Profile of the chemical industry

World chemicals production

The EU chemical industry is one of EU's most international, competitive and successful industries, embracing a wide field of processing and manufacturing activities.

In 1999, the world chemicals production is estimated at € 1370 billion, which represents an increase of 12% compared with 1998. With an estimated € 403 billion, the EU chemical industry accounts for 29% of estimated world production.

About 2% of world chemicals production is estimated to originate from the other West European countries. The West European chemical industry is therefore the world's largest chemicals producer followed by the USA (30%) and Asia (27%).

Western Europe, the USA and Asia (including Japan) continue to be the three major manufacturers of chemicals in the world. Taking all these regions together, they account for 88% of the world chemicals production.

World network of chemicals trade flows

The major geographic blocs trading with the European Union are Asia (excluding Japan), the USA and Central & Eastern Europe (CEEC). The total EU external chemical industry trade surplus is mainly attributable to positive trade balances with these regions.

In 1997, Asia was the largest EU export market. The first EU import market was attributable to the USA, with imports amounting to some € 18 billion. In 1998, the EU trade surplus with SE Asia was considerably reduced, mainly due to the spillover effect of the SE Asian crisis and its spreading to other regions in the world.

One positive effect of the SE Asian crisis is the improvement of the EU trade surplus with the USA compared with 1997. As a result, the USA became in 1998 the first EU export market and the first EU import market. This was a significant structural change stemming in particular from the crisis effects.

Geographic breakdown of EU chemical production

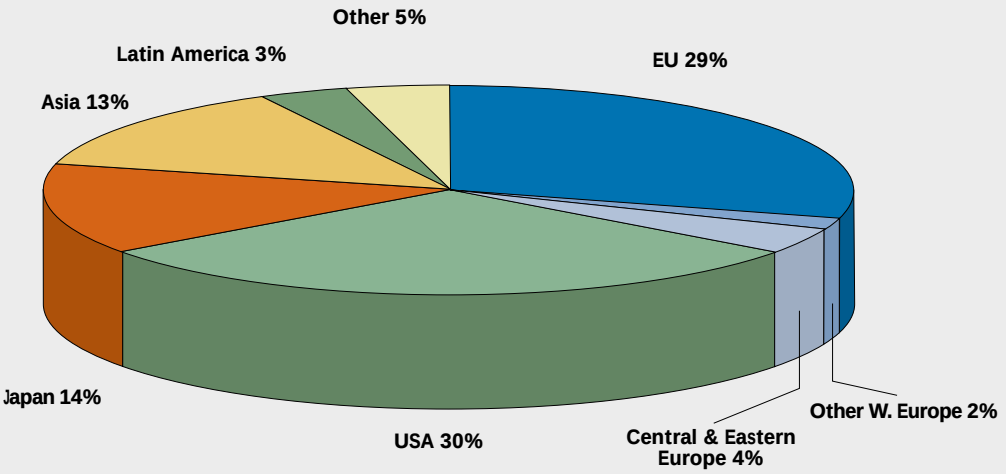
Germany is the most emotive, use largest chemicals producer in Europe, followed by France, the UK and Italy. Together, those four countries produce 65% of EU chemicals output. Adding the national industries of Spain, Belgium and the Netherlands brings the share up to 87%.

