



U.S. Plastics Market Update

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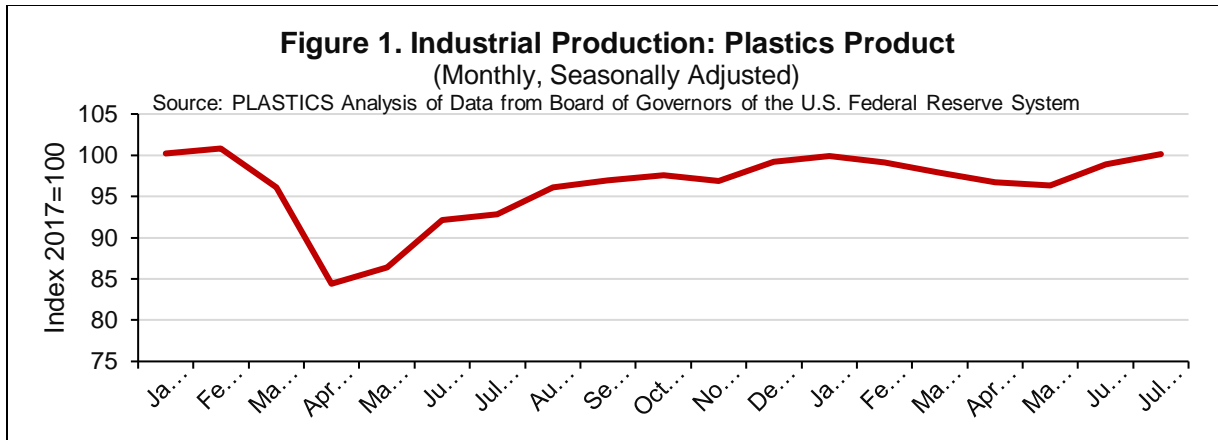
This report provides an update of the U.S. plastics market since the coronavirus pandemic that resulted in the COVID-19 recession in the U.S. This report was prepared exclusively for the 27th Fakuma International trade fair for plastics processing in conjunction with the release of the Plastics Industry Association (PLASTICS) annual flagship publication – *Global Trends* – which can be accessed [here](#). Companies interested in a thorough analysis of U.S. plastics trade—from resin, plastics products, machinery, molds for plastics, to other products with plastic content—will find the *Global Trends* report indispensable. For those who want to crack the U.S. plastics market, the report and its accompanying dataset provide U.S. plastics imports by the 10-digit Harmonized Tariff Schedule codes.

The outlook of the U.S. plastics market remains positive as strong demand in plastics' end-markets are expected to continue. Supply chain issues along with low labor supply, however, are headwinds for the U.S. plastics industry.

Recent numbers confirm the strength of the U.S. plastics industry after the COVID-19 recession, but challenges remain. Plastics product manufacturing increased 7.9% in July 2021 from a year earlier and plastics material and resin production rose 5.0% in June 2021 from June last year. The value of manufacturer's shipments of plastics and rubber increased 6.7% in July from July 2020. Plastics employment increased in August 2021—3,100 jobs were added in plastics and rubber products manufacturing.

