CBI MARKET SURVEY

THE CHEMICALS MARKET IN THE EU

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This survey was compiled for CBI by ProFound – Advisers in Development in collaboration with Jan Ramakers Fine Chemical Consulting Group.

Report summary

Industrial demand and trends

The European market is becoming increasingly integrated. Only about 25% of total chemical sales takes place domestically, while around 50% of total sales is made within other countries in the EU. The remaining 25% is exported to outside the EU. Industrial demand for chemicals within the EU amounted to an estimated € 565 billion in 2005, with Germany being the biggest EU user.

The chemical market is closely related to the global economic situation. In contrast to the developments in the past few years, in which most chemical industries have been going through a very difficult period, most market experts are quite positive about the current situation, as well as the outlook for the chemicals market in the EU.

Production

In 2005, total EU turnover (domestic and export sales) of chemicals amounted to € 613 billion, representing an average annual increase of almost 3% since 2000. The leading EU producer is, by far, Germany, followed by France and Italy.

While the industry is recovering from difficult periods, companies are examining possibilities to realign their purchasing operations and many are looking at options to purchase more of their raw materials from what they call 'non-traditional' sources. Basically, this means that they are increasingly considering buying from companies outside Europe, USA and Japan, i.e. from developing countries. India and China are in the main focus of their attention, but most companies would certainly consider suppliers in other developing countries. This outsourcing trend offers exporters in developing countries an opportunity to participate in the EU market for chemicals.

Imports

Due to the economic recession in the recent past, the development towards more outsourcing by European countries temporarily came to a halt, but is resuming again. This is also reflected in the current trade statistics, showing a recovery in the imports of chemicals. In 2006, total imports of chemicals (as selected for this survey) by EU member countries amounted to 28.4 million tonnes, representing a value of € 56.2 billion. Total EU exports amounted to € 67.6 billion / € 27.2 million tonnes, reflecting a trade surplus in the EU chemical trade.

Within the selected range of chemicals, inorganic chemicals are in particular sourced in developing countries, although the dyes and pigments and, to a lesser extent, organic chemicals and oleo chemicals are also increasingly imported from developing countries. In 2006, 7.1% of overall chemical imports (in value) originated in developing countries. Inorganic chemicals and dyes and pigments are largely low-value chemicals which are relatively easy to produce, hence the shift to developing countries, where low labour costs provide a competitive advantage.

Trade structure

Custom or contract manufacturing appears an attractive strategy for exporters in developing countries, provided, of course, that a suitable trading partner can be identified and is willing to cooperate. In cases where no contract manufacturing is involved, the best way to approach the EU market is often to go through importers or distributors. Although it reduces the profit margin, it has many advantages, like a low payment risk, and no worries about the logistics needed to deliver the product to the customers.

An important development that needs further monitoring is the use of e-Business. A number of e-commerce initiatives has emerged in recent years for the more specialised products in the fine and specialty chemicals market. However, so far, none of these have been successful. Typically, the products traded were too specialised and consequently the volumes too low to

finance the e-commerce initiative. Nevertheless, a number of B2B platforms is emerging in exporting developing countries, particularly China and India.

This report should be read in conjunction with other CBI publications. Additional information can be found on the CBI website (http://www.cbi.eu).

Introduction

This CBI market survey profiles the chemicals market in the EU. The emphasis of the survey lies on those products, which are of importance to developing country suppliers. The role of and opportunities for, developing countries are highlighted.

This market survey discusses the following product groups:
- Organic chemicals;
- Dyes and pigments;
- Oleo chemicals, surfactants and derivatives;
- Inorganic chemicals.

For detailed information on the selected product groups, please consult appendix A. More information about the EU can be found in appendix B.

CBI market surveys covering the market in specific EU member states, specific product(group)s or documents on market access requirements, can be downloaded from the CBI website. For information on how to make optimal use of the CBI market surveys and other CBI market information, please consult 'From survey to success - export guidelines'. All information can be downloaded from http://www.cbi.eu/marketinfo Go to 'Search CBI database' and select your market sector and the EU.

1 Industrial demand

This chapter discusses the industrial demand for chemicals in the EU. A large part of chemical industrial demand, particularly for chemicals imported from developing countries, is in the form of intermediate inputs rather than final (consumer) demand. Consequently, the chemicals market is a typical business to business (B2B) market, and issues relevant to consumer products (such as fashion, design and product presentation) do not have a direct impact on the market. Nevertheless, demand for chemical intermediates is obviously determined by developments in the market of the final products.

1.1 Market size

The chemical market is closely related to the global economic situation. In contrast to the developments in the past few years, most market experts are quite positive about the current situation, as well as the outlook for the chemicals market in the EU. In general, growth in the market for chemicals is roughly in line with the development of the GDP, with the exception of the pharmaceutical industry, which has managed to achieve higher growth rates during the past few years.

Total EU market

CEFIC (European Chemical Industry Council) data on the value of industrial demand from 2001-2005 are presented in the table below. These data refer to the overall industrial demand for chemicals; a more detailed breakdown of the selected product groups is not available. The main observations which can be made with regard to Table 1.1 are:

- Industrial demand for chemicals within the EU amounted to an estimated € 565 billion in 2005, representing an average annual growth of 3.3% since 2001.
- For 2006, CEFIC expected domestic demand for chemicals to increase by 4.6%, mainly driven by the favourable business climate in most EU member countries.
- Germany is the leading EU chemical consuming market, with a share of 22% of total EU demand. Other major EU markets are Italy with a share of 16%, France (15%), the UK (13%) and Spain (9%).
- Although industrial demand in the new EU member states is relatively small, these markets become increasingly interesting, with an average annual growth rate of 9% between 2001 and 2005.
- The countries with the highest average annual growth rates can be found among the 10 new EU member states: Slovakia (+13%), Czech Republic (+12%), Lithuania (+11%), Hungary (+10%) and Estonia (+9%).

Table 1.1 Industrial demand for chemicals (including pharmaceuticals) in the EU25, 2001-2005, in € million

	2001	2002	2003	2004	2005	Average % value change	Share in %
EU25	**496,581**	**501,226**	**507,835**	**528,973**	**564,598**	**3%**	
EU15	466,660	468,910	473,788	491,453	521,869	3%	92%
EU10	29,921	32,315	34,047	37,521	42,729	9%	8%
Germany	109,824	109,054	108,971	112,168	121,992	3%	21.6%
Italy	74,273	78,336	79,879	83,562	87,261	4%	15.5%
France	75,224	74,590	78,022	80,674	86,449	4%	15.3%
United Kingdom	70,275	69,695	64,157	67,167	71,544	0%	12.7%
Spain	44,215	45,362	47,518	50,542	51,647	4%	9.1%
Belgium	23,538	22,149	23,245	23,118	25,435	2%	4.5%
The Netherlands	19,838	18,828	19,988	20,389	23,259	4%	4.1%
Poland	13,241	13,556	13,362	15,434	17,136	7%	3.0%
Sweden	10,872	10,561	10,915	11,106	12,417	3%	2.2%
Czech Republic	5,627	6,160	6,583	7,023	8,824	12%	1.6%

	2001	2002	2003	2004	2005	Average % value change	Share in %
Austria	8,548	8,148	8,670	8,746	8,735	1%	1.5%
Finland	6,224	6,252	6,593	7,465	7,957	6%	1.4%
Portugal	6,874	7,164	7,332	7,748	7,685	3%	1.4%
Hungary	4,706	5,032	5,957	6,186	6,935	10%	1.2%
Greece	5,215	5,426	5,605	6,117	6,271	5%	1.1%
Denmark	5,338	5,640	5,421	4,933	5,809	2%	1.0%
Ireland	6,404	7,707	7,471	7,718	5,409	-4%	1.0%
Slovenia	2,690	2,963	3,142	3,249	3,425	6%	0.6%
Slovakia	1,973	2,056	2,323	2,760	3,250	13%	0.6%
Lithuania	670	713	769	836	1,010	11%	0.2%
Estonia	515	525	615	680	728	9%	0.1%
Cyprus	562	555	560	589	600	2%	0.1%
Latvia	n.a.	537	504	522	540	-	0.1%
Malta	n.a.	219	233	242	282	-	0.0%

Source: CEFIC (2006)
Note: EU totals for 2001 do not include figures for Latvia and Malta

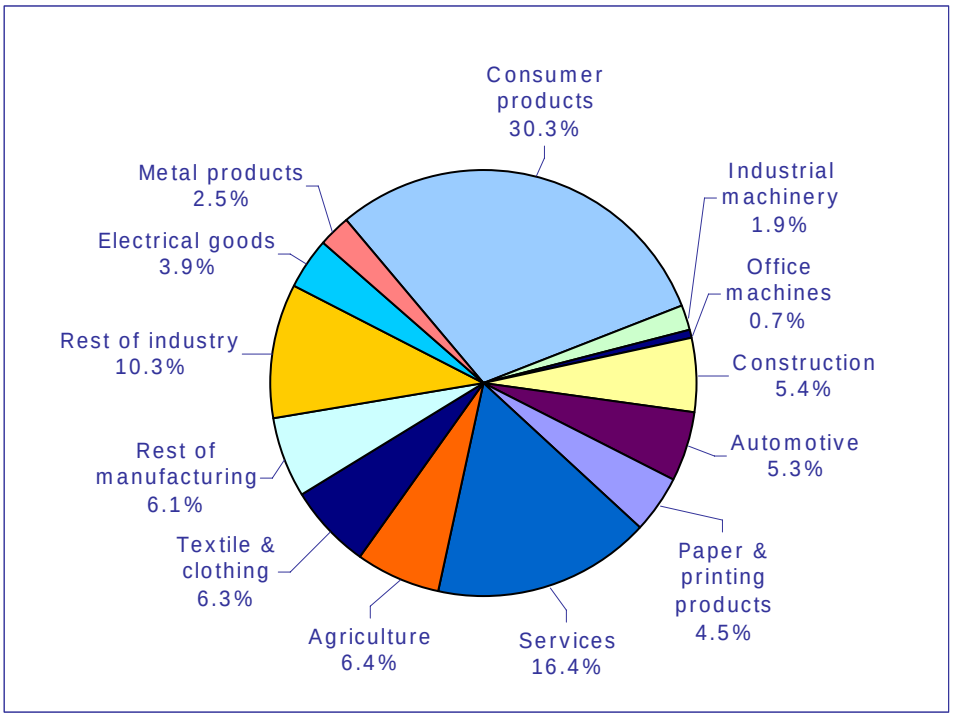
1.2 Market segmentation

Origin of demand

The reallocation of internal consumption by the chemical industry and consumption by the rubber and plastic processing industries, produces the following picture of the chemicals consumption structure:

- A large part of the chemicals (30.3%), becomes part of consumer products (e.g. aromatics, preservatives and detergents) or is sold as a consumer product directly (e.g. sodium chloride). Other major destinations are services (16.4%) and agriculture (6.4%).
- The big industrial users of chemicals are the textiles & clothing, the automotive, the paper & printing products, the metal and the mechanical & electrical industries.

Figure 1.1 Origin of EU* demand, in % of total domestic consumption



Source: CEFIC (2006)
* data refer to EU15

1.3 Patterns and trends in industrial demand

Industry relocation
Most of the chemical companies operate production facilities in multiple countries. The adverse economic conditions of the past few years have triggered many companies to rationalise their manufacturing capabilities. In some cases, parts of sites or even complete sites have been shut down, and production transferred to other sites of the same company. Those sites are not necessarily in the same country or even on the same continent, which means that some production was transferred into the EU, some out of the EU, and some from one EU country to another. All of this leads to apparent changes in production and demand (for raw materials) on a 'by-country' basis.

Demographic and socio-economic factors
High growth in the demand for pharmaceuticals partly reflects the aging population in the EU. Low birth rates and increasing life expectancy imply an increasing fraction of elderly people with a relatively high demand for health care services. The pharmaceutical industry is coming up with new products of ever increasing complexity which, due to their higher prices, put enormous pressure on health care budgets. Whereas the complex pharmaceutical products themselves are produced in the EU or other developed countries, pressures to achieve cost reduction imply that, at least at the lower end of the value chain, more and more production is shifting to developing countries. As the complexity increases at the upper end of market, the lower end of the market is also becoming increasingly sophisticated. Further outsourcing therefore implies opportunities for developing countries to add more value to their products before exporting.

Environmental factors
Issues around safety, health and environment have had an ever-increasing impact on the global chemical industry in recent decades. European consumers demand high social and environmental standards for the products they consume, which, among other consequences, has led to the development of various eco-labels based on product-life cycle analyses. See chapter 10 for details on how this may affect demand for your products.

An increasing number of companies is putting continuous effort into replacing damaging chemicals with new products, or in recycling them. As a result, smaller quantities of products which have a negative impact on the environment are being used, and demand is shifting towards products which have less impact on the environment. Many additives to plastics, paints and other materials are under constant scrutiny.

For example, organic solvents traditionally used in coatings have been under pressure for the last 25 years and, as a result, many paint and coating systems are now water-based, or use significantly less solvents. Those which are based on organic solvents, because water is not an alternative in some systems, are using less toxic solvents. Also, powder coatings are being increasingly used in an ever-expanding number of applications. Some toxic dyes and pigments have also been banned. The majority of these changes has taken place on a global scale.

