

BASF SE

Site Communications Ludwigshafen, ESM/K

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www.ludwigshafen.basf.de/en



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Gemeinsam engagiert in der



*Metropolregion
Rhein-Neckar*

An aerial photograph of the BASF Ludwigshafen industrial site. The image shows a vast complex of industrial buildings, storage tanks, and infrastructure. In the foreground, a large blue cargo ship is navigating a river. The sky is clear and blue. A blue banner is overlaid on the top left of the image, containing the BASF logo and the slogan 'We create chemistry'.

■ - BASF

We create chemistry

Ludwigshafen Site Strong in the Verbund

Site | Customer | Employees
Production | Verbund | Logistics
Research & Development | Innovation
Digitalization | Sustainability
Safety | Neighborhood | Dialog
Social Engagement

**We create chemistry
for a sustainable future**



app. 10 km² site area



app. 39,000 employees



around 2,000 buildings



around 2,850 km
of pipelines



app. 230 km of rails



more than 100 km of roads



around 200 plants



1865 year of foundation



Our standard: **To be the number one**

Within the BASF Group and throughout the chemical industry

The Ludwigshafen site is the cradle of the Verbund concept. That means that secondary products from one factory serve as valuable feedstocks elsewhere, allowing chemical processes to be run in a resource-efficient way with a low energy input and high yields.

Over a third of all BASF employees worldwide work here, around 200 plants produce thousands of products for customers from virtually every industry. The portfolio extends from basic chemicals, intermediates and plastics to refining and crop protection products.

An overview of the most important data and facts can be found on the website **“The site in facts and figures”**



If there is something we cannot do, it is stand still. Constantly developing and improving new processes and products is in our DNA. That is how we help to solve the challenges society faces. As the largest employer in the Rhine-Neckar metropolitan region, we are committed to our surroundings in a host of ways and are determined to maintain open dialog with our neighbors.

Ludwigshafen should set an example – in efficiency, safety, quality, and good coexistence between industry and the neighborhood.

Find out more at

 www.ludwigshafen.basf.de/en



From Ludwigshafen to the world: **Production in the Verbund**

LEADER IN EFFICIENCY

The Verbund idea was born in Ludwigshafen, from where it has been continuously developed and exported to the world. In the Verbund, production plants, logistics and infrastructure are intelligently connected to one another. The best thing? Nothing is wasted. Secondary products from one place serve as feedstocks in another. This allows us to protect resources, succeed in competition, and build our own foundation for innovation.

Find out more at [▶ ludwigshafen.basf.de/en/verbund](https://ludwigshafen.basf.de/en/verbund)

THE HEART OF THE VERBUND

The larger of the two steam crackers alone takes up an area the size of 13 soccer pitches. The steam crackers are among the largest production plants in Ludwigshafen and form the heart of the site. Numerous supply chains originate in the crackers, which use steam to crack naphtha. This produces shorter molecules – the basic building blocks for further production.

Find out more at [▶ ludwigshafen.basf.de/en/steamcracker](https://ludwigshafen.basf.de/en/steamcracker)





WORKING AT FULL STEAM

Production would be impossible without energy. In the chemical industry, we need both, power and steam. They are generated in our gas-steam power plants and – as a consequence of our energy Verbund – additional steam comes from production plants which convert their waste heat into steam. Intelligent control ensures that energy is fed efficiently into the Verbund site. We therefore succeed in supplying the Ludwigshafen site with energy in the best possible way, while also protecting the environment.

Find out more at

[▶ ludwigshafen.basf.de/energy](https://ludwigshafen.basf.de/energy)



CLEVERLY CONNECTED

Our logistics Verbund is a clear advantage of the site. Raw materials and feedstocks are delivered by pipeline or ship, arriving at the plants via three ports, two tank farms and an extensive piping network. As an environmentally friendly means of transport, the railway also plays a major role. When it comes to internal transportation by truck or rail, keeping journeys short is key. Its intermodal transport terminal makes Ludwigshafen an important European hub for rail and truck transportation.

