



2024

PLASTICS INDUSTRY
SIZE & IMPACT

One industry
that makes a
positive impact

EXECUTIVE SUMMARY

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GROWTH IN PLASTICS

The U.S. plastics industry is thriving, with demand for plastics expected to remain strong for the foreseeable future.

Real Value Added in Plastics Manufacturing

PLASTICS MANUFACTURING



+0.9%

Overall manufacturing:

0.0%

PLASTICS EMPLOYMENT BY STATE IN 2023



TEXAS

77.4K

Highest level of plastics employment



INDIANA

15.2K

Highest plastics employment concentration*

* per 1,000 non-farm jobs)

**A Thriving U.S. Plastics Industry:
Snapshot of Growth and Impact**

Plastics Gross Output and Consumption in 2023

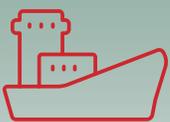
8th largest industry
in 2022

Plastic Products Personal Consumption

87.6%
in 2023

* defining industries at the 4-digit NAICSS level

TOTAL PLASTICS INDUSTRY SHIPMENTS IN 2023



\$519 BILLION

\$658 BILLION

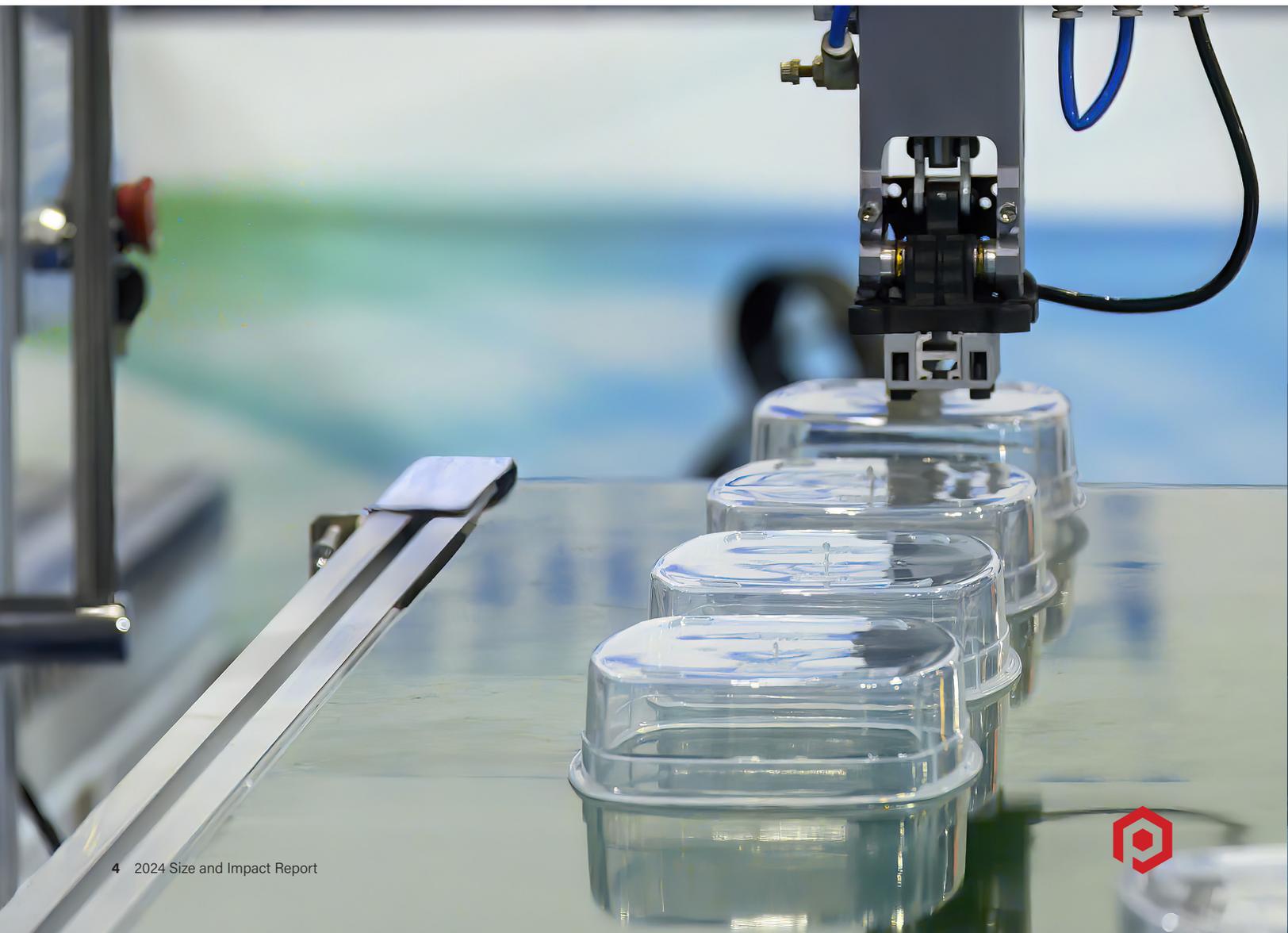
Including suppliers' shipments to the plastics industry