CHART 1.1

Geographic breakdown of world chemicals production*

Production 1999: € 1370 bn

Percentage shares

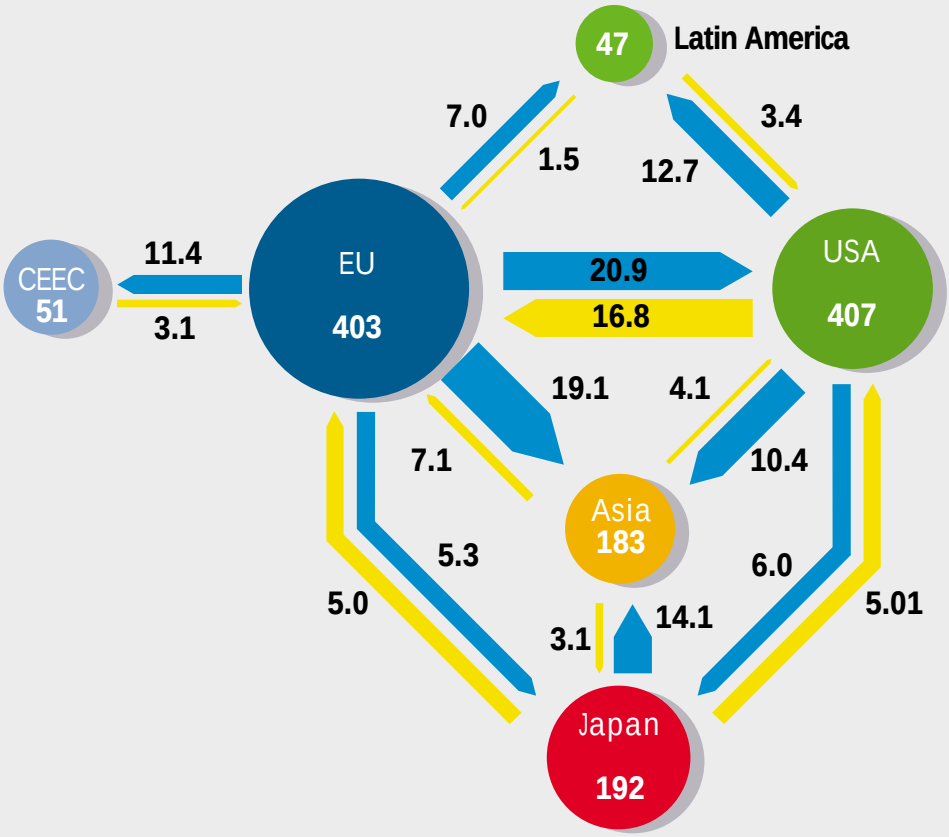


Sources: ESCIMO, UNIDO Industrial Statistics & CEFIC-TEA (Trade & Economic Affairs) Analysis.
Notes: Estimated world production; estimates for all regions except EU, USA & Japan.
Other = Africa, Oceania, Canada, Turkey, Malta & other Balkan States.
(*) Strictly speaking, value of production sold, augmented by value of sales of products purchased and resold in their original condition.

CHART 1.2

World network of major chemicals trade flows

In bn €



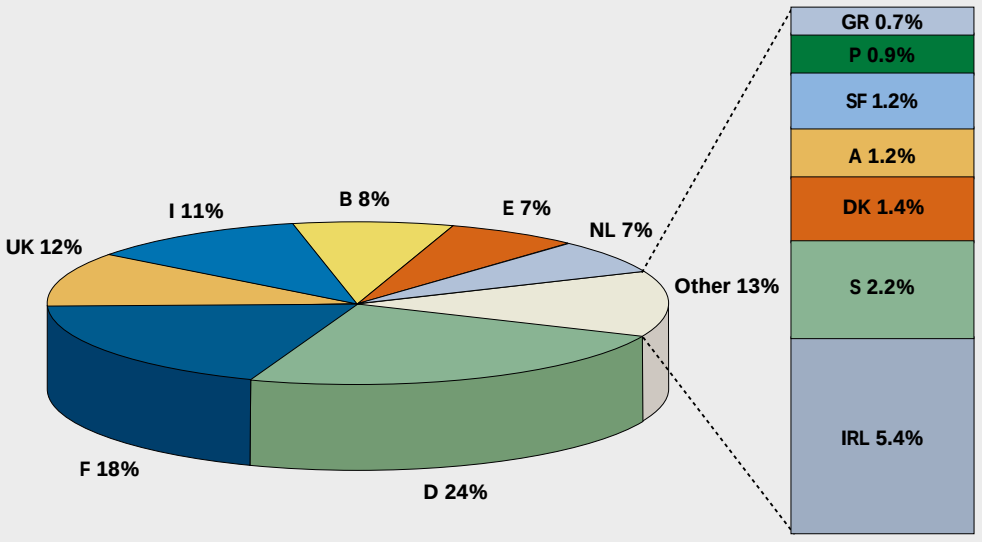
Sources: UNSTAT Comtrade & CEFIC-TEA Analysis.
Notes: Circles: 1999 production
1998 trade flows
CEEC = Central & Eastern Europe, including former USSR.

CHART 1.3

Geographic breakdown of the EU chemical industry production*

Production 1999: € 403 bn

Percentage shares



	1999 Production In mio €		1999 Production In mio €
Germany	97 161	Ireland (IRL)	21 819
France (F)	73 176	Sweden (S)	8 834
United Kingdom (UK)	46 734	Denmark (DK)	5 505
Italy (I)	45 655	Finland (SF)	4 694
Belgium (B)	33 081	Austria (A)	4 639
Spain (E)	28 459	Portugal (P)	3 563
the Netherlands (NL)	26 546	Greece (GR)	2 637
Total EU			**402 502**

Sources: ESCIMO & CEFIC-TEA Analysis.

Notes: the data presented above are not perfectly comparable. Indeed, there is no common definition of the chemical industry across countries. In particular, fibres, rubber and plastic processing can be either included or excluded.

(*) Strictly speaking, value of production sold, augmented by value of products purchased and resold in their original condition.

Sectoral breakdown of EU chemical industry production

The output of the chemical industry covers a wide range of chemical products. Basic chemicals require further treatment within the chemical industry itself in order to be converted into downstream chemicals. Downstream chemicals are destined either for industry and agriculture or directly for consumer markets.

