MONITOR Chemicals & Plastics

Inventory & Equipment



A BUMPY ROAD TOWARD RECOVERY

STORMS IMPACT THE GULF COAST

The Gulf Coast has already been impacted by a number of major storms in 2021

OIL AND NATURAL GAS PRICES CLIMB

Oil and natural gas prices continued to climb through the summer and into the fall of 2021

PLASTIC PRICING INCREASES

Prices for most plastic resins were driven upward by strong demand and constricted supplies

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MONITOR CHEMICALS & PLASTICS BRILEYFIN.COM SEPTEMBER 2021 800-454-7328 **344**

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Deals are a moving target. A constantly shifting mix of people, numbers and timing. We're here to simplify this process for you. Our experts are dedicated to tracking down and flushing out the values you need even on the most complex deals, so you can leverage our hard-won knowledge to close the deal.

Trend Tracker - Inventory

	Chemicals	Plastics
NOLVs	Increasing ▲	Increasing ▲
Sales Trends	Increasing ▲	Increasing ▲
Gross Margin	Increasing ▲	Increasing ▲
Inventory	Increasing ▲	Mixed 🔷
Selling Prices	Increasing ▲	Increasing ▲
Market Prices	Increasing ▲	Increasing ▲

NOLVs

- Chemicals: NOLVs increased by two to 10 percentage points in recent appraisals due to higher gross margins, strong sales and turnover, and higher inventory levels that leveraged expenses.
- Plastics: NOLVs in recent plastics appraisals increased up to seven percentage points due to improvements in gross margin and sales, as well as higher selling prices.

SALES TRENDS

- **Chemicals:** Sales volumes generally increased 10% to 25% due to pent-up demand and comparisons to weaker sales in the early months of the pandemic.
- Plastics: Sales volumes increased 5% to 10% year-overyear and up to 20% in recent quarters due to strong demand in the wake of the early pandemic closures.
 Sales dollars benefited from higher selling prices.

GROSS MARGINS

- Chemicals: Gross margins increased two to five percentage points in recent appraisals due to supply shortages that have allowed for higher selling prices, exacerbated by strong demand.
- Plastics: Gross margins in recent plastics appraisals increased two to seven percentage points due to favorable resin prices, tight supplies, and strong demand, which allowed for higher selling prices.

INVENTORY

- Chemicals: Inventory levels have increased up to 20% in recent appraisals due to strong demand and higher raw material prices that have driven up inventory cost.
 The increases have been offset in some cases by high turnover and some supply constraints.
- Plastics: Inventory levels have varied, increasing or decreasing up to 5%. The higher cost of inventory has resulted in elevated inventory levels in some appraisals, while supply shortages and strong turnover resulted in lower inventory levels in other appraisals.

SELLING AND MARKET PRICES

 Chemicals and plastics: Generally speaking, selling and market prices have increased for most chemicals and plastics, as well as feedstock materials. Oil and natural gas prices increased steadily throughout most of 2021 through September, causing increases throughout the production chain. Selling prices also increased due to constricted supplies and strong demand.

Trend Tracker - Machinery and Equipment

	Plastics
Used Pricing	Increasing ▲
Used Trade Movement	Increasing ▲
OEM Pricing	Increasing ▲
Technology Advancement	Increasing ▲
Auction Activity	Decreasing ▼

USED PRICING

Disruptions to OEM supply have resulted in higher prices. Long lead times and difficulty in sourcing parts has led to late-model equipment commanding a premium. Demand for equipment related to medical production, housewares, recycling, and pipe and profiles has increased recently.

USED TRADE MOVEMENT

Used plastics equipment is trading well due to increased lead times from OEMs. This is particularly true for equipment related to medical production, housewares, packaging, and pipe and profiles. Conversely, the automotive and consumer sheet industries have suffered.

OEM PRICING

As the economy recovers, OEMs are seeing increased lead times and increased orders. OEMs are reducing discounts as their orders increase and they continue to recover from lost production caused by the pandemic. Shipping costs and availability from China have impacted product availability and increased the cost of certain types of equipment.

TECHNOLOGY ADVANCEMENT

Automation has become more desirable as processors look for ways to insulate themselves from situations causing a reduction in workforce as seen during the pandemic. The lack of a skilled workers in the marketplace has increased the need for technology. Electric drive injection molding machines continue to make headway into the marketplace for their efficiencies and reduced maintenance.

AUCTION ACTIVITY

B. Riley has observed less plastics industry auction activity over the past year as business activity slowed during the pandemic. If the economy continues to respond positively, this trend may continue. There has been a slight uptick in the number of plastics-related auctions in the last few months. Companies that were struggling may recover if the vaccine rollout goes well or may close if another surge occurs.