Innovations and product development
In general, patent protection is seen as a necessary means to encourage companies to invest in new inventions. In the pharmaceutical industry, huge sums are invested in research activities to innovate and actually develop new medicines. However, once a patent has expired, usually after 20 years, drugs may be produced by other manufacturers, generally leading to a much lower price. These so-called generic drugs are becoming more and more important on the EU market, as national and private health services attempt to contain or reduce spending on medicines. In addition, the demand for and development of self-medication products, in particular herbal remedies, vitamin and mineral supplements, is growing rapidly.

Product quality
Despite higher prices of exports compared with import prices, successful quality competition has led the EU to being a net exporter. Moreover, quality has become the most strategic instrument of EU chemical producers for creating a competitive advantage. This strategy creates a tendency towards the development of increasingly complex and high-value chemicals in the EU. Another effect results from the fact that these new products are specifically developed for a certain purpose, and therefore are required in smaller quantities, thus having a reduced impact on the environment. This applies to all chemicals, including chemicals used as pharmaceuticals and coatings.

Globalisation
The ongoing globalisation, resulting from the removal of tariff barriers, has a major impact on the prices of chemicals. The resulting increase in competition has a downward effect on prices. A good example is the situation in agrochemicals. Due to globalisation, farmers in the EU are increasingly competing with farmers all over the world, for example the USA. This puts pressure especially on the EU farmers, because they tend to operate on a much smaller scale than US farmers do. Unless EU farmers reduce their costs, their crops will not be competitive on a global level. This pressure results in a similar pressure on the prices for agrochemicals and their required intermediates.

1.4 Opportunities and threats

Opportunities for and threats to exporters of chemicals in developing countries:
***Opportunities*:**
• Although the EU chemical industry has recently gone through an economically tough period, the prospects for the present and the future are more positive, creating (new) opportunities for developing country exporters. • Generic drugs and medicines in general are becoming more important, resulting in an increasing demand for pharmaceutical chemicals. • The new EU member states have very high growth rates in industrial demand.
***Threats*:**
• Increasing complexity of products. • Demand for chemicals is strongly related to factors like economic development and energy prices. • Increasing quality requirements.

1.5 Useful sources

Organisations offering information sources, or which can be contacted to obtain information are:
- CEFIC (European Chemical Industry Council) – http://www.cefic.org
- AISE (International Association of the Soap and Detergent Industry) – http://www.aise-net.org
- CEPE (European Council of the Paint, Printing Inks and Artists' Colours Industry) – http://www.cepe.org
- EFMA (European Fertilisers Manufacturers Association) – http://www.efma.org
- EFPIA European Federation of Pharmaceutical Industries and Associations) – http://www.efpia.org
- APPE (Association of Petrochemicals Producers in Europe) – http://www.petrochemistry.net
- FEICA (Association of European Adhesives Manufacturers) – http://www.feica.com
- AEGSP (The Association of the European Self-Medication Industry) – http://www.aesgp.be
- GPUE (Pharmaceutical Group of the European Union) – http://www.pgeu.org

Online news sources:
- ICIS Chemical Business – http://www.icis.com / http://www.icischemicalbusiness.com
  ICIS (incorporating the former European Chemical News (ECN) and the former Asian

Chemical News) offers a comprehensive range of services and publications, online and in print, as well as new interactive formats like the Internet TV.

- Chemistry & Industry – http://www.chemind.org
  From its perspective at the science, commerce and industry interface, *C&I* magazine offers a mix of news, reviews, features and research highlights. *C&I* magazine also provides a finance tracker with Stock Price Indices.
- A source of global trends in the chemicals market, which often apply to the EU market as well, is Chemical & Engineering News - http://pubs.acs.org/cen/

Please refer to the CBI market surveys covering the chemicals market in individual EU countries for links to the website of the national chemical association in the individual EU member counties.

2 Production

2.1 Size of production

This chapter provides an overview of the chemical industry in the EU and discusses trends in production. Please note that, in this chapter, the term 'turnover' will be used to measure the value of production.

The chemical industry is of substantial importance for the economy of the EU. In fact, the EU is the world's leading producer of chemicals, accounting for 30% of the total worldwide sales (CEFIC, 2006). The EU chemical industry is also a major employer, with approximately 1.9 million people working at some 31 thousand chemical industry companies, which is equivalent to 6% of the overall workforce in the manufacturing industry.

Most chemicals covered in this survey are not produced in dedicated production facilities. Typically, chemical plants for the manufacture of fine or specialty chemicals are set up in such a way that it is possible to switch between various products. Some plants can produce a number of products within the same product family, and are normally referred to as multi-product plants. Other production facilities have a very high degree of flexibility, and a modular build-up. They consist of a number of units, each performing a specific chemical reaction (normally referred to as 'unit operations'). These units (so-called multi-purpose facilities) are often found in companies which manufacture intermediates for agrochemicals and pharmaceuticals.

Table 2.1 presents an overview of the EU25 turnover of chemicals between 2001 and 2005 (CEFIC, 2006). In 2005, total EU25 chemicals turnover (domestic and export sales) amounted to € 612.8 billion, representing an average annual increase almost of 3% since 2001. The leading EU producer is, by far, Germany, accounting for about 25% of total EU25 chemical turnover in 2004. Other important EU producers are France (16%) and Italy (13%).

With the exception of Belgium and Slovakia, which reported an average annual decrease of 2% and 13% respectively, all EU25 member states managed to increase or maintain their turnover between 2001 and 2005. Most noticeable is the increase in turnover of the 10 new member states which had a total average annual increase of 9% over the same period, reflecting the growing dynamism of their economies.

The European market is becoming increasingly integrated. Only about 25% of total chemical turnover (excluding pharmaceuticals) is sold domestically, while around 50% of total turnover takes place within other countries in the EU. The remaining 25% is exported to countries outside the EU.

Table 2.1 Turnover* of chemicals (including pharmaceuticals) in the EU, 2001-2005, € million

	2001	2002	2003	2004	2005	Average % value change	Share in %
EU25	**537,153**	**542,698**	**553,585**	**586,601**	**612,750**	**3%**	
EU15	516,550	521,268	531,303	557,596	583,926	3%	95%
EU10	20,603	21,430	22,282	29,005	28,824	9%	5%
Germany	133,887	132,495	136,428	142,126	152,833	3%	24.9%
France	85,105	84,729	88,127	93,700	95,709	3%	15.6%
Italy	66,036	68,042	68,141	70,317	76,654	4%	12.5%
United Kingdom	56,601	53,579	48,984	51,153	57,605	0%	9.4%
Spain	37,471	37,903	39,337	41,648	43,215	4%	7.1%
The Netherlands	32,138	32,300	33,952	36,382	40,000	6%	6.5%

	2001	2002	2003	2004	2005	Average % value change	Share in %
Belgium	42,378	42,760	44,216	47,300	38,947	-2%	6.4%
Ireland	26,103	31,549	32,484	34,212	34,549	7%	5.6%
Sweden	12,417	12,667	13,655	14,368	14,680	4%	2.4%
Poland	7,673	7,785	7,835	10,530	10,215	7%	1.7%
Denmark	7,374	7,769	8,112	7,261	8,022	2%	1.3%
Austria	5,317	5,563	5,531	5,572	7,882	10%	1.3%
Finland	5,446	5,404	5,612	6,388	6,624	5%	1.1%
Hungary	2,988	3,256	3,426	5,914	5,877	18%	1.0%
Czech Republic	3,059	3,335	3,435	4,045	5,620	16%	0.9%
Portugal	3,797	3,919	4,029	4,366	4,292	3%	0.7%
Slovenia	2,691	2,918	3,317	3,463	3,775	9%	0.6%
Greece	2,481	2,589	2,695	2,802	2,914	4%	0.5%
Slovakia	3,276	3,200	3,247	3,852	1,877	-13%	0.3%
Lithuania	313	349	397	474	610	18%	0.1%
Estonia	213	191	235	288	358	14%	0.1%
Cyprus	174	178	175	199	199	3%	0.0%
Latvia	148	151	146	157	190	6%	0.0%
Malta	69	68	70	82	102	10%	0.0%

Source: CEFIC (2006)
* Turnover is calculated as the aggregate of domestic and export sales

It should be noted that it is extremely difficult to assess the market for a specific chemical substance. The Harmonised System (HS) groups chemicals by composition and not by function. Within an HS code, chemical substances are essentially different products and may have different functional properties. This also implies that complex intermediates and basic intermediates may in fact be put together in one HS group, only because they have the same chemical components. As a consequence, it is difficult to describe the production of chemical intermediates in the European countries, as it is not possible to tell whether these intermediates are in fact competing with chemicals produced in developing countries.

Turnover by product group

CEFIC classification of the chemicals market covers 4 wide ranges of products: base chemicals, speciality and fine chemicals, consumer chemicals, and pharmaceuticals. Table 2.2 presents a detailed sectoral breakdown of these chemicals sectors. Based on these data, the following observations can be made:

- Measured in total EU turnover (€ 612 billion in 2005), base chemicals, with a share of almost 40%, comprise by far the largest chemical sector. Base chemicals are produced in large volumes, and are mostly sold to the chemical industry itself or to other industries. Between 2004 and 2005, this group of base chemicals increased by a considerable 7%. Plastics & synthetic rubber and petrochemicals are the leading categories within this group of chemicals.
- Specialties cover the auxiliaries for industry, dyes & pigments, oleo chemicals, crop protection, and paints & inks. The group of fine chemicals comprises pharma-, agro-, and chemical intermediates. These two chemicals groups are produced in small volumes, but represent 28.2% of total EU chemicals turnover. Between 2004 and 2005, this group showed the largest increase in sales (+9%).
- Pharmaceuticals represent both basic pharmaceutical products and pharmaceutical preparations, but not pharmaceutical intermediates. This group is the only one which showed a decrease between 2004 and 2005 (-3%).
- Consumer chemicals are sold to end-consumers in the form of soaps and detergents, perfumes and cosmetic products. They represent 10.1% of total EU chemicals turnover. Turnover between 2004 and 2005 remained relatively stable.

Table 2.2 Sectoral breakdown of chemicals turnover in the EU, 2004-2005, EU sales in € billion, change in % of sales, share in total EU sales

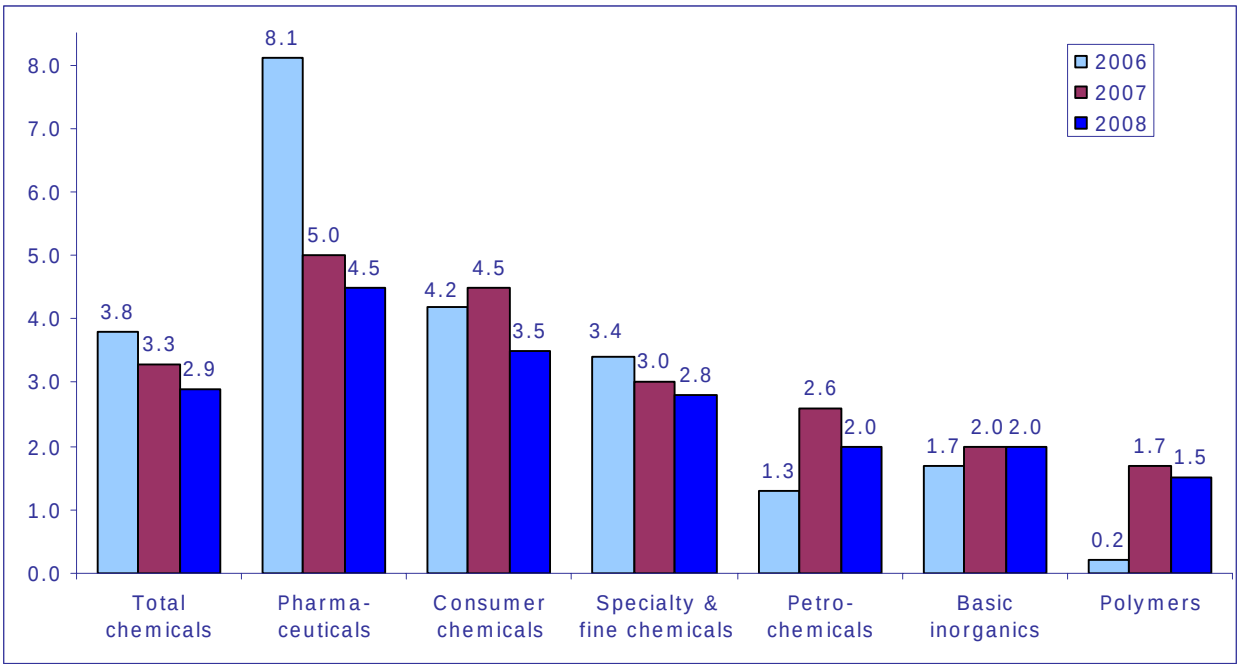
Sector	Sales 2004	Sales 2005	Change in %	Share in 2005 sales
Total turnover EU25	**586**	**612**	**+4%**	
Base chemicals	**221**	**236**	**+7%**	**39%**
• Plastics & synthetic rubber	95	101	+6%	16%
• Petrochemicals	69	74	+8%	12%
• Fertilisers	15	16	+7%	3%
• Man-made fibres	12	13	+10%	2%
• Industrial gases	10	11	+5%	2%
• Other basic inorganics	21	22	+3%	4%
Specialty and fine chemicals	**158**	**173**	**+9%**	**28%**
• Paints & inks	36	38	+4%	6%
• Crop protection	10	10	+3%	2%
• Other specialty chemicals	80	83	+4%	14%
• Fine chemicals	32	42	+30%	7%
Pharmaceuticals	**146**	**142**	**-3%**	**23%**
Consumer chemicals	**61**	**62**	**+1%**	**10%**
• Perfumes & cosmetics	35	35	0%	6%
• Soaps & detergents	26	27	+2%	4%

Source: CEFIC (2005 and 2006)

Outlook

According to CEFIC, the total chemical industry (including pharmaceuticals) is expected to have increased by 3.8% in 2006. For 2007 and 2008, a slight slowdown in output is expected, dropping to growth rates of 3.3% and 2.9% respectively.

