

## Singapore - Chemical Industry

### General Information

Mega growth trends like rapid urbanisation, changing demographics and the rise of the Asian middle-class are shifting the need for products and services to Asia. With greater demand for transportation fuel, as well as petrochemical and specialty chemical products, the Asia growth story creates a window of opportunity.



As one of the world’s leading energy and chemical industry hubs, Singapore’s contribution to the industry is vast, both in terms of output and research, and the Republic is constantly working to stay at the forefront of the industry’s advancement. Singapore’s position as a global chemicals hub has grown in tandem with the extensive development of Jurong Island – an integrated complex housing many of the world’s leading energy and chemical companies, among them BASF, ExxonMobil, Lanxess, Mitsui Chemicals, Shell and Sumitomo Chemicals. Presently, Jurong Island has successfully attracted investments in excess of S\$35 billion.

The government, supported by the Economic Development Board (EDB), wants to keep the manufacturing industry in a balanced economic environment. The aim is to not to become a pure service oriented nation.

### Market for Chemical Products

In terms of chemical development and research, Singapore has a promising future. In 2012, the chemical sector grew more than double compared to the total manufacturing industry with a rising positive tendency. With 42.3% production value of the total industry, and 30.2 % of the value added products, the chemical sector remains the most important processing industry next to the electronic sector. In 2013, the production value increased about 4.2 % (nominal), while the value added products even grew with 5.2% (nominal). Therefore the investment licenses were almost tripled. From 2010 until 2012, the investment in chemical industries grew from 1.7 Billion USD to 6.7 Billion USD. Continuous investment may lead to a comprehensive independence from imports in future.

Leveraging on the country’s strengths as a leading market player in other areas such as marine and offshore engineering, water treatment and lubricants, Singapore is well-positioned to further expand the chemical industry by focusing on high value-added specialty chemicals that serve these sectors. From 2009 until 2012, this section grew with an average of 12% per year. Additionally, specialty chemicals companies can tap on the close proximity of Singapore to their customers and the end-consumers, and respond with agility to the emerging needs of Asian consumers by innovating new applications. Leading German companies investing in these sectors are Lanxess and Evonik.

### Main Market Players

Name	Company profile
DuPont™ (US)	The total investment of DuPont in Singapore is close to S\$200 million. It has 2 plants; an Engineering Polymers Zytel® site on Jurong island producing nylon resin cubes for the automotive, electronics and appliance industries, and an Engineering Polymers Vespel® site located in Tuas, producing parts for aerospace, semiconductor, transportation and diversified industries.

ExxonMobil Chemical (US)	ExxonMobil has operated in Singapore for over 100 years. They have grown from trading kerosene post to a multi-billion-dollar manufacturing and marketing presence today.
Kanto Kagaku (Japan)	The Laboratory centre is set up based on the technology transferred from Kanto Japan with the State-of-the-Art analytical instrument such as the Dynamic Reaction Cell-ICP-MS. The Lab will be able to perform the ultra-trace analysis on organic and inorganic contaminants in various chemicals to support the internal production; equipment projects and external service to the electronic and semiconductor industries.
Lucite (UK)	Lucite International is a global leader in the design, development and manufacture of acrylic-based products. With manufacturing, sales and distribution capabilities across EAME, The Americas and Asia Pacific, it has produced acrylic products, which make a significant contribution to a wide range of growing sectors and geographic markets. Since being acquired by Mitsubishi Rayon Group in 2009 it has further strengthened its position as the world's largest supplier of MMA, the essential building block for all acrylics.
Shell Chemicals (The Netherlands)	In May 2010, Shell developed a major integrated oil and petrochemicals complex - comprising a new world-scale ethylene cracker on Bukom Island, a world-scale Mono-Ethylene Glycol (MEG) plant on Jurong Island and enhancements to the existing Bukom Refinery. This multi-billion dollar investment is the single largest investment by Shell in Singapore, and reinforces Shell's continuing commitment to and confidence in the country.
Sumitomo Chemical (Japan)	Sumitomo Chemical Singapore (SCS) was established in 1996 and is currently engaged in the manufacture and sale of MMA monomer and polymers (PMMA), as well as the sale of agro-chemicals, household insecticides, feed additives and IT-related chemical products manufactured by Sumitomo Chemical.
Mitsui Chemicals Inc (Japan)	MCAP is one of the four regional headquarters of Mitsui Chemicals Inc. (MCI), which is taking charge of the vast region of Southeast Asia, Oceania, South Asia and Middle East. Besides the sales and marketing of the MCI group products in the region, MCAP as the regional headquarter is rendering various administrative supports to all of the 16 MCI business affiliates in the region including Singapore, Thailand, Indonesia, Malaysia and India. In 2012, MCAP started the Technical Support Center for providing customers with various technical supports for their better business solutions both quality-wise and cost-wise.