Find out more at

[▶ ludwigshafen.basf.de/logistics](https://ludwigshafen.basf.de/logistics)



KEEPING US MOVING

Although tank cars remain important, the future belongs to our self-driving electric vehicles that transport large innovative tank containers. These automated guided vehicles (AGVs) are equipped with electronic systems that allow them to find their way with centimeter accuracy without a driver. The idea is for transport on the site premises to be fully automated in future. We are currently trialling this innovative mobile tank concept in a pilot project at the Ludwigshafen site.

Find out more at

➔ www.ludwigshafen.basf.de/tank-container



Fascinated by the topic?
Here is a video about **AGVs**





Designing the future: Research and Development

CREATING THE NEW

Increasing demand for food, energy and clean water for a rapidly growing global population, limited resources and the need to protect the climate – reconciling all of this is the greatest challenge of our time. Innovations in chemistry will play a key role here. We are working on innovative processes, technologies and products and driving digitalization in research forward worldwide. With chemistry-based solutions for our customers in almost every industrial sector, we are securing our business success for the long term.

A PASSION FOR INVENTION

Our innovative strength is based on efficient research and development. We build on the enormous creativity, specific skills and broad expertise of our employees and our networks. Ludwigshafen is the largest research site in our global R&D Verbund. Our research focuses range from battery materials and biodegradable plastics to low-emission processes for central intermediates in the chemical industry.

Find out more at

➤ www.basf.com/innovations

We cannot imagine life without them: products “made in LU”

BASF is found in an incredible range of areas. Products from Ludwigshafen have proven themselves in myriad fields.

Toothpaste, chewing gum, cooling creams for sports injuries – they all taste or smell like the world’s biggest-selling and most popular aroma chemical:

L-menthol.

Our **vitamins**: We all consume them every single day in dietary supplements, clinical and medical nutritional products, food and beverages.

A shoe that weighs less, returns energy, or is non-slip. That is just as good for a marathon as for a walk in the park. Our innovative **plastics** are found in numerous safety, running and leisure shoes.



Virtual experiments made easy: **All thanks to the supercomputer!**

COMBINED COMPUTING POWER

We are driving the digitalization of research forward. Calculating the most promising polymer structure from thousands of options takes a high-performance computer. We have one. Its name: QURIOSITY. The supercomputer allows our researchers to process complex questions highly efficiently and much faster than before. Even better, new chemical compounds and products that would otherwise have remained undiscovered can now be found. QURIOSITY is one of the world's highest performing computers in the chemical sector.

KEEPING A COOL HEAD

The supercomputer can complete around 1.75 quadrillion calculations per second. This corresponds to the processing power of around 50,000 notebooks – performance that certainly heats up the hardware. The waste heat from just one of the 18 cabinets in the server room, each taller than a man, could heat two houses. QURIOSITY is saved from overheating by our ingenious air-water cooling system, which cools the supercomputer with up to 60,000 liters of water per hour.

Find out more at [▶ www.basf.com/supercomputer](https://www.basf.com/supercomputer)

QURIOSITY's role includes calculating complex environmental simulations for the registration of crop protection agents. The models cover the behavior and retention of the products, as well as potential decomposition products in the environment. Another example of the supercomputer's uses is molecular simulations of detergent formulations, which are used to explain at a molecular level how existing and potential new BASF products work. Our supercomputer also helps to speed up research looking for innovative cathode materials for high-performance lithium-ion batteries.

BASF
We create chemistry

**QUANTUM
CURIOUSITY**

PetaFLOPs



Our video says:
Open doors for the
supercomputer







Interested in digital technologies? Our film about **smart manufacturing** is available here



Our path is digital: Ludwigshafen 4.0

DATA AS A COMPETITIVE ADVANTAGE

Digitalization presents big opportunities for us. It allows us to distinguish ourselves from the competition and strengthen BASF's position as a leading chemical company. It helps us to create exciting new customer experiences. We link the data together in such a way as to make our processes safer and more efficient and to optimize our procedures even further – from research to production to logistics.