Figure 2.1 Outlook for the EU chemical industry, 2006-2008, expected growth rate in % of production volume



Source: CEFIC (2006)

With respect to the chemical sectors as classified by CEFIC, pharmaceuticals and consumer chemicals are expected to perform particularly well in 2007 and 2008. Pharmaceutical production should continue to develop above the average, by 5.1% in 2007 and 4.5% in 2008.

According to CEFIC (2006), the EU chemicals industry experienced a positive development during 2006, which was mainly due to a strong domestic demand and dynamic growth of trade activities with the major EU trade partners.

On the whole, however, expectations for the years 2007 and 2008 are less positive than for the year 2006. With the exception of basic inorganics, all chemical sectors are expected to show a downward trend in 2008, after having reached a high level in 2006 and, although less impressive, in 2007.

2.2 Trends in production

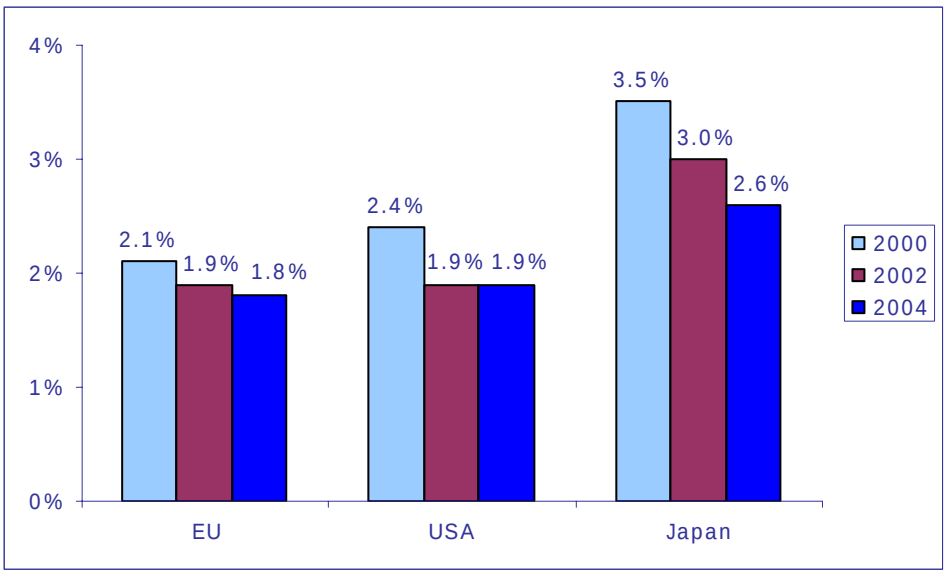
Research and development

Research and technical development (R&TD) can be seen as a key element for securing the future of the chemical industry, since it promotes the adaptation to, and development of, new technologies. Wide variations in R&TD efforts are observed across the chemical industry. R&TD is strongest in pharmaceuticals and in life sciences.

Figure 2.2 shows the share of EU15 spending on R&TD in chemicals (excluding pharmaceuticals) sales for the period 2000-2004. For comparison reasons, the shares for the USA and Japan are also provided. Two things become clear from the graph: firstly, Japan and, to a lesser extent, the USA spend more on R&TD than the EU and, secondly, R&TD spending decreased in all three regions during the period 2000-2004.

This decline was mainly caused by the adverse economic developments in the recent past and the subsequent low profit margins for chemicals companies. The cutbacks in the R&TD mostly have an effect on the long-term research, while expenditures on process research and guidance often remain unattached. The cutbacks and cancellation of long-term research are particularly popular among the management of companies, since it is has an immediate positive effect on the company results (profit margin). As soon as the economic situation shows signs of recovery, companies steadily (re)start to initiate long-term research projects.

Figure 2.2 Chemical industry R&TD spending in the EU, the USA and Japan, 2000-2004, in % of sales



Source: CEFIC (2006)

Concentration

In 2005, almost half (13) of the world's 30 largest chemicals companies (excluding pharmaceuticals) had their headquarters in the EU, and together they accounted for almost 50% of the top-30 global chemicals sales. Many of the large producers of chemicals in Europe are active in a variety of segments in the industry, while other companies tend to specialise in certain areas, selling off those activities which they no longer consider to be their core business.

Many of the large chemical companies started in the pioneering countries like Germany, the UK, and The Netherlands, and still have their headquarters there. Examples include companies like Bayer, BASF, Degussa (Germany), DSM, Shell and Akzo Nobel (The Netherlands), and ICI (United Kingdom). Over the past decade, the chemical sector in Europe became dominated by a handful of large companies, which further developed their activities throughout the EU. In the years after political changes in the East European countries, many large West European chemical producers have acquired chemical companies and/or manufacturing facilities in those countries.

Particularly the paint industry, for example the decorative paints and industrial coatings sectors, has undergone considerable changes in recent years. It moved from being an industry characterised by a fragmented national structure of small and medium-sized enterprises to one which at the end of the 1990s, had an increasing number of large, multinational players. As an illustration, in the United Kingdom more than 80% of the decorative paints market is in the hands of the three largest producers. This may partly be caused by trends among downstream industrial customers like automotive and packaging manufacturers. These manufacturers increasingly expect service from multinational paint suppliers. Please refer to chapter 8 for more information about 'contract manufacturing'.

Outsourcing of intermediates

In addition, a very significant trend these days is cost reduction by means of outsourcing. The more advanced, complex intermediates tend to be outsourced to European or US companies, while more basic intermediates are increasingly outsourced to companies in developing countries.

Responsible care

One good example, initiated by the chemical industry itself, is the Responsible Care ethics, which promote safer, healthier and more environment-friendly business processes. This initiative is not obligatory by law, but in most countries Responsible Care is a precondition for membership of the national association of chemical producers. Companies which are not committed to Responsible Care will often have more difficulty in finding customers in the EU. Among other things, Responsible Care requires more transparent trade procedures and a more rigorous inspection of the traded goods through the entire value chain. This will translate into various measures for suppliers. For example, stricter requirements for tracking and tracing by an importer committed to Responsible Care, could require its suppliers to improve their labelling. For more information, please refer to http://www.responsiblecare.org/.

Environmentally friendly products

Not only the production processes used in the chemical industry are often damaging to the environment. Many of the actual products from the chemical industry also place a heavy burden on the environment. EU legislation aims to influence chemical production in favour of more environment-friendly products. Paints serve as a clear example. There are 2 types of paint: paint based on solvents and paints based on water. The first type of paint often has a large negative impact on the environment, while the impact of water-based paints is more neutral. Directive 1999/13/EC on volatile organic compounds sets rules for the limitation of emissions of organic solvents. The legislation and demand from the users have pressured paint

manufacturers to develop water-based paints with performance similar to solvent-based paints.

REACH

It is expected that the REACH system (Registration, Evaluation and Administration of Chemicals), appplicable as from June 2007, will have various consequences for producers and importers of chemicals in both developing and developed countries producing more than 1 tonne chemical substance per year. The complexity of REACH will place a burden on the chemical industries in developing countries, as greater responsibility for the entire supply chain will be imposed on producers. Sufficient knowledge needs to be built up in order to supply the required information for registration of substances. This can be a costly procedure and can have damaging effects on small and medium size enterprises in developing countries. This also means that a number of chemicals can no longer be used in the EU, since obtaining all the required documents will be too costly.
For more information on REACH, please refer to http://www.cbi.eu/marketinfo

2.3 Opportunities and threats

Opportunities for and threats to exporters in developing countries:
***Opportunities*:**
• Trend towards outsourcing of production to other countries/regions. • Relatively high production costs in the EU.
***Threats*:**
• Increasing concentration of big chemical multinational enterprises. • High level of European research and technical development (R&DT). • The move towards more environmentally friendly products limits demand for certain raw materials, such as organic solvents. • Although nobody knows what the exact effects will be, it is definitely clear that REACH will have far-reaching consequences for the chemical industry in the EU.

2.4 Useful sources

- CEFIC (European Chemical Industry Council) – http://www.cefic.org
- Eurostat PRODCOM database – http://epp.eurostat.ec.europa.eu/portal/page?_pageid=0,1136195,0_45572097&_dad=portal&_schema=PORTAL
  Go to: 'Statistics by product'.
- AISE (International Association of the Soap and Detergent Industry) – http://www.aise-net.org
- CEPE (European Council of the Paint, Printing Inks and Artists' Colours Industry) – http://www.cepe.org
- EFPIA European Federation of Pharmaceutical Industries and Associations) – http://www.efpia.org

3 Trade channels for market entry

3.1 Trade channels

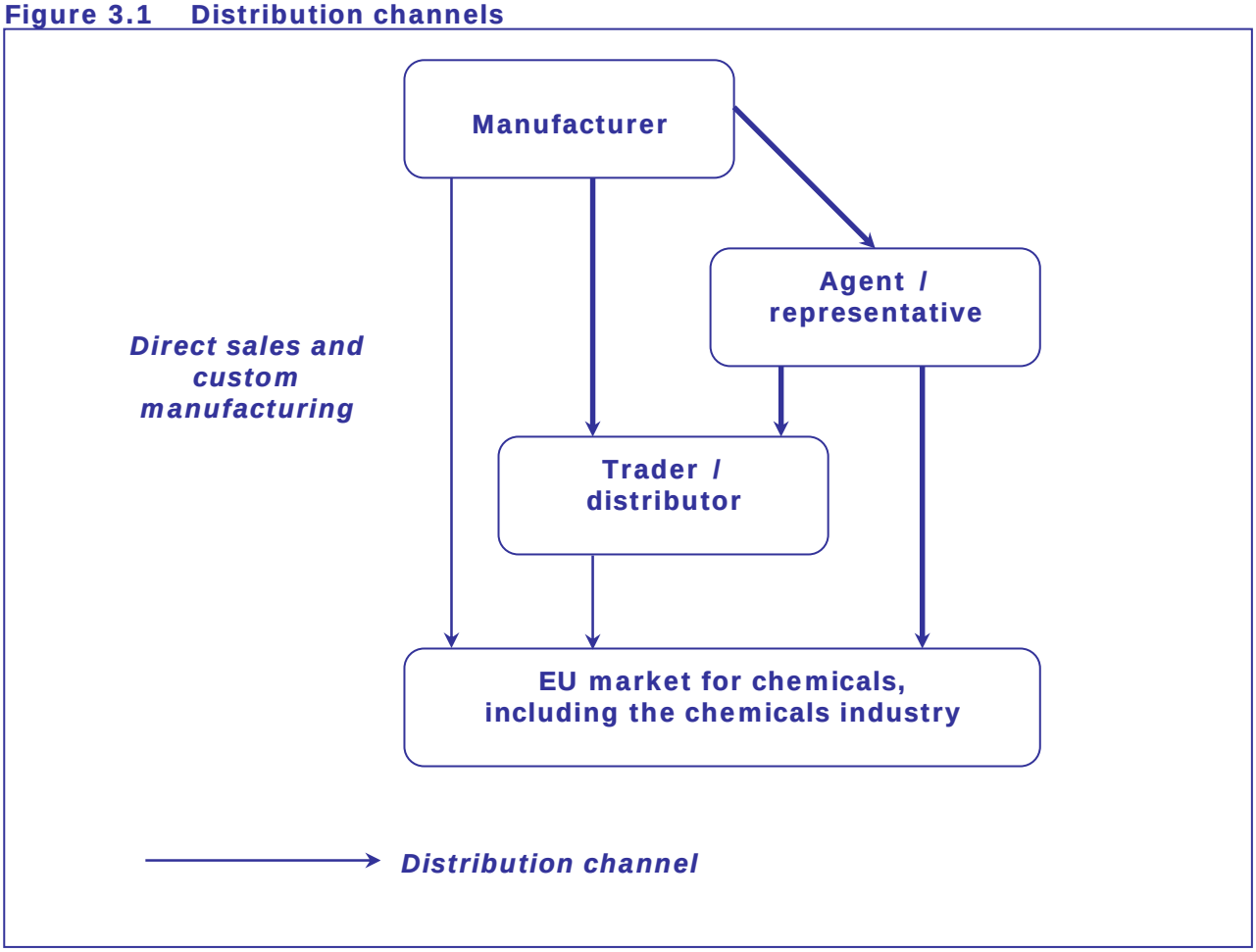
All the large chemical companies in the EU operate on a global level rather than on a national level and are mainly involved in business-to-business activities.