### German Market Players

Name	Company profile
BASF SE	The world is BASF's ester. BASF is the world's largest chemical company, ahead of Dow and DuPont. It has more than 370 manufacturing facilities and does business worldwide through six business segments: plastics (polymers and polyurethanes), performance products (including dispersions and pigments, adhesives and sealants, personal care and pharma additives, paper chemicals, and lubricant additives), chemicals (plasticizers and solvents), oil and gas exploration and production (through subsidiary Wintershall AG), functional solutions (catalysts, coatings, and construction chemicals), and agricultural products (fungicides, herbicides, insecticides). BASF has divested most of its fertilizer operations.

LANXESS	LANXESS is a leading specialty chemicals company with sales of EUR 9.1 billion in 2012 and roughly 17,500 employees in 31 countries. The company is currently represented at 52 production sites worldwide.
Siltronic AG (Branch from Wacker Chemie AG)	WACKER is a globally active chemical company with some 16,300 employees and annual sales of around €4.63 billion (2012). Spanning the globe with five business divisions, we currently operate 24 production sites worldwide. WACKER is represented by subsidiaries and sales offices in 29 countries in the Americas, Asia, Australia and Europe.
Evonik	Evonik is one of the world's leading specialty chemicals companies. Around 80 percent of sales come from leading market positions, which it plans to expand further. It concentrates on high-growth megatrends, especially health, nutrition, resource efficiency and globalization.  In 2012 Evonik's roughly 33,000 employees generated sales of €13.6 billion and an operating result (adjusted EBITDA) of €2.6 billion. 75 percent of sales are generated outside Germany, providing convincing evidence that our business is global.

### Research & Development (R&D)

Located on Jurong Island, the Institute of Chemical and Engineering Sciences (ICES) is an autonomous national research institute under A\*STAR (Agency for Science, Technology and Research). It was created to undertake a diverse range of activities from exploratory research to process development, optimization and problem solving as well as the running of pilot-scale projects. With a focus on providing highly trained R&D manpower, establishing a strong science base and developing technology and infrastructure, ICES is well-positioned to support energy and chemical companies as they develop new products and processes from Singapore. Together with public research institutes such as ICES, Singapore is host to a number of private sector research centers by Chemical companies like 3M, Bayer and BASF.

### Environmental aspects

As Singapore positions itself for the next phase of growth in its energy and chemical industry, the Republic aims to be a model of sustainable development. To address climate change concerns and global resource constraints, Singapore is taking the lead in terms of raising the bar in energy efficiency, emissions management as well as accelerating the development of new, sustainable feedstock and technologies in partnership with industry through the Jurong Island version 2.0 initiative. A number of high impact projects, to ensure Jurong Island's continued attractiveness as an integrated manufacturing location will be implemented over the next few years. These include key infrastructure such as a gasification plant, a LPG terminal and a multi-user product grid. Recognising the importance to companies of plant-level sustainability efforts, which reduce a plant's carbon footprint, the city also actively supports companies to encourage adoption of energy efficiency improvement projects.

The city continues to receive glowing reviews year after year for its infrastructure, manpower capabilities, as well as ease of doing business. For companies seeking a location from which to connect to their customers and manage their operating entities in Asia, Singapore's strategic location and physical connectivity means that companies can oversee their activities in this fast-growing region.

## Industry growth

The tables below give an overview of the industry growth in Singapore.

Chemical Sector in 2012 (in Mio. SGD)				
	Value of production	Changes compared to the previous year	Value added products	Changes compared to the previous year
Chemical Industry in Total	127.175	+4,2%	18.209	+5,2%
Oil	57.402	+2,6%	501	75,8%
Petrochemistry	32.964	+1,4%	1.1781	-31,6%
Speciality Chemicals	9.776	8,9%	2.007	-5,3%
Pharmaceutical Products	25.120	+11,1%	13.427	+14,4%
Others	1.913	-2,9%	494	-14,0%
Share of processing industry	42,3%	2,0%	30,2 %	2,4%

Source: ASIA Bridge 12:13/1:14

Import of important chemical products (in Bio SGD)	2011	2012	2013 (first and second quarter)
Chemical Products	127.175	+4,2%	18.209
Organic Chemicals	57.402	+2,6%	501
Plastics	32.964	+1,4%	1.781
Medical & Pharmaceutical Products	9.776	+8,9%	2.007
Essential oils, resinoids, intermediates, health care, detergents	25.120	+11,1%	13.427

Source: International Enterprise Singapore

According to EDB, Singapore has a ripe potential for specialty chemicals, due to its R&D capabilities and facilities. The country will continue to develop its R&D structure and cater to the rising demand of products and services in Asia.

### Sources

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