Overview

Following a turbulent 2020 - which was characterized by the emergence of the COVID-19 pandemic; global lockdowns, closures, and stay-athome orders; and major fluctuations in feedstock material costs - the chemicals and plastics sectors were confronted with a new set of challenges and obstacles in 2021.

Perhaps the most notable trend in 2021 has been an ongoing escalation in market prices for many commodities, including many chemicals, plastics, and the feedstocks from which they are derived. Higher market prices were catalyzed by a number of overlapping causes, including various storms that impacted the Gulf Coast, which is a major production region for chemicals and plastics, as well as their various feedstocks; lingering supply shortages stemming back to the early months of the pandemic; new supply chain issues impacting the entire globe; the global chip shortage limiting production in the downstream automotive sector; and unexpectedly strong demand from other downstream sectors as global economies have tentatively reopened.

On February 15, 2021, Winter Storm Uri hit the Gulf Cost, and particularly Texas, with freezing temperatures, ice, and snow. The storm caused widespread failure of the power grid in Texas and impacted water supplies. It forced many refineries, petrochemical plants, and plastic manufacturers to either shutter or significantly reduce operations. The storm tangled the distribution network, constricted the supply of feedstocks, shortened already-tight supplies of propylene, ethylene, and other base chemicals, and generally left the chemicals and plastics industries reeling for months to follow.

While the full impact of Winter Storm Uri is unknown, it contributed to widespread shortages at a time of strong demand, resulting in further escalation of market prices that were already well above average.

More recently, the Gulf Coast was impacted by another devastating storm. Hurricane Ida made landfall in Louisiana on August 29, 2021. The storm was the second-most damaging hurricane in Louisiana history, following Hurricane Katrina, and is estimated to have caused upwards of \$50 billion in damages across the U.S. The region of Louisiana in which Ida made landfall is a leading hub for petroleum, petroleum-based products, and natural gas. The hurricane's full impact on the sector is not yet known, but it damaged a number of facilities, temporarily shuttered production at others, and is sure to have a lasting effect.

Despite the disturbances to production and the supply chain, the industry has proved to be exceedingly resilient. Even faced with record-high pricing and tight supplies, demand for plastic resins has remained strong. Producers have worked to bring capacity back online and it appears that supplies of many materials have loosened.

That being said, the coming months will be unpredictable as chemicals and plastics producers in the U.S. contend with the ongoing hurricane season, uncertainty as the Delta variant of COVID-19 spreads throughout the country and across the globe, and the multifaceted complications that have arisen in the pandemic's wake.

Feedstocks

FEEDSTOCKS OVERVIEW

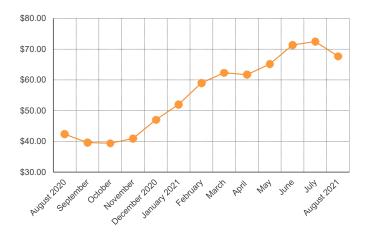
A majority of chemicals and plastics are derived from petroleum or natural gas. Any fluctuations in the prices of these commodities impact the downstream chemicals and plastics sectors.

PETROLEUM

Average spot prices for West Texas Intermediate ("WTI") crude oil hovered just below \$40 per barrel in September and October 2020. In subsequent months, crude oil prices began a slow but steady climb. Prices peaked at over \$70 per barrel in June and July 2021 before dipping slightly in August.

Prices were driven upward by a combination of returning demand as global economies reopened coupled with low supply. Global oil producers decreased production in the early stages of the pandemic and have been slow to ramp up production in 2021.

Crude Oil Cushing, Oklahoma WTI Spot Price August 2020 through August 2021 (\$ per barrel)



According to the EIA, U.S. commercial crude oil inventory for the week ended September 10, 2021 totaled 417.4 million barrels, a decrease of 6.4 million barrels from the previous week. The EIA notes that inventory levels are about 7% below the five-year average for this time of year.

