UK Chemical and Pharmaceutical Industry Facts and Figures

as at 1 January 2015

Established 1965

CIA Chemical Industries Association

50 YEARS

working for chemical and pharmaceutical businesses

Responsible Care: continuously improving health, safety and environmental performance

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The chemical industry is the essential partner for the medical industry, helping to meet the world-wide need for safe and reliable products for treating illnesses and injuries.

Hip replacement cement: polymethyl methacrylate

Dentures: polymethyl methacrylate

Cough medicine: dextromethorphan

Antiseptic wipes: benzalkonium chloride

Eye drops: chloramphenicol

Sedative: benzodiazepine

Non-latex gloves: nitrile butadiene rubber

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Steve Elliott
Chief Executive,
Chemical Industries
Association

‘You can’t live without us…’

In our 2015 facts and figures publication we show how today’s UK chemical and pharmaceutical industry continues to be a vital part of this country’s economy. When the final 2014 figures are published, we expect them to show growth of around 4% for chemicals in 2014. Chemical and pharmaceutical businesses in the UK (represented by the Association) contribute £60m of Added Value every single working day (over £15bn a year) to the UK’s Gross Domestic Product. The industry is our Country’s largest manufacturing export sector with exports of nearly £50bn each year. The growth in jobs has been an astonishing 11% in the chemicals sector and 10% in the pharmaceutical industry. There are a total of 30,000 full-time equivalent roles in research and development showing the strength of the UK’s expanding science base. The £4bn spent on capital expenditure represents a 7% real terms annual increase. Representing all the different sub-sectors of the chemical industry, including dyes and pigments, inorganics and fertilisers, CIA members have a turnover approaching £50bn.

The chemical and pharmaceutical industry is a positive force for good in this country and beyond.

It is the hard work of the men and women who lead and work in chemical and pharmaceutical businesses throughout the UK which is the reason for our outstanding achievements.

In addressing our long-term future, we have been pleased to work with Government, the trade unions and all parts of the chemical and chemistry-using industries through the Chemistry Growth Partnership (CGP). Last year saw us capture some significant ‘wins’ with the budget’s support for energy intensive businesses; the strengthening of commercial relationships for many UK suppliers with key multinational customers in the agrochemical and pharmaceutical sectors; the securing of a £32m Science Industry Partnership (SIP) for skills provision and confirmation of a £28m National Formulation Centre (NFC) in the Chancellor’s Autumn Statement. Building on its excellent 2012 performance, last year also saw the UK chemical industry again securing the highest reputation of any major chemical industry in Europe opposite 10,000 members of the general public and opinion formers – a point highlighted by our All Party Parliamentary Group through an early day motion in Parliament itself.

This year CIA celebrates 50 years of working for chemical and pharmaceutical businesses. Let’s ensure, through partnership, that we continue to strengthen the economic, environmental and social success story that is the UK chemical industry.

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All the information in this publication is taken from official data.

Chemicals: making a better world

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The chemical industry is the essential partner for the construction industry, helping to develop energy efficient products for the framework of today's society.

PVC doors and windows: polyvinyl chloride

Paint: titanium dioxide

Insulation: expanded polystyrene

Perspex: polymethyl methacrylate

Safety hats: acrylonitrile butadiene styrene

Pipes: high-density polyethylene

Low voltage insulation: low-density polyethylene

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‘An energy saving record to be proud of’

‘Britain’s £50bn chemical industry…’

Energy

Energy consumption by the chemicals sector amounts to 3.4m tonnes of oil equivalent. We are the largest industrial sector, with 14% of the total. Because of the energy intensive nature of the industry, it has consistently sought to improve its efficiency. Between 1990 and 2010 we have reduced our energy input per unit of output by 35%.

The main primary energy source is gas (1.9m tonnes oil equivalent). In total the industry spends about £2bn on energy, of which over half is for gas.

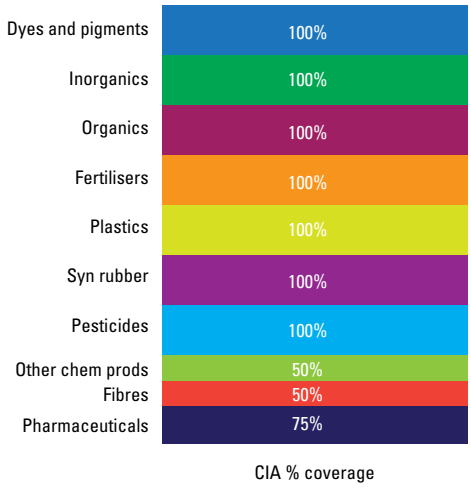
The energy used in manufacturing chemical products is saved more than twice over during the lifetime of the products (McKinsey study for International Council of Chemical Associations) by virtue of lighter and friction-reducing products in transport, reducing energy inputs and improving yields in agriculture, insulation to reduce heat losses and many others.