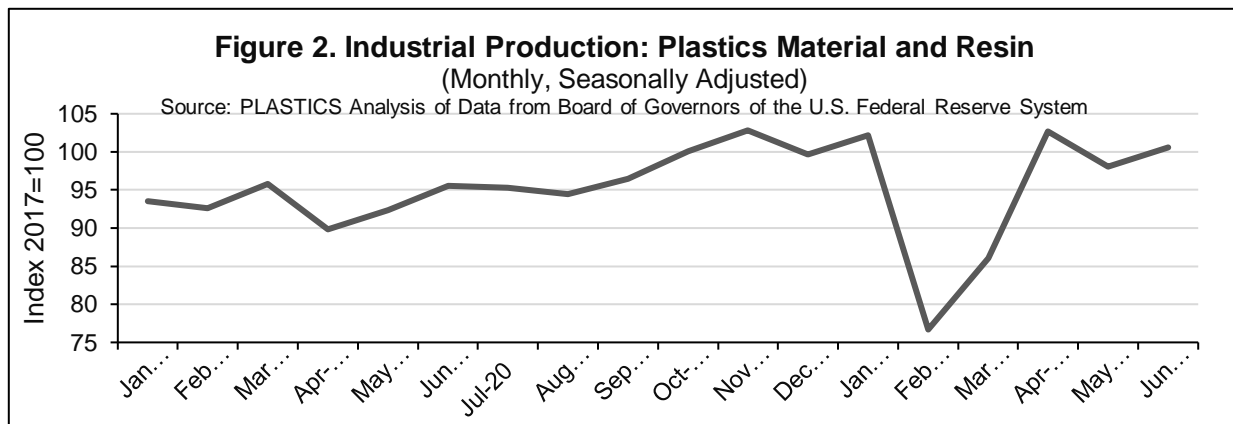
The COVID-19 recession which started in February 2020 and ended in April 2020, was the shortest in U.S. history. The lockdowns in the U.S. that started in March 2020 caused a steep decline in economic activity affecting many industries including the plastics industry. In April 2020, the U.S. plastics industry sustained the most losses. Plastics product manufacturing fell by 15.8% in April 2020 from January 2020 as the economy began dealing with the coronavirus pandemic. Production started turning around in May 2020 and as of July 2021, it was 18.7% higher than April last year. As shown in Figure 1, plastics product manufacturing has recovered from the COVID-19 recession. The consistent increases in plastics production underscored the importance of plastics products and packaging in dealing with the coronavirus pandemic. Personal consumption expenditures of essentials and the increasing use of personal protective equipment (PPE) and other medical products made of plastics increased. The demand for plastics increased significantly more than the supply of plastics material and resin.

Unlike plastics product manufacturing, resin production in the U.S. experienced a minimal decrease during the COVID-19 recession. As shown in Figure 2, resin production decreased by 3.9% in April



2020 — less than the decrease in plastics product manufacturing. There was ample resin inventory leading into the coronavirus pandemic. Resin production started increasing in May 2020. In December 2020, resin production was up by 11.0% from the preceding April. However, strong demand for plastics products in consumer essentials, packaging, and distribution and healthcare supplies strained resin

supply. This caused resin prices to increase at the end of 2020. Adverse weather in February 2021, however, exacerbated the limited resin supply and caused resin production to fall by 25.0%. As of June 2021, resin production was 16.9% above February. From a year earlier, resin production increase by 5.0% in June.



The COVID-19 recession resulted in a loss of jobs in the U.S. plastics industry. In plastics product manufacturing alone, a total of 64,000 jobs were lost in March and April of 2020. From 2020 to June 2021, 55,600 jobs have been added in plastics product manufacturing – still short by 8,400. To illustrate the severity of the labor shortage in the plastic industry, plastics and rubber manufacturing in the U.S. had 2.4% and 2.9% unemployment rates in June and July, respectively, in 2021. At these rates, plastics and rubber products manufacturers are still looking for workers – unable to fill open positions.

U.S. unemployment rate in August 2021 was 5.2% with unemployment in manufacturing at 3.6%. The average hourly wage of all employees in manufacturing in August 2021 was 3.1% higher than a year earlier. For production and nonsupervisory employees in manufacturing, the average hourly wage in August 2021 was up by 5.0% from a year earlier. Low labor supply for manufacturing is causing upward pressures on manufacturing wages. The U.S. plastics industry should factor in higher labor costs in the

short- to medium-term. Shortages of skilled workers for manufacturing in the U.S. have been an ongoing issue affecting the plastics industry. This has been due partly to an aging U.S. population and an education curriculum that for many years has played down career opportunities in the manufacturing sector. The shortage of labor supply is analyzed in PLASTICS' *Workforce Development White Paper: An Analysis of Workforce Development Issues in the U.S. Plastics Industry*.¹