Downstream chemicals for industry and agriculture are used as auxiliary materials such as adhesives, paints, unprocessed plastics, dyes or fertilisers. Consumer chemicals are sold directly to final consumers: pharmaceuticals, cosmetics, household products, paints etc.

Sales structure by destination

If the EU chemical industry was able to stabilise its overall production in the crisis year 1993 and to expand it thereafter, this is largely thanks to the bullish development of its exports outside of Europe. Sales to EU partner countries also increased considerably in 1994-99, making the single market more of a reality.

As a result of these trends, in 1999 the EU chemical industry realises 73% of its sales in its own regional market: 30% in domestic markets and 43% in non-domestic markets inside the EU. Not less than 27% of chemicals sales are now exported outside of the EU area, mainly to Asia and North America, compared with 17% in 1990.

Apparent consumption structure by origin

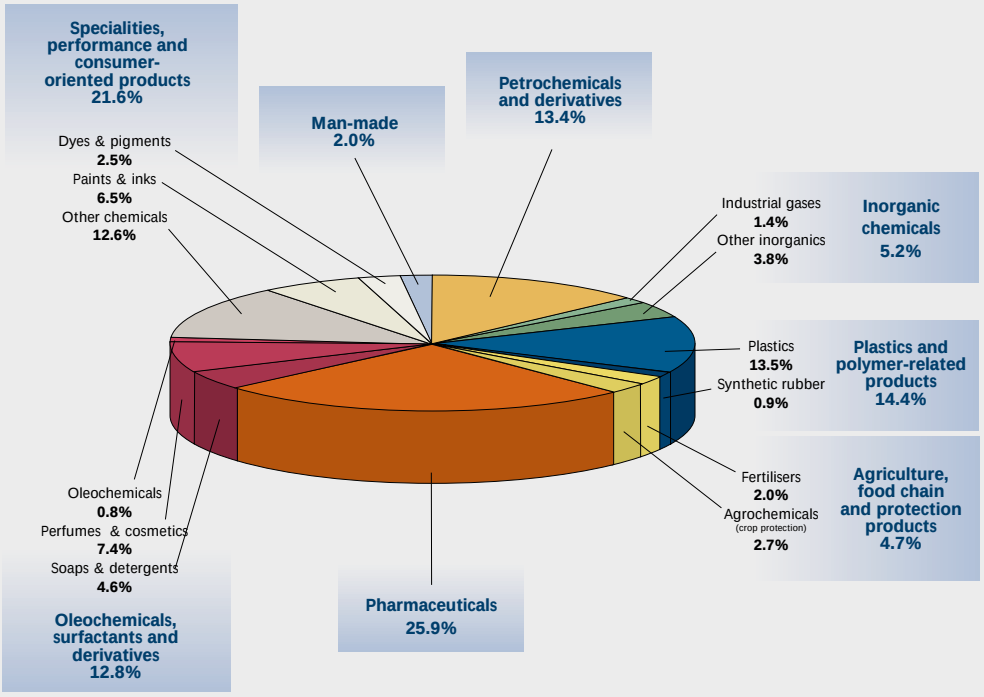
The EU apparent consumption of chemicals in 1999 is estimated at € 356 billion, of which 18% originate from outside the region - mainly from North America and other West European countries.

CHART 1.4

Sectoral breakdown of the EU chemical industry production*

1999

Percentage shares

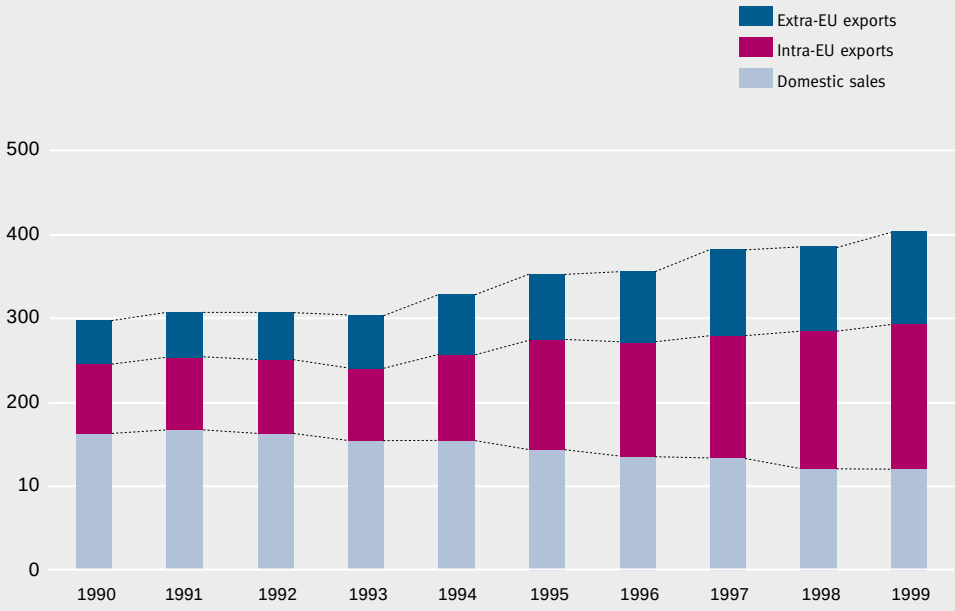


Sources: ESCIMO & CEFIC-TEA Analysis.
Notes: Weighted average calculated on the basis of data for D, F, UK, I, NL, E, A & SF.
(Weighting factor = 1999 value of production)
(*) Strictly speaking, value of production sold, augmented by value of sales of products purchased and resold in their original condition.

