

MERCK

WHO
we
are



Merck is a vibrant science and technology company that operates across Healthcare, Life Science and Performance Materials.

Every day, our nearly 52,000 employees work in 66 countries to make a positive difference to millions of people's lives by creating more joyful and sustainable ways to live.

We are known as Merck internationally except for the United States and Canada, where we operate as EMD Serono in the biopharmaceutical business, MilliporeSigma in the life science business, and EMD Performance Materials in the high-tech materials business.

**we
are
MERCK**

science is at the heart of everything we do.


We believe in science
as a force for good.

That's why our work is dedicated to the most pressing questions of our time – be it the growing world population and its effect on the management of natural resources or the increase in life expectancy and its consequences for human health. With our solutions we are helping to meet the demand for sustainable, personalized and connected products, including new technologies and services in the healthcare, life science and performance materials industries.

For more than 350 years, we have been pushing the boundaries of possibility. Thanks to the constant curiosity of our more than 7,200 R&D professionals, we are discovering and developing technologies that can change the landscape of entire industries. We partner with those who share our passion. Our clear goal is to achieve progress for patients, customers and society as a whole. This is what we work for. Every day.



Stefan Oschmann
Chairman of the
Executive Board
and CEO of Merck



HEALTHCARE

We are here for people at

**every
step,**

helping to create, improve and prolong life. We deliver personalized treatments for serious diseases and enable people to achieve their dream of becoming parents.

In Healthcare, our research and development (R&D) efforts focus on patients with unmet medical needs. We invest substantial amounts in developing new therapies and medical technologies – for instance against cancer and chronic progressive diseases, especially those of the immune system, including multiple sclerosis (MS). At our R&D hubs in Darmstadt, Boston, Beijing, and Tokyo, more than 3,000 employees work in global networks, aiming to make groundbreaking discoveries for the benefit of patients.

Patients are at the center of our work and with every advance, we are improving lives. This single ambition drives everything we do.

An estimated 18 million people across the globe are diagnosed with cancer every year – a number that is expected to increase significantly over the next decade due to a growing world population and increasing life expectancy.

Immunotherapies have the potential to bring great improvements for many cancer patients, by harnessing the immune system to attack tumors more efficiently. We are re-imagining immunotherapies – exploring an array of targets and selectively focusing on the modalities with the best chance of reducing disease burden. Given our ambition to develop breakthrough therapies for the treatment of cancer and to take patient outcomes to the next level, we conduct comprehensive research and development and are working on several projects in this field.

Worldwide, more than 2.3 million people have multiple sclerosis (MS), a chronic disease that affects the central nervous system. Significant progress has been made in MS care over the past few decades.

However, there are still unmet needs, both in treatment choices and patient support. We aim to improve the lives of patients with MS, having spent over 20 years researching and developing solutions for advancing MS care. We are dedicated to addressing areas of unmet medical need in MS and to conducting research in the field of immunology.

For some couples, the wish to have a baby leads to a long and difficult personal and medical journey.

Nine percent of couples around the world struggle to conceive. Building on our fertility expertise that goes back to 1906, we have continuously generated innovations in this area.

An estimated 2.7 million babies worldwide have been born with the help of our products. We are complementing our therapeutics portfolio with a continually growing number of fertility technologies, aiming to further increase the chances of treatment success.



Our portfolio addresses therapeutic areas such as:

Oncology &
Immuno-Oncology (cancer)

Neurology & Immunology
(e.g. multiple sclerosis)

Fertility

Endocrinology
(e.g. growth hormone disorders)

General Medicine
(e.g. thyroid, type 2 diabetes
and cardiovascular diseases)

Allergies



LIFE SCIENCE

**we
empower**

the
scientific
community

Our tools, services and digital platform make research simpler, more exact, and help to deliver breakthroughs more quickly. Our solutions accelerate access to health by ensuring that tests are accurate and the medicines we take can be trusted.

Our Life Science experts help scientists and engineers to solve problems at every stage of their work. We offer leading-edge technologies, high-quality products and solutions for R&D and the manufacturing of biologics and novel therapies, including cell and gene therapy.

Our dedication to the customer experience extends from the lab to our e-commerce platform, which connects customers in nearly every country with the products, publications and technical expertise needed to advance their research and development further and faster.



We provide state-of-the-art tools, technologies and services in fields such as:

- Clinical & diagnostics
- Emerging biotech
(new biotechnology companies)
- Environmental testing
- Food & beverage
- Government & academic research
- Industrial
(manufacturing and distribution)
- Pharma & biopharma manufacturing
- Pharmaceutical research
- Pharma quality control

Since the human genome was fully decoded 16 years ago, much has happened in medical research and biotechnology.

With CRISPR genome editing technology, for example, the DNA of an organism can be “edited”. Certain gene sequences can be separated or “cut” and replaced in a cell.

Our genome editing products help scientists make life-changing possibilities a reality. These possibilities are coupled with enormous responsibility. We conduct genome editing research in compliance with statutory regulations and careful consideration of ethical standards and a clearly defined bioethics policy.