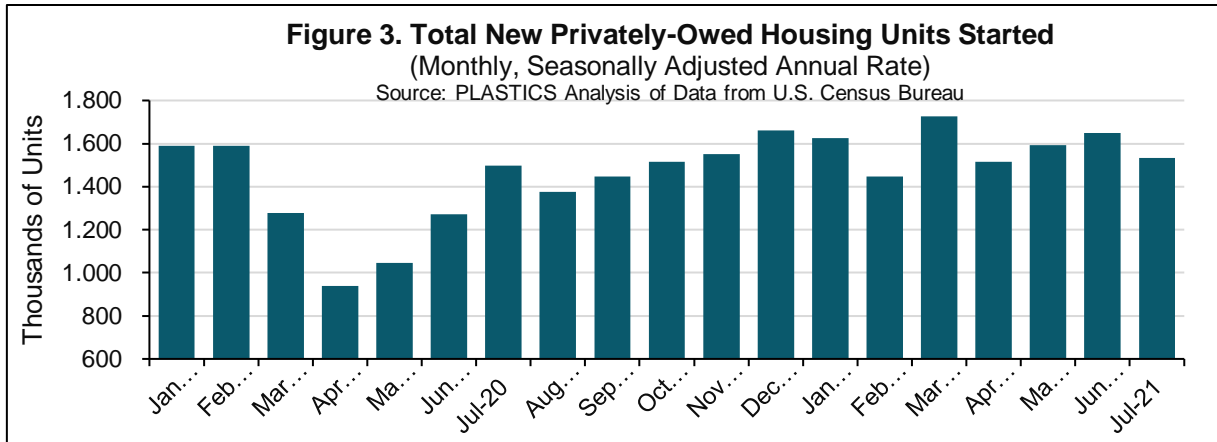
In this year's *PLASTICS Size and Impact Report*, it is estimated that the U.S. industry is composed of 15,688 establishments employing 945,300 employees. Texas had the most plastics employment in 2020 – estimated at 70,500.

Despite the coronavirus pandemic and labor shortages, U.S. plastics production increased due to higher consumer spending that caused plastics end markets to recover quicker than expected. Food and beverage purchases for off-premises consumption increased 22.3% from March to April 2020 as the economy went into lockdowns. Plastic products and packaging are part of consumer essentials and use in their distribution or shipping. This steep increase consequently led to the production of plastics particularly in packaging to replenish the decrease in inventory due to strong demand. PLASTICS projects a 7.8% increase in personal consumption expenditures this year followed by a 4.4% increase next year. This year's consumption of nondurable goods and services are expected to increase 7.0% and 6.4%, respectively. While it is projected that nondurable goods consumption will see a modest 1.8% increase next year, consumption in services could see a 6.3% increase. This means demand for plastics products and packaging are expected to remain healthy this year and next year.

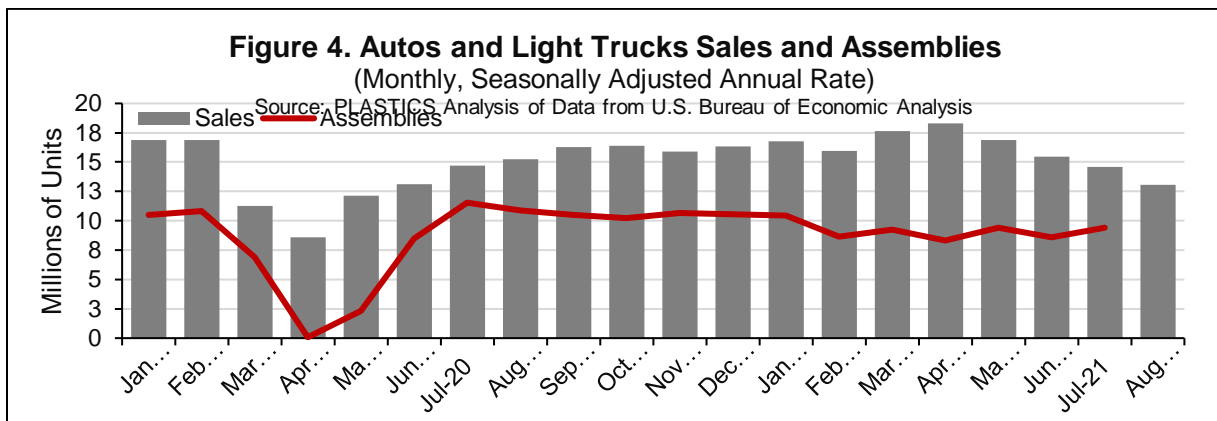
A plastics end-market that was expected to slow during the pandemic was building and construction, specifically residential construction. While U.S. residential construction was underbuilt going into the COVID-19 recession, it was expected that home construction would stay lower for longer. Housing starts—the number of privately owned new home construction—decreased 26.5% to 938,000 units in April 2020 (see Figure 3). Thereafter it rose 11.5% and 21.7% in May and June, respectively. Currently, housing starts are estimated by PLASTICS to increase by 13.6% in 2021 before it decreases marginally by 0.2% in 2022. Nonresidential construction spending, which decreased in 2020, is expected to decrease this year by 3.9% before it increases to 4.6% in 2022, according to the American Institute of Architects. The production of construction supplies in the U.S. has not fully recovered from the slowdown last year. In July 2021 it was 6.3% higher than a year earlier, but still, 2.6% below in February 2020 when the economy went into a recession. There is room for construction supplies production to grow and by extension growth prospects for plastics in the building and construction space.