Source: DUKES energy statistics, published by DECC.

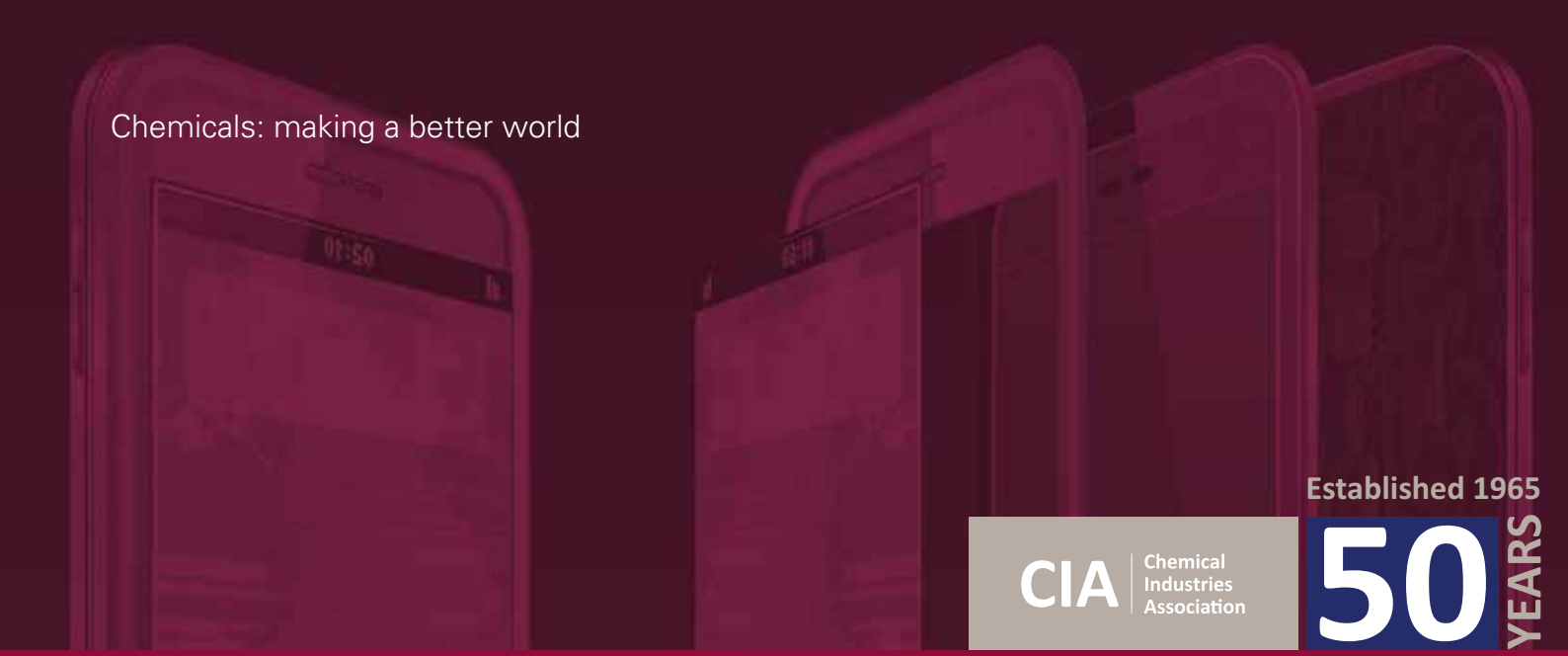
Turnover

Turnover of UK chemicals and pharmaceuticals approaches £50bn.

“Turnover” includes sales of merchanted goods (purchased and resold without further processing) and the value of any other activities carried out by the reporting company beyond selling own manufactured chemical products. Eurostat data shows that merchanted goods have recently been 11-12% of turnover for chemicals and around 13-14% for pharmaceuticals. See below for CIA coverage of chemical subsectors.



Source: Annual Business Survey (ONS), Eurostat.



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The chemical industry is the essential partner for the communications industry, helping the advances of technology by creating resource-efficient production.