Find out more at

 www.basf.com/digitalization

WORKING DAY 4.0

Tablets and smartphones have become an integral part of the working day in many fields. Mobile applications provide support in plant control, monitoring and maintenance. They help to make data available quickly on site and to transfer it into systems more rapidly. Intelligent data analyses enable better forecasts and predictive maintenance, so that our plants do not suffer unplanned downtimes. This will allow us to make decisions even faster and better in future. New structures help us to establish digitalization expertise and to learn from and with one another. After all, we walk the path to digitalization together.

Find out more at

 www.basf.com/smart-manufacturing



Growth driver number 1: **Sustainability**

THE CORE OF WHAT WE DO

We want to contribute to a world that provides a viable future with enhanced quality of life for everyone. That is why we support our customers and society in using the available resources in the best possible way. Sustainability is at the core of what we do, a driver for growth as well as an element of our risk management. Here in Ludwigshafen in particular, we take new approaches and develop sustainable products and processes.

LESS IS MORE

We have set ourselves the goal of driving circular economy forward and advancing climate-friendly chemical production. Our researchers are working on fundamentally new, low-CO₂ production processes. Until these are fully developed, we will reduce our emissions by enhancing the efficiency of our production and increasing our use of regenerative sources when purchasing electricity. When it comes to plastic waste, less is also more. Chemical recycling can help to reduce the quantity of plastic waste disposed of in a landfill or thermally recycled. The material gained can be fed into the Verbund, where it serves as a valuable raw material.

Find out more at [▶ www.basf.com/sustainability](https://www.basf.com/sustainability)





Plastic waste as a raw material:
Find out more about the
Chemcycling project
in our video





Day and night: **Truly eye-catching**

The site never sleeps. Our 39,000 employees ensure that our plants operate around the clock. The site is a city within the city and, spreading across an area of ten square kilometers, is the world's largest integrated chemical complex owned by a single company.



The key to success: **Our employees**

Building a career

GETTING STARTED

Vocational training is very important to us – and the starting opportunities we offer are as diverse as our employees. Here at the site, new job starters can choose between 30 apprenticeship professions, dual degree programs, and the Start-Program “Start in den Beruf”. All jobs have one thing in common: the high quality of the vocational training we offer.

Find out more at

➤ www.basf.de/ausbildung *(only available in German)*



UNIQUE OPPORTUNITIES

We are convinced that the people in our company are the key to our success. That is why we give our employees the support they need to achieve their personal and professional goals. At the same time, this gives us the opportunity to be and remain the leading chemical company. The world needs solutions. To provide them, we need the best team.

Find out more at

www.basf.com/career

Interested?
Access the **BASF's job world**



Life in balance

GREATER FLEXIBILITY

We offer numerous services, from childcare to caring for relatives, to help our employees to better balance their private and professional lives. As a responsible company, we support flexible working time models that help our employees to adapt their working hours and location to their personal needs and circumstances.

Find out more at

➤ ludwigshafen.basf.de/work-life-balance

EVERYTHING UNDER ONE ROOF

By building LuMit, we have made a visible statement of how seriously we take the balance between work and private life. Measuring around 10,000 square meters, the building complex brings together a wide range of services, tailored to different periods of life, in one central location – from the daycare facility, to the gym and health studio, to the Employee Assistance Program by BASF Stiftung (BASF foundation).

Find out more at

➤ www.ludwigshafen.basf.de/en/lumit



A success story:

Our LuMit – the employee center for Work-Life-Management

(only available in German)



FEELING AT HOME

The Ludwigshafen site has a long tradition of offering apartments for employees. We have been building residential properties in Ludwigshafen and the surrounding areas for more than 100 years and are constantly developing the areas to adapt them to modern requirements. This is our contribution to urban development, helping a lot of people to find their perfect home with us – from shared apartments for apprentices to detached houses and homes suitable for older people.