The transportation and automotive market also recovered faster than expected. Following the light vehicle sales decline to 8.6 million units, annualized, in April 2020, it bounced back to over 16.0 million units in September. As shown in Figure 4, autos and light trucks sales continued to stay above 15.0 million units through June 2021. In July and August autos and light trucks sales decreased to 14.6 million and 13.1 million units, respectively. Low inventories—as auto and light truck manufacturing continues to deal with supply chain issues—slowed auto and light truck sales in recent months. Figure 4 shows the bounce back in autos and light truck assemblies following a drop to 70,000 in April 2020. It also shows that assemblies bounced back in July but stopped growing. This year, autos and light trucks assemblies stayed under 10.0 million units as supply chain bottlenecks linger. Of the approximately 30,000 parts in an automobile – 1/3 are plastic. It is easy to understand that strong demand for autos and light trucks in the U.S. will lead

¹ The White Paper can be accessed in PLASTICS website <https://www.plasticsindustry.org/data/industry-data>.



to an increase in plastics production. Auto and light truck sales in the U.S. this year and next year could be around 16.0 million units as supply chain issues linger.



The coronavirus pandemic underscored the relevance of plastics in healthcare. Plastics are a key material in personal protection equipment (PPE) used by healthcare professionals in addition to the medical equipment and supplies. On November 1, 2019, I wrote a blog “Medical Plastics are Essential in Saving Lives.”² Little did I know that what I said then will be proven by the coronavirus pandemic, when I wrote:

“There are reasons why a specific material is used in certain healthcare applications. The task of healthcare workers—particularly during emergency situations—is to save a patient’s life. We were approached by a reporter from National Geographic to comment on ways plastic use in hospitals can be reduced. The answer is quite simple: medical professionals choose the material that works best for each patient’s needs.”

The annual healthcare consumption in the U.S. has been stable about 16.0% of total personal consumption expenditures. It can be expected that plastics production of the healthcare end market would remain stable ahead.

The outlook of the U.S. plastics industry is positive judging from the recently released Plastics Industry Annual Business Outlook survey results. This year’s Plastics Business Outlook Index rose substantially to 183 from last year’s 79. The index, which is 83 points above the baseline of 100, indicates an

² <https://www.plasticsindustry.org/blog/percspective-medical-plastics-are-essential-saving-lives>.

expansionary business outlook. 88% of respondents expect an increase in the volume of business in the next six to 12 months – starting in July 2021. Most of the respondents (74.3%) indicated growth in the building and construction end market. Sixty-nine percent indicated growth in packaging and 64.6% expect growth in the consumer products and appliances end market.³

The outlook for the U.S. plastics industry, while positive, continues to evolve. Supply chain issues and labor shortages will continue to be headwinds for the U.S. plastics industry despite growing plastics demand. For instance, shipments of primary plastics equipment (injection molding and extrusion) in North America decreased by 4.2% in the second from the first quarter this year. In our Media Reports, I argued that:⁴

“While new orders of plastics equipment have been increasing, ongoing supply chain issues—shortage of parts and components—are causing longer order-to-delivery timelines. This explains the decrease in shipments in the second quarter. For the third consecutive quarter, plastics equipment shipments were higher from a year earlier. This means that the underlying trend in plastics equipment demand remains upward sloping – still in sync with the robust economic recovery.”

In the PLASTICS Quarterly forecast, issued in the second quarter, production growth projections for 2021 and 2022 varied in each plastics industry category. Currently, it is projected that plastics manufacturing will grow by 5.0% this year. Plastics machinery and molds production could increase by 12.6% and 4.6%, respectively. This year’s production of plastics materials and resin could be 2.9% lower from last year but 8.2% higher next year. However, forecasts are subject to revisions as the macroeconomic environment change and new data becomes available.