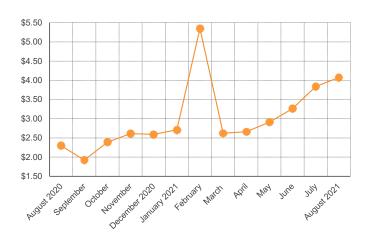
NATURAL GAS

According to estimates from the EIA, working gas in underground storage totaled 3,006 billion cubic feet ("Bcf") for the week ended September 10, 2021, which represents a 16.5% decrease from the previous year. The following table illustrates working gas in underground storage in the lower 48 states (units in Bcf):

Region	9/10/21	9/10/20	% Change
East	732	822	(6.5%)
Midwest	876	979	(2.3%)
Mountain	193	220	(4.5%)
Pacific	240	310	(17.5%)
South Central	965	1,271	(9.3%)
Total	3,006	3,601	(7.1%)

Henry Hub natural gas prices stood at \$1.92 per million BTUs ("MBTU") in September 2020. Following that low point, prices began a steady ascent that continued through the summer of 2021. Natural gas prices averaged \$4.07 per MBTU in August 2021, well above \$2.30 per MBTU in August 2020. Gas prices have climbed due to relatively flat production levels, high temperatures driving gas consumption by electric power plants, a storage deficit, and strong export activity.

Henry Hub Gulf Coast Natural Gas Spot Price August 2020 through August 2021 (\$ per MBTU)



Chemicals

PROPYLENE

Propylene in the U.S. is derived from the processing of naphtha in ethylene steam crackers, as well as the refinement of petroleum into gasoline. Growth in demand for propylene has also resulted in some purposeful propylene manufacturing operations, as opposed to sourcing the material as a byproduct.

Due to production stoppages in the early stages of the COVID-19 pandemic, propyelene supplies were constrained in the latter half of 2020 and into 2021. Winter Storm Uri caused production outages at many downstream polypropylene plants in the winter and early spring of 2021, causing propylene demand and pricing to fall. As PP plants came back online, demand for propylene returned, and prices climbed through the summer. Most recently, propyelene pricing dropped in September in expectation of increased supply.

ETHYLENE

Ethylene is produced in the steam cracking of ethane, as well as the cracking of naphtha. One of the largest downstream uses is the production of polyethylene resin, which is one of the most commonly used plastics across the globe.

Ethylene supplies were also constricted in the late months of 2020 and into early 2021 due to storm activity that caused production outages, as well as strong demand from downstream plastics manufacturers. However, Winter Storm Uri shuttered production at many Gulf Coast polyethylene plants in February 2021, which served to ease supply constraints. The ethylene market was also impacted by steadily rising feedstock natural gas prices, but producers were able to mostly offset those increases with higher run rates. Industry experts anticipate that stocks of ethylene should continue to ease in coming weeks and months due to additional capacity coming online.



Plastic Resins and Polymers

POLYPROPYLENE

	Polypropylene Price Trend
12-month	Increasing ▲
Three-month	Increasing ▲

Polypropylene, a polymer which is derived from propylene, is one of the world's most commonly-used plastics.

Polypropylene prices dropped unexpectedly in March 2021. While prices for most resins continued the long increase that began in the summer of 2020, polypropylene prices decreased due to a decline in feedstock propylene monomer pricing. Winter Storm Uri knocked many polypropylene facilities offline in February 2021, which resulted in less demand for the feedstock, causing the dip in pricing.

Following another decline in prices in April, polypropyelene prices reversed direction and started a long climb that has continued into September. Prices have increased due to strong demand, ongoing constraints in supply, and storm activity that continues to cause closures throughout the Gulf Coast production region. Hurricane Ida swept through Louisiana in late August and early September, causing widespread destruction, and while the impact on the industry has not yet been fully seen, industry experts do not believe that polypropylene supplies will be materially impacted.

POLYETHYLENE

	Polyethylene Price Trend
12-month	Increasing ▲
Three-month	Increasing ▲

Polyethylene, a plastic derived from ethylene feedstock, is another of the world's most widely used plastic materials.

Mirroring the trajectory of many other plastic resins, prices for polyethylene began to recover in the summer of 2020, bouncing back from the erosion that occurred in the early months of the COVID-19 pandemic. Market prices benefited from stronger-than-anticipated demand as U.S. and global economies reopened, while supplies were constrained due to low production rates.

Since that point, polyethylene producers have faced a number of obstacles that have left them struggling to keep up with strong demand. In addition to the early-pandemic slowdowns, producers have been faced with a number of storms that had a major impact on the Gulf Coast, as well as global supply chain issues. Despite increased production capacity, producers struggled to meet demand through much of 2021, causing continued escalation in polyethylene market prices. The impact of Hurricane Ida on the market has not yet been fully seen.



Plastic Processing Equipment

Plastics processors are reliant on demand from assorted downstream markets, ranging from the food packaging industry to automotive equipment manufacturers. Over the last year or so, the type and mix of consumer products that were in demand shifted. Companies serving those in-demand markets have generally performed well.

