attract and retain talented people for the company and support them in their development. To do so, we have continuously invested in employee development and sponsored a range of programs to cultivate an inspiring working environment. As of the end of 2018, BASF in Greater China had a total of 9,317 employees (2017: 8,982).

BASF Corporate Commitment

We value people and treat them with respect

Number of employees (as of December 31)

2018	9,317	<div style="width: 100%; height: 10px; background-color: #c00000;"></div>
2017	8,982	<div style="width: 96%; height: 10px; background-color: #c00000;"></div>
2016	8,805	<div style="width: 94%; height: 10px; background-color: #c00000;"></div>

Recruitment

- **Launch of BASF "Grow+" Management Trainee Program**
- **Strategic partnerships with vocational colleges**
- **Joint training program for full-time professional master's candidates with ECUST**

Finding new talent is essential to BASF's human resource strategy. By offering a variety of programs for fresh graduates, BASF collaborates with Chinese universities and vocational schools to cultivate the next generation of our talent pool.

After a decade of success as an entry-level talent pipeline, the BASF "Grow" Graduate Program® was relaunched in 2018 as the "Grow+" Management Trainee Program. The program aims to identify and develop young talents with strong potential as future leaders or experts. It strengthens the validity and reliability of candidate selection by setting solid professional backgrounds, preferred competency behaviors and high leadership potential as key indicators. After on-boarding, trainees are assigned to challenging and enriching projects and duties. The importance of roles and responsibilities of senior leaders as mentors is further emphasized.

Collaboration with vocational colleges plays a vital role in securing qualified front-line technical operators for BASF. Along with its

partnership with Shanghai Petrochemical Academy, first established since 2015, BASF signed strategic agreements with Shanghai Institute of Technology and Nanjing Polytechnic Institute in 2018 to further cultivate students with high technical skills and strong practical experience through vocational college education.

In 2018, BASF and the East China University of Science and Technology (ECUST) expanded their collaboration on a joint training program for master's candidates, to include students with backgrounds not only from chemical engineering but also from other majors such as chemistry and material science. The program provides a half-year internship at BASF after full-time classroom lectures in the first year, which creates a talent pipeline for both BASF production sites and laboratories.

Career development

- **#Career Day# Campaign**
- **STAND-OUT talent development program**

Employee development at BASF is guided by the belief that talent is in everyone. This means development opportunities and support are open to all employees.

A new program named #Career Day# was launched in 2018 to promote diverse development opportunities within BASF and encourage colleagues to drive their own career development.

In 2018, BASF launched the new "STAND-OUT" talent development program. Based on the concept of Action Learning, it allows employees to showcase their abilities and further develop professional and leadership competencies through real business challenges under the guidance of senior leaders. It contributes to both personal growth and concrete business solutions.



The "Career Day" Campaign was held in major offices and sites in China.

Working at BASF

- **Flexible benefit plan**
- **Employee assistance program**
- **Trade union activities**

BASF strives to create a workplace to meet employees' needs of both personal and professional development. The company constantly reviews working conditions at both office and production sites to ensure a safe, convenient and pleasant working environment.

BASF launched a flexible benefit plan in 2018, effective in 2019¹. The flexible benefit plan not only provides employees with a variety of benefit options, but also extends the benefits to their spouses and parents, allowing employees to personalize their benefit packages based on their individual needs.

Under the "Employee Assistance Program" (EAP) launched in mainland China in 2013, BASF has been offering psychological and emotional support to employees and their direct family members via a 24-hour consultation hotline. The calls are answered by external qualified psychotherapists and treated with strict confidentiality. In 2018, BASF's EAP piloted a new form of consultation, with psychotherapists available at the Shanghai office to provide face-to-face consulting services. In Taiwan, the program also provides employees with personal legal, financial and medical counseling in addition to psychological consultation.



Employees actively compete and collaborate on the Sports Day held in Shanghai.

BASF's Joint Trade Union aims to create a harmonious and enjoyable working environment for employees with various leisure activities. In September 2018, the Union held the sixth BASF Sports Day in Shanghai. Over 3,000 employees and their families from 13 sites and offices throughout the city participated in the event.

