PLASTICS
INDUSTRY ASSOCIATION

2021 GLOBAL TRENDS

EXECUTIVE SUMMARY

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2020 U.S. PLASTICS INDUSTRY EXPORT MARKETS

MEXICO
$13.7B
LARGEST EXPORT MARKET

CANADA
$11.7B
SECOND LARGEST EXPORT MARKET

2020 U.S. PLASTICS INDUSTRY TRADE SURPLUSES

MEXICO
$8.2B
LARGEST TRADE SURPLUS

BELGIUM
$2.0B
SECOND LARGEST TRADE SURPLUS

2020 U.S. RESINS TRADE SURPLUS

$18.6B

APPARENT CONSUMPTION OF PLASTICS PRODUCTS

0.4% DECREASE FROM 2019 TO 2020

2020 THE U.S. MOLDMAKING INDUSTRY TRADE DEFICIT

17.9% LESS THAN THE DEFICIT IN 2019

Executive Summary

This U.S. plastics industry is a key player in world trade. This edition of the Plastic Industry Association's annual **Global Trends** study analyzes U.S. trade data on an industry-wide and segment-specific basis for 2020.[S1] It also provides a peek at 2021 and beyond.

The report is divided into six sections. Section I describes exports, imports, and the trade balance for the industry and its four segments: resins, plastics products, molds, machinery and "other plastics." Section I also measures trade flows as a percentage of domestic shipments. Section II analyzes apparent consumption and market shares for the industry and its segments. Section III discusses trade in goods that contain resins and plastics products, labeled "contained trade" in this study. Section III also measures the "true" consumption of resins and plastics products, which includes plastics that are contained, or associated with, other products and services that are consumed. Section IV presents forecasts of world trade, U.S. general trade, U.S. plastics trade, and the shipments and apparent consumption of plastics in the U.S. through the year 2026. Section V highlights U.S. plastics trade in the first half of 2021. Finally, Section VI provides a world perspective on plastics production, consumption and trade, including snapshots of five important U.S. trading partners.

The study's key findings are:

INDUSTRY-WIDE TRENDS

1. During the 2020 COVID-19 recession, stimulated by federal relief dollars, U.S. plastics consumption held up at a time when employment was down and capacity was constrained. The result was higher imports and a trade defecit.
2. The plastics industry is defined here to include the production of plastic resins, plastics products, molds for plastics and machinery for the processing of plastics. The U.S. plastics industry's trade balance fell to a $5.5 billion deficit in 2020, from $0.7 billion surplus in 2019.
3. Industry exports fell 8.2%, and imports rose 1.8%.
4. Mexico and Canada remained the U.S. plastics industry's largest export markets. In 2020, the industry exported $13.7 billion to Mexico and $11.7 billion to Canada.
5. The industry had its largest trade surplus with Mexico in 2020—$8.2 billion.
6. China is the industry's third largest export market. However, the industry, overall, had its largest trade deficit with China—$15.3 billion in 2020.
7. The estimated value of domestic shipments fell 2.2% in 2020, to $282.8 billion. Shipments figures were depressed by the COVID-19 recession, supply chain constraints and lower prices.
8. Exports amounted to 20.4% of domestic shipments in 2020, down from 21.8% in 2019.

S1 The methodologies and data used to estimate the value of domestic shipments and contained trade values were provided by Probe Economics LLC.

9. Apparent consumption of plastics industry goods fell 0.1% from $288.6 billion in 2019 to $288.4 billion in 2020.

10. "True" consumption includes all the resins and plastics products that U.S. residents consume, including those that are contained in imported goods. The "true" consumption growth rates computed in this study show that underlying U.S. plastics demand remains solid. They also show that the U.S. market for plastics is larger and growing faster than the market being addressed by domestic producers.

RESIN TRENDS

1. The U.S. resin industry had a $18.6 billion surplus in 2020, which was down 6.9% from the $20.0 billion surplus in 2019.

2. Thanks to growing supplies of low-cost feedstocks, made possible by unconventional, shale-related drilling techniques, U.S. resin producers continued to enjoy a cost advantage over most foreign producers.

3. U.S. resin exports decreased 9.1% in dollar terms from 2019 to 2020, while imports decreased 12.0%. Lower resin prices were a factor.

