THE EUROPEAN CHEMICAL INDUSTRY
A VITAL PART OF EUROPE’S FUTURE

FACTS & FIGURES 2022

cefic
Foreword

With most of all manufactured goods relying on chemicals, Europe’s chemical industry is a crucial element of almost all value chains and a vital part of Europe’s economy.

During the last two years marked by the pandemic and the subsequent economic crisis, our sector proved in practice its strategic role for Europe producing the necessary health care materials and equipment. Tomorrow’s world will become even more so a world created by chemistry, as many future climate-neutral and circular solutions rely on Chemistry, from wind turbines to electric vehicles. Consequently, the European Commission has recognised the chemical industry for its “indispensable” role to help society achieve the new European Green Deal objectives.

Our European chemical industry has the ambition to become climate neutral by 2050, and the sector is uniquely positioned at the heart of European manufacturing to contribute to realizing a climate-neutral society.

At the same time, the chemical industry must remain competitive while undergoing a green and digital “twin” transition in order to become climate-neutral, circular and digital, all while navigating the Chemicals Strategy for Sustainability (CSS), which will not only affect the sector economically for the years and decades to come, but it will also create a significant “ripple effect” across many value chains relying on chemicals.

For this transition to be successful, a clear pathway that includes concrete timelines, milestones, and measures should be put forward by EU policymakers in close collaboration with Industry. This Transition Pathway for the chemical industry should ensure the availability of competitively priced renewable and low-carbon energy, promote innovation and the deployment of breakthrough technologies, support the development of relevant infrastructure and facilitate access to public and private finance.

Disclaimer:
For the sake of data integrity, figures within Cefic’s Facts & Figures publications are compiled and updated on a regular basis from public statistical sources (Eurostat, EU Commission, EEA, ...). These sources regularly review their previous years’ data and at times retroactively amend it. As a result of these updates, the comparison of annual Cefic Facts & Figures editions is not necessarily consistent over time.

Unless specified, chemical industry excludes pharmaceuticals
Europe is the second largest chemicals producer in the world

World chemical sales (2020, €3,471 billion)
China dominates chemical sales globally

World chemical sales by country: top 10

Source: Cefic Chemdata International
World market share of EU27 chemical sales drops substantially

EU27 share of global chemicals market

Source: Cefic Chemdata International
A smaller European slice of a larger chemicals market

World chemical sales 2020-2030

Sales 2020

€3.5 trillion

Sales 2030

€6.2 trillion

Source: Cefic Chemdata International

* Rest of Europe covers UK, Switzerland, Norway, Turkey, Russia and Ukraine

** North American Free Trade Agreement

*** Asia excluding China, Japan and South Korea
EU 27 holds trade surplus with top competing markets

EU27 chemicals trade flows with major geographic blocs (2020)

Extra-EU 27 exports (€169.3 billion)
Extra-EU 27 imports (€128.8 billion)

Source: Cefic Chemdata International
* Rest of Europe covers UK, Switzerland, Norway, Turkey, Russia and Ukraine
** North American Free Trade Agreement
*** Asia excluding China and Japan
Top 10 EU 27 partners account for 70% of EU 27 chemicals trade*

EU 27 chemicals trade flows with top 10 partners (2020)

Source: Cefic Chemdata International
*Trade = exports + imports
Energy costs are the Achilles’ heel of European industry

Ethylene cash cost of regional steam crackers

Source: ICIS
China leads the global chemicals investment

Capital spending in the chemicals industry by region: 2020 vs 2010

Source: Cefic Chemdata International
* Rest of Europe covers UK, Switzerland, Norway, Turkey, Russia and Ukraine
** North American Free Trade Agreement
*** Asia excluding China, India, Japan and South Korea
EU 27 R&I spending reached the highest level in 2020

R&I spending by the EU27 chemical industry

Source: OECD and Cefic Chemdata International
EU 27 is the second largest R&I investor in the world

R&I spending in the chemicals industry by region: 2020 vs 2010
EU 27 gas and electricity account for nearly two thirds of total energy consumption

Total energy consumption in the EU27 chemical industry by source (%)

Source: Eurostat
EU 27 consumption falls by 21% since 1990

Energy consumption in the EU27 chemical industry

Source: Eurostat
EU 27 greenhouse gas emissions* fall by nearly 54% since 1990

Total scope 1 GHG emissions* by the EU27 chemical industry

Source: European Environment Agency (EEA), *Germany and Malta did not separately report GHG emissions from combustion of fuels in the chemical sector.
EU27 GHG emissions* fall by 145.1 million tonnes (CO₂) since 1990

Total scope 1 GHG emissions* by the EU27 chemical industry per type of GHG

Source: European Environment Agency (EEA), *Germany and Malta did not separately report GHG emissions from combustion of fuels in the chemical sector.
EU 27 chemical waste falls by nearly one third since 2007

Total hazardous and non-hazardous waste in the EU27 chemicals industry

Source: European Pollutant Release and Transfer Register (E-PRTR)
* Slovakia did not report data under the EU Registry. Data for Germany, Latvia, Lithuania, Liechtenstein, Lithuania, and Portugal are incomplete for 2018 and 2019.
Data for Italy, Malta and Switzerland are incomplete for the year 2019.
EU 27 accidental pollutant releases dropped by at least 40% since 2007

Accidental pollutant releases by the EU27 chemicals industry
EU 27 acidifying emissions fall by more than 70% since 2007

Acidifying emissions to air by the EU27 chemicals industry

Source: European Pollutant Release and Transfer Register (E-PRTR)
* Slovakia did not report data under the EU Registry. Data for Germany, Latvia, Liechtenstein, Lithuania, and Portugal are incomplete for 2018 and 2019.
Data for Italy, Malta and Switzerland are incomplete for the year 2019.
EU 27 emission of water pollutants nearly halved since 2007

Total organic carbon emissions to water by the EU27 chemicals industry

Source: European Pollutant Release and Transfer Register (E-PRTR)
* Slovakia did not report data under the EU Registry. Data for Germany, Latvia, Liechtenstein, Lithuania, and Portugal are incomplete for 2018 and 2019. Data for Italy, Malta and Switzerland are incomplete for the year 2019.
EU 27 emissions to air fall by 70% since 2007

EU27 methane and non-methane volatile organic compound (NM-VOCs) emissions to air

Source: European Pollutant Release and Transfer Register (E-PRTR)
* Slovakia did not report data under the EU Registry. Data for Germany, Latvia, Liechtenstein, Lithuania, and Portugal are incomplete for 2018 and 2019. Data for Italy, Malta and Switzerland are incomplete for the year 2019.
EU 27 chemical production and greenhouse gas emissions decoupled

GHG emission and production by the EU27 chemical industry

Source: European Environment Agency (EEA)
A full version of the 2022 Cefic Facts & Figures of the European chemical industry is available online on the Cefic website.

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Cefic, the European Chemical Industry Council, founded in 1972, is the voice of large, medium and small chemical companies across Europe, which provide 1.2 million jobs and account for about 14.4% of world chemicals production.

Cefic members form one of the most active networks of the business community, complemented by partnerships with industry associations representing various sectors in the value chain. A full list of our members is available on the Cefic website: [www.cefic.org/about-us](http://www.cefic.org/about-us)

Cefic is an active member of the International Council of Chemical Associations (ICCA), which represents chemical manufacturers and producers all over the world and seeks to strengthen existing cooperation with global organisations such as UNEP and the OECD to improve chemicals management worldwide.