CHART 1.5
EU chemical industry sales structure by destination

1990 - 1999

In bn €



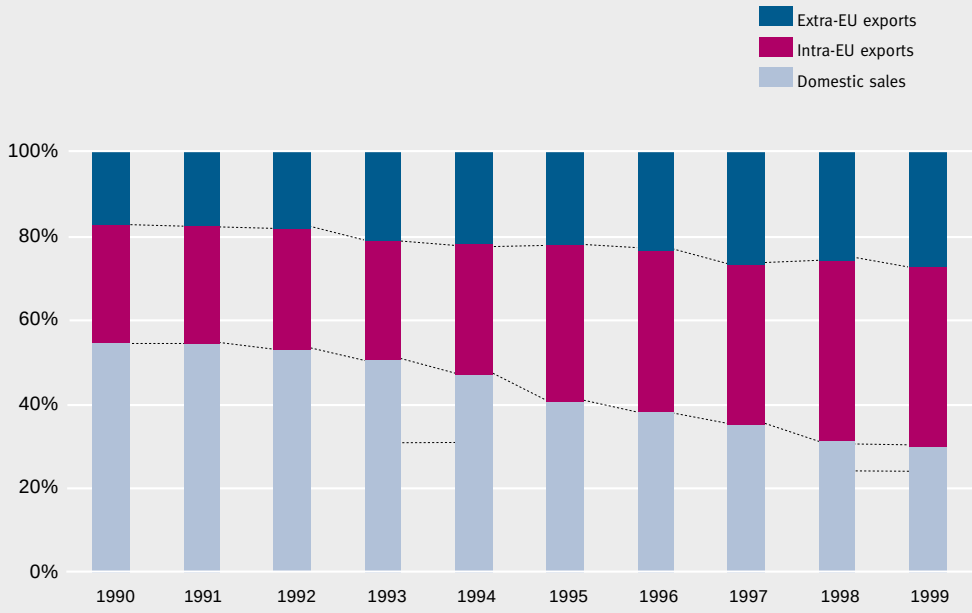
In bn €	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Extra-EU exports	52	55	57	64	72	79	84	102	100	111
Intra-EU exports	84	86	88	86	102	130	137	146	165	172
Domestic sales	162	167	162	154	154	143	135	134	120	120

Sources: ESCIMO & CEFIC-TEA Analysis.

CHART 1.6
EU chemical industry sales structure by destination (%)

1990 - 1999

% of total sales



In % of total sales	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Extra-EU exports	17%	18%	19%	21%	22%	22%	24%	27%	26%	27%
Intra-EU exports	28%	28%	29%	28%	31%	37%	38%	38%	43%	43%
Domestic sales	54%	54%	53%	50%	47%	41%	38%	35%	31%	30%

Sources: ESCIMO & CEFIC-TEA Analysis.

EU chemical industry consumption structure

The chemical industry supplies virtually all sectors of the economy. Initially however, the major share (33%) of chemical products is further processed within the chemical industry itself. In other words, the chemical industry is its own largest customer. In many instances, it is only after several processing stages that the products go to outside customers.

An important share of chemicals production (9%) is also further processed by the rubber and plastic processing industries, for which chemicals represent 39% of total inputs.

Once chemicals self-consumption by the chemical industry and consumption by the rubber and plastic processing industries are re-allocated to downstream customers, one obtains the following picture of the consumption structure of the EU chemical industry: 28% of chemicals are absorbed by final consumption, 18% go to services, 9% to agriculture, 5% to construction, and the remaining 40% to the manufacturing industry.

The big industrial customers of chemicals are the metals, mechanical & electrical industries, textiles & clothing, wood & paper and the automotive industry.

Place of chemicals in the EU manufacturing industry

In 1999, the EU chemical industry generated the largest external trade surplus compared with the other manufacturing industries, followed by the "transport equipment" industry. Furthermore, within the EU manufacturing industry, the chemical industry ranks fourth in terms of turnover and value added.