Values for injection molding machines have been stabilized by production of medical devices, home goods, appliances, and construction equipment. However, resin shortages and price increases are affecting all types of plastic processors. February's Winter Storm Uri and, more recently, Hurricane Ida have caused a large disruption in North American resin production. These natural disasters, coupled with the increase in oil and gas prices, caused significant increases in the price of most plastic resins. As the primary input in plastics operations, resin prices have a significant effect on plastics processors' profitability and capital expenditures. The increase in resin prices has bolstered the recycling market.

The secondary market for plastics equipment has tightened. OEMs are recovering from shutdowns and have seen increases in orders and longer lead times. Equipment vintages of five years or less are the most desirable and are trading well for injection molding equipment (10 years or less for extrusion equipment). Demand for plastics equipment from the late 1990s to mid-2000s previously had fallen sharply, due both to its age and the surplus of older equipment in the secondary marketplace. Long OEM lead times and a need for equipment has shown equipment from the mid-2000s to be temporarily in demand.

The auto market, which recovered far better and more quickly than originally predicted, is now facing chip shortages, resin

price increases, and a lack of skilled workers. The housing, remodeling, and construction markets continue upward. The production of PVC trim, pipe, conduit, composite decking, roof tiles, and appliance components has caused demand for midrange injection molding machines and extrusion machines to remain stable.

Injection molding machines manufactured in China continue to have an impact on the plastics machinery resale market. The lower cost of this machinery as compared to counterparts built in the U.S., Europe, or Japan had some manufacturers reconsidering their equipment supply chain, especially since the COVID-19 pandemic. Additional disruptions to shipments and the high costs of overseas containers have put additional pressure on equipment from China. Accessing machinery and parts from China, as well as the volatility of trade relations with China, are concerns at the forefront of plastics processors' minds. New machines produced in China are still available at a price point of a four- to six-year-old tier-one brand (i.e. Milacron (US), Krauss Maffei (Germany), Engel (Austria), or Nissei (Japan)). The machines produced in China come equipped with energy saving servo pump technology, name brand controls, and better warranties. However, manufacturers in China are currently battling steel tariffs and may have to raise prices closer to those seen in the U.S.

To remain competitive, U.S. manufacturers need to monitor interest rates and inflation and their effect on the housing and construction industries. Additional areas to watch will be supply-chain disruptions, labor shortages, repatriation of critical supply chain elements, plastic and chemical legislation, bans on specific plastics products, chemical recycling, inflation, and adoption of bio-resins.

Monitor Information

The Chemicals and Plastics Monitor relates information covering many chemicals and plastics, including industry trends, market pricing, and their relation to our valuation process. Due to the commodity nature of certain chemicals and plastic resins, timely reporting is necessary to understand an ever-changing marketplace. In addition, pricing trends are impacted by a number of macroeconomic indicators that should be monitored, and B. Riley Advisory Services strives to contextualize these indicators in order to provide a more in-depth perspective of the market as a whole. Please feel free to utilize our contact information shown in this and all Chemicals & Plastics Monitor issues.

The information contained herein is based on a composite of B. Riley Advisory Services' industry expertise, contact with industry personnel, liquidation and appraisal experience, and data compiled from a variety of well-respected sources believed to be reliable. We do not guarantee the completeness of such information or make any representation as to its accuracy. B. Riley Advisory Services does not make any representation or warranty, expressed or implied, as to the accuracy or completeness of the information contained in this issue. Neither B. Riley Advisory Services nor any of its representatives shall be liable for use of any of the information in this issue or any errors therein or omissions therefrom.



Experience

B. Riley Advisory Services has worked with and appraised numerous companies within the chemicals and plastics industries. While our clients remain confidential, they include well-known and significant global, national, and regional producers and distributors of commodity and specialty chemicals, chemical intermediates, plastics, and resins for uses throughout the construction, automotive, oil and gas, food and beverage, manufacturing, and agricultural industries.

B. Riley Advisory Services has appraised companies such as the following:

- A global manufacturer of chemicals and plastics, a refiner of crude oil, and a significant manufacturer of fuel products, with annual sales of nearly \$20 billion;
- One of the largest global manufacturers and distributors of high-performance polymer resins and resin-based products, with locations throughout the world and sales exceeding \$3.5 billion annually;
- A manufacturer and distributor of plastic packaging such as containers, closures, tubes, and bottles, with revenue of \$3.5 billion annually;
- Two of the world's largest producers of integrated fibers and polymers, with annual sales of \$1.4 billion and \$3 billion, respectively;
- One of the nation's leading specialty chemical producers, with annual revenue of over \$1.5 billion;
- A distributor of crop input products to customers in the mid-southern regions of the U.S., including herbicides, various agricultural chemicals, insecticides, defoliant, surfactant, fertilizer, seed, and similar goods;
- One of Europe's leading specialty chemical producers; and
- A producer of specialty chemicals derived from renewable resources serving the pharmaceutical, rubber production, and agricultural markets, among other industries.