Our video on **employee apartments at BASF** shows what BASF Wohnen + Bauen GmbH has to offer *(only available in German)*






A future built on the past: **A step ahead for more than 150 years**

From humble beginnings as a synthetic dyes factory, as can be seen from this 1873 painting, BASF has developed into one of the world's leading chemical companies. Our pioneering spirit has driven us ever since. Countless discoveries and inventions that have changed the world and shaped how we live today have their roots in Ludwigshafen. We have always been a step ahead – for example in the production of synthetic dyes in the 19th century, with the Haber-Bosch process for producing ammonia, in the development of high-pressure syntheses in the first half of the 20th century, and in the versatile high-performance plastics of today.

Find out more at [▶ www.basf.com/history](https://www.basf.com/history)



From 1865 to today.
Do you have any questions?
BASF Corporate History will be
happy to help: history@basf.com



Trustful relationships: **Good neighbors**

Buzzing with activity

On the field, not on the sidelines: Be it a city event, a film or wine festival – as a good neighbor we are to be found in the front row at a lot of events. There is a lot going on around the Ludwigshafen site. To make sure our neighbors know what is happening even earlier, we keep them updated on various channels.



Your neighbor online

www.ludwigshafen.basf.de/en
standortaktuell@basf.com

Our social media channels



Public hotline: 0800 50 50 500

Our hotline for neighbors
in case of an incident



Environmental Monitoring Center: 0621 60 40 40

Your contact for environmental
questions – around the clock

Successful with safety

HIGH EXPERTISE

Prevention is our top priority. Numerous experts pursue the shared goal of preventative emergency response and environmental protection at the site. This also includes trust-based collaboration with the authorities and close dialog with the neighborhood. Our motto is “safety first.” When malfunctions occur, we provide open and comprehensive information quickly.

Find out more at

www.ludwigshafen.basf.de/environment-and-safety



ON THE SCENE AROUND THE CLOCK

The Environmental Monitoring Center brings together the most important measured values from air, water and sound monitoring. It is the point of contact for environmental questions from both employees and local residents – 24 hours a day, seven days a week. When an incident occurs, environmental monitoring vehicles are called into action along with the fire brigade. This enables us to determine any environmental impact as quickly as possible and take countermeasures where necessary.

Find out more at

➤ www.ludwigshafen.basf.de/environmental-center

VISIBLE FIRE

One thing that our neighbors can't help but notice is our flares. They are as integral a part of the Ludwigshafen site as the columns and pipe racks. Many of them are almost invisible, while others are clear to see and hear. Flares are a compulsory safety device. If gases cannot be used, they must be burned. The flares are therefore a visible and audible sign that our safety systems are reacting and working as required.

Find out more at

➤ www.ludwigshafen.basf.de/flares



Just a drill!
Our "BASF inside" video on
the **major incident drill**
shows how we practice for
an emergency



A direct link to our surroundings

NOT A ONE-WAY STREET

The size of the site, its proximity to nearby residential areas and its location in the heart of the Rhine-Neckar metropolitan region mean we are obliged to be top class. This is the standard we set ourselves – including as a neighbor. That is why we insist on openness and dialog. In doing so, we see communication not as a one-way street, but instead as a trust-based, constructive way of living together on an equal footing.

KEEPING IN TOUCH

As a company, we are committed to showing a presence and taking a stand. In order to better understand the needs of our neighbors, we have established a series of different dialog events and communication activities. These are held at various levels – from dialog events for citizens to digital services. Be it the Ludwigshafen Community Advisory Panel, open day or activities on our social media channels, all the formats aim to provide first-hand information about the site and to maintain a constant dialog.

Find out more at

➤ www.ludwigshafen.basf.de/neighbor





Guaranteed to amaze

FROM “WOW” TO “AHA”

Informative. Fascinating. Eventful. We are showing a new side to chemistry. It doesn't matter whether our visitors already have some knowledge or are only just discovering chemistry – our exhibition extends over five floors and 2,000 square meters, offering an exciting time and plenty of “wow” moments to young and old.

