



Scientific apparatus and glassware on laboratory bench awaiting Experiment | © gettyimages / Andrew Brookes

## Germany's Chemical Industry

Whether in the reinforcement of traditional industry products or the sustainable development of emerging technologies, Germany's chemical sectors play a keystone role. Supported by world-renowned R&D institutes, knowledge laden graduates, and dependable supply-chains, Germany offer investors fertile ground for their product development and market integration within Europe's largest economy. And all this at the center of the world's largest market: the European Union.

### The Industry in Numbers

As the European leader in chemical sales, exports, investment and R&D expenditure, Germany plays a decisive role in meeting global chemical demand. The chemical industry in Germany offers investors fertile ground for both production and product development within Europe's largest economy.

## The German Chemical Industry in Numbers (2017)

Sales (Source: chart 60b)	EUR 155 billion Number 1 in Europe Number 3 worldwide (behind China and USA)
Exports (Chart 42b)	EU-28: 60%, European Non-EU: 10%, Asia: 17%, NAFTA: 7%, Latin America: 3%, Rest of world: 3%
R&D Expenditure (Chart 48)	EUR 4.2 billion
Employees (Chart 22a)	336,000 - thereof 158,000 in corporations with more than 1,000 employees
Companies (Chart 18)	3,120: 83% (1-99 employees), 16% (100-999 employees), 1% (>1,000 employees)

Source: VCI, Chemiewirtschaft in Zahlen 2018

## Publications & Downloads



The Chemical Industry in Germany | © GTAI

## The Chemical Industry in Germany

Germany's chemical industry is number one in Europe. [More ▶](#)



Fact Sheet: Chemical Parks in Germany | © GTAI

## Chemical Parks in Germany

Opportunities for Chemicals Producers

As a chemical production and associated process industries location, Germany is a global heavyweight, ranking first in Europe. [More ▶](#)

- [CHEManager \(12/2017\): Steeled for Competition ▶](#)
- [ICIS Chemical Business \(06/2015\): Will M&A be the saviour of profits? ▶](#)
- [ICIS Chemical Business \(08/2014\): Adieu, crisis! ▶](#)
- [ICIS Chemical Business \(06/2013\): Germany's chemical spring ▶](#)
- [The German Chemical Industry \(12/2018\) ▶](#)

## Market Opportunities

### Stable and Sustained Growth

During the period 1960 to 2010, chemical industry revenue in Germany increased from EUR 12 to EUR 171 billion (according to Feri AG and the German Chemical Industry Association – VCI); resulting in an average nominal growth rate of 5.4% per year (real growth rate: 3.1%). Over the same period, the number of employees decreased from 458,000 to 415,000; increasing productivity sixteen-fold indicated by revenue per employee levels of EUR 412,000 in 2010.

### Global Production Leader

When it comes to chemical production locations, Germany is a global heavyweight, ranking first in Europe. With 2017 turnover of EUR 155 billion (VCI), the German chemical industry played a leading role in European performance, generating almost 30% of total EU-28 sales of EUR 542 billion. Germany has occupied the world number three spot in global chemical revenue ranking for a number of years, being surpassed only by China (EUR 1,293 billion) and the US (EUR 466 billion) in 2017.

### New Markets

“New” raw materials and energy and mobility: these 21<sup>st</sup> century megatrends offer enormous opportunities for Europe’s technology-driven chemical industry. Germany in particular will play a leading role in shaping these trends, thanks to the strong interdisciplinary character of German industry. This capability is vital, as cross-sector technologies and the development of new materials are an absolute necessity.

### From Commodities to Specialties

The development away from mass commodity or bulk chemistry to fine & specialty chemical production can be best observed using a “push-and-pull” model. As a result of high cost pressure, the low-margin equipped mass commodity chemistry is increasingly pushed into the raw materials processing countries. At the same time, Europe has access to the necessary technologies and know-how required in the constantly growing specialty chemicals market. Europe, with Germany at the forefront, is proving very attractive to the specialty chemical industry.

**Please contact us for more information on the German chemical industry or for an individual project assessment.**

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## Investment Climate

### **Plug & Play Production Concept: Chemical Parks**

Today, the “plug & play” concept is widely understood and appreciated. Sites (i.e. chemical parks) commonly offer a comprehensive range of services which are customized to the needs of prospective international or domestic investors. The major benefits to both the site operator or owner and the investor are shared site overheads for increased cost effectiveness. Chemical parks offer a wide range of flexible business models which are attractive for potential investors. Subject to their individual requirements, investors can simply buy or lease land from the site owner in order to establish their own production unit. At the other end of the scale, the business model might consist of a site operator investing in and operating new plant for the investor on a custom or toll-manufacturing basis.