Plastics Trade: The World is our Market

Every year, PLASTICS releases an annual publication—*Global Trends Report*. In 2019, the report was unveiled at the K-Show. This year, it is being released at the 27th Fakuma International trade fair for plastics processing. Along with lower merchandise trade volume globally due to the coronavirus pandemic, global plastics trade decreased by 4.0% to \$1.28 trillion. U.S. plastics industry exports—exports of resin, plastics products, plastics machinery, and molds for plastics—totaled \$57.8 billion in 2020. It was 8.2% lower than in 2019. 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. U.S. plastics industry imports were \$63.3 billion in 2020, up 1.8% from 2019. For the first time in many years,

Exclusively Released at the 27th Fakuma
International trade fair for plastics processing
2021 Global Trends Report

What’s Inside?

- Top export markets of the U.S. plastics industry
- Top U.S. plastics imports country of origin
- Annual Global Plastics Ranking™
- Comprehensive dataset of U.S. plastics exports and imports by country by 10-digit HTS number
- Global trade in plastics and rubber
- U.S. and global plastics trade outlook

Want to know what the U.S. is importing from Germany? Get your copy of the report today at:
<https://www.plasticsindustry.org/globaltrends>

³ The 2021 Plastics Industry Annual Business Outlook can be downloaded in PLASTICS’ website at <https://www.plasticsindustry.org/data/plastics-industry-annual-business-outlook>.

⁴ Plastics Report: Plastics Machinery Shipment Slowed in the Second Quarter
<https://www.plasticsindustry.org/news/press-releases>.

the U.S. had a trade deficit in plastics last year. The \$18.6 billion trade surplus in resin was insufficient to cover the \$20.9 billion trade deficit in plastic products and the \$1.2 billion and \$2.0 billion deficits in molds and machinery, respectively. The U.S. had the most trade surplus with Mexico—one of its partners in the United States-Mexico-Canada Agreement (USMCA) free trade pact—Belgium, Brazil, Singapore, and the Netherlands. Of the \$5.5 billion trade deficit in plastics, the U.S. had the most deficit with China, Germany, South Korea, Taiwan, and Japan.

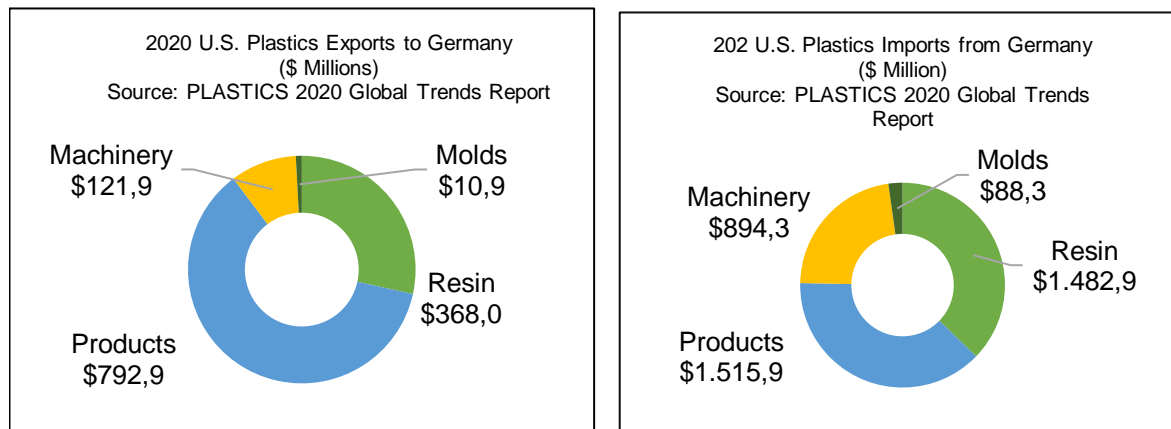
The world economy went into a deep COVID-19-related recession and is now recovering—more slowly than in the U.S. and China. All aspects of the plastics industry continue to be affected. In the first six months of this year, U.S. plastics industry trade volume (exports plus imports) rose 27.9% compared to the same period in 2020. Exports rose 21.1% in the first six months, while imports rose 34.8%.

In this year's Global Plastics Ranking™, after China, the U.S. and Germany are ranked the second and third global players in plastics, respectively. The large and still growing plastics industry outside the U.S. will continue competing with the U.S. for overseas markets as well as their own domestic markets.