B. Riley Advisory Services also maintains extensive appraisal experience with a variety of plastic bottle and plastic container manufacturers, as well as foam and foam product manufacturers. B. Riley Advisory Services has also appraised a variety of small and middle market commodity and specialty chemical manufacturers and distributors. B. Riley Advisory Services has been involved in the asset disposition and valuation of many plastics processing facilities involving injection molding, blow molding, extrusion, thermoforming, and more. Recent transactions include: Cincinnati Milacron, Collins & Aikman, Essel Propack America, Fortis Plastics, Home Products International, Hunjan Group, ILPEA Industries, Interbath, Jodee Plastics, Kamco Plastics, MedPlast, Mullinix Packages, Packaging Plus, Rantoul Products, Royal Dynamics, Thomas Plastics, and United Plastics Group.

Given our experience in both the valuation and disposition of chemicals and plastics processing equipment, B. Riley Advisory Services is uniquely qualified to not only render value opinions, but to also serve your liquidity needs through the sales of surplus and/or idle chemicals and plastics processing assets. In addition to our vast liquidation and appraisal experience, B. Riley Advisory Services maintains contacts within the chemicals/plastics industry that we utilize for insight and perspective on recovery values.

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About B. Riley Advisory Services

B. Riley Advisory Services works with lenders, law firms, private equity sponsors and companies of all types. Our Advisory Services are a unique mix of Valuation and Appraisal Services including asset-based lending (ABL) Valuations; Restructuring and Turnaround Management; Forensic Accounting and Litigation Support; Operations Management; Compliance, Risk & Resilience Services; and Transaction Support Services including Due Diligence and Quality of Earnings Reviews. B. Riley Advisory Services is the trade name for GlassRatner Advisory & Capital Group, LLC, B. Riley Advisory & Valuation Services, LLC, Great American Group Machinery & Equipment, LLC, and Great American Group Intellectual Property, LLC.



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Capitalize On The B. Riley Difference

B. Riley Financial ("B. Riley") provides collaborative solutions tailored to fit the capital raising and business advisory needs of its clients and partners. B. Riley operates through several subsidiaries that offer a diverse range of complementary end-to-end capabilities spanning investment banking and institutional brokerage, private wealth and investment management, financial consulting, corporate restructuring, operations management, risk and compliance, due diligence, forensic accounting, litigation support, appraisal and valuation, auction and liquidation services. B. Riley Financial is headquartered in Los Angeles with offices across the U.S. as well as an international presence.

In February 2021, B. Riley acquired National Holdings Corporation. The combination created an enhanced wealth management platform, and as a result of the acquisition, B. Riley has a synergistic footprint with offices now expanding from coast to coast.

ADVISORY SERVICES

Provides specialty financial advisory services to address complex business problems and board level agenda items.

- Appraisal & Valuation Services
- Compliance, Risk & Resilience Services
- Forensic Accounting & Litigation Support
- Operations Management Services
- Restructuring & Turnaround Management
- Transaction Support

INVESTMENT BANKING & CAPITAL MARKETS

Provides a full suite of investment banking, corporate finance, advisory, research, and sales and trading services for middle-market public and private companies.

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- Restructuring & Recapitalization
- Mergers & Acquisitions (M&A)
- Sales & Trading
- Equity Research

PRINCIPAL INVESTMENTS

Develops investment opportunities through the acquisition and/or restructuring of companies and corporate assets that present attractive cash-flow driven returns.

REAL ESTATE SOLUTIONS

Dedicated practice group that provides real estate advisory and valuation services in the U.S. and abroad.

- Sales & Dispositions
- Lease Restructuring
- Real Estate Advisory Services
- Capital Solutions & Acquisitions
- Financial Advisory Services

RETAIL SOLUTIONS

Retail restructuring, advisory and disposition solutions that help retailers maximize their retail store portfolios and inventory positions, as well as a real estate services vertical focused on maximizing distressed real estate values.

- Dispositions
- Inventory Clearance
- Appraisal & Valuation Services
- Real Estate Solutions

SPONSORS COVERAGE

Provides dedicated resources that drive value with the firm's alternative asset manager clients by developing and maintaining relationships with middle market financial sponsors.

VENTURE CAPITAL

Invests in late-stage