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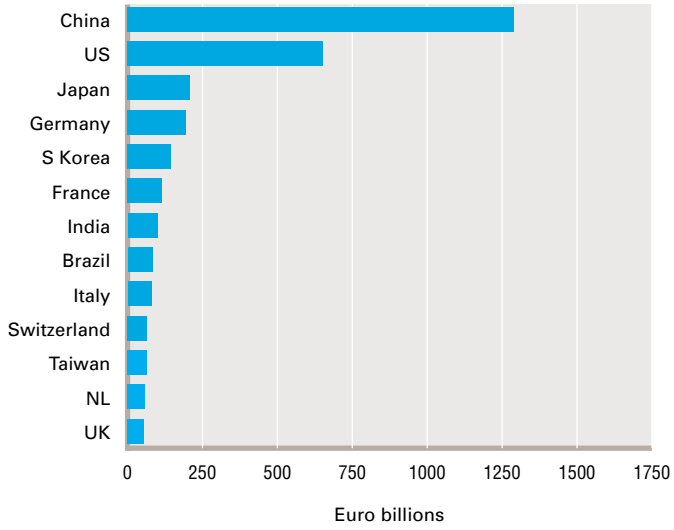
‘A top global player’

‘A leading, value added contributor’

Global ranking/ Comparative size of chemical industry to the rest of world

The UK is one of the world’s top global producers of chemicals and pharmaceuticals.

The ranking is based on combined sales of chemicals and pharmaceuticals. The final year data in most cases involves extrapolation by using volume and price indices. Full data, in € billions: China 1,291bn, US 652bn, Japan 208bn, Germany 196bn, S Korea 144bn, France 114bn, India 100bn, Brazil 83bn, Italy 80bn, Switzerland 66bn, Taiwan 65bn, NL 57bn, UK 54bn.



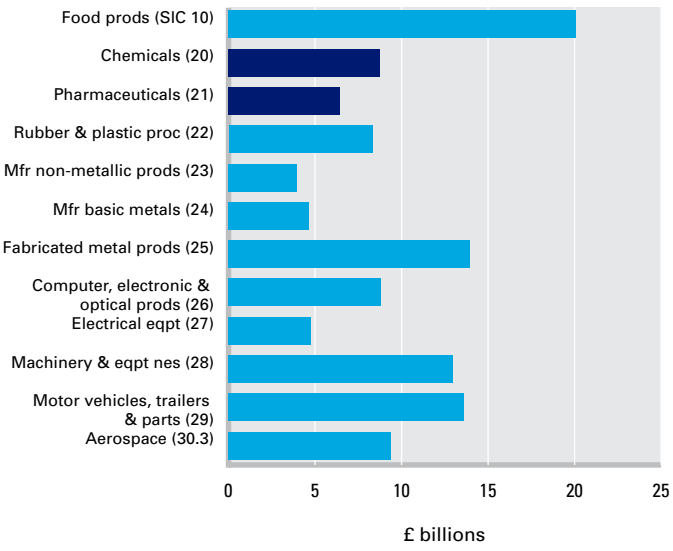
Source: FERI (German consultants) compilation of data from official national statistical agencies and central banks, Eurostat.

Value added: contribution to the UK economy

Value added in UK is £8.8bn for chemicals and £6.4bn for pharmaceuticals. The combined total of £15.2bn represents 1.0% of the £1,525bn gross value added at basic prices for the whole economy.

This is the single most relevant economic statistic which demonstrates the importance of the chemicals sector to the economy – apart from the position of the sector at the head of so many supply chains within manufacturing. Comparative value added for some other sectors: motor vehicles, trailers and parts (SIC 29): £13.6bn; aerospace (SIC 30.3): £9.4bn; computers, electronic and optical equipment (SIC 26): £8.8bn; electrical equipment (SIC 27): £4.8bn; other machinery (SIC 28): £13.0bn; food products (SIC 10): £20.1bn.

We frequently quote the value added per (working) day: £60m per day.



Source: ONS Annual Business Survey and GDP statistics.

Chemicals: making a better world

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The chemical industry is the essential partner for the automotive industry, helping to develop products for today's resource-conscious environment.

Coatings: methyl methacrylate

Airbags: sodium azide

Bumpers: polypropylene

Headlamp lenses: polycarbonate

Fuel tanks: high-density polyethylene

Tyres: solution-styrene-butadiene rubber

Screenwash: ethylene-glycol

Fuel additive: 2,4-Dimethyl-6-tert-butylphenol

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‘The number one manufacturing exporter’

‘A significant employer accounting for half a million jobs’

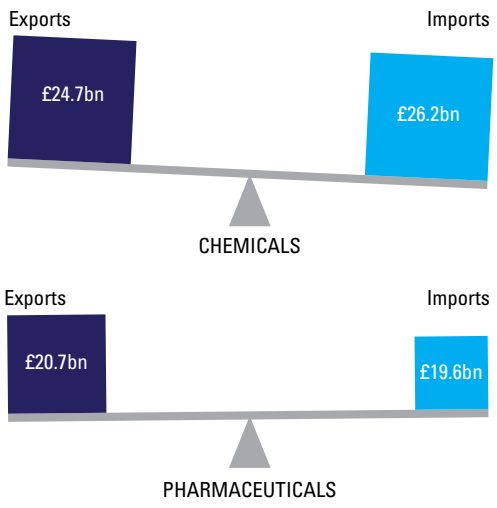
Exports/imports/trade balance

In the 12 months to November 2014, exports of chemicals were £24.7bn and of pharmaceuticals £20.7bn. Corresponding imports were £26.2bn and £19.6bn, giving a deficit of £1.5bn for chemicals and a surplus of £1.1bn for pharmaceuticals. UK accounts for approximately 4% of global exports of chemicals and pharmaceuticals.

