

The Ohio Petroleum and Chemical Manufacturing Industries

The petroleum and coal products industry (NAICS 324) is based on the transformation of crude petroleum and coal into usable products.

The chemical manufacturing industry (NAICS 325) is based on the transformation of organic and inorganic raw materials by a chemical process and the formulation of products.

Ohio's Standing

- Ohio's petroleum and coal products industry produced \$1.3 billion (current dollars) worth of goods in 1999, which was 4.7 percent of total U.S. output. In 1999, Ohio ranked fifth in gross state product (GSP) behind California, Texas, Louisiana and Illinois.
- Ohio's chemical manufacturing industry produced \$10 billion worth of goods in 1999, which was 5.7% of total U.S. output. Ohio ranked sixth in GSP behind New Jersey, Pennsylvania, Texas, California and North Carolina.
- The petroleum and coal products industry experienced a decline of 41.0 percent in GSP from 1990 to 1999. During the same period, the chemical manufacturing industry experienced an increase of 68.5 percent in GSP.

Key Petroleum Subsectors

- In 1999, the petroleum and coal products industry ranked third in total establishments (176) and sixth in total employees (5,697) and seventh in total receipts (\$6.2 billion).
- The petroleum refinery subsector (NAICS 32411) includes establishments engaged in refining crude petroleum into refined petroleum. In 1999, Ohio had six refinery establishments that employed 1,894 workers. In 1997, Ohio earned \$4.6 billion in receipts.

Gross State Product, 1999 (millions of current dollars)

Chemical Manufacturing Industry (SIC 28)

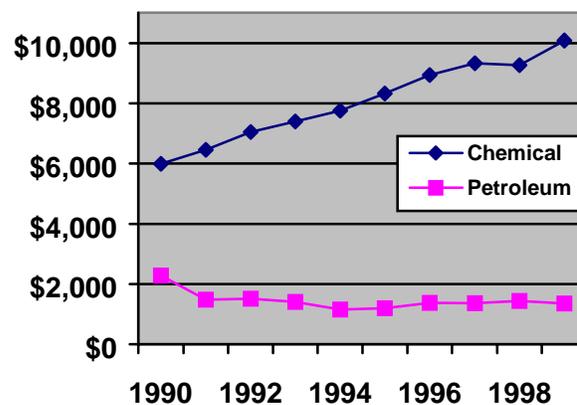
United States	176,316
New Jersey	16,134
Pennsylvania	14,791
Texas	13,812
California	12,659
North Carolina	10,812
Ohio	10,077
Percent of U.S.	5.7%

Petroleum and Coal Manufacturing Industry (SIC 29)

United States	28,604
California	5,878
Texas	5,472
Louisiana	2,406
Illinois	1,592
Ohio	1,349
Percent of U.S.	4.7%

Source: U.S. Bureau of Economic Analysis

Ohio's Gross State Product Data for the Chemical and Petroleum Industries, 1990-1999 (dollars in millions)



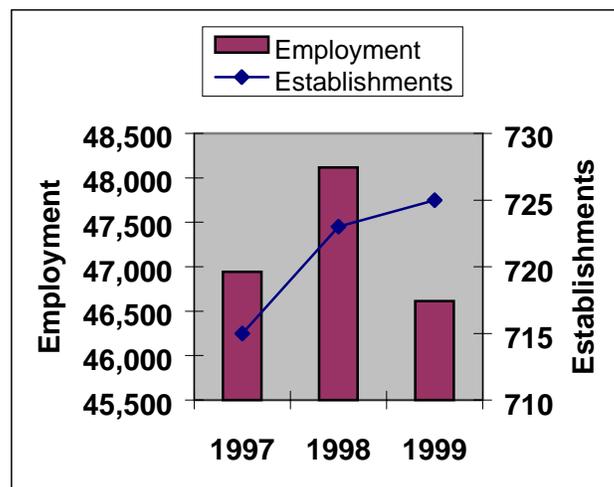
Source: U.S. Bureau of Economic Analysis

- The asphalt paving, roofing and saturated materials manufacturing subsector (NAICS 32412) had 131 establishments that employed 2,270 workers in 1999. Ohio earned \$1.1 billion in receipts in 1997.