Contribution of the chemical industry to the EU economy

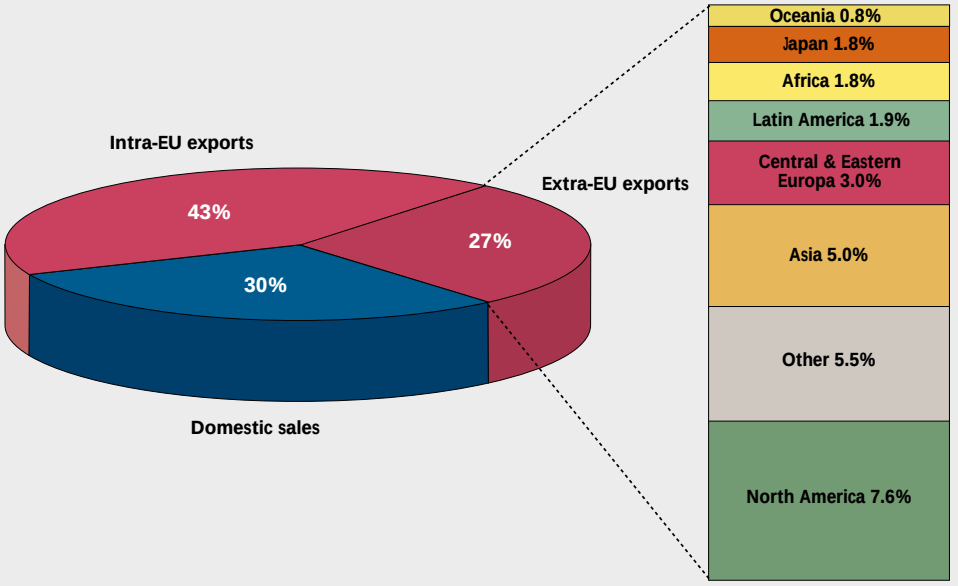
The chemical industry's contribution to the EU gross domestic product amounts to 2.4%. This may seem small at first sight, but should be re-assessed by taking into consideration both the shrinking contribution of industry as a whole to GDP in advanced economies and the wide penetration of chemical products into all the branches of the economy.

CHART 1.7

EU chemical industry sales structure by destination (cont'd)

Sales 1999 : € 403 bn

Percentage shares

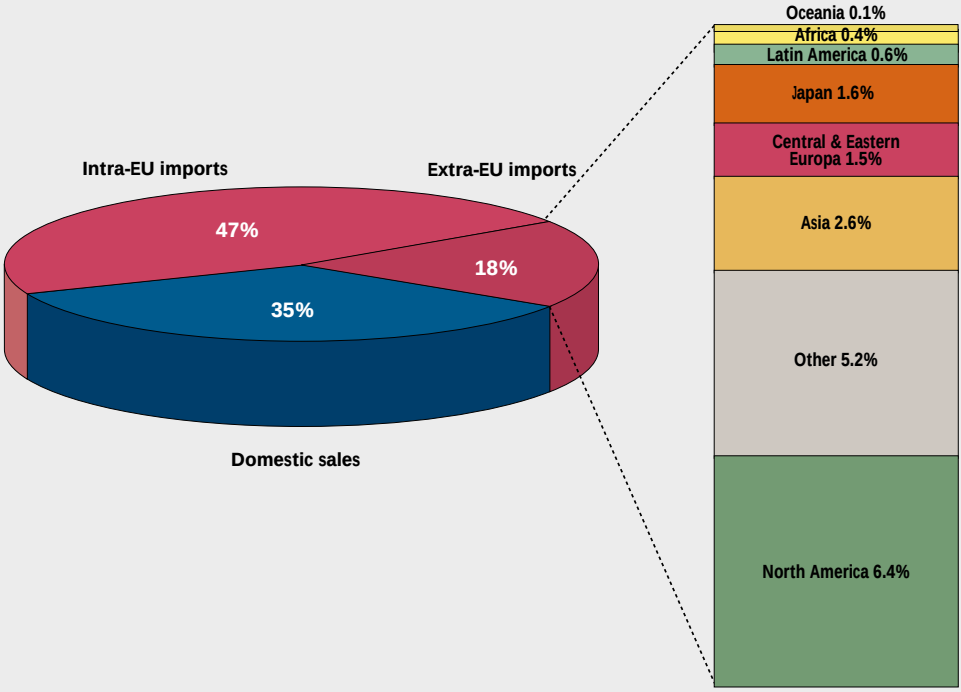


Sources: ESCIMO, COMEXT & CEFIC-TEA Analysis.
Notes: other = rest of Western Europe, Turkey, other Balkan states