The U.S. plastics industry continues to be a vital component of the economy, driving job creation and economic growth.

One industry that makes a positive impact

The 2024 Size and Impact Report indicates that the U.S. plastics industry remains one of the economy's largest sectors and poised for continued growth. While most plastics are used in manufacturing, their role in services is becoming increasingly significant. As highlighted in another Plastics Industry Association (PLASTICS) study, the 2024 Global Trends Report, abundant petrochemical feedstocks have bolstered domestic production to meet stable demand, as well as U.S. exports, benefiting U.S. plastics companies, the industry, and the broader economy.



EXECUTIVE SUMMARY

This report tells the story of the U.S. plastics industry through numbers. It addresses several important questions, including:

- How large is the plastics industry?
- How does it compare to other industries?
- How fast is it growing?
- Where is it concentrated in the U.S.?
- How does it impact the broader economy?
- What is the outlook for the industry?
- When suppliers to the plastics industry are considered, plastics-related U.S. jobs grow to 1.55 million, and total shipments grow to \$658.2 billion.
- As measured by gross output, the plastic products portion of the plastics industry was the eighth largest U.S. industry in 2022 (the latest year for which data are available).
- The plastic materials and synthetics portion of the plastics industry (including rubber and fiber) was the 16th largest industry in 2022.
- A success story for the U.S. economy, plastics manufacturing employment grew 1.1% per year from 2013 to 2023, outpacing total manufacturing, which saw employment grow by only 0.7% per year during the same period.
- Despite the COVID recession, real (inflation-adjusted) plastics manufacturing shipments fell at only a 0.1% annual rate from 2013 to 2023, while real shipments by manufacturing as whole fell at a 0.5% rate.

The Numbers

- The U.S. plastics industry is large, accounting for over a million jobs (1,005,100) and \$519.1 billion in shipments in 2023.
- Texas had the most plastics industry employment (77,400) in 2023.
- As a percentage of total non-farm employment, the plastics industry is most important to Indiana, where it accounted for 15.2 of every 1,000 non-farm jobs in 2023. Michigan was second (14.5).



“When suppliers to the plastics industry were included, jobs grew to 1.55 million, and total shipments grew to \$658.2 billion.”

Industry Size

Table S-1 summarizes the plastics industry by dividing it into categories named: Plastics Manufacturing, Plastics Wholesale Trade, Captive Plastic Products Manufacturing, and Upstream Impacts. The first three categories comprise what the authors call the “plastics industry.” Captives are plastic processing activities located in establishments, such as automobile assembly and milk bottling plants, which are not classified by the government, or by most economists, as being part of the plastics industry.

Comparisons with Other Industries

To rank plastics among other industries, the authors considered 82 manufacturing industries defined by the 4-digit North American Industry Classification (NAICS) system. Data were available through 2022.

- Plastic Products (NAICS 3261), which accounted for most of the plastic processing industry, was the eighth largest U.S. manufacturing industry in terms of shipments in 2022.
- Resin, Synthetic Rubber and Artificial & Synthetic Fibers & Filament (NAICS 3252), which primarily includes the Plastic Materials and Resins Industry, was the 16th-ranked manufacturing industry in 2022.