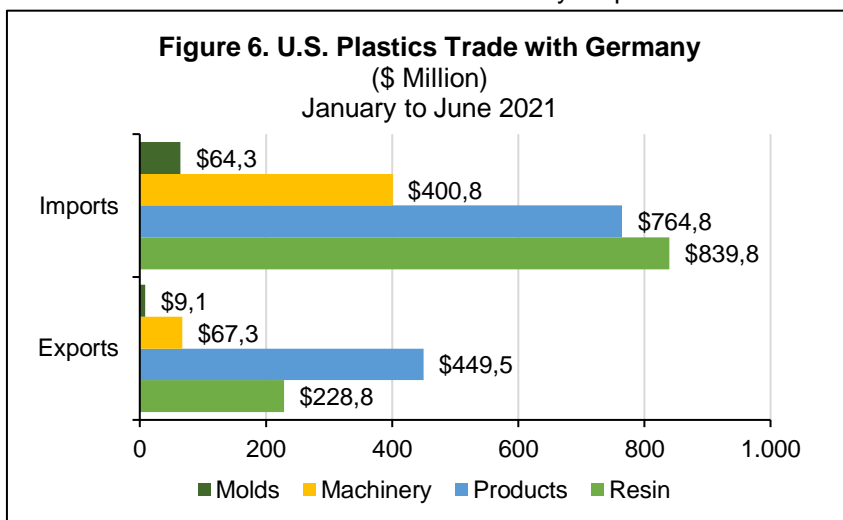
U.S. Plastics Trade Relations with Germany

In 2020, U.S. plastics exports to Germany totaled \$1.29 billion, a decrease of 10.5% from 2019. U.S. Imports from Germany in 2020 topped \$3.98 trillion. It was 4.8% lower than in 2019. After China, Canada, and Mexico, most U.S. plastics imports originated from Germany. As shown in Figure 5, most of the U.S. plastics exports to and imports from Germany in 2020 were plastic products. All told, the U.S. had a \$2.69 billion plastics trade deficit with Germany in 2020. Of most U.S. plastics product imports from Germany in 2020, the top three were HTS 3926.90.9990 (other articles of plastics, not elsewhere specified or indicated), HTS 3926.90.9910 (laboratory ware), and HTS 3920.10.000 (other plates, sheets, film, foil, and strip, of plastic, noncellular and not reinforced, laminated, supported, or combined with other material, of polymers of ethylene). In the first half of 2021, U.S. plastics exports to Germany totaled \$754.70 million. Over the same period, U.S. imports from Germany totaled \$2.07 billion. The breakdown of the U.S. plastics trade with Germany is shown in Figure 6.

Figure 5. U.S. – Germany Plastics Trade in 2020



The outlook for U.S.-Germany trade relations is positive. Data shows the importance of the plastics industries of the U.S. and Germany to one another. Trade between both countries is expected to grow. Moreover, the movements of merchandise between both countries mirrors a far-reaching relationship beyond plastics trade but also in foreign direct investments. Last year, 17.0% of new foreign direct investments into the U.S. were from Germany – up from 10.0% in 2019.⁵ Of the \$20.5 billion new foreign



direct investment first-year expenditures, \$20.1 billion involved business acquisition, \$26 million in business establishments, and \$386 in business expansions. As of 2020, Germany's direct investment position in the U.S, on a historical cost-basis was \$411.3 billion in 2020. With both the U.S. and Germany taking the second and third spots in Global Plastics Ranking™ expect trade and investments in plastics between both countries to grow.

Tap Into the U.S. Plastics Market

Whatever approaches foreign companies use to tap the growing U.S. plastics market, they should include trade show participation. Trade shows are critical platforms for businesses to connect with customers and showcase their products. For the plastics industry, the largest and most important trade show in the Americas is NPE: The Plastics Show. The triennial trade show will be held on May 6-10, 2024, at the Orange County Convention Center in Orlando, Florida.

⁵ See U.S. Bureau of Economic Analysis Direct Investment by Country and Industry, 2020 at <https://www.bea.gov/data/intl-trade-investment/direct-investment-country-and-industry>.

The last NPE[®], which was held in 2018, had 55,832 attendees—14,941 of which were international attendees—and 2,182 exhibiting companies. The over 1.2 million net square feet of exhibit space, generated an estimated total net bookings of over \$0.25 billion – according to PLASTICS projections. Plastics companies outside of the U.S. should consider showcasing their products, technologies, and innovations at the next NPE in 2024. Companies can maximize their exposure in the U.S. plastics and North America.