Key Chemical Sectors

- In 1999, the chemical manufacturing industry ranked fifth in total establishments (725) and sixth in total employment (46,613). The industry ranked sixth in receipts (\$21 billion) in 1997.
- Ohio's basic chemical-manufacturing subsector includes establishments primarily engaged in manufacturing chemicals using basic processes, such as thermal cracking and distillation. In 1999, this subsector ranked fourth in establishments (136) and fifth in employment (11,612). In 1997, Ohio ranked fifth in receipts (\$5 billion).
- The pesticide, fertilizer and other agricultural chemical manufacturing industry (NAICS 3253) ranked eighth in establishments (31) and fifth in employment (2,027). In 1997, Ohio ranked tenth in receipts (\$640 million).
- The fertilizer manufacturing industry (NAICS 32531) includes establishments engaged in manufacturing nitrogenous or phosphoric fertilizer materials and manufacturing fertilizers from sewage and animal waste. In 1999, Ohio ranked fifth in establishments (25), second in employment (1,663), while ranking fifth in receipts (\$598 million) in 1997.
- Ohio's paint, coating and adhesive manufacturing subsector (NAICS 3255) ranked third in establishments (142) and first in employment (9,037) in 1999. In 1997, Ohio ranked first in receipts (\$3.3 billion).
- The pharmaceutical and medicine subsector (NAICS 32541) includes establishments engaged in manufacturing biological and medicinal products. In 1999, the industry had 49 establishments and employed 3,496 workers. In 1997, Ohio earned \$1.2 billion in receipts.

Employment and Establishments in the Chemical Industry, 1997-1999



Source: U.S. Census Bureau, CBP

Top-Ranked Industries, 1997 (Receipts in \$1000)

NAICS Code	Industry Title	Receipts	U.S. Rank
3251	Basic Chemicals	\$5,044,878	5th
3253	Pesticides	\$640,738	10th
32531	Fertilizer	\$598,216	5th
3255	Paints & coatings	\$3,353,080	1st
32541	Pharmaceuticals	\$1,262,007	16th
3256	Soap & Toilet	\$6,155,903	1st
325611	Soap & Detergent	\$4,274,415	1st

Source: U.S. Census Bureau: Economic Census, 1997

- Ohio's soap, cleaning compound and toilet preparation manufacturing industry (NAICS 3256) ranked eighth in the area of establishments (92), fifth in employment (7,866) and first in total receipts (\$6.1 billion).

Notable Companies

Fortune 1000 Companies, 2001

- The chemical manufacturing industry has five companies on the Fortune 1000 list. The companies are Procter & Gamble (31), Sherwin-Williams (337), RPM, Inc. (713), Lubrizol Corp. (772) and Ferro (897). These five companies accounted for \$50 billion in revenues.

Forbes 500 Private Companies, 2001

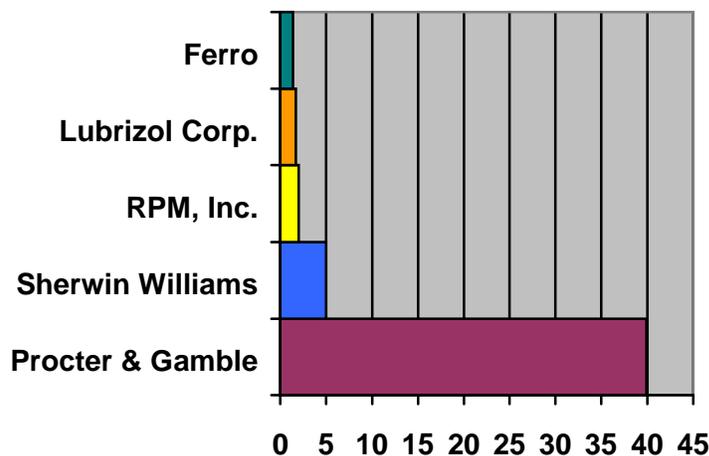
- Borden (150) and Noveon (220), chemical manufacturing companies, earned \$1.5 billion and \$1.1 billion in revenues respectively.