4. The resin industry had a $5.3 billion surplus with Mexico, followed by a $3.0 billion surplus with China.

5. The resin industry had its largest trade deficit with Germany, at $1.1 billion.

6. Resin exports accounted for 39.8% of domestic shipments, while imports were 16.9%.

7. The apparent consumption of resins rose 1.2%, from $61.7 billion in 2019 to $62.4 billion in 2020. Resin prices realized by U.S. producers fell 3.4%, as measured by the Producer Price Index, which suggests that apparent consumption increased 4.6% in real, tonnage terms.

8. U.S. resin producers held a 78.1% market share (percent of apparent consumption) in 2020, up from 74.8% in 2019.

9. The estimated value of resins contained in exported goods was $19.7 billion, and the estimated value of resins contained in imported goods was $52.3 billion, which meant that the segment had a $32.6 billion deficit in contained resin trade.

PLASTICS PRODUCTS TRENDS

1. The country's deficit in plastics products increased from $15.7 billion in 2019 to $20.9 billion in 2020, an increase of 33.0%.

2. Exports of plastics products fell 6.9%, while imports rose 8.3%.

3. The U.S. had its largest plastics products surplus with Mexico—at $2.4 billion.

4. China accounted for the largest plastics products trade deficit, at $17.8 billion, up 14.8% from 2019. Countries like South Korea and Vietnam are starting to bite into China's market share.

5. Exports of plastics products were 12.3% of domestic shipments, and imports were 23.0%.

6. The apparent consumption of plastics products fell 0.4%, from $216.9 billion in 2019 to $216.1 billion in 2020. As measured by the Producer Price Index, plastics products prices realized by U.S. producers fell 0.7% in 2020, suggesting that apparent consumption grew 0.3% in real terms.

7. U.S. producers of plastics products held a 79.2% market share (percent of apparent consumption), down from 80.9% in 2019.

8. The estimated value of plastics products contained in exports was $22.2 billion in 2020, and the estimated value contained in imports was $53.1 billion, giving the U.S. a $30.9 billion deficit in contained plastics products trade.

MOLDS TRENDS

1. The U.S. moldmaking industry had a $1.2 billion trade deficit in 2020, which was 17.9% less than the deficit in 2019.

2. Mold exports rose 0.9%, while imports fell 12.9%.

3. The U.S. moldmaking industry had its largest surplus with Mexico, at $332 million. It had its largest deficit with Canada, at $656 million.

4. Exports of molds were 19.8% of domestic shipments, and imports were 64.3%.

5. Apparent consumption of molds for plastics fell 6.9%, from $4.3 billion in 2019 to $4.0 billion in 2020.

6. U.S. moldmakers held a 55.5% market share (percent of apparent consumption) in 2020, up from 52.4% in 2019.

MACHINERY TRENDS

1. The U.S. plastics machinery industry registered a $2.0 billion trade deficit in 2020, little changed from 2019.

2. Exports fell 14.4%, and imports fell 6.5%.

3. The industry had its largest surplus with Mexico at $184 million, and its largest deficit with Germany at $772 million.

4. Exports of machinery were 27.5% of domestic shipments, and imports were 79.4%.

5. Apparent consumption of plastics machinery rose 2.6%, from $5.7 billion in 2019 to $5.8 billion in 2020. Domestic shipments rose 5.0%.

6. U.S. machinery producers held a 47.7% market share (percent of apparent consumption), up from 42.7% in 2019.

FORECASTS

1. The world economy went into a deep COVID-19-related recession and is now recovering—more slowly than in the U.S. and China. All aspects of the plastics industry continue to be affected.

2. World trade volume had grown for years in response to increased globalization, accelerating from 2001 to 2008. Volume dipped and recovered from the 2008–09 recession, but has been flat-to-down since. The COVID-19 recession hasn't helped.

3. U.S. manufacturers have steadily lost share in their own domestic market to imports. Usually, when an economy goes into recession, it demands fewer imports and winds up with a better trade balance for a while. The COVID-19 recession was different. During it, the U.S. trade position actually deteriorated faster. Perhaps the COVID-19-related shutdowns, need for COVID-19 supplies and availability of federal stimulus funds drove up country's demand for imports. Will the decline in domestic share be reversed at some point? Will the calls for "reshoring" that have been heard for years finally bring results? That remains to be seen. Government policy needs to be favorable.

4. The U.S. plastics industry trade surplus has been decreasing in response to offshoring and a strong domestic economy. It was thought that an economy in recession would see its trade balance improve, but that did not happen in the COVID-19 recession. The U.S. plastics trade surplus became a deficit in 2020. Data through the first half of 2021 show continued deterioration. One hopes for a bounce-back, but the proposed taxes on plastics and its raw materials would likely stimulate more offshoring of plastics activities.