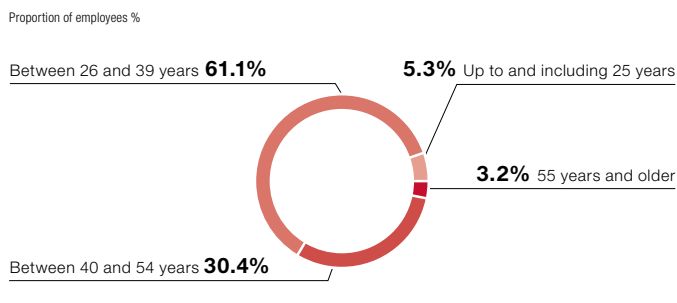
BASF was once again certified as a "Top Employer in China" by the Top Employers Institute, and named in "Top 100 Employer Excellence of China" program by 51job for the ninth consecutive year. In 2018, we were also selected as one of the "Top Graduate Employers of China 2018" by yingjiesheng.com and 51job for the first time.

Inclusion of diversity

BASF encourages people of different backgrounds to draw on their individual perspectives and skills to grow our business. Through the inclusion of diversity, we aim to boost our teams' performance and innovation, and increase creativity and motivation.

All employees are offered equal opportunities at BASF regardless of gender, age and nationality. In 2018, the largest proportion (61.1%) of employees at BASF in Greater China was in the 26-39 year-old range (2017: 61.3%)

BASF employee age structure as of December 31, 2018



¹ The plan is implemented at BASF's wholly foreign-owned enterprises in China.



Promoting diversity is part of our company culture.

Compliance

- **BASF expects and promotes commitment to laws, labor standards and business ethics**
- **Comprehensive system of compliance management**

Compliance with national laws and the core labor standards of the International Labor Organization forms the basis of BASF's operations around the world and in Greater China. Commitment to the highest standards of legal compliance and business ethics runs deeply through the entire organization. To this end, our globally standardized Code of Conduct summarizes important laws and corporate policies that govern the behavior of all BASF employees in their dealings with business partners, officials, colleagues and society.

At a global level, BASF's Chief Compliance Officer reports directly to the Chairman of the Board of Executive Directors and manages the further development of its global compliance organization and its Compliance Management System. He is supported in this task by more than 100 compliance officers worldwide in the regions and countries, including Greater China.

All employees are required within a prescribed time frame to take part in basic compliance trainings, refresher courses and special tutorials. In 2018, BASF held a series of 40 live compliance training sessions and tailor-made antitrust workshops in mainland China. This training program, in addition to mandatory electronic training sessions, covered more than 1,800 employees in Greater China.

Besides, the legal and compliance team in Greater China was invited by business partners of BASF to share more information about BASF's well established compliance program.

BASF particularly encourages its employees to actively and promptly seek guidance if in doubt. For this, they can consult their managers, dedicated specialist departments, and company compliance officers. BASF has also set up external compliance hotlines worldwide, including in Greater China, which employees can use – also anonymously – to report suspected or actual violations of laws or company guidelines. All hotlines are also open to the public. Each report is documented according to specific criteria, properly investigated in line with standard internal procedures and addressed as quickly as possible. The outcome of the investigation as well as any measures taken are documented accordingly and included in internal reports. A number of compliance cases have been reported and investigated in Greater China in 2018. Cases where violation or misconduct had been substantiated resulted in disciplinary actions and implementation of additional control measures.

Apart from training and investigations, a comprehensive legal and compliance risk assessment was initiated based on a systematic dialog with functional leaders focusing on key risks associated with their operation and exploring mitigations.

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

Social Engagement

With the United Nations' Sustainable Development Goals (SDGs) as its guiding principles, BASF is strengthening its social engagement through a variety of activities. We continue our commitment to supporting a better quality of life within the communities around our sites.

Stakeholder engagement

- **Community Advisory Panels for dialog with local communities**
- **Open Days at major sites in Greater China**
- **Stakeholder dialog sessions with Chinese NGOs**

To enhance mutual understanding with various key stakeholder groups in Greater China, BASF conducts open dialog in a variety of forms, to better support the needs of the communities where we operate.

BASF supports Community Advisory Panels (CAPs) around our major production sites worldwide. Members of CAPs are elected from the local communities to regularly and openly discuss common issues of mutual interest with the site management of BASF. In Greater China, BASF supports CAPs in Shanghai, Chongqing and Nanjing.

In 2018, BASF held CAP meetings and reached out to local communities in Shanghai, Chongqing and Nanjing. In addition to regular dialog, members participated in visits to historic sites in the community, and tested recreation facilities donated by BASF.

BASF-YPC Co. Ltd. (BASF-YPC), a 50:50 joint venture Verbund site of BASF and Sinopec in Nanjing, held its annual dialog session on environmental impact in 2018. This session fosters exchange among the management of BASF-YPC, its neighboring community, local officials and environmental experts.



Marko Murtonen, General Manager of BASF Chongqing site, plays pingpong with a CAP member.