The ONS figures are presented on a ‘balance of payments’ basis – the cost of freight and insurance on imports is debited elsewhere. Most international statistics are on a ‘fob/cif’ basis – export values measured as per balance of payments at ‘free on board’, but imports are at ‘cost, insurance and freight’.

Chemicals and pharmaceuticals together accounted for 20% of all UK manufactured exports in twelve months to November 2014. The deficit of £410m contrasted with a deficit in the rest of manufacturing of £80.4bn. The chemical trade balance weakened in 2014 following a surplus of £1.1bn in 2013.

Nonetheless, we are the largest export sector with exports £47.2bn for the chemical and pharmaceutical industry. Automotive exports were £31.5bn and aerospace exports were £24.7bn in 2013.



Source: ONS UK Trade in Goods, HMRC Overseas Trade Statistics, UN trade statistics and Chemdata.

Employment

In Q3 2014 there were 158,000 jobs in the chemical industry (including pharmaceuticals). Jobs increased by more than 10% when we compare this quarter with the same quarter in the previous year.

In Q3 2014 there were 105,000 jobs in the chemical industry and 53,000 in the pharmaceutical industry. Jobs increased by 11% in the chemical industry and 10% in the pharmaceutical industry when comparing this quarter with the same quarter the previous year.

Indirect jobs will include:

- contract staff employed by third parties
- services such as transport, building and plant maintenance
- IT
- legal
- accounting
- finance
- insurance

Also included are employees in downstream industries such as plastics and rubber processing and their ancillary services which would fall away if the UK source of the relevant input were to disappear. A ‘multiplier’ of 3 is typically used when presenting estimates of ‘jobs saved or created’ in support of applications for public funding for chemicals sector projects. In that case we could claim a total of around 500,000 directly and indirectly dependent jobs.

Source: ONS Workforce jobs (Employee jobs plus Self-employed jobs).

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The chemical industry is the essential partner for the energy industry, helping with the most efficient and productive use of raw materials and natural resources.

Wind turbine blades: polyester resin

Solar cells: monocrystalline silicon

Gas pipes: high-density polyethylene

Biodiesel: fatty acid methyl esters

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‘A research intensive sector’

‘A leading investor in re-building productive capacity for the UK’

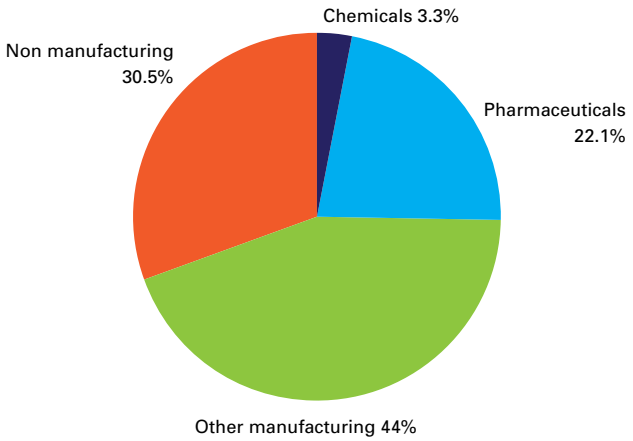
Research and Development intensity and annual spend

Research and Development expenditure by chemical businesses in the UK is £612m and pharmaceutical businesses is £4.1bn. Corresponding turnover figures are £31m and £15.4m, giving intensities of R&D spend to sales of 1.9% and 26.4% respectively.

The high intensity for pharmaceuticals is boosted by the UK hosting a high share of the major global R&D departments, while manufacturing is much less concentrated.

There are around 30,000 full-time equivalent employees in R&D in the chemical industry (7,000 in the chemical industry and 23,000 in the pharmaceutical industry).

Percentage of R&D expenditure across all business enterprise in the UK



Source: ONS, Research and Development in UK Businesses, 2013.

Capital expenditure

Business investment by the chemical industry (including pharmaceuticals) is £4bn, a 7% real terms annual increase.

The quarterly business investment series shows that investment has increased in real terms, now £3.1bn since reaching a low point in 2009.

‘The chemical and pharmaceutical industry is a positive force for good in this country and beyond.

It is the hard work of the men and women who lead and work in chemical and pharmaceutical businesses throughout the UK which is the reason for our outstanding achievements.’

Source: ONS ‘Business Investment’

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January 2015