CHART 1.8
EU chemicals apparent consumption structure by origin

Apparent consumption 1999: € 356 bn

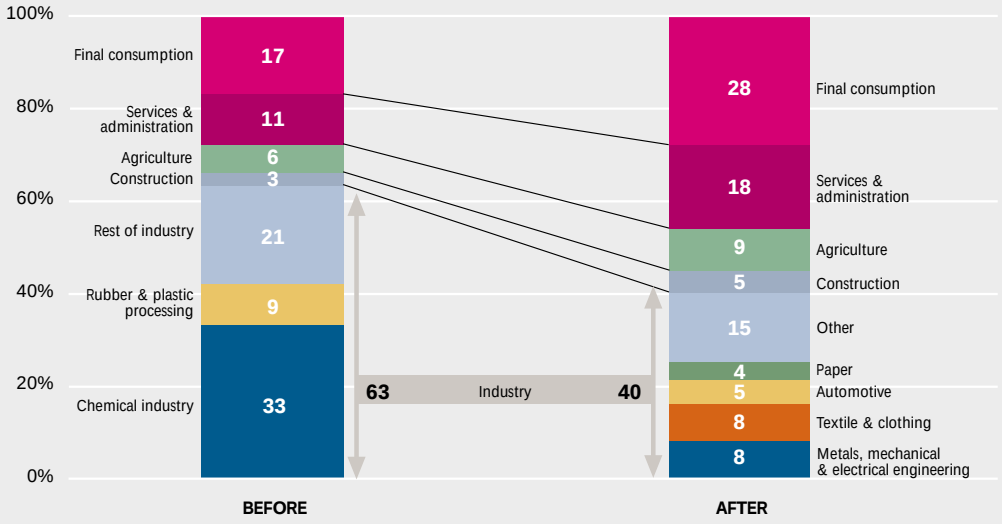
Percentage shares



Sources: ESCIMO, COMEXT & CEFIC-TEA Analysis.
Notes: Other = rest of Western Europe, Turkey, other Balkan states.
Apparent consumption = production + imports - exports.

CHART 1.9
EU chemical industry consumption structure

% of domestic consumption



Re-allocation to downstream customers of chemicals self-consumption and consumption by the rubber & plastic processing industries

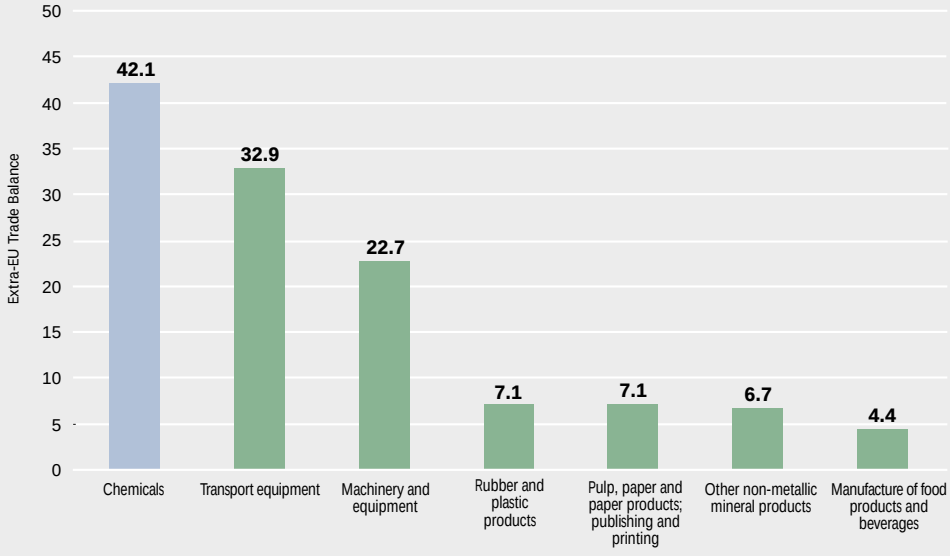
Sources: EUROSTAT & CEFIC-TEA Analysis.
Notes: Input-output tables estimated by EUROSTAT for 1991 on the basis of 1985 national tables.

CHART 1.10

The place of chemicals in the EU manufacturing industry:

The largest trade surplus 1999

In bn €



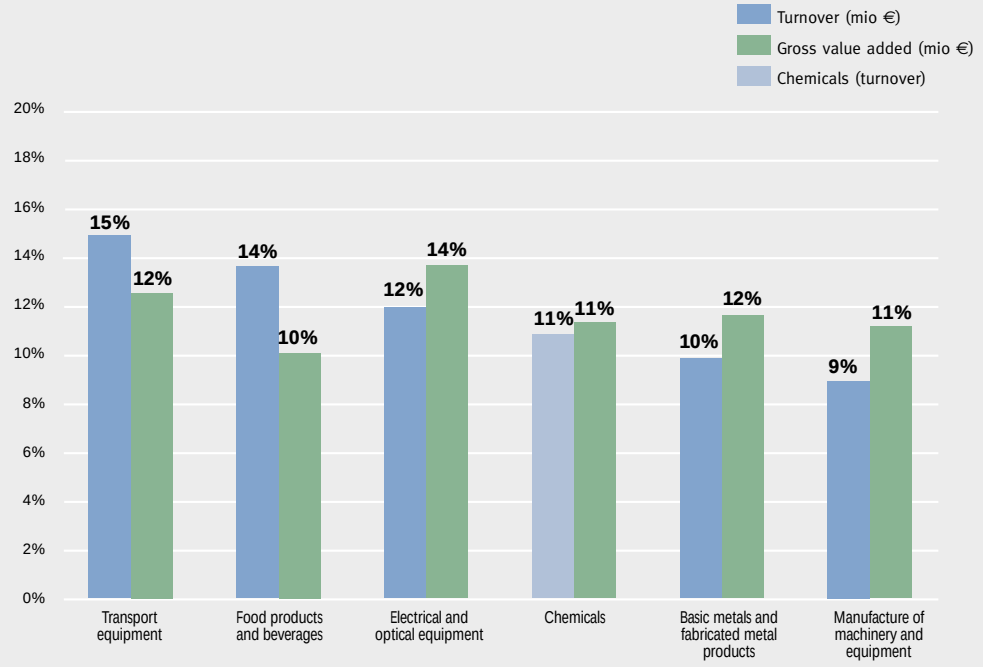
Source: EUROSTAT-COMEXT & CEFIC-TEA Analysis

CHART 1.11

The place of chemicals in the EU manufacturing industry:

The fourth largest turnover 1999

Share in %

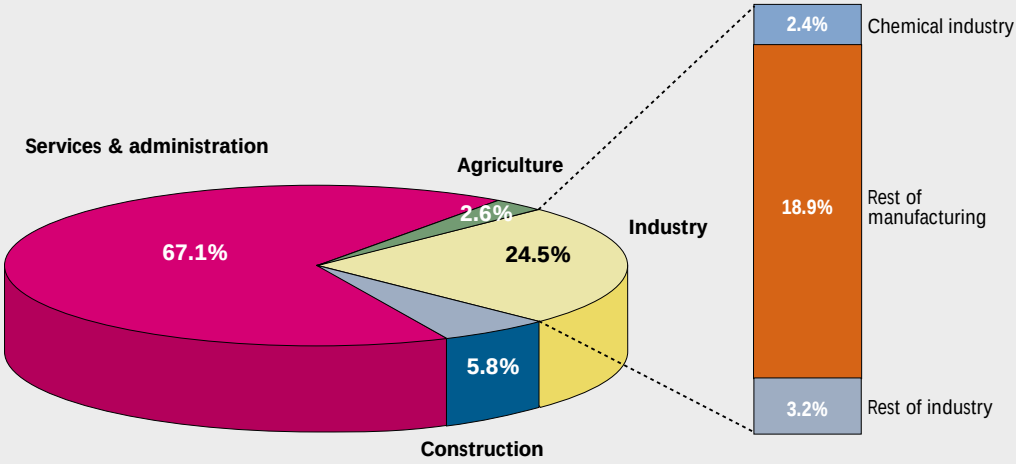


Source: EUROSTAT-SBS & CEFIC-TEA Analysis

CHART 1.12

Contribution of the chemical industry to the EU economy

Percentage of GDP



Sources: EUROSTAT-COMPET and SBS & CEFIC-TEA Analysis.

30 Top chemical companies in the world

The formation of larger groups has been necessary to internationalise operations and to implement global strategies in order to be competitive on a world-wide basis. A major objective is to reap the benefits of large scale production and of the international division of labour in order to secure the comparative advantages in terms of market skills and production costs offered by the different regions of the world.

In 1999, the 30 world chemicals majors - of which 17 have their headquarters in the EU - account for 30% of world chemicals sales.

The 30 world chemicals majors generated chemical sales valued at € 417 billion, which represents an increase of 13% compared with 1998.

Based in	Number	Worldwide sales		Share of world chemicals sales
		In bn €	In %	
EU	17	224	54%	16%
other W. Europe	2	37	9%	3%
USA	6	109	26%	8%
Japan	5	46	11%	3%
Total	**30**	**368**	**100%**	**30%**