They are Increasingly involved in outsourcing and the establishment of partnerships and alliances. Apart from the fact that the major trading hubs for chemicals in Europe are located in The Netherlands and Germany, there are no major differences between the ways chemicals are traded in the various EU member countries (including the new accession countries). In fact, most companies operate subsidiaries in multiple countries. Please refer to the CBI market surveys covering the chemicals market in individual EU countries for names of the major players located in the individual EU member countries.

There is a number of routes which lead from a producer of chemicals to the final customer. The options for the producer of chemicals are:

- Direct sales to the (industrial) end-user
- Sales via distributor or importer
- Sales via agent
- Sales via manufacturer's representative
- Sales via trader
- Custom manufacturing
- E-business

Figure 3.1 Distribution channels



As indicated with bold arrows in the above figure, the main distribution channels are agents, representatives, traders and distributors. Each of the options mentioned, however, has its specific advantages and disadvantages. If a producer sells **directly to the industrial end-user**, the producer company will get higher margins, direct feedback from the customer, and market knowledge. The downside, however, is that the marketing costs of this approach are very high. The exporter will have to initiate, build, and maintain the relationship with the customers, including visits etc. This can be very expensive, especially for producers which are located at a far distance from the EU. When supplying directly to a customer, the producer will also have to take care of all the logistics involved in getting the product to the customer. Last but not least, the payment risk is higher in this case.

A **distributor or importer** buys products from a producer, and sells these on to his customers. The advantage of this approach is that the producer does not have to search for customers himself, he does not have to take care of the logistic aspect and there are no marketing costs involved. All these issues are taken care of by the distributor. Furthermore, the distributor or importer also pays the producer, which makes the payment risk low. The downside is that the producer does not gain customer contact and/or market knowledge, because these 'belong' to the distributor. He also takes part of the added value, so the producer has a lower margin.

Information about distributors in the most important countries in Europe for chemicals can be found at the website of the European Association of Chemical Distributors (http://www.fecc.org). The site gives links to the websites of the various national associations of distributors. Those sites provide lists of their member companies with details and often links to their individual websites.

Agents sell the product on behalf of the manufacturer. After selling a product, they pass on the order to the manufacturer, who then supplies the product. The manufacturer invoices the client, and pays a commission (pre-arranged percentage of the sales value) to the agent. Most agents will also take care of the logistics (for a fee). This distribution channel is roughly a combination of the previous two. A typical problem when working with agents is that the agent is often split up between being loyal to his principal (the manufacturer) and his clients.

The manufacturer's **representative** works for one company and acts as their local office. It can be quite expensive, especially if the export value is not very high, because the representative is paid on a time basis, rather than on a performance basis. Even if he or she does not sell anything, they will still have to be paid.

Traders are only interested in buying and selling products; that is their business and the sole source of their income. They never see any product, and sometimes they resell products within the hour. They are normally only interested in larger quantities of material. Their margin per tonne is low and hence they need high volumes to generate sufficient income.

The above-mentioned trade chain options are used for all market segments described in this report, with the exception of tailor-made intermediates for agrochemicals and pharmaceuticals (custom manufacturing). The latter are based on a one-to-one contract between supplier and customer. There are no major variations between EU member states.

In general, large imports are handled through local agents, who are familiar with local culture. In addition to the agents, distributors are often used to serve niche markets in the same country. From the perspective of the end-users, who need a lot of different performance chemicals, it is clear that they prefer to buy the chemicals from one source. Consider a paint producer as an example. Apart from the resin which forms the basis of the paint, this manufacturer will need pigments, fillers, dryers, flow improvers, anti-skinning agents, stabilisers, and so on. There are no companies which produce all these chemicals, but there are distributors who are able to obtain these materials from a variety of different companies. This situation is ideal for the paint manufacturer in question. He can go to the distributor and

buy a complete package of all the products he needs without having to deal with a dozen or so different companies. The distributor, therefore, plays a key role in the chemical sector.

Custom manufacturing is becoming increasingly popular in the chemical manufacturing industry. In this case, a producer manufactures a specific product for another chemical company. Typically, production is always covered by a contract, and the product is only supplied to the contract partner. Contract manufacturing can be done in a number of ways. The two 'extreme' cases are:

- The supplier (i.e. the company doing the custom manufacturing) obtains the starting materials from the customer and converts them into the desired product. This is often referred to as 'toll conversion'.
- The supplier sources the starting materials and does the conversion, using their own technology. This is often referred to as custom manufacturing.

There are many possibilities in between these two extremes, with various degrees of involvement of the customer company. Essential in all cases of custom manufacturing, however, is that it can only be done through direct contact between the customer and the supplier. No third parties are involved in this process.

E-business has become increasingly popular across a wide range of industries, including the chemical industry. However, in the chemical industry, e-commerce has so far been mostly limited to large commodity products and polymers. The larger companies which are active in those markets are working with global e-commerce companies. A prime example is Elemica (http://www.elemica.com), a global chemicals and plastics industry network hub which facilitates the buying and selling of a broad range of products. Elemica enables suppliers which have multiple trading partners in the chemical industry, to achieve a distinct competitive advantage and reduce their overall costs. Its major strength is to provide an efficient and cost-effective way to transact repeat order processing for the contract buying / selling of chemicals.

More generally, the main driving forces for using e-business in the chemical industries differ quite substantially from sub-sector to sub-sector, as the chemical industries are very diverse. Commodity-producing companies in the basic chemicals industry, for example, place different expectations on e-business than R&D-intensive pharmaceutical companies. In general, four major objectives for e-business in the chemical industries can be identified:

- Decreasing processing costs
- Speeding up information flows
- Improving information about the market
- Extending the market

Chemical companies cooperate online with external business partners to a comparatively large extent. This is first of all an indication of the strong interconnection in the chemical supply chain. Typical Value Chain activities using e-tools include:

- Online collaboration with business partners for designing products
- Online collaborating with business partners to forecast product demands
- Online management of capacity/inventory
- Electronic exchange of documents with suppliers
- Electronic exchange of documents with customers
- Online negotiations of contracts.

A number of e-commerce initiatives has emerged in recent years for the more specialised products in the fine and specialty chemicals market. So far, however, none of these has been successful. Typically, the products traded were too specialised and, consequently, the volumes were too low to finance the e-commerce initiative. Although some industry insiders doubt whether e-commerce is going to make huge inroads into the fine and specialty chemicals sector in the near future, these developments should be watched closely as they could potentially simplify the way in which developing countries can make deals with companies in the EU.

For example, a number of B2B platforms is emerging in exporting developing countries, particularly China and India. B2B marketplaces in China and Asia are aiming at directly connecting suppliers of (bulk) chemicals to interested parties in Europe and worldwide. Although less sophisticated in the services offered and technology used (e.g. no integration into supply chain management), these marketplaces seem to fulfil a need. Reports show that SME chemical industries in Europe look for 'low threshold' e-business solutions.

Important trade channels for developing country exporters
All the options mentioned in the previous paragraph are open to exporters in developing countries, but clearly some are more appropriate than others.

The 'direct route' from exporter to industrial customer is not recommended, unless custom manufacturing is involved. It will be very difficult for exporters to persuade customers to deal with them directly. The main reasons for this are the uncertainties for the customer about the abilities of the exporter, and the lack of a track record of selling into the EU. The cost for the exporter is very high and it is very difficult to organise the logistics.

The use of traders or agents is not recommended either. They may seem initially very attractive, assuming the volumes are right, but once a trader (or agent) is involved it is difficult to stop using them. The exporter may incur high penalty payments if he starts supplying customers who used to be supplied regularly through the trader, sometimes even if there is no formal contract with the trader.

A manufacturer's representative is not an interesting option for exporters, except for those companies which have already developed substantial business with the EU. In most other cases this will be too expensive an option.

In cases where no contract manufacturing is involved, the best way for exporters in developing countries to approach the EU market is often to go through importers or distributors. Although it reduces the margin, it has many advantages, like a low payment risk, and no worries about the logistics needed to deliver the product to the customers.

Many chemical companies in developing countries are in an excellent position to do custom manufacturing for companies in the EU. Custom manufacturing business cannot be generated through any of the regular trade channel partners. It can only be generated through direct contacts between the supplier and their potential customer.

3.2 Price structure

Generally speaking, the following steps can be identified in the value chain for chemicals:

Bulk raw material → Intermediate → Advanced intermediate → Active ingredient → Formulation → End use by other industry or consumer.

The number of steps depends on the precise product. The option to add more value is only available to those companies which have sufficient know-how and technological capabilities, in addition to the ability to invest in additional production facilities.

The commission and fees which companies pay to agents and distributors vary and depend on a range of parameters, such as the total volume, the expected number of clients and the packaging. Bulk handling prices are different from handling of drums or small packaging sizes. However, some general indications can be provided for the EU as a whole. The next box presents an overview of the margins demanded by various distribution channels.

Distribution Channel	Margin
• Distributor	10-15%
• Trader	2-4%
• Agent	5-10%
• Representative	if applicable 3-4% (plus fixed costs)

A distributor undertakes the most efforts and, consequently, has the highest margin, i.e. 10-15%. A trader requires the lowest margin because they just sell the product, i.e. 2-4%. Alternatively, an agent, who performs marketing and logistics, requires a 5-10% margin. A representative is an employee and, in principle, does not have a margin. However, there are agreements in which representatives receive fees on their turnover.

The box presented below provides indicative prices and margins for a selected number of chemical products:

Products	Prices (per kilo) ex works	Margins
• Dyes: Commodity-type dyes Advanced dyes	 € 4.50 € 20 or more	 5%
• Pharmaceutical intermediates for antibiotics e.g. (hydroxy fenylglycine)	€ 7.50 or (much) more	5-10%
• Inorganic chemicals like magnesium or zinc sulphates	€ 1,50	1-3%

Prices for all the products mentioned in the above box are increasingly coming under pressure, and margins pushed back, as production is gradually shifting towards developing countries. In general, more simple products yield lower margins. Higher value products (but not high-tech) like pharmaceutical intermediates, yield higher margins. Finally, most prices used to be quoted in US$, but, with the exception of bulk commodities, are increasingly also quoted in €.

3.3 Useful sources

The best sources of information are the industry and distributors themselves. As already mentioned, the European Association of Chemical Distributors (http://www.fecc.org) is a valuable source for finding distributors and their national associations in a number of EU countries. Furthermore, please refer to the CBI market surveys covering the chemicals market in the individual EU member countries for names and websites of interesting local players.

Finally, the following B2B market portals for the chemical industries are useful sources for finding interesting players active on the market for chemicals:

- Alibaba.com – http://www.alibaba.com
  Alibaba is a large marketplace for global trade and provider of online marketing services for importers and exporters. Alibaba.com assists in finding trade opportunities and promoting businesses online.
- ChemConnect – http://www.chemconnect.com
  Founded in 1995, ChemConnect is a global trading hub for chemical products such as: Petrochemicals, Industrial chemicals, Plastics & polymers, Pharmaceutical inputs, Fine and Specialty chemicals, Industrial gases and Agrochemicals. ChemConnect has 9,000 members in 150 countries.
- Chemnet – http://www.chemnet.com
  This site lists suppliers and manufacturers of chemical products, listed by product group.
- Elemica – http://www.elemica.com
  Elemica is a global neutral e-marketplace for the contract buying and selling of chemicals. The company offers an integrated, end-to-end system, enabling buyers and sellers to

streamline their business processes for contract sales and improve negotiation, contract management, order fulfilment and payment.

- eMarket Services – http://www.emarketservices.com
  eMarket Services attempts to make it easier for companies to use electronic marketplaces for international business. It is an international independent collaboration of trade promotion organisations.
- Cc-chemplorer – http://www.cc-chemplorer.com
  Upon registration, companies have direct access to the supplier and buyer gate, business partners and the general trading partner directory via the main navigation.
- There is an article on e-business for chemicals available on the Internet, in which a list of e-marketplaces for chemicals is presented.
  http://pubs.acs.org/cen/coverstory/7829/7829bus1.html

4 Trade: imports and exports

This chapter examines the trade in chemicals. The EU is the major chemicals producing area in the world, and shows a surplus on the trade balance for chemicals with all major geographical areas in the world.

In the main text of this chapter, the focus will be restricted to those chemical products identified in Appendix A as being particularly relevant for developing countries. The overview presented here therefore necessarily presents only a partial picture of the whole EU chemicals market.

4.1 Total EU imports

Total imports by EU countries of chemical products as identified in Appendix A have shown considerable increases during the recent past. In 2006, total imports amounted to € 56.2 billion, representing an average annual increase of 7% since 2002. In terms of volume, a growth has been realised as well. Between 2002 and 2006, total imports of chemicals increased by an average annual 6% in volume terms, amounting to 28.4 million tonnes in the latter year.

Belgium has passed Germany, the United Kingdom and France as the principal importer of chemicals into the EU. In 2006, Belgium accounted for 20% of total EU imports (in value), followed by Germany (17%), the United Kingdom (12%), Italy (11%) and France (10%). Of these leading EU importers, Belgium demonstrated the largest average annual increase in imports between 2002 and 2006 (+14%), whereas French imports showed a continuous decrease (-2%) in imports during the review period. In general, most of the 27 EU member states increase chemicals imports, and in some cases even significantly. This is especially the case for Central European countries such as Estonia (+25%), Malta (+18%), Poland (+15%) and Lithuania (15%). Only French, Danish and Luxembourgian imports decreased in terms of value during the review period.

Table 4.1 EU imports of chemicals, 2002-2006, € million / 1,000 tonnes

	2002		2004		2006		Average annual % change in value
	value	volume	value	volume	value	volume	
Total EU,	**43,700**	**22,798**	**44,894**	**25,454**	**56,248**	**28,365**	**7%**
of which from							
Intra-EU	31,564	17,324	32,108	19,434	41,292	21,422	7%
Extra-EU	12,135	5,473	12,786	6,020	14,956	6,944	5%
Developing countries	2,242	2,887	2,697	3,584	3,978	4,200	15%

Source: Eurostat (2006, 2007)
DC: developing countries

As can be seen in Table 4.2, the lion's share of EU imports is sourced from other EU member countries. On the other hand, the share of imports originating in developing countries increased from 5.1% in 2002 to 7.1% in 2006.

Table 4.2 EU imports and leading suppliers to the EU of chemicals, 2006, in € million, share in % of value

	Imports 2006	Leading suppliers in 2006 (share in %)		Share in imports
Total Chemicals	56,248	Intra-EU	Ireland (17%), Belgium (12%), Germany (11%), The Netherlands (8%), France (7%)	73%
		Extra-EU excl. DC	USA (8%), Switzerland (5%), Japan (2%), Singapore (2%), Norway (0.6%)	20%
		DC*	China (2%), India (1.4%), Saudi Arabia (0.9%), Jamaica (0.6%), Venezuela (0.2%), Brazil (0.2%)	7%

Source: Eurostat (2006, 2007)
*Developing countries

4.2 EU imports per product group

This section discusses the total EU imports per product group falling under the chemicals covered in this survey and developments therein. For information on imports by the individual EU member states, please refer to the CBI surveys covering the chemicals market in the individual EU member countries.

Over the past few years, the composition of EU imports has remained fairly stable, with limited movements in the shares of the respective categories. Organic chemicals, including additives and basic intermediates for pharmaceuticals and agro-chemicals, formed the bulk (on average around 70%) of total chemical imports by the EU in terms of value. In volume terms, they account for somewhat more than 40% of imports. Oleo chemicals accounted for 16% of value imports and for 28% of volume imports in 2006. Dyes and pigments accounted for 8% of value and 4% of volume imports, while the smallest product group in value, inorganic chemicals, accounted for 5% of value imports and 24% of volume.

These shares in import values and volumes signify large differences in import unit values between the different product groups, with dyes and pigments being the highest value products, and inorganic chemicals the lowest. For more information on average unit prices and prices in general, please refer to Chapter 5 of this survey.

Organic chemicals

As from 2002, imports of organic chemicals by EU member countries increased by an average annual 8% in both terms of value and volume, amounting to € 39.9 billion / 12.3 million tonnes in 2006. Table 4.3 shows the most important suppliers to the EU of organic chemicals.

A relatively large part of imports (24% of value imports in 2006) is handled by Belgium. Other leading EU importers of organic chemicals are Germany (16%), the United Kingdom (13%), Italy (11%) and France (9%).

Imports of organic chemicals are largely sourced from within the EU. The share of imports originating in the EU increased from 68% of value in 2002 to 70% of value in 2006. At the same time, imports from developing countries have increased as well, from 4% to 7%. Imports from China are, in particular, increasing rapidly.

Developing countries play a relatively minor role in the EU organic chemicals trade, with a share of only 7% of the EU import value. In absolute terms, however, it is the largest product group compared to the other product groups, reflecting the large organic chemicals market in the EU. The share from other non-EU countries has decreased, particularly from Switzerland.

Table 4.3 EU imports and leading suppliers of organic chemicals, 2002-2006, in € million, share in % of value

	2002 € mln	2004 € mln	2006 € mln	Leading suppliers to EU in 2006 Share in %	Share (%)
Total EU, of which from	**29,245**	**30,471**	**39,923**		
Intra-EU	19,888	20,325	28,033	Ireland (23%), Belgium (13%), The Netherlands (8%), Germany (7%), France (7%)	70%
Extra-EU ex. DC*	9,508	10,343	12,093	USA (9%), Switzerland (6%), Japan (3%), Singapore (3%), Norway (0.6%)	23%
DC*	1,253	1,661	2,602	China (2%), India (1.4%), Saudi Arabia (1.2%), Venezuela (0.3%), Brazil (0.3%), Ukraine (0.3%), South Africa (0.2%)	7%

Source: Eurostat (2006, 2007)
*Developing countries

Oleo chemicals

Between 2002 and 2006, EU imports of oleo chemicals increased by 4% in value and by 5% in volume, amounting to € 8.9 billion / 7.8 million tonnes in the latter year. Compared to the increases in the import values of organic and inorganic chemicals (+8% and +10% respectively), the increase seems rather modest.

The shares of supplies from intra-EU, extra-EU and developing countries remained fairly stable during the survey period. As can be seen in Table 4.4, imports of oleo chemicals are mainly sourced from within the EU, while imports from countries outside the EU, and particularly from developing countries, are very limited.

Germany is the leading EU importer of oleo chemicals, handling 16% of the import value in 2006. Other major EU importers are France (14%), the United Kingdom (10%) and Belgium (10%).

Table 4.4 EU imports and leading suppliers of oleo chemicals, 2002-2006, in € million, share in % of value

	2002 € mln	2004 € mln	2006 € mln	Leading suppliers to EU in 2006 Share in %	Share (%)
Total EU, of which from	**7,792**	**7,938**	**8,949**		
Intra EU	7,081	7,272	8,228	Germany (22%), France (13%), Belgium (10%), The Netherlands (10%), UK (8%)	92%
Extra EU ex. DC*	712	667	722	USA (4%), Switzerland (2%), Norway, (0.7%). Japan (0.5%), Canada (0.1%)	7%
DC*	39	47	65	China (0.3%), Turkey (0.2%), Croatia (0.1%)	1%

Source: Eurostat (2006, 2007)
*Developing countries

Dyes and pigments

Dyes and pigments are the highest value product group dealt with in this survey. Between 2002 and 2006, imports of dyes and pigments decreased by an average annual 1%, amounting to € 4.4 billion in the latter year. In terms of volume, imports increased by 2% annually, reaching almost 1.3 million tonnes in 2006. Table 4.5 shows the most important suppliers to the EU of dyes and pigments.

The share of imports from other EU countries (intra-EU trade) decreased from 70% in 2002 to 67% in 2006, to the benefit of the share of imports from developing countries, which increased from 10% to 14%. In fact, whereas total imports decreased in value terms, supplies of dyes and pigments from developing countries increased by an average annual rate of 8% since 2002, reaching € 603 million in 2006. This increase was mainly due to rising imports from China.

In 2006, Germany was the leading EU importer of dyes and pigments, accounting for 21% of value imports. Other leading EU importers are Italy (15%), France (12%), The United Kingdom (8%) and Belgium (8%).

Table 4.5 EU imports and leading suppliers of dyes and pigments, 2002-2006, in € million, share in % of value

	2002 € mln	2004 € mln	2006 € mln	Leading suppliers to EU in 2006 Share in %	Share (%)
Total EU, of which from	**4,599**	**4,256**	**4,371**		
Intra-EU	3,224	2,995	2,939	Germany (21%), Belgium (8%), UK (8%), Spain (7%), The Netherlands (6%)	67%
Extra-EU ex. DC*	1,375	1,260	1,432	Switzerland (10%), USA (6%), Japan (2%), South Korea (1%), Taiwan (0.5%)	19%
DC*	447	448	603	China (7%), India (5%), Mexico (0.5%), Brazil (0.3%), Turkey (0.3%), Thailand (0.3%), Indonesia (0.3%), Argentina (0.2%)	13%

Source: Eurostat (2006, 2007)
*Developing countries

Inorganic chemicals

Imports of inorganic chemicals increased by 10% annually in terms of value and by 4% annually in terms of volume between 2001 and 2005, amounting to € 3.0 billion / 6.9 million tonnes in the latter year.

Compared to the other product groups within chemicals, a relatively large share of inorganic chemicals originates in developing countries. Nevertheless, the largest share is still supplied by other EU member countries. The share of intra-EU trade even increased from 66% in 2002 to 70% in 2006. This is mainly due to a considerable increase in imports from The Netherlands and Ireland.

Germany is the leading EU importer of inorganic chemicals, accounting for 17% of the import value in 2006, followed by France (13%), the United Kingdom (13%) and The Netherlands (10%).

Table 4.6 EU imports and leading suppliers of inorganic chemicals, 2002-2006, in € million, share in % of value

	2002 € mln	2004 € mln	2006 € mln	Leading suppliers to EU in 2006 Share in %	Share (%)
Total EU, of which from	**2,064**	**2,230**	**3,004**		
Intra-EU	1,372	1,516	2,091	Germany (16%), The Netherlands (11%), Ireland (8%), Italy (6%), Greece (5%)	70%
Extra-EU ex. DC*	744	780	920	USA (3%), Russia (0.6%), Japan (0.4%), Australia (0.4%)	7%
DC*	502	541	708	Jamaica (12%), China (3%), Surinam (3%), Bosnia & Herzeg. (1%), South Africa (1%), Peru (0.9%), Kazakhstan (0.9%), Morocco (0.7%)	24%

Source: Eurostat (2006, 2007)
*Developing countries

4.3 The role of the developing countries

This section discusses the role of developing countries in the supply of chemicals to the EU. Please note, as already mentioned, that information on imports by the individual EU member states is available in CBI surveys covering the chemicals market in the individual EU member countries.

In general, developing countries are performing well on the EU market for chemicals. While the overall EU chemical market showed an increase of 7% annually between 2002 and 2006, imports from developing countries increased by 15% annually during the same period.

In 2006, developing countries exported chemicals with a value of almost € 4.0 billion / 4.2 million tonnes to the EU, representing a share of 7% of total EU value imports and 15% of total EU volume imports. However, large differences exist between product groups, with shares in EU value imports ranging from less than 1% for oleo chemicals to almost 24% for inorganic chemicals. Except for the imports of inorganic chemicals, the share of imports from developing countries increased for each individual chemical product group, reflecting increasing opportunities for developing country exporters.

Table 4.7 Imports of chemicals from developing countries 2002-2006, € million / 1,000 tonnes

	2002		2002		2006		Average % value change
	value	volume	value	volume	value	volume	
Total EU	**2,241.9**	**2,887.5**	**2,697.0**	**3,583.6**	**3,978.0**	**4,199.9**	**15%**
The Netherlands	343.6	737.5	456.4	1,089.7	808.4	1,410.1	24%
Germany	490.7	526.4	542.9	551.7	757.7	481.9	11%
Italy	284.9	170.8	353.5	255.1	535.1	416.0	17%
Spain	186.4	128.5	228.6	138.1	359.4	187.8	18%
United Kingdom	213.6	206.2	200.8	189.1	353.7	417.0	13%
France	256.1	614.8	222.9	490.2	301.0	574.5	4%
Belgium	136.8	71.9	180.6	116.8	276.4	154.8	19%
Romania	30.1	58.8	91.8	200.1	91.6	147.5	32%
Poland	31.7	20.8	54.3	81.2	82.1	102.0	27%
Portugal	33.1	43.0	28.5	39.7	64.0	89.1	18%
Greece	54.7	108.2	42.7	76.2	61.4	81.7	3%
Slovenia	16.4	5.0	33.5	5.9	44.9	13.4	29%
Austria	25.2	7.8	21.3	8.1	43.5	13.0	15%
Hungary	13.9	5.4	87.0	85.2	41.2	35.7	31%
Ireland	13.5	1.7	18.6	2.1	27.4	3.5	19%
Denmark	15.3	1.9	17.5	3.5	22.7	4.4	10%
Bulgaria	16.6	21.4	16.5	17.3	20.3	16.2	5%
Czech Republic	18.7	8.5	18.9	11.1	17.2	10.3	-2%
Sweden	33.9	120.5	36.5	140.6	16.2	5.6	-17%
Slovakia	9.9	12.6	22.2	61.6	16.1	14.3	13%
Malta	2.4	0.2	3.2	0.3	11.1	0.3	47%
Finland	4.0	2.7	7.6	2.7	10.7	3.7	28%
Cyprus	3.7	0.8	4.3	1.4	6.7	1.5	16%
Lithuania	3.6	10.6	4.0	13.3	5.0	13.8	9%
Luxembourg	0.4	0.1	1.2	0.2	2.1	0.4	54%
Latvia	2.5	1.3	1.3	1.7	1.8	1.0	-8%
Estonia	0.4	0.3	0.6	0.9	0.5	0.4	0%

Source: Eurostat (2006, 2007)

The most important product group for developing countries, in absolute terms, is organic chemicals, showing very large annual increases. Although developing countries increased their market share from 5% in 2002 to 7% in 2006, only China, India and Saudi Arabia played a significant role.

Table 4.8 Chemicals supplied to the EU by developing countries, 2002-2006 € 1,000 / tonnes

	2002		2004		2006		Average annual change
	value	volume	value	volume	value	volume	
Total	2,242	2,887	2,697	3,584	3,978	4,200	15%
Organic chemicals	1,253	833	1,661	1,351	2,602	1,985	20%
Inorganic chemicals	502	1,902	541	2,044	708	1,980	9%
Dyes and pigments	447	105	448	124	603	167	8%
Oleo chemicals	39	48	47	65	65	67	13%

Source: Eurostat (2006, 2007)

Table 4.9 lists the ten largest developing country exporters of chemicals to the EU countries. As can be seen, China is by far the biggest supplier of EU chemical imports, followed at a distance by India.

Table 4.9 Top-10 developing countries supplying chemicals to the EU, 2006, in € million and in 1,000 tonnes.

Developing country	EU imports (€ million)	EU imports (1,000 tonnes)	EU imports (unit value €/kg)
1. China	1,405	474	2.97
2. India	771	133	5.79
3. Saudi Arabia	487	938	0.52
4. Jamaica	334	1,297	0.26
5. Venezuela	140	265	0.53
6. Brazil	138	93	1.48
7. Ukraine	115	199	0.58
8. South Africa	106	116	0.91
9. Surinam	78	309	0.25
10. Mexico	69	20	3.36

Source: Eurostat (2006, 2007)

Inorganic chemicals are of relatively low value and are comparatively easy to produce - hence the shift to developing countries, where low labour costs provide a competitive advantage. Poor enforcement (or absence) of environmental regulations is another major source of cost advantage for some countries. However, these advantages are short-lived. Initiatives like the Product Stewardship Code imply that production in developing countries increasingly has to comply with specific environmental standards, even if these are not imposed in the developing countries themselves.

4.4 Exports

Between 2002 and 2006, the value of EU chemicals exports increased by an average annual rate of 4% in terms of value and by 3% in terms of volume, amounting to € 67.6 billion / 27.2 million tonnes in the latter year.

Although its exports are stagnating, Ireland remains the largest exporter of chemicals in the EU, accounting for almost a quarter of the total EU export value. A large part of Irish exports consist of re-exports of previously imported raw material which has been converted into advanced intermediates or Active Pharmaceutical Ingredients (APIs). These products mainly concern high-value chemicals traded by pharmaceutical companies.

The exports from Belgium, which is the second leading EU exporter of chemicals (19% of the export value), are increasing fast. Interesting to note are the rapid increases reported in exports to several new member states, such as Poland, Slovakia and Romania.

Besides Ireland and Belgium, other leading EU exporters of chemicals are Germany (18% of value imports in 2006), the United Kingdom (9%), France (9%), and The Netherlands (7%).

Major export destinations are principally the USA and EU member countries. However, the importance of China as a destination in total exports is increasing fast, with exports to this country increasing by 12% annually.

Table 4.10 EU exports of chemicals, 2002-2006, € million / 1,000 tonnes

	2002		2004		2006		Average annual % change in value
	value	volume	value	volume	value	volume	
Total EU,	**58,642**	**23,712**	**54,901**	**25,610**	**67,599**	**27,185**	**4%**
of which from							
Intra-EU	32,078	17,097	30,104	18,708	38,891	20,141	5%
Extra-EU	26,564	6,615	24,798	6,902	28,708	7,044	2%

Source: Eurostat (2006, 2007)

4.5 Opportunities and threats

Opportunities for and threats to exporters in developing countries:

***Opportunities*:**

- The share of chemical imports from developing countries is increasing.
- Inorganic chemicals represent the most interesting product group, as about a quarter of value imports is supplied by developing countries.
- Belgium, Germany, the United Kingdom, Italy and France are the EU's leading import markets for chemical.
- Imports of oleo chemicals and surfactants from developing countries are negligible as a share of the EU market. Although imports from developing countries are still relatively small (1% of value imports), strong growth has been realised over the last few years and there is a lot of potential for further increases.

***Threats*:**

- Developing countries play a relatively minor role within the EU organic chemicals trade
- The EU is the world's leading producer of chemicals. Not surprisingly, the EU is also a net exporter of chemicals.

4.6 Useful sources

- EU Expanding Exports Helpdesk - http://export-help.cec.eu.int/
  Go to: 'trade statistics'.
- Eurostat – official statistical office of the EU - http://epp.eurostat.cec.eu.int
  Go to: 'themes' on the left side of the home page - 'external trade' - 'data – full view' - 'external trade - detailed data'.
- CEFIC (European Chemical Industry Council) – http://www.cefic.org
  Go to: 'statistics'.

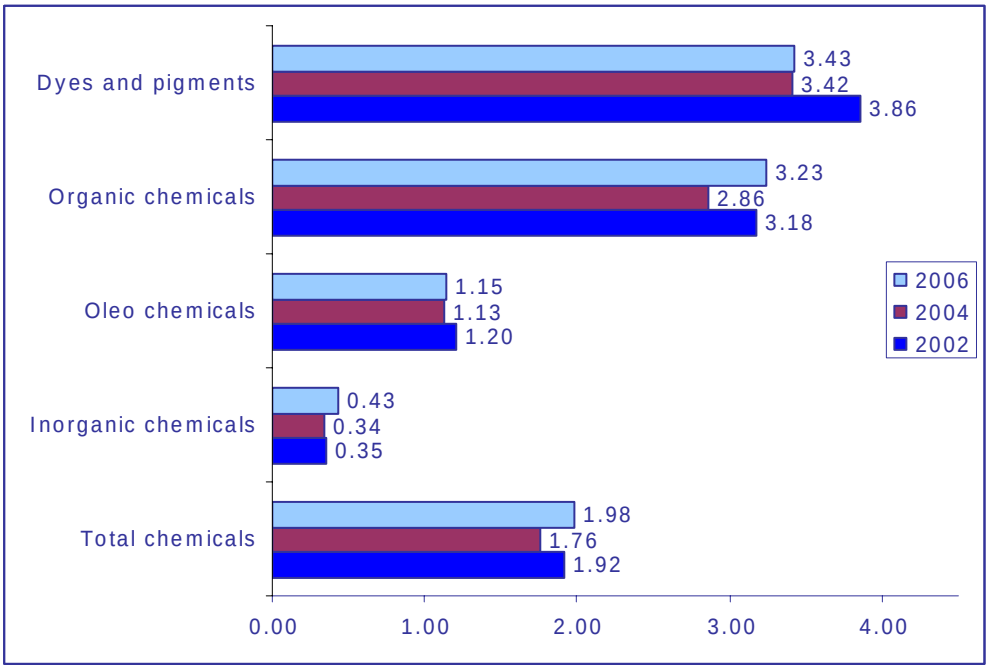
5 Price developments

5.1 Prices

Prices for chemicals are highly influenced by external developments. Tighter environmental and security requirements (e.g. REACH system), congested transportation lines, dynamism in foreign and domestic demand, higher labour and raw materials costs and increasing energy costs instigate upward pressure on chemical prices all over the world. The EU chemical industry is very energy-intensive, absorbing about 12% of total EU energy demand, while energy costs account for 10-60% of the total costs of most chemical products (CEFIC, 2007). On the other hand, intensifying competition (for example, lower production costs and product innovation / substitution) in other parts of the world is increasingly exerting a strong downward pressure on prices in the EU chemical industry.

Figure 5.1 shows import unit values (value imports divided by volume of imports), revealing a decrease in the unit price for chemicals between 2002 and 2004, after which there was an increase between 2004 and 2006. Most noticeable is the decrease in per unit import price of dyes and pigments. Dyes and pigments used to be mostly manufactured in India. More recently, there has been a lot of competition from low-price Chinese dyes and pigments, pushing the Indian companies out of the global market.

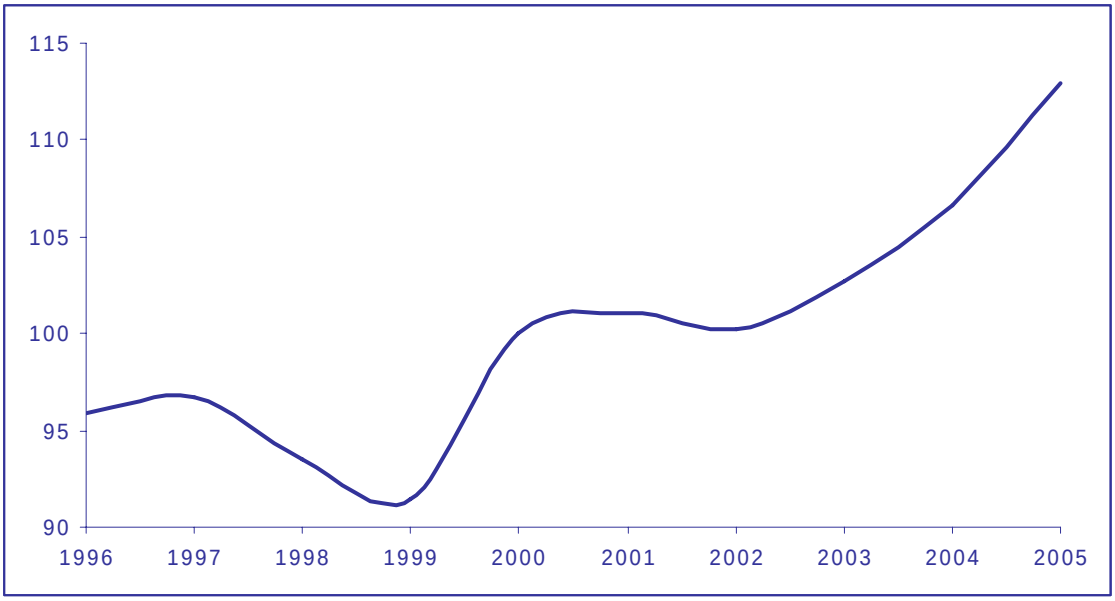
Figure 5.1 Import unit values of chemicals imported by the EU, 2002-2006, €/kilo



Source: Eurostat (2006, 2007)

Between 2001 and 2005, producer prices in the chemical industry increased by a total 12% (CEFIC, 2006). The increase mainly took place in the period 2003-2005, reflecting the recovery in the market for specialty and fine chemicals. Please refer to Table 5.1 for more detailed price data.

Figure 5.2 Producer prices in the EU chemical industry, 1996-2005, index 2000=100



Source: CEFIC (2006)

Table 5.1 presents an overview of the trends in producer prices for the individual chemical sectors over a period of 7 years (2000-2007) and over a period of 1 year (2006-2007). Most remarkable is that the producer price for pharmaceuticals remained fairly stable over the long term as well as over the short-term. In fact, it is the only chemical sector for which producer prices have decreased by somewhat over 2% since 2000.

Table 5.1 Trends in producer prices in the EU chemical sector, January 2000-February 2007, change in % compared to previous period

Chemical Sectors	Change Jan 2000-Feb 2007	Change Feb 2006-Feb 2007
Overall chemicals	**14.0%**	**2.4%**
Petrochemicals	37.7%	5.2%
Polymer	22.0%	3.8%
Plastic	21.8%	3.8%
Synthetic rubber	48.8%	6.9%
Man-made fibres	12.7%	2.4%
Basic inorganics	25.1%	3.1%
Other inorganics	23.9%	5.2%
Industrial gases	14.2%	1.8%
Fertilisers	34.2%	1.3%
Pharmaceuticals	-2.1%	-0.6%
Specialty & fine chem.	9.8%	2.8%
Auxiliaries for industry	11.5%	3.5%
Dyes and pigments	-0.1%	0.3%
Crop protection	3.5%	0.5%
Paints & inks	12.4%	3.1%
Consumer chemicals	10.9%	1.4%

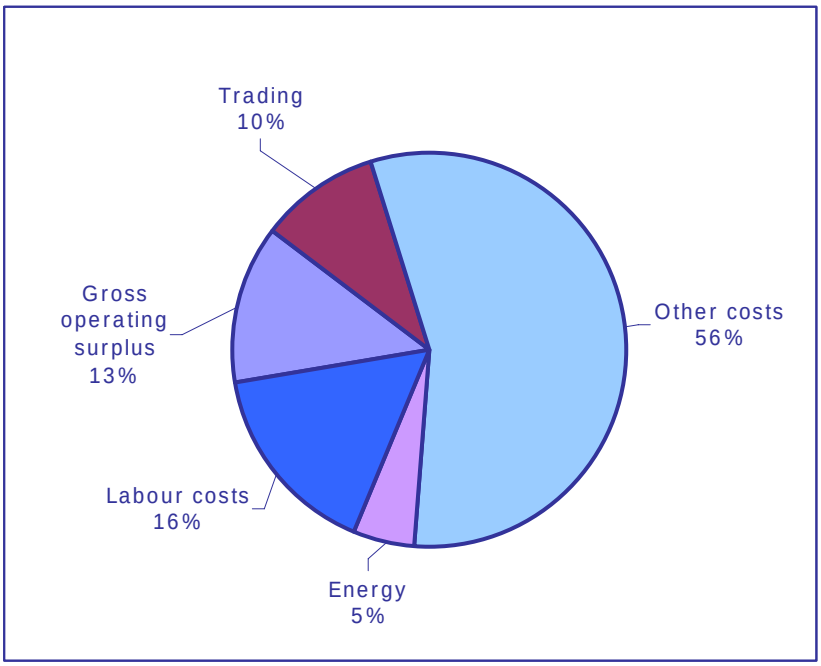
Source: CEFIC (2007)

EU chemicals companies are examining possibilities to realign their purchasing operations and many are examining options to purchase more of their raw materials from what they call 'non-

traditional' sources. Basically this means that they are increasingly looking at buying from companies outside Europe, USA and Japan, i.e. from developing countries. India and China are the focus of their attention, but most companies would certainly consider suppliers in other developing countries.

In this context, it is interesting to look at the cost structure of producers in the EU chemical industry. Figure 5.3 clearly shows that purchases (trading, energy and other costs e.g. raw material) make up 71% of the sales value. Efficiency gains in this area will therefore lead to significant increases in profitability for EU producers. The remaining 29% constitutes the gross value added by the sector, which comprises salaries and gross operating surplus.

Figure 5.3 Cost structure of the EU chemical industry, 2003, in % of the sales value



Source: CEFIC (2006)
Note: Data refer to the EU15

5.2 Useful sources

The prices of most of the commodity chemicals can be found relatively easily. A few sources are listed below. However, the prices of fine and specialty chemicals are more difficult to obtain. They are not published and can vary widely from one application area to another. Getting reliable price information in these segments often requires asking a distributor, or asking a producer for a quotation.

- For information on EU producer prices, consult – http://www.cefic.be
- http://www.icischemicalbusiness.com – Subscribers have access to price information on chemicals
- http://www.icispricing.com – This website provides detailed and up-to-date information on prices on the chemical markets.

6 Market access requirements

As a manufacturer in a developing country preparing to access EU markets, you should be aware of the market access requirements of your trading partners and the EU governments. Requirements are demanded through legislation and through labels, codes and management systems. These requirements are based on environmental, consumer health and safety and social concerns. You need to comply with EU legislation and have to be aware of the additional non-legislative requirements that your trading partners in the EU might request.

For information on legislative and non-legislative requirements, go to 'Search CBI database' at http://www.cbi.eu/marketinfo, select Chemicals and the EU in the category search, click on the search button and click on market access requirements.

Manufacturers interested in placing chemicals on the EU market have to comply with a number of requirements regarding the determination, notification, classification, packaging and labelling of the substances as laid down in Directive 67/548/EEC. The regulations in this directive will be replaced by REACH after the latter is fully implemented (which might take up to 11 years for some products). However, until then, please refer to http://www.cbi.eu/marketinfo for two separate documents which specifically deal with legal issues when importing chemicals: "EU legislation: Chemicals (procedures)" and the case study "EU legislation: trading chemicals". The first document sets out all requirements and explains, step by step, all the issues involved needed to place goods on the European market. Determination and notification are particularly specific to trade in chemicals. The case study gives two concrete examples, one substance which is already on the EINECS-list (European Inventory of Existing Commercial Chemical Substances), and one that is not on the list.

It is crucial to consult the aforementioned documentation in order to avoid shipping substances to Europe, only for them to be confiscated or barred from entering the European market. Please note, however, that this system will disappear after the full implementation of REACH. For more information on REACH, please also refer to http://www.cbi.eu/marketinfo.

In short, packaging of chemicals is strictly regulated. The nature of the packaging and the precautions necessary vary with the product. In general, packaging needs to be clearly labelled with at least:

- Name of the substance
- Origin of the substance (full name and address details of the manufacturer, distributor, or importer)
- Danger symbol and indication of the danger involved in the use of the substance
- A reference to the special risks arising from such dangers

Standard phrases indicating the safety advice relating to the use of the substance.

All this information should also be on the paperwork which accompanies the shipment. In addition to that, the shipment should be accompanied by a Hazard Data Sheet (HDS), sometimes called material safety data sheets (MSDSs) or chemical safety data sheets (CSDSs).
There should be a separate HDS in the languages of each of the countries through which the shipment passes. In general, in the HDS, information should be provided on the company, on the potential hazards of a particular product, on how to combat these hazards, how to handle the product to prevent problems, on relevant physical characteristics of the product, and on the regulation which applies to the product.

Additional information on packaging can be found at the website of ITC on export packaging: http://www.intracen.org/ep/packaging/packit.htm

No quota exists for chemicals. Tariffs on chemicals are determined based on the exporting country and on the product concerned. More information on tariffs and quota can be found at http://export-help.cec.eu.int/

7 Opportunity or threat?

In the recent past, the market for chemicals has experienced, along with the general economic recession worldwide, a downturn in the demand for chemicals. By 2004, economic conditions became less strict and market analysts were more optimistic about future developments. However, after an impressive upswing in 2006, it is expected that prospects for the years after are somewhat less positive. These developments apply to the EU market for chemicals as well. Nevertheless, the chemical industry remains of paramount importance for the economy of the EU, which is the world's leading producer of chemicals. The EU could therefore be a very attractive export market.

Factors influencing or offering opportunities for developing countries exporters are:
- Favourable business conditions
- Increasing demand for pharmaceutical chemicals, as a result of increasing importance of Generic drugs and medicines in general.
- Increasing incomes, particularly in the new EU member states.
- More outsourcing of production to other countries/regions.
- Relatively high production costs in the EU.
- The share of chemical imports from developing countries is increasing. Particularly inorganic chemicals are interesting

Factors which could pose threats for developing countries exporters of chemicals are:
- Increasing complexity of products and quality requirements.
- Closely related to economic development and energy prices.
- Increasing concentration of big chemical multinational enterprises.
- High level of European research and technical development.
- Developing countries play a relatively minor role within the EU organic chemicals trade
- Although nobody knows what the exact effects will be, it is definitely clear that REACH will have far-reaching consequences for the chemical industry in the EU.

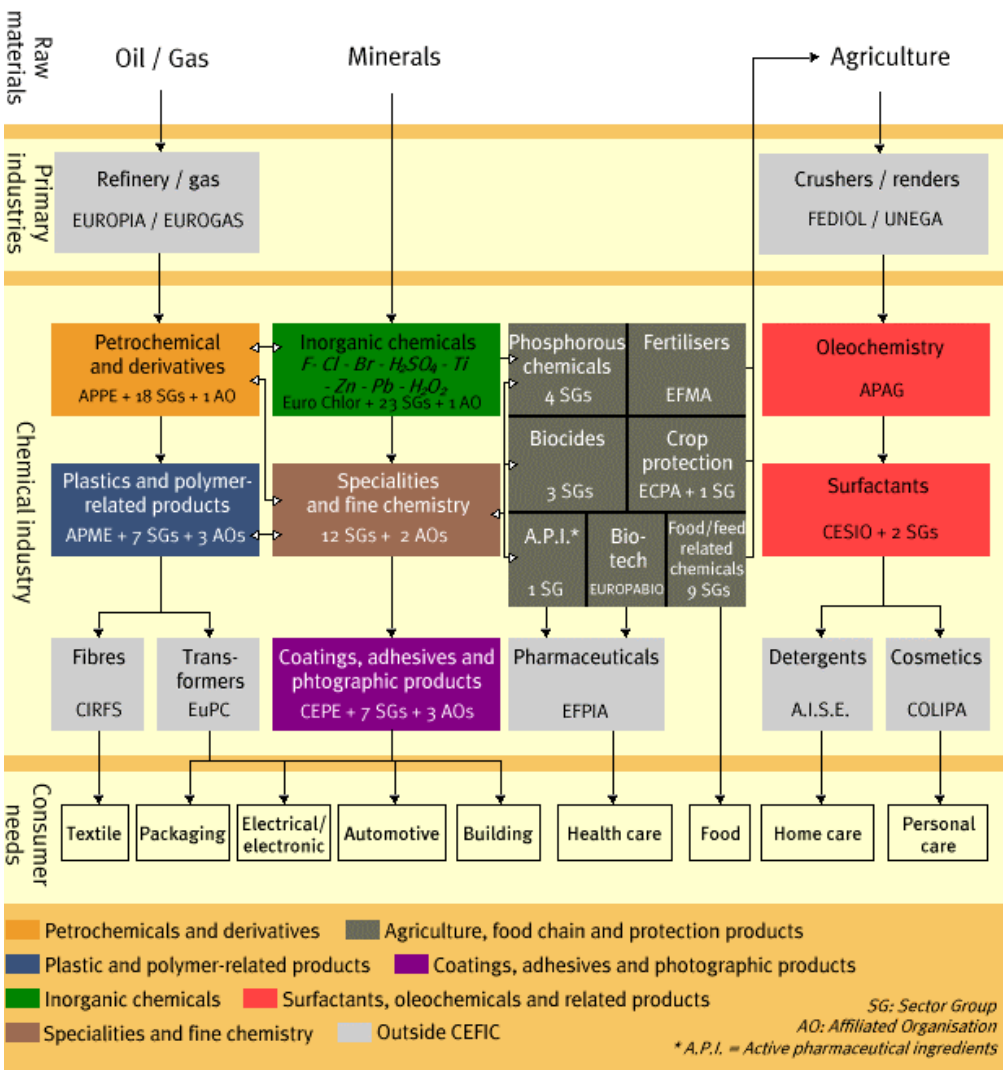
Please not that a trend or development could offer opportunities to certain (developing country) exporters, but at the same time pose a threat to other exporters. As an exporter, you will need to analyse if the development provides an opportunity or a threat for your business. This will depend on your specific situation. REACH for example, is an attractive system for exporters who have sufficient reserves to finance the initial costs of registration and testing. This will make other registration processes, which were required by the previous legislation, unnecessary. In the long-term this will lead to less registration processes and thus less costs. Notably small companies will, on the other hand, have trouble to make enough capital available for the initial registration and testing. There have been proposals to exchange information and prevent multiple companies from going through the same process, but it is likely that more wealthy companies will profit more from these arrangements than smaller companies. In any case, registration will be relatively more expensive for small quantities of chemicals.

Appendix A Product characteristics

Product groups

The chemical sector is very diverse. The structure of the industry can be outlined according to the classification of the European Chemical Industry Council (CEFIC) in Table A.1. (Note: dedicated sector groups or similar organisations within CEFIC are indicated for each of the market segments).

Table A.1 Structure of the chemical industry



Source: CEFIC

The above figure illustrates that the chemical industry is built on three pillars: oil and gas, minerals and agriculture. Oil and gas are the main basis for the petrochemical and derivatives production which ultimately lead to plastics and polymer-related products. Minerals are the main basis for inorganic chemicals which feed, together with organic chemicals, the production of specialities and fine chemistry and the production of pharmaceuticals and agro-chemicals like fertilisers, biocides and crop protection chemicals. Specialty and performance chemicals comprise a very wide range of products. The main characteristic of these products is that they are sold for what they do, for their performance in a specific application, and not by chemical specification, as is the case for example for the pharmaceutical intermediates. Agriculture provides the crushers and renders which are the basis for oleo chemicals and surfactants.

Chapter 1 on industrial demand and Chapter 2 on production applies this classification of chemicals and distinguishes the following four product groups: base chemicals (petrochemicals and derivatives and basic inorganics), specialty and fine chemicals (dyes & pigments, oleo chemicals, crop protection, and paints & inks), pharmaceuticals (basic pharmaceutical products and pharmaceutical preparations) and consumer chemicals (detergents and cosmetics). This classification is chosen because of the availability of data on consumption on the product groups.

The group of base chemicals is included as it is an integral part of the chemical sector and the data on this sector. However, they are not discussed in detail because petrochemicals, such as plastics and polymers, are produced in large-scale plants and sold in bulk quantities at relatively low prices, making them less interesting for potential exporters in developing countries.

A slightly different classification is applied in chapter 4 on EU imports and exports. This classification is based on the HS codes on which Eurostat produces trade statistics.[1] In addition, 'pharmaceuticals and agrochemicals' and 'specialty and performance chemicals (including additives, dyes and pigments)' are put together in one main group as 'organic chemicals', except for 'dyes and pigments', which are, in turn, taken as a separate product group. The following product groups result:

- **Organic chemicals**, including additives for paints, coatings, water treatment and cosmetics, as well as basic intermediates for pharmaceuticals and agro-chemicals;
- **Dyes and pigments**, including tanning substances, colouring matter, pigments, opacifiers and prepared colours and dryers;
- **Oleo chemicals, surfactants and derivatives**, including surface active agents and preparations and lubricants;
- **Inorganic chemicals**, including metal oxides, sulphates, chlorides, bromides and the like.

Although oleo chemicals constitute a fairly small category, the raw materials for these substances are often locally available in developing countries. Furthermore, note that these product groups are defined purely on the basis of the chemical structure of the product (e.g. aliphatic or aromatic) and from there by functional groups, substitutes and side chains. As a consequence, the product groups do not have a direct relationship with the application or end-use of the product, as has the CEFIC classification. Unfortunately, it is impossible to align the classification based on HS codes with the CEFIC classification as used in Chapters 1 and 2. For example, a certain inorganic chemical (such as a chloride derivative) could be applied in a fine chemical or maybe in a more complex structure (after chemical reaction with other products) also in a fertilizer. Moreover, a multitude of products can be allocated in a variety of directions or markets, including the textile industry, automotive industry, food industry, health care or building industry. As a consequence, the data presented in Chapters 1 and 2 cannot be compared to the data as presented in Chapter 4.

Statistical product classification

On January 1, 1988, a unified coding system was introduced to harmonise the trading classification systems used world-wide. This system is called the Harmonised Commodity Description System (HS) and was developed by the World Customs Organisation (WCO). The system covers about 5,000 commodity groups, each identified by a six-digit code, arranged in a legal and logical structure, and is supported by well-defined rules to achieve uniform classification. More than 179 countries and economies use the system as a basis for their Customs tariffs and for the collection of international trade statistics. After the six-digit code, countries are free to use further subheadings. The trade data of Eurostat uses an eight-digit system. Most codes, however, end with two zeros, i.e. effectively only using 6 digits. In some countries even 10 digits are sometimes used.

[1] There are no trade statistics which correspond to the CEFIC classification. Trade statistics usually group chemicals by characteristics of the chemical structure, whereas production/consumption statistics are generally collected on a functional (or end-use) basis.

Because the HS classification differs from the product groups and products mentioned in the paragraphs above, this puts limitations to in-depth interpretation and of the possible relations between import and export figures on the one hand, and consumption and production figures on the other hand. Moreover, within the HS categories, products can still be very diverse. In fact, in some cases the unit price of one substance may be more than twenty times the unit price of another substance, even though both substances have the same HS code. Obviously, this makes it extremely difficult to compare data internationally and to come to a meaningful market assessment of a specific chemical substance.

Organic chemicals, including additives and basic intermediates for pharmaceuticals and agro-chemicals.	
290110	Saturated acyclic hydrocarbons
290129	Hydrocarbons, acyclic, unsaturated (excl. ethylene, propene 'propylene', butene 'butylene' and isomers thereof and buta-1.3-diene and isoprene)
2903	Halogenated derivatives of hydrocarbons
29054990	Polyhydric alcohols (excl. diols, triols and tetraols)
290550	Halogenated, sulphonated, nitrated or nitrosated derivatives of acyclic alcohols
290713	Octylphenol, nonylphenol and their isomers; salts thereof
290721	Resorcinol and its salts
290919	Acyclic ethers and their halogenated, sulphonated, nitrated or nitrosated derivatives (excl. diethyl ether)
290920	Cyclanic, cyclenic or cycloterpenic ethers and their halogenated, sulphonated, nitrated or nitrosated derivatives
290960	Alcohol peroxides, ether peroxides, ketone peroxides and their halogenated, sulphonated, nitrated or nitrosated derivatives
2910	Epoxides, epoxyalcohols, epoxyphenols and epoxyethers, with a three-membered ring, and their halogenated, sulphonated, nitrated or nitrosated derivatives
291229	Cyclic aldehydes, without other oxygen function (excl. benzaldehyde)
291230	Aldehyde-alcohols
291249	Aldehyde-ethers, aldehyde-phenols and aldehydes with other oxygen function (excl. ethylvanillin '3-ethoxy-4-hydroxybenzaldehyde' and vanillin '4-hydroxy-3-methoxybenzaldehyde')
2914	Ketones and quinones, whether or not with other oxygen function, and their halogenated, sulphonated, nitrated or nitrosated derivatives
29157020	Salts and esters of palmitic acid
29157030	Salts of stearic acid
29157080	Esters of stearic acid
29159010	Lauric acid
291615	Oleic, linoleic or linolenic acids, their salts and esters
291619	Unsaturated acyclic monocarboxylic acids, their anhydrides, halides, peroxides, peroxyacids and halogenated, sulphonated, nitrated or nitrosated derivatives (excl. acrylic acid and its salts and esters, methacrylic acid and its salts and esters, and oleic, linoleic or linolenic acids, their salts and esters)
291713	Azelaic acid, sebacic acid, their salts and esters
292119	Acyclic monoamines and their derivatives; salts thereof (excl. methylamine, dimethylamine, trimethylamine, diethylamine and their salts)
292142	Aniline derivatives and their salts
292143	Toluidines and their derivatives; salts thereof
292151	O-phenylenediamine, m-phenylenediamine, p-phenylenediamine or diaminotoluenes and their derivatives; salts thereof
2927	Diazo-, azo- or azoxy-compounds
2928	Organic derivatives of hydrazine or of hydroxylamine
2932	Heterocyclic compounds with oxygen hetero-atom(s) only
2933	Heterocyclic compounds with nitrogen hetero-atom(s) only; nucleic acids and their salts

2934	Heterocyclic compounds (excl. with oxygen only and with nitrogen hetero-atom(s) only)
2942	Organic compounds n.e.s.
Dyes and Pigments	
3202	Synthetic organic tanning substances; inorganic tanning substances; tanning preparations, whether or not containing natural tanning substances; enzymatic preparations for pre-tanning
3204	Synthetic organic colouring matter, whether or not chemically defined; preparations based on synthetic organic colouring matter of a kind used to dye fabrics or produce colorant preparations; synthetic organic products of a kind used as fluorescent brightening agents or as luminophores, whether or not chemically defined (excl. preparations of headings 3207, 3208, 3209, 3210, 3213 and 3215)
3207	Prepared pigments, prepared opacifiers and prepared colours, vitrifiable enamels and glazes, engobes, liquid lustres and similar preparations of a kind used in the ceramic, enamelling or glass industry; glass frit and other glass in the form of powder, granules or flakes
3211	Prepared driers
Oleo chemicals, surfactants and derivatives	
3402	Organic surface-active agents (excl. soaps); surface-active preparations, washing preparations, incl. auxiliary washing preparations, and cleaning preparations, whether or not containing soap (excl. those of heading 3401)
3403	Lubricant preparations, incl. cutting-oil preparations, bolt or nut release preparations, anti-rust or anti-corrosion preparations and mould release preparations based on lubricants; textile lubricant preparations and preparations of a kind used for the oil or grease treatment of leather, furskins or other material (excl. preparations containing, as base constituents, >= 70% petroleum oil or bituminous mineral oil by weight)
Inorganic chemicals	
281610	Hydroxide and peroxide of magnesium
2817	Zinc oxide; zinc peroxide
281820	Aluminium oxide (other than artificial corundum)
281830	Aluminium hydroxide
2819	Chromium oxides and hydroxides
2820	Manganese oxides
2821	Iron oxides and hydroxides; earth colours containing >= 70% by weight of combined iron evaluated as fe2o3
2822	Cobalt oxides and hydroxides; commercial cobalt oxides
2824	Lead oxides; red lead and orange lead
282520	Lithium oxide and hydroxide
282732	Aluminium chloride
282733	Iron chloride
283321	Sulphates of magnesium
283326	Sulphates of zinc

Appendix B Introduction to the EU market

The European Union (EU) is the current name for the former European Community. Since January 1995 the EU has consisted of 15 member states. Ten new countries joined the EU in May 2004. In January 2007 two more countries – Bulgaria and Romania - joined the EU. Negotiations are in progress with a number of other candidate member states. In this survey, the EU is referred to as the EU27, unless otherwise stated.

Cultural awareness is a critical skill in securing success as an exporter. The enlargement of the EU has increased the size of the EU, and also significantly increased its complexity. Dealing with more people from culturally diverse backgrounds makes effective communication necessary. Be aware of differences in respect of meeting and greeting people (use of names, body language etc.) and of building relationships. There are also differences in dealings with hierarchy, presentations, negotiating, decision making and handling conflicts. More information on cultural differences can be found in chapter 3 of CBI's export manual 'Exporting to the EU (2006)'.

General information on the EU can also be found at the official EU website http://europa.eu/abc/governments/index_en.htm or the free encyclopaedia Wikipedia http://en.wikipedia.org/wiki/Portal:Europe.

Monetary unit: Euro

On 1 January 1999, the Euro became the legal currency within twelve EU member states: Austria, Belgium, Finland, France, Germany, Italy, Ireland, Luxembourg, The Netherlands, Spain, and Portugal. Greece became the 12th member state to adopt the Euro on January 1, 2001. Since 2002, Euro coins and banknotes replaced national currency in these countries. Slovenia adopted the Euro in 2007 and Malta and Cyprus will adopt the Euro by January 2008. Denmark, United Kingdom and Sweden have decided not to participate in the Euro.

In CBI market surveys, the Euro (€) is the basic currency unit used to indicate value.

Table 1 Exchange rates of EU currencies in €, average yearly interbank rate 2006

Country	Name	Code	2006	July 2007
Bulgaria	Lev	BGN	0.511	0.512
Cyprus	Pound	CYP	1.737	1.714
Czech Republic	Crown	CZK	0.035	0.036
Denmark	Crown	DKK	0.134	0.134
Estonia	Crown	EEK	0.064	0.064
Hungary	Forint	HUF	0.004	0.004
Latvia	Lats	LVL	1.436	1.438
Lithuania	Litas	LTL	0.288	0.290
Malta	Lira	MTL	2.322	2.336
Poland	Zloty	PLN	0.257	0.263
Romania	Lei	ROL	0.027	0.321
Slovakia	Crown	SKK	0.004	0.030
Sweden	Crown	SEK	0.108	0.108
United Kingdom	Pound	GBP	1.467	1.494

Source: Oanda http://www.oanda.com/ (July 2007)

Appendix C List of developing countries

OECD DAC list - January 2006

When referring to developing countries in the CBI market surveys, reference is made to the group of countries on this OECD DAC list of January 2006.

Afghanistan	Gabon	Nepal	Uruguay
Albania	Gambia	Nicargua	Uzbekistan
Algeria	Georgia	Niger	Vanuatu
Angola	Ghana	Nigeria	Venezeula
Anguilla	Grenada	Niue	Vietnam
Antigua and Barbuda	Guatemala	Oman	Wallis & Futuna
Argentina	Guinea	Pakistan	Yemen
Armenia	Guinea-Bissau	Palau	Zambia
Azerbaijan	Guyana	Palestinian Admin. Areas	Zimbabwe
Bangladesh	Haiti	Panama	
Barbados	Honduras	Papua New Guinea	
Belarus	India	Paraguay	
Belize	Indonesia	Peru	
Benin	Iran	Philippines	
Bhutan	Iraq	Rwanda	
Bolivia	Jamaica	Samoa	
Bosnia & Herzegovina	Jordan	Sao Tome & Principe	
Botswana	Kazakhstan	Saudi Arabia	
Brazil	Kenya	Senegal	
Burkina Faso	Kiribati	Serbia	
Burundi	Korea Rep. of	Seychelles	
Cambodia	Kyrgyz Rep.	Sierra Leone	
Cameroon	Laos	Solomon Islands	
Cape Verde	Lebanon	Somalia	
Central African Rep.	Liberia	South Africa	
Chad	Libya	Sri Lanka	
Chile	Macedonia	St. Helena	
China	Madagascar	St. Kitts Nevis	
Colombia	Malawi	St. Lucia	
Comoros	Malaysia	St. Vincent & Grenadines	
Congo Democratic Rep.	Maldives	Sudan	
Congo Rep.	Mali	Suriname	
Cook Islands	Marshall Islands	Swaziland	
Costa Rica	Mauritania	Syria	
Cote d'Ivoire	Mauritius	Tajikistan	
Croatia	Mayotte	Tanzania	
Cuba	Mexico	Thailand	
Djibouti	Micronesia, Fed. States	Timor-Leste	
Dominica	Moldova	Togo	
Dominican Republic	Mongolia	Trinidad & Tobago	
Ecuador	Montenegro	Tunisia	
Egypt	Montserrat	Turkey	
El Salvador	Morocco	Turkmenistan	
Equatorial Guinea	Mozambique	Turks & Caicos Islands	
Eritrea	Myanmar	Tuvalu	
Ethiopia	Namibia	Uganda	
Fiji	Nauru	Ukraine	

CBI countries – January 2007:

CBI supports exporters in the following Asian, African, Latin American and European (Balkan) countries:

Albania
Armenia
Bangladesh
Benin
Bolivia
Bosnia-Herzegovina
Burkina Faso
Colombia
Ecuador
Egypt
El Salvador
Ethiopia
Georgia
Ghana
Guatemala
Honduras
India
Indonesia
Jordan
Kenya
Macedonia
Madagascar
Mali
Moldavia
Montenegro
Morocco
Mozambique
Nepal
Nicaragua
Pakistan
Peru
Philippines
Rwanda
Senegal
Serbia
South Africa
Sri Lanka
Suriname
Tanzania
Thailand
Tunisia
Uganda
Vietnam
Zambia