The following conclusions can be drawn from Table S-1:

- The U.S. plastics industry, as it is documented by U.S. Government data, operated 15,146 manufacturing establishments, employed 800,400 people, and made shipments worth \$435.3 billion in 2023. This excludes establishments producing captive plastic products or supplying goods and services to the plastics industry.
- When captives are included in the definition of the plastics industry, the number employed rose to 1,005,100 people in 2023. Another 546,900 people were employed by the upstream industries that supplied the industry, which brought the total year 2023 employment total to 1.55 million – 1.0% of the U.S. non-farm workforce.
- The plastics industry generated \$519.1 billion in shipments in 2023. Another \$139.1 billion was generated upstream by supplying industries, bringing the total shipments of the plastics industry to \$658.2 billion.
- Table S-1 does not include downstream impacts on the industries that use plastics, or on the consumers who buy the products containing plastics.

TABLE S-1

PLASTICS INDUSTRY IMPACTS, 2023

	Number of Establishments	Employees (Thousands)	Value of Industry Shipments (\$Millions)
Plastics Manufacturing			
NAICS 325211 Plastics Materials and Resins	1,187	75.4	95,400
NAICS 325991 & 3261 Plastics Products	10,196	664.2	271,778
NAICS 3332491 Plastics Working Machinery	399	12.2	4,691
NAICS 33351105 Molds for Plastics	629	15.0	3,741
Plastics Manufacturing Totals	12,411	766.8	375,609
Plastics Wholesale Trade			
NAICS 424610 Wholesale Trade for Plastics Materials, Forms and Shapes	2,735	33.6	59,714
Government-Documented Plastics Industry	15,146	800.4	435,323
Captive Plastic Products	N/A	204.7	83,766
Plastics Industry	N/A	1,005.1	519,089
Upstream Impacts	N/A	546.9	139,132
Full Impact *	N/A	1,552.0	658,221

*Excluding downstream impacts

Growth Rates

- Over the past 26 years, plastics industry employment, real shipments and real value added have outperformed the overall manufacturing sector, largely because plastics remain a relatively new material compared to other manufacturing methods and materials.
- Employment in the plastics manufacturing industry fell 0.8% per year between 1997 and 2023. This is better than employment in all of U.S. manufacturing, which fell 1.1% per year during the same period.
- Real (adjusted for inflation) shipments for plastics manufacturing were flat between 1997 and 2023. Real shipments in all of U.S. manufacturing declined at an annual rate of 0.2% during the same period.
- Real value added grew 0.9% per year from 1997 to 2023, bouncing back strongly after the COVID recession.
- Productivity in plastics manufacturing, defined as real shipments per employee, grew 0.8% per year from 1997 to 2023. Productivity in manufacturing as a whole grew at a slightly higher 0.9% per year rate.
- The number of plastics industry establishments had been drifting down slowly, but that trend may have stopped in 2022.
- Employment in plastics manufacturing declined from 2000 through 2010 before beginning to rise. The trend mirrored the broader manufacturing sector, though plastics manufacturing was more volatile, typically experiencing sharper declines during recessions and faster recoveries thereafter.

TABLE S-2

COMPARATIVE GROWTH RATES, 1997-2023

	Plastics Manufacturing	All Manufacturing
Employment	-0.8%	-1.1%
Real Shipments	0.0%	-0.2%
Real Value Added	0.9%	0.0%
Productivity Growth	0.8%	0.9%

Location

- The plastics industry has a presence in all 50 states. As shown in Table S-3, Texas had the most plastics industry employees in 2023, followed by Ohio, California, Michigan, Illinois, Pennsylvania, Indiana, Wisconsin, North Carolina and Georgia.

TABLE S-3

TOP STATES FOR PLASTICS EMPLOYMENT (PLASTICS INDUSTRY, 2023)

Rank	State	Plastics Employment (Thousands)
1	Texas	77.4
2	Ohio	74.3
3	California	72.3
4	Michigan	64.6
5	Illinois	52.2
6	Pennsylvania	52.0
7	Indiana	49.2
8	Wisconsin	42.8
9	North Carolina	38.5
10	Georgia	34.6
	U.S. Total	1,005.1

Over the past 26 years, plastics industry employment, real shipments and real value added have outperformed the overall manufacturing sector, largely because plastics remain a relatively new material compared to other manufacturing methods and materials.

- An alternative measure, plastics industry employees per thousand non-farm employees, indicates the concentration of the plastics industry in each state, or the degree to which a state specializes in plastics. Using this measure, Table S-4 shows that Indiana had the highest concentration of plastics industry employees per thousand non-farm employees in 2023, followed by Michigan, Wisconsin, Ohio, Kentucky, South Carolina, Alabama, Rhode Island, Tennessee and Kansas.