### **Chemical Infrastructure: Pipeline Network**

The major chemical carbon source, crude oil, is distributed by an advanced net of pipelines. Thirteen refineries (with a total capacity of 115 million tons per year – equivalent to 3% of global capacity) and eight steam crackers supply Germany’s chemical industry with all of the necessary building blocks. Of the 145 million tons of chemicals transported annually in Germany, 36% are transported by pipeline. Major chemical sites are interconnected through pipelines that transport raw materials such as ethylene within the country and via Belgium and the Netherlands to neighboring chemical production centers and Europe’s northwestern seaports. There are also hydrogen, carbon monoxide and oxygen pipelines between chemical parks with a specialized production focus.

### **Energy Security: Low Power Outages in the World**

The security of Germany’s electricity supply is very high by international standards. In marked contrast to the US and other countries in Europe where major blackouts are recurrent, power outages are definitely the exception in Germany. The average amount of time lost to blackouts in the US is nearly four hours per year and in Spain two hours per year. Italy and the UK suffer from outages of around 80 minutes per year. However, these all exceed the German average of just 40 minutes per year.

### **Research & Development: Cutting-Edge Infrastructure**

More than 40,000 employees work in the German chemical industrial R&D units with annual industry R&D expenditure amounting EUR 4.2 billion. Industry R&D efforts are complemented by institutional R&D. Publicly funded research units of the Max-Planck Society, the Fraunhofer Gesellschaft, the Helmholtz Association, and the Leibniz Association undertake R&D in close cooperation with the industry; often taking place within Germany’s unique chemical cluster network infrastructure. The unique combination of industrial and institutional R&D represents an immensely valuable source of capacity for international companies. Thanks to institu-

tional research's privileging of practical expertise, project-oriented cooperation between industry and institutions is commonplace – ensuring that Germany's chemical industry remains at the international cutting edge.

### **Workforce and Training: Unique Training System**

Germany's chemical industry has a highly trained workforce of more than 330,000 employees. As in other German industry sectors, a unique training system provides the industry with skilled workers according to the company's needs via the vocational or "dual" training system. This enables young employees to specialize on chemical laboratory work, product development or production from the age of 16 onward. This system is accompanied by bachelor and master programs in chemistry offered nationwide (about 50 universities offer classical master degrees in chemistry supplemented by chemical engineering, biochemistry etc.). As well as this, 14 universities of applied sciences offer programs in chemistry. The combination of vocational and advanced training is pivotal to the success of the German chemical industry.

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### **Our References**

**Sunstar Engineering Europe GmbH - Yoshihiro Nakata, Managing Director**



Yoshihiro Nakata, Managing Director, Sunstar Engineering Europe GmbH | © Sunstar Engineering Europe GmbH/GTAI

*"The investment in Germany is an integral part of our global strategy for our adhesives and sealants. Due to the highly qualified workers and efficient cost structure, on top of Germany's leading position in the field of automotive expertise, Germany was the clear choice for our new production, European headquarter and R&D activities". (2017)*

### **Air Liquide Germany Ltd. - Thomas Pfützenreuter, Chairman**



Thomas Pfützenreuter, Vorsitzender der Geschäftsführung, AIR LIQUIDE Deutschland GmbH | © AIR LIQUIDE Deutschland GmbH/GTAI

*"Location Germany' is of great importance to Air Liquide. The German market is the most important pillar for our company in Europe after France. We invest around EUR 100m in Germany every year. On top of that are large projects such as the new Steam Reformer in Dormagen, while we are also busying ourselves with future projects such as the expansion of the hydrogen fuel station network." (2014)*

### **DYMAX Corporation - A. Gregory Bachmann, President**



A. Gregory Bachmann, President of DYMAX Corporation | © DYMAX Corporation/GTAI

*"Europe is a growing market for our light-curing adhesives. Due to the highly qualified workers and efficient cost structure, Germany was the clear choice for the expansion of our production and R&D activities." (2011)*

## Toho Tenax Europe - Eckard Scholten, Managing Director



Eckard Scholten Managing Director, Toho Tenax Europe | © Toho Tenax Europe/GTAI

*"At the center of the strongest industrial region in Europe, the industrial park in Oberbruch is a natural location for Toho Tenax Europe. With the initiation of our fourth production line, we confirm our position as the leading carbon fiber producer in Europe." (2010)*

## Dow Deutschland - Markus Wildi, President Dow Europe, President and Chairman of the board



Markus Wildi, President of Dow Europe | © Dow Europe/GTAI

*"For Dow, Germany is the most important manufacturing base and national market outside the US. The highly qualified, motivated, and innovative workforce – the 'Human Element' – is key to driving our success." (2009)*



## Hi-Bis GmbH - Tadashi Tomitaka, Managing Director



Tadashi Tomitaka, Managing Director of Hi-Bis GmbH | © Hi-Bis GmbH/GTAI

*"We chose Bitterfeld-Wolfen because of the stellar chemical park infrastructure for chemical companies, excellent workforce, and financial incentives. These three things were offered to us at the same time, and therefore we could not let this chance go." (2009)*



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