Factors such as an aging global population and an increase in chronic diseases are leading to the growth of personalized medicines. These are driving demand for drug manufacturers to innovate development and manufacturing processes to get therapies to patients more quickly, cost-effectively and safely.

Both biologics, which are manufactured in a micro-organism, plant or animal cell, and gene therapy have great potential in treating illnesses where no other options are available. At the same time,

the clinical development journey of a new biologic is a long and challenging process. We collaborate with pharma and biopharma manufacturers to develop and formulate their drugs, as well as ensure their safety.

By helping our partners modernize through new processes and equipment for drug manufacturing, we can accelerate access to new life-saving therapies that address the healthcare needs of underserved populations.

The safety of our foods and beverages is something we often take for granted. Luckily, our customers in the food manufacturing industry don’t.

A comprehensive portfolio, combined with our regulatory expertise, enables testing on a wide variety of pathogens and harmful microorganisms such as Salmonella or Listeria.

Microorganisms pose a severe threat to the consumer products we use daily. If particles end up in the environment, the consequences can be serious for human health and safety, as well as for process efficiency. We offer customers a variety of products for air testing, which provide the most reliable protection against particle contamination.

PERFORMANCE MATERIALS

we brighten

the world
around us

Our science sits inside technologies that are changing the way we access and display information. We are making future mobility safer, homes and devices smarter, and technology more sustainable.

Through our Performance Materials business we provide high-tech materials and specialty chemicals for displays, computer chips and all kind of surfaces. By analogy with a smartphone, our Display Solutions business unit is the user interface, the Semiconductor Solutions business unit the intelligence, and Surface Solutions business unit the design and aesthetics.

PERFORMANCE MATERIALS

Our technologies enable the intelligence of smart devices.

In smartphones for example, the semiconductors in the fingerprint sensors, memory chips and processors, as well as the Wi-Fi modules or even the camera couldn't be produced without our specialty chemicals. Our OLED¹ (organic light-emitting diode) and liquid crystal technologies make the displayed images sharper, our semiconductor materials make it faster and smarter, and our effect pigments create a more durable, scratch-resistant surface for its shell.

Modern microchips and sensors are crucial for trends such as 5G, Artificial Intelligence and the Internet of Things. Through our high-tech solutions we enable faster processing power and better storage capacities for the next generation of technical devices and systems.

The new 3D-NAND technology allows a storage chip architecture that builds up height instead of being limited to a two-dimensional space. This way, faster performance can be ensured while reducing the energy demand. Also, innovations such as Directed Self-Assembly (DSA) technology are changing common circuit production methods. DSA² allows lower production costs due to a self-directing specialty chemical that achieves conductive pattern structures within the nanometer range and replaces costly patterning applications.

Our liquid crystal and OLED display solutions create sharper images on the displays of more than half of the world's flat-screen televisions, tablet computers, and smartphones.

Always thinking beyond current technologies, we are researching and developing the next generation of materials for displays. OLED materials, for instance, are ideal for the flexible displays of the future: They transform surfaces into incredibly thin and lightweight displays with brilliant colors and sharp images from every viewing angle. What's more, they are extremely energy-efficient.



We offer specialty chemicals and solutions for surfaces, displays and semiconductors for the following industries, among others:

Electronics & technology

Cosmetics

Automotive

¹organic light-emitting ²Directed Self-Assembly

KEY FIGURES

51,749

Employees Worldwide

As of December 31, 2018

Key figures

(€ billion)

	2018	2017
Net sales	14.8	14.5
EBITDA pre*	3.8	4.2
Margin (% of net sales)*	25.6 %	29.3 %
R&D costs	2.2	2.1
Business free cash flow*	2.5	3.2
Employees (number as of Dec. 31)	51,749	52,941

*Not defined by International Financial Reporting Standards (IFRSs).

Net sales 2014–2018

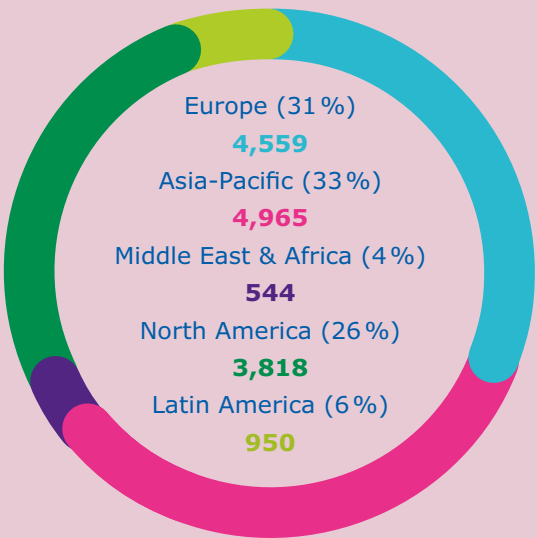
(€ billion)