5. U.S. plastics industry apparent consumption normally correlates well with GDP, down during recessions and up during recoveries. Apparent consumption was already down in 2019 because the of the trade disputes engaged in by the U.S. Surprisingly, the recession brought little further decline. Demand in 2020 was apparently stimulated by COVID-19 needs and federal aid spending. Now that the economy is growing again, healthy increase in apparent consumption can be expected. The authors forecast a 4.5% annual increase in plastics apparent consumption between 2020 and 2027 if adverse tax policies do not get in the way.

U.S. PLASTICS TRADE IN FIRST SIX MONTHS OF 2021

1. U.S. plastics industry trade volume (exports plus imports) rose 27.9% in the first six months of 2021, compared to the same period in 2020.

2. Plastics industry exports rose 21.1% in the first six months, while imports rose 34.8%. As a result, the industry's trade balance went from a $400 million deficit in the first six months of 2020 to a $4,505 million deficit in the first six months of 2021.

3. Resin exports rose 22.6% in the first six months of 2020 compared to a year earlier. Imports increased 34.9%, but still there was a 13.2% improvement in the country's resin trade surplus.

4. The country's plastics products trade deficit continued to grow in the first six months of 2021, up 59.7% from the comparable 2020 period. Exports were up 19.4%, but imports were up 36.0%.

5. Exports of molds for plastics rose 5.7% in the first half of 2021. Imports rose 27.1%. The molds trade deficit grew by 36.8%.

6. Plastics machinery exports were up 12.1% in the first six months of 2021. Imports were up 21.6%. The country's trade deficit in plastics machinery grew by 27.5%.

INTERNATIONAL PLASTICS INDUSTRY

1. The large and growing plastics industry outside the U.S. will continue to compete with the U.S. for overseas markets as well as for its own domestic markets.

2. The U.S. was the world's top plastics and rubber producer in 2005. By 2020, Chinese plastics and rubber production was 2.5 times that of the U.S.

3. Plastics and rubber consumption in a country is determined by its population, level of development and focus on manufacturing. Mature, industrialized countries like France, Germany and the U.S. have apparent consumption of plastics and rubber between $600 and $1,000 per capita—on the higher end of that range if the country has a high level of manufacturing, where most plastics and rubber is consumed.

4. India, a developing country, consumed only $44 of plastics and rubber per capita in 2020. It is one of the great markets of the future, but it does not appear destined to duplicate China's success with manufacturing, nor its consumption of plastic and rubber.

5. China, which consumed only $86 of plastics and rubber per capita in 2005, shot up to $459 per capita in 2020. That wasn't all domestic consumption. A lot of it went into the manufacture of goods that were exported.

6. The biggest exporter of resin in 2019 was the U.S., followed by Germany, South Korea, Saudi Arabia and China.

7. China was by far the biggest exporter of plastics products in 2019, followed by Germany and the U.S.

8. China's growth is slowing, but its dominance as a manufacturer, and therefore, as a consumer of plastics and rubber, is nearly unshakable.

9. South Korea is much smaller than China, but it is further along in its development. Its plastics industry is highly developed.

10. The United Kingdom, the world's sixth largest economy, is not primarily focused on manufacturing. Still, it produced $35 billion in plastics and rubber during 2020. As the country pulls away from the European Union, it remains to be seen how its economy will evolve and how its trading relationships will develop.

11. Brazil, South America's biggest economy, continues to struggle to realize its potential as a plastics and rubber market of the future.

12. Japan, the world's third-largest economy, continues to be a manufacturing and plastics powerhouse. It is accomplishing this despite its lagging growth and high wage levels. The latter make manufacturing less competitive.

13. Germany, the world's fourth largest economy, is a little like Japan. It has high wage rates but, despite this, excels in manufacturing, plastics and exporting. The German economy was set back by the COVID-19 pandemic, but, unlike Japan, it looks likely to remain on a growth path.

14. For the fourth year, PLASTICS releases an annual Global Plastics Ranking™. The ranking is based on trade volume estimates—the sum of exports and imports of four general classification which altogether is referred to as the plastics industry: plastics machinery, plastics molds, materials and resins, and plastics products. China, the U.S., and Germany remain the top three players in the global plastics trade in 2020.

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