BUCKLE UP!

How does the freshness get into the toothpaste tube? And what makes sofas so soft? In the Visitor Center, our guests can immerse themselves in the world of BASF and learn how chemistry enriches our everyday lives. At the monthly open-house Saturdays, we offer young and old visitors an eventful program for an unforgettable day. The real highlight: A bus tour right across the ten square kilometer chemistry facility – past the steam cracker, the intermodal transport terminal, our three power plants and many other highlights besides.

Find out more at

➤ www.ludwigshafen.basf.de/en/visitor-center





Experience BASF
right now with our video
on the Visitor Center



A treat for all the senses

In our **Culinary Calendar**, you will find numerous opportunities to visit our venues and experience special events



RELAX AND UNWIND

Enjoy outstanding cuisine, sophisticated wines and a stylish atmosphere for celebrations and overnight stays – BASF's catering service ensures that our guests feel totally at home. Our service is available to employees, companies, neighbors and curious outsiders. The top priority: Everyone who comes to us should be able to concentrate on two things – relaxation and enjoyment. To make these happen, our creative team is constantly composing surprising new taste symphonies.

Find out more at

➤ www.ludwigshafen.basf.de/gastronomy



THE RIGHT TEMPERATURE

Wine should not be complicated – just good. We store more than 2,000 different wines from all over the world at just the right temperature – from rustic wines to rare treasures. Be it for a spontaneous barbecue or a long-planned celebration, we have (almost) everything. Our experts have been selecting the best wines since 1901, and our guests truly value their experience. From connoisseurs to those just discovering wine, everyone will find something to their taste here – either in the Wine Store or online at any time.

Find out more at

➤ www.ludwigshafen.basf.de/wine-cellar

PASSION MEETS PROFESSIONALISM

Service is perfect if our guests from all over the world do not notice it, because they want for nothing. Our Hotel René Bohn has 80 rooms and 11 apartments. More than 90 venues in the various buildings managed by the BASF catering service provide the ideal backdrop for any occasion, be it a business or private event. Our event management team will be happy to advise and offers all services individually tailored from a single source.

Find out more at

➤ www.ludwigshafen.basf.de/en/hotel-rene-bohn



Find our culinary expertise on social media:



@basfgastronomie @basfweinkeller



Aniliners help out – our
“BASF inside” video shows
how we get involved
(only available in German)



Leaving a trace: **Committed in the region**

Get tickets for the
BASF cultural program
(only available in German)



AN ACTIVE PART OF SOCIETY

We want to help shape our immediate surroundings through our social commitment. To do so, we work together with numerous partners in the Rhine-Neckar metropolitan region. We want to unlock opportunities by improving people's participation and integration, while also boosting the spirit of research and discovery.

Find out more at

➤ www.ludwigshafen.basf.de/commitment

EXPANDING HORIZONS

Arts and culture give people important inspiration to develop and grow. Promoting them is therefore a key pillar of our social commitment. We have also been a successful concert organizer for more than 100 years. With more than 60 events every year, we offer one of the most varied cultural programs in the Rhine-Neckar metropolitan region.

Find out more at

➤ www.ludwigshafen.basf.de/culture

Gemeinsam engagiert in der



**Metropolregion
Rhein-Neckar**

ENGINE OF PARTICIPATION

Our surroundings are diverse, colorful and international. We champion the participation of socially disadvantaged people and support stakeholders in migration and integration. Sport is a key instrument of change here. Health promotion, movement and joining clubs are all ways to experience community, enable participation and develop one's individual personality.

Find out more at

➤ www.ludwigshafen.basf.de/sports

STRONG THROUGH EDUCATION

We are convinced that learning through research is becoming ever more important in a fast-changing world. The key is to find answers to key questions of the future and to meet challenges with curiosity and the spirit of exploration. From kindergarten to university, we are committed to arousing curiosity and interest in sciences. Education is also vital for integration and participation.

Find out more at

➤ www.basf.de/education