2018	14.8
2017	14.5
2016	15.0
2015	12.8
2014	11.4



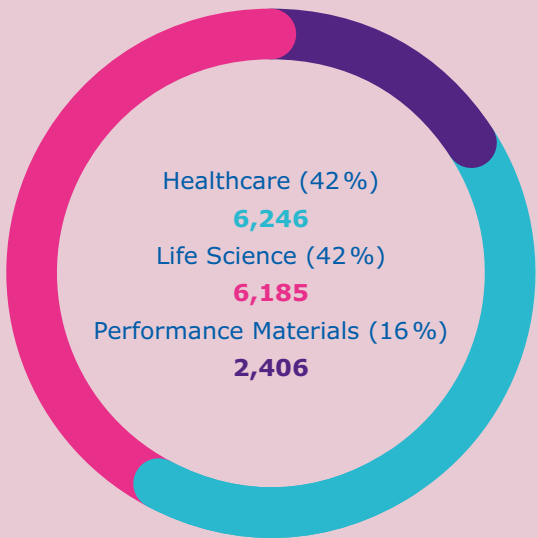
2018 sales by region

(€ million)



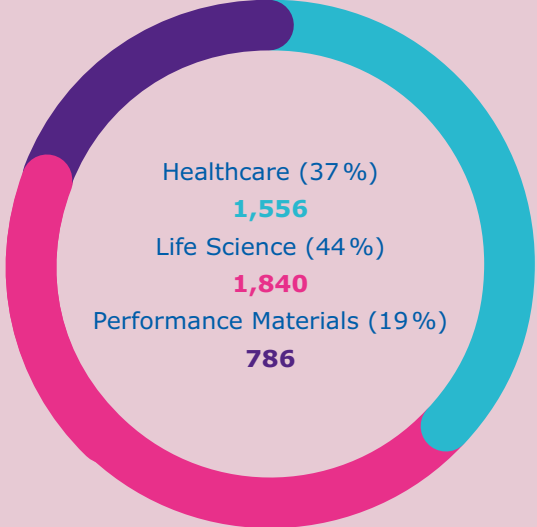
2018 sales by business sector

(€ million)



2018 EBITDA pre* by business sector

(€ million)



*Not defined by International Financial Reporting Standards (IFRSs).



RESPONSIBILITY

Successful business with a

conscience



We take responsibility for our products, the environment and the people around us – especially our employees and the communities in which we operate. In doing so, safety and ethical aspects matter just as much to us as business success.

With our long-term Corporate Responsibility strategy, we focus on generating sustainable added value for ourselves as a company and for society. To achieve this, we are taking a shared value approach. We focus on areas where we can make the greatest impact.

Global Health:

Our initiatives, programs and partnerships particularly address unmet medical needs in low- and middle-income countries. Our non-profit Merck foundation also focuses on achieving this goal. Hand in hand with our partners, we help provide local solutions and develop treatments, for example to eliminate the tropical worm disease schistosomiasis or to fight malaria.

Sustainable Solutions:

We are constantly working to improve the sustainability footprint of our products which helps our customers achieve their own sustainability goals. To this end, we have established systematic approaches for product development such as our Design for Sustainability program in the Life Science business sector.

Broad Minds:

We believe that culture inspires people, opening minds to new possibilities and fueling creativity. As a vibrant science and technology company, we want to take action in different fields of science. Thus, we support educational programs at schools as well as pioneering research in academia.



We maintained our fourth-place ranking in the 2018 Access to Medicine Index, a recognition of our company's integrated strategy to address the medical needs of unserved and underserved populations.

More than 900 million tablets have been donated since 2007 to treat schistosomiasis in around 360 million school-aged children.

More than 750 greener alternatives to conventional products are available in our Life Science portfolio. In the SPARK Global Volunteer Program, more than 2,800 of our Life Science employees volunteered over 19,000 hours of their time throughout 2018, engaging over 66,000 students worldwide in science.

We launched a new partnership program in China with the One Foundation charity fund, which aims to provide clean water to schools. The money donated in 2018 helped to install drinking water purification facilities for around 15,000 students in 33 rural schools.

The Merck family has also long been committed to philanthropic work. Since 2016 its activities are falling under the umbrella of the Merck Family Foundation. This organization takes on social responsibility by supporting projects that bring benefits to the people in the vicinity of our sites.

Curious minds
dedicated to

human PROGRESS

Societal and economic developments are changing the lives of millions of people. Our constant curiosity and passion for science let us find answers and solutions to some of those challenges.

Tackling the scarcity of resources:

How can we use advanced technology and research innovations to maintain our planet's vital ecosystem while meeting the needs of our growing global population?

Creating a smarter, connected world:

How can we drive technological innovation and harness the vast quantities of data generated by billions of connected devices to accelerate research and transform people's lives?

Shaping the future of healthcare with precision medicine:

How can we generate insights from our growing knowledge of diseases and enhanced datasets to tailor medical interventions to individuals and improve health outcomes?

Changing the future of scientific work:

How can we accelerate life-changing discoveries by empowering the scientific community with next generation tools, services and platforms that make research simpler and more exact?

For centuries, we've been contributing to scientific and technological progress and we will continue to push the boundaries of possibility to create opportunities for everyone.

#alwayscurious





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Merck KGaA
Group Communications
Frankfurter Straße 250
64293 Darmstadt, Germany

+49 6151 72-0
service@merckgroup.com

MERCKgroup.com