In May 2018, BASF welcomed more than 300 members of the neighborhood to an Open Day at its production site in Chongqing. Through a guided site tour, stakeholders learned about site safety, production systems and environmental protection measures.

In Shanghai Caojing, BASF co-hosted a firefighting contest with Shanghai Chemical Industry Park (SCIP) to promote fire safety awareness and emergency response. A total of 105 contestants participated, with more than 300 visitors from the local community.

In November 2018, 15 representatives from environmental and educational non-governmental organizations (NGOs) across the country were invited to BASF's annual stakeholder dialog in Shanghai. During the event, which focused on food and nutrition, BASF executives and experts exchanged their views with NGO representatives on how innovation in chemistry can contribute to the health and welfare of both people and the natural environment.



BASF China Management Team and members of Shanghai Pudong CAP visit Jiangdong Academy, a historical site in Gaoqiao.



At the Open Day in Chongqing, kids enjoy games and fun experiments.



BASF supports the Shanghai Association of Persons with Physical Disability through the “Goodwill Teacher” program.



BASF volunteers in Hong Kong paint bedroom doors to help elderly residents find their way back to their rooms.

Corporate Citizenship

- **Strengthening cooperation with partners**
- **Volunteering activities across the region**
- **BASF Kids’ Lab**

BASF supports initiatives that have a long-term impact, and develops its not-for-profit activities in cooperation with partners and target groups while strengthening existing projects.

In 2018, BASF and Shanghai Science & Technology Museum (SSTM) expanded their strategic partnership to strengthen science education for teenagers. With the latest initiative, BASF will support the renovation of the Materials Exhibition Area at SSTM and jointly design educational activities, including visits by high school students to BASF production sites in Shanghai.

BASF continued to cooperate with the Songshuhui-Association of Science Communicators, a leading Chinese non-profit science education organization, to deliver science education programs to the public.

BASF sponsors a variety of volunteering options for employees, by working with local non-profit organizations.

In Shanghai, BASF employees volunteered to offer free oral English tuition to teenagers from disabled families under the “Goodwill Teacher” program. In 2018, the program was named an “Outstanding Volunteer Service Team” by the Shanghai Gaoqiao Volunteer Association.

In Hong Kong, BASF worked with Habitat for Humanity, a non-profit housing organization, to renovate homes for elderly residents, including mold removal, repainting, and installation of air conditioners.

The BASF Taiwan Volunteer Club provided career development guidance for middle school students from underprivileged families in Chiayi County, together with Shiou Ping Education Foundation. Employees also held a Christmas celebration activity and donated gifts to the members of Kindgarden, a social welfare organization dedicated to accommodating people with intellectual disabilities.



Science salons supported by BASF attract over 200 participants offline, while an online discussion on scientific lifestyle generated over 6 million views and responses.



Employees celebrate Christmas with the members of Kindgarden in Taiwan.



Students try the new experiment “Who’s Inflating the Balloon?” at 2018 Kids’ Lab in Shanghai, under the guidance of a volunteer teacher.

BASF Kids’ Lab is a long-standing science education program for children aged 6-12, intended to encourage them to explore science and discover the magic of chemistry through simple and safe chemistry experiments. In 2018, the program launched a new experiment and introduced a new visitor exploration area to engage not only the kids but also their families with interactive exhibits. In Shanghai, a guided tour led by BASF scientists was organized so that children could get more insights from the exhibits.

Around 11,800 children took part in the 2018 sessions in Shanghai, Beijing, Chongqing, Taipei, Kaohsiung and Hong Kong as of the year end. Since its launch in 2002, around 196,000 children have participated in BASF Kids’ Lab in Greater China.

Selected prizes and awards

In recognition of its commitment to sustainability in Greater China, BASF has received the “Best Corporate Citizenship” award from 21st Century Media Group for 14 consecutive years, and was among the “Ranking of Enterprises in China by Corporate Social Responsibility” by Southern Weekly newspaper for 12 consecutive years.

In 2018, BASF also won the “More than a Market Award” by the German Chamber of Commerce in China | Shanghai and the Bertelsmann Stiftung for the first time, and was awarded as one of the “Top 10 Foreign Companies in China of 10 Years in CSR” by the CSR Research Center of China Academy of Social Sciences for its continuous efforts on transparency through annual sustainability reporting.



A BASF scientist volunteer introduces mineral ores to children during a guided tour at the Shanghai Science & Technology Museum.



BASF was ranked second by the Taiwan-based business publication Commonwealth magazine in its annual “Excellence in Corporate Social Responsibility” in the “multinational companies” category.



Visitors listen to BASF science podcast “Voice of Fantastic Chemistry” at the visitor exploration area.



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