Number of enterprises & sales by employment size-class

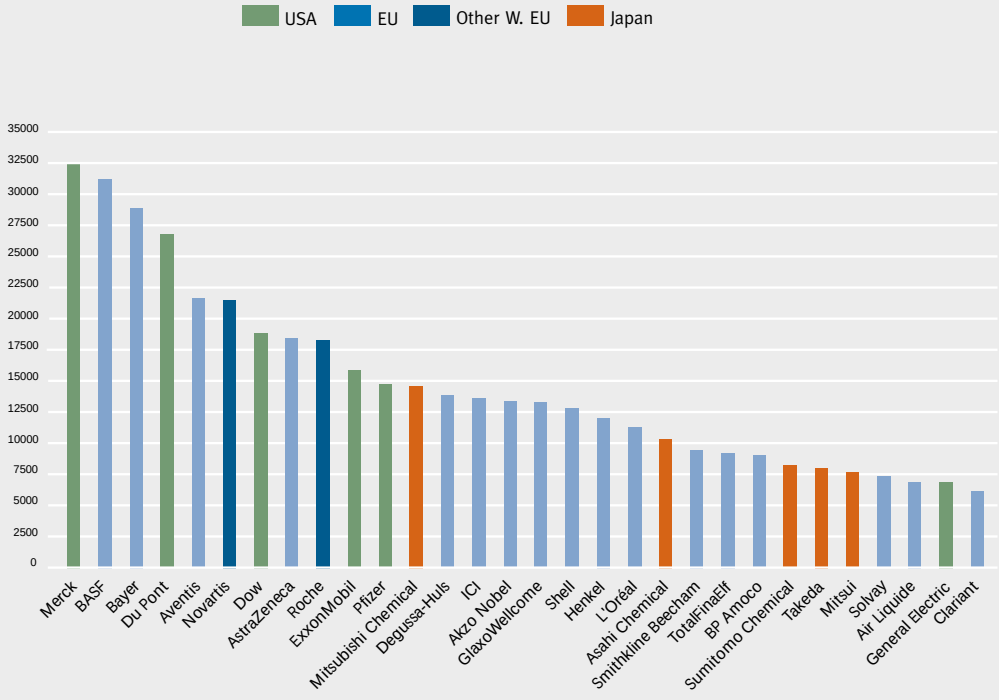
In spite of its relatively high degree of concentration, the EU chemical industry is made up of about 34 000 enterprises, 96% of which have less than 250 employees and may be considered as small and medium- sized enterprises. These account for 28% of sales and employment.

Only 4% of the EU enterprises employ more than 250 employees and generate some 72% of the total sales.

CHART 1.13
30 top chemical companies in the world

1999

Sales in USD Millions



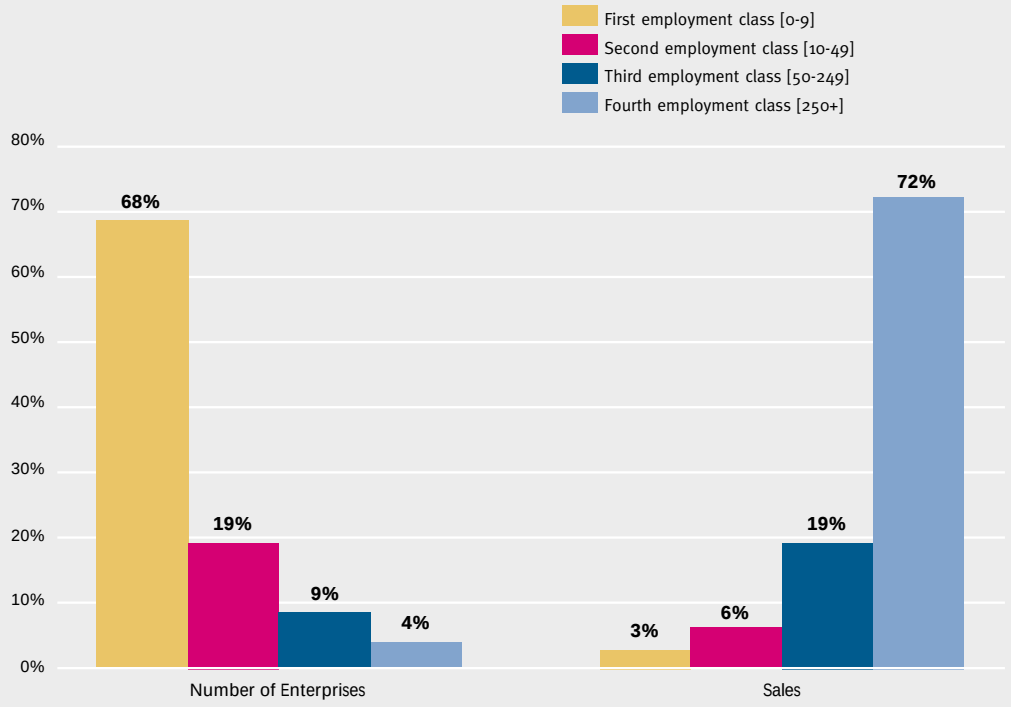
Source: Chemical Insights & CEFIC-TEA Analysis.
N.B. List of 30 top chemical companies reproduced with the kind permission of Reed Business Publishing - Chemical Insight, but adjusted by using average rather than year end exchange rates and completed with data from company Annual Reports.

CHART 1.14

The EU chemical industry: number of enterprises & sales by employment size-class

1999

Share in %



Source: EUROSTAT, Enterprises in Europe & CEFIC-TEA Analysis
Note: 1996 Data