Key Trends

Employment

- The latest employment projections from Ohio's Bureau of Labor Market Information cover the period from 1998 to 2008 and are based on the SIC system. The chemical manufacturing industry (SIC 28/NAICS 325) is expected to lose 2,300 workers by 2008—a decrease of 3.5 percent.
- The soap, cleaning compound and toilet preparation manufacturing industry (SIC 284/NAICS 3256) is expected to add 1,400 workers, growing 7.0 percent.
- The petroleum and coal products manufacturing industry (SIC 29/NAICS 324) expects to lose 400 workers by 2008—a decrease of 6.6 percent.
- The top employers in the chemical manufacturing industry are Procter & Gamble (13,700 employees) and Sherwin-Williams (3,990 employees).

Ohio-Based Fortune 1000 Firms (Revenues in billions)



Source: www.fortune.com

Employment Projections-Chemical and Petroleum Industries, 1998-2008

Industry	Employment 1998	Projected Employment 2008	Percent change
Chemical Manufacturing	65,200	62,900	-3.5%
Soaps/Toilet Goods	20,000	21,400	7.0%
Petroleum Manufacturing	6,100	5,700	-6.6%

Source: Bureau of Labor Market Information

Exports

- Chemical manufacturing (NAICS 325) exports increased from 1999 to 2000 by 11.1 percent. The graph to the right illustrates the decline in chemical exports from 1997 to 2000.
- Petroleum and coal products manufacturing (NAICS 324) exports decreased from 1999 to 2000 by 26.9 percent. The four-year decline is also illustrated by the graph on the right.

Investment Trends

Company Investment in the Ohio Chemical Industry

- In 1999, PPG Industries invested \$74 million toward its paint products operation in Cleveland. Matrix Essentials, a cosmetics manufacturer, invested \$54 million toward its Solon operations. The Praxair Company invested \$50 million for its Warren manufacturing facility.
- In 2000, Procter & Gamble, manufacturer of soaps and cosmetics, invested \$67 million toward its St. Bernard R&D facility.

Company Investment in the Ohio Petroleum

- In 1998, Clark Refining invested \$76 million toward its petroleum refinery operation in Shawnee Township.
- In 2000, Sunoco MidAmerica invested \$50 million toward its petroleum manufacturing facility in Oregon.

Recent Projects

- DuPont, the largest chemical company in the U.S., is spending \$90 million to expand Kapton production at its Circleville plant. Kapton is used in flexible circuits for wireless, digital and computer products. The project will add 40 jobs when it is completed in 2002.

State Merchandise Exports to the World—1997-2000 (Exports in thousands of dollars)

	Chemical	Petroleum
1997	3,130,255	80,768
1998	2,565,185	79,275
1999	2,812,179	83,212
2000	3,124,848	60,813

Source: Office of Trade and Economic Analysis

Announced Investments, 1998-2000

1998			
Company	County	Product	Investment (Millions \$s)
Clark Refining	Allen	Petroleum Refining	\$76
1999			
PPG Industries	Cuyahoga	Paint Products	\$74
Matrix Essentials	Cuyahoga	Cosmetics	\$54
Praxair	Trumbull	Industrial Gases	\$50
2000			
Procter & Gamble	Hamilton	Soaps & Cosmetics	\$67
Sunoco MidAmerica	Lucas	Petroleum	\$50

Source: Ohio Department of Development

Ohio Petroleum and Coal Products Industry (NAICS 324) and Chemical Manufacturing (NAICS 325)



-  counties with employees over 500 in chemical manufacturing
-  counties with employees over 500 in both chemical and petroleum manufacturing

Source: 1999 County Business Patterns, U.S. Bureau of Census
Prepared by: Office of Strategic Research, Ohio Department of Development