TABLE S-4

**TOP STATES FOR PLASTICS CONCENTRATION
(PLASTICS INDUSTRY, 2023)**

Rank	State	Plastics Employees per 1,000 Non-Farm Employees
1	Indiana	15.2
2	Michigan	14.5
3	Wisconsin	14.2
4	Ohio	13.2
5	Kentucky	13.0
6	South Carolina	12.2
7	Alabama	10.2
8	Rhode Island	10.2
9	Tennessee	10.1
10	Kansas	8.7
	U.S. Average	6.5

- The states with the highest concentrations of plastics industry employees tend to have the highest concentrations of manufacturing activity, which is consistent with the fact that most plastic products go into manufactured goods.

Upstream (Supplier) Impacts

Jobs are created not only in the plastics industry but also in the industries that directly or indirectly supply goods and services to it. These industries supply fuel, spare parts, office supplies, accounting services, transportation services, and more. As discussed in connection with Table S-1, the employment and shipments of these upstream industries contribute significantly to the overall economic impact of plastics.

- During 2023, upstream industries accounted for 546,900 jobs to supply goods and services to the plastics industry—every two plastics jobs support another job elsewhere in the economy.
- During 2023, upstream industries generated \$139.1 billion in shipments to supply goods and services to the plastics industry.

Downstream (User) Impacts

Some plastic products, such as toys and wastebaskets, are final goods ready for use. Most are intermediate goods, which are associated with services or are sent on for subsequent manufacturing processes before becoming a final good. Virtually all plastic products wind up as part of some kind of final good or service.

- In 2023, an impressive 25.5% of the final consumption of plastic products, on a value basis, wound up in some form of service, including healthcare, food services and drinking places, retail and wholesale trade, and other services.
- 8.7% of final plastic products were used in the construction industry.
- A large share (30.0%) went into non-durable goods: food, tobacco and spirits (7.4%); plastic products (16.2%); and other non-durables (6.4%).
- Durable goods accounted for the remaining 21.4% share: transportation equipment (10.9%); furniture and related (2.3%); and other durables (8.2%).
- In 2023, 87.6% of plastics-containing goods and services were consumed by households, 28.8% went allocated to private fixed investment, and 13.5% were used by state, local and federal government agencies.¹
- In 2023, the plastics industry was the most intense final user of plastic products, measured by the value of plastic products per dollar of final product or service. This was followed by soft drinks and ice, mattresses, blinds and shades, sign manufacturing, and seasonings and dressings.

Forecasts

In the final section of this report, Perc Pineda, Ph.D., Chief Economist with the Plastics Industry Association (PLASTICS), offers his outlook for the plastics industry, and numerical forecasts for employment and shipments.

- Following a contraction last year and modest growth the year prior, the plastics industry is expected to grow this year and next. The industry will continue to leverage its advantage in hydrocarbon feedstocks. Given a stable demand baseline for plastics, moderate growth is anticipated, barring significant external economic shocks.
- Tight skilled labor supply will continue to be a headwind resulting in a contraction in employment this year despite the continued low unemployment rate in the industry. A less robust labor market in the near-term could be a tailwind for the industry, offering an opportunity to narrow the gap between job openings and hirings.
- The plastics industry, which primarily supports the manufacturing sector, will continue to track the manufacturing activity of plastics end-markets and the broader economy. Weak domestic and global manufacturing outlook will cap industry growth this year. With expectations of higher unemployment rate and a continued downtick in inflation, eventual lower interest rates could reinvigorate capital expenditure on the business sector and boost interest-rate sensitive household consumption.
- U.S. plastics industry employment will slowly recover from last year's 1.6% contraction. This year is likely to experience a slower contraction of 0.2%, potentially followed by a 0.9% increase next year.
- Real plastics industry shipments are expected to increase 1.3% this year, following a 2.0% decrease last year. Industry growth will be driven mostly by increased production of plastics materials and resin, along with a modest increase in plastic conversion. A 1.6% increase in real shipments is projected for next year.

In the sections that follow, the authors provide data, discuss definitions and methodology, and develop the conclusions just discussed.

¹ These percentages add up to more than 100%, because the 29.9% that was provided by imports (net of exports)—not supplied by domestic producers—was not deducted. The deduction would be required if National Income and Product Account (NIPA) accounting was used.

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