



TÜRKİYE KİMYA SANAYİCİLERİ DERNEĞİ
TURKISH CHEMICAL MANUFACTURERS ASSOCIATION

In Brief
TURKISH CHEMICAL INDUSTRY
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Excerpted from the following references:

- © İGEME – Export Promotion Center of Turkey, 2011, www.ibp.gov.tr/Assets/sip/san/Chemical.pdf
- <http://www.invest.gov.tr/en-US/infocenter/publications/Documents/CHEMICALS.INDUSTRY.PDF>
- S. Celebi – TOBB Chemical Sector Consultancy Report, 2011



TURKEY - In Brief

Capital City	Ankara
Population	74 million (2010)
Labor Force (Population)	25.9 million (October 2010)
Median Age	29.2 (2010)
Time Zone	GMT +2
Neighboring Countries	Bulgaria, Greece, Syria, Iraq, Iran, Azerbaijan, Armenia, Georgia
Major Cities (Population)	Istanbul (13.3 million), Ankara (4.8 million), Izmir (3.9 million), Bursa (2.6 million), Adana (2.1 million)
Currency	Turkish Lira (TRY)
Financial Center	Istanbul
GDP	USD 736 billion (2010 - Current Prices)
GDP Per Capita	USD 10,079 (2010)
Exports Value	USD 114 billion (2010)
Imports Value	USD 185 billion (2010)
Tourism Revenue	USD 20.8 billion (2010)
Tourist Number	28.5 million people (2010)
Foreign Direct Investment	USD 9.1 billion (2010)
Number of Companies with Foreign Capital	25,500 (2010)
Inflation Rate	6.4% (CPI - 2010)
Major Exports Markets	Germany (10.1%); UK (6.3%); Italy (5.7%); Iraq (5.3%); France (5.3%) (2010)
Major Imports Sources	Russia (11.6%); Germany (9.5%); China (9.3%); USA (6.6%); Italy (5.5%) (2010)
Trade Agreements	<ul style="list-style-type: none">• Customs Union Agreement with the EU,• Free Trade Agreements with Albania, Bosnia Herzegovina, Chile, Croatia, EFTA member countries (Switzerland, Norway, Iceland and Liechtenstein), Egypt, Georgia, Israel, Jordan, Macedonia, Montenegro, Morocco, Palestine, Serbia, Syria, Tunisia
Airports	45 (13 international)



CHEMICAL INDUSTRY IN TURKEY

Chemicals are indispensable to modern life and the development of the chemical industry has helped to elevate the standard of living, an indicator of the level of industrialization in a country. Chemical industry products contribute significantly to growth in other industrial sectors.

At the beginning of the 20th century there were a few chemical establishments, manufacturing soap, liquorices extract, valonia extract, etc., within the boundaries of the Ottoman Empire. After the establishment of the Republic of Turkey till the 1950s, these chemical works passed through a process of corporation and production began in some fields such as explosives, medicine, agricultural chemicals, detergents, printing ink and textile dyes and involved the final stages only. It was only after the 1950s, especially during the planned economy period, that the development of the chemical industry in Turkey accelerated. between 1960 and 1980 economic policies were based on import substitution and public sector investments were directed to petrochemicals, fertilizers and basic organic and inorganic chemicals, the fields which required high investment, with low profitability whereas private sector and foreign investments were directed to pharmaceuticals, synthetic yarns, soaps and detergents.

In 1980 Turkey started to follow a new export oriented economic policy. As a result of these successful policies, production and exports of the manufacturing sector boomed. The chemical industry, likewise, benefited from the new economic policy and showed an impressive increase both in production and exports.

Today, the Turkish chemical industry with its modern technology and diversified products is the key component of the industry and integrated into supply chain of national industries, especially, textiles and automotive sectors.

Production Diversity

The Turkish chemical sector covers a wide range of products in 14 distinct product chapters In foreign trade statistics. The production of the sector is generally aimed at the products demanded by the manufacturing industry and the directly consumable products; namely, petrochemicals, thermoplastics, fertilizers, organic and inorganic chemicals, pharmaceuticals, synthetic fibers and yarns, soap and detergents, paints, etc. A total of 126 million tons of chemicals were produced in 2010. About 84% of production originates from the private sector.

Most of the companies in the chemical industry, especially private sector companies, are located in Istanbul, Izmir, Kocaeli, Sakarya, Adana, Gaziantep and Ankara. The Turkish chemical industry has developed significantly in terms of quality, productivity and protection of the environment, and is in the process of adopting the EU's Technical Standards. In addition, the responsible care, the chemical industry's trademarked noncompulsory initiative on environmental, health and safety issues, has been successfully implemented since 1992.

The Turkish chemical industry has competitive power because of various raw materials advantages. Turkey is among the main producers of soda ash, chrome and boron chemicals. The Turkish **petrochemicals industry** has shown considerable growth since



1970. The dominant organization in the Turkish petrochemical sector is Petkim Petrokimya Holding A.Ş. which is a public company and under a privatisation scheme at present. There are two petrochemical complexes, one is the Petkim Aliaga complex in İzmir and the other one is the Tupras (Turkish Petroleum Refineries Corporation) Korfez Petrochemical and Refinery in Kocaeli. In these two complexes a wide range of petrochemicals, all common plastics (HDPE, LDPE, PS, PVC, and PP), aromatics, ethylene glycol, phthalic anhydride, terephthalic acid, carbon black, synthetic rubber, acrylonitrile and caustic soda are produced. The total production of these petrochemicals reaches about 2.9 million tons/year, and meets about 25 % of domestic demand.

Since the **textile sector** is a well-developed sector in Turkey, polymer production related to textiles and the production of textile chemicals have also developed simultaneously. Large plants for the production of polyamide, polyester and acrylic fibers have been built and production has been directed to both the foreign markets as well as the domestic market. Almost all synthetic fibers are produced by the private sector and synthetic fiber production is around 850 000 tons/year.

The **fertilizer industry** is one of the key industries for Turkey, which has vast agricultural potential. The first independent fertilizer plant commenced production in 1954 and heavy fertilizer investments were realized between the years 1960-1970. Today there are seven companies producing fertilizers exclusively: Tugsas, Igsas, Bagfas, Toros Gubre, Ege Gubre, Akdeniz Gubre and Gubre Fabrikalari which are all in the private sector. The industry has a total production capacity of 5.8 million tons/year. AN 26, AS, DAP, TSP, urea and composed fertilizers comprise the largest share of fertilizer production. Turkey's fertilizer production meets domestic demand and the surplus is exported.

Pharmaceuticals, soap and detergents, soda, chromium chemicals, boron chemicals, paints, sodium sulphate, fatty acids and rose oil are the other main areas of production of the chemical industry. The **pharmaceuticals industry** has become one of the leading sectors of the chemical industry and accounts for approximately 10 % of the chemical industry's production. Production trends of pharmaceuticals are closely related to domestic demand. Turkish pharmaceutical companies manufacture a wide range of pharmaceutical products, mostly generic formulas. The number of pharmaceuticals on the market is 3100; if alternative posologies are included the number is 7200. Domestic industry meets 90 % of the pharmaceutical demand but new pharmaceuticals, such as ones for cancer, vaccines and hormones are imported. The pharmaceuticals industry produces many active ingredients of pharmaceuticals, primarily antibiotics and analgesics, by using fermentation, extraction and synthesis methods. The major characteristics of the pharmaceuticals raw materials industry are that mainly private companies invest in the sector and the existing production capacity can easily be shifted to various production lines. It is worth mentioning that the Afyon Alkaloids Factory produces 20% of the morphine consumed by pharmaceuticals industries all over the world.

The Turkish **soap and detergent industry** has shown very good performance in terms of quality, capacity and exports. There are many companies in the soap and detergent industry, about 15 of them being the major ones; among these there are multinational groups which have worldwide reputations. Since 1990 domestic and foreign investments in the Turkish cleaning products industry have increased considerably. As a consequence, detergent production capacity has reached 1.3 billion tons and soap production capacity has reached 550 thousand tons; both have great export potential. Since Turkey has a large variety of herbs and natural products, natural soap production is also widespread and done



by small size local companies throughout Turkey. World famous “laurel soaps” are produced in large quantities in Mersin, Antakya and its surrounding regions. Turkey is also among the top producers of olives, therefore natural olive oil soaps are also manufactured and exported in large quantities.

The consumption and production of cosmetics and personal care products are growing rapidly. The number of cosmetics and personal care products is increasing every year. Hair care has the largest share of the cosmetics and personal care products market in Turkey. Shampoos represented around 59 % of hair care products. Men’s grooming products, depilatories, bath and shower products especially bar soaps, lip and eye makeup, personal deodorants and antiperspirants, perfumes, cologne and other toilet waters, baby care products and dentifrices are the main products. Natural cosmetic production is on rise due to growing demand for these products.

Parallel to the developments in Turkey’s construction, automotive and marine industries, the **paints and coatings industry** has also developed and has become one of the most dynamic sectors of the Turkish chemical industry. Today the industry produces about 800 000 tons/year of paints and coatings and is comprised of about 600 manufacturers, 20 of them being large-scale companies. In addition to meeting domestic demand, the Turkish paint sector has recently tended to export more.

Turkey has the largest **soda factory** in the Middle East with a total capacity of 750 000 tons/year. In addition to light and dense soda ash, refined sodium bicarbonate and sodium silicate are produced at the Mersin plant. An extremely rich trona (natural soda ash) deposit was found near Ankara, at Beypazari and at present Turkey has substantial export potential for soda ash. Eti Soda A.Ş. has started operation in 2009 and 1 million tons/year soda ash will be produced.

Being among the top five countries supplying chrome ore to world markets, Turkey produces and exports some of the most important **chrome chemicals and derivatives** such as sodium bichromate, basic chrome sulfate, chromic acid and chrome oxide.

Turkey also enjoys a comparative advantage in **boron chemicals** (borax decahydrate, borax pentahydrate, boric acid and sodium perborate) due to the size of her reserves, the quality of minerals and proximity to consumer markets. Eti Maden İşletmeleri Genel Müdürlüğü is the dominant producer of boron minerals and boron chemicals and the sole exclusive exporter of boron chemicals.

Turkey has developed a substantial capacity and production of **sodium sulphate**. In sodium sulphate production, Turkey is second largest in Europe and sixth in the world.

Owing to Turkey’s climatic and ecological conditions, many **medicinal and aromatic plants** are cultivated or gathered from nature. Turkey is one of the most important rose oil exporters in the world market. The majority of these exports originate from the Isparta region. Laurel oil, thymus oil, lavender oil and origanium oil are also produced in Turkey.

In conjunction with recent industrial growth in Turkey, the consumption and production of many other chemicals are growing rapidly and the number of chemicals produced is increasing every year. The recent developments in **textile and leather chemicals** are also worth mentioning and many small and medium size companies have recently started to operate in these two sectors. In the Turkish chemical industry, there are about 314 companies with foreign investment. The Turkish chemical industry has a share of 13 % of total foreign capital in Turkey.



Exports

Chemical sector exports have peaked to \$13.6 billion in 2008 with an average annual rate of increase of 21% since 2005; however, decreased to \$9.7 billion in 2009 due to the global economic crisis. In 2010, the recovered chemical sector reached a \$12.7 billion in exports, becoming the third in ranking after automotive and textile sectors with a 11.9% share of the total country exports while increasing its share of exports in overall manufacturing sector exports to 12% in 2010 as compared to 10% in 2009.

As of 2010, plastics and plastic products made up 31% of the chemical sector exports, followed by 27% mineral fuels and oils, 7.5% inorganic chemicals, 7% rubber products where the remaining 28% by the other ten subsector groups. In recent years, the share of mineral fuel and mineral oils in chemical sector exports reveal a decreasing trend, whereas plastics and plastic products show an increasing trend. Turkey's chemical industry exports are increasing steadily. In 2010 the chemical industry was one of the important exporting sectors among total industrial exports. The value of chemical exports was about US \$ 7,5 billion in 2010, or about 6,5 % of the total exports in Turkey.

Major export products of the Turkish chemical industry were processed plastic products such as tubes, pipes & hoses & fittings with an export value of US \$ 1.461 million in 2009. The second major export product was soaps, detergents and cosmetics with an export value of US \$ 1.030 million. Other major product groups were inorganic chemicals (US \$ 610 million) and medicament mixtures put in dosage (US \$ 473 million).

Export Product Groups of Chemical Industry (Value: 1000 US \$)

SITC Rev. 3	Product Groups	2007	2008	2009	2010	Major Export Markets in 2009
51	Organic chemicals	374.341	486.730	347.713	520.343	Italy, Spain, USA, Greece, Egypt
52	Inorganic chemicals	516.632	679.619	611.676	931.088	China, Italy, Belgium, Spain, Egypt
53	Dyeing, tanning and colouring materials	357.455	452.405	428.800	532.799	Iraq, Azerbaijan, China, Romania, Georgia
54	Medicinal and pharmaceutical products	357.818	421.134	429.062	558.172	Germany, USA, Switzerland, United Kingdom, TRNC
55	Soaps, detergents, cosmetics, personal care products, essential oils and resinoids, polishing and other products	516.667	662.604	647.735	678.231	Iraq, Russian Fed., Azerbaijan, Ukraine, Israel
56	Fertilizers	84.346	217.321	83.679	205.587	Italy, Iran, India, TRNC, Brasil
57	Plastics in primary forms	489.030	614.036	521.508	705.086	Germany, Egypt, Russian Fed., Ukraine, Greece
58	Plastics in non-primary forms	2.333.023	2.949.161	2.571.707	3.012.307	Libya, Russian Fed., Iraq, Azerbaijan, Iran
59	Other chemical materials and products	280.150	364.088	320.285	399.831	Iran, Azerbaijan, Egypt, Iraq, Turkmenistan
5	Chemicals and Related Products Total	5.309.462	6.847.098	5.962.165	7.543.444	

Source: Undersecretariat of Foreign Trade



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Turkey is exporting all these chemicals to about 180 countries throughout the world. Major destinations for chemicals were Iraq, Russian Federation, Germany, Azerbaijan, Italy, Iran and China.

In 2008, EU was the leading country group of Turkish chemical sector export client with \$1,849 million, followed by Near and Far East countries with \$896 million and other European countries with \$693 million. In 2009, Asian countries replaced the export ranking position of the other European countries. In 2009, 100% to 635% increases, mostly on mineral oils, were recorded in exports to United Arab Emirates, Iran, Kenya, South Korea, Indonesia, India and Poland.

Exports to the first group of 10 countries have 40% share while the second 10 percent group has 22% share of Turkish Chemical Sector. In 2010, the share of EU in total exports showed a decrease compared to previous years; Iraq becoming the top export client replacing Germany.

The Chemical Industry Exports by Countries (Value: 1000 US \$)

Country	2008	2009	2010
Iraq	271	346	489
Germany	389	353	435
Russian Fed.	466	305	414
Italy	326	225	345
Azerbaijan	250	254	290
China	165	203	288
Romania	364	242	261
Iran	173	207	260
United Kingdom	207	180	236
Egypt	182	178	217
Spain	188	132	204
Ukraine	277	151	197
France	148	135	181
Libya	96	223	173
Georgia	169	135	168
Israel	174	146	163
U.S.A.	155	142	159
Bulgaria	208	145	155
Turkmenistan	72	111	148
Belgium	150	106	139
Others	2.415	3.624	2.623
TOTAL	6.847	7.543	7.546

Source: Undersecretariat of Foreign Trade

Imports

Imports of the Turkish chemical sector, including mineral fuel and mineral oils, had peaked to \$77 billion in 2008; however, decreased to \$53 billion in 2009 due to global economic crisis. The imports value in 2010 was \$65 billion. Four product groups, mineral fuel and mineral oils, plastics, pharmaceuticals and organic chemicals, make up about 84% of the total sectoral imports.



Mineral fuel and mineral oils has the major share of imports with \$29 billion followed by plastic raw materials and products with \$7 billion. Plastic raw materials, petrochemical products, make up the majority of the imports in plastics group.

EU countries were the top import source of chemical industry products with \$14.6 billion in 2008, followed by Asian countries with \$4,674 million and by other European countries with \$2,831 million of imports. This ranking was not changed in 2009 and 2010.

General Indicators

Turkish chemical sector generated about \$50 billion added value to the national economy in 2010 with an estimated \$123 billion in production at 70-75 percent of overall capacity utilization rate. The chemical sector has a major weight in the Turkish manufacturing industry with its 6% share in GDP and a wide range of products.

Based on the Turkish Union of Chambers of Industry and Exchanges (TOBB) data base, 83 % of the 13,118 registered chemical companies are SMEs. The chemical sector, having a 180 million total production capacity, produces about 2,600 chemicals. Total employment in the sector is about 765,00 of which 6% having engineering education and training. However, despite such impressive potential, the Turkish chemical sector with a €195,50 per capita chemical sales value, is way below the approximately €1,750 per capita of the fourteen EU country averages in chemicals production, revealing that the sector is quite open to investments in value added production.

Country	Chemical Sales Billion Euro	Share in EU (%)	Population	Per capita Chemical Sales, Euro
Germany	147	24,0	82.500.849	1.783,25
France	92	15,0	62.518.571	1.470,76
Italy	77	12,5	58.462.375	1.310,67
UK	58	9,4	60.059.900	959,41
Spain	44	7,1	43.038.035	1.011,27
Holland	37	6,0	16.305.526	2.255,68
Belgium	39	6,4	10.445.852	3.755,75
Ireland	34	5,6	4.109.173	8.353,99
Poland	10	1,7	38.173.835	272,99
Austria	8	1,3	8.206.524	971,06
Denmark	8	1,3	5.411.405	1.472,63
Finland	7	1,1	5.236.611	1.287,66
Hungary	6	1,0	10.097.549	607,08
Czech Rep.	6	1,0	10.220.577	539,79
Average				1749,83
Turkey	14	2,3	71.611.001	195,50

Ref: Cefic and Eurostat

As is the case for non-petroleum producing countries, the chemical industry is an import-dependent sector in Turkey. On an average of various subsector groups, approximately 70% of raw materials are obtained through imports in last decade, where this ratio is the highest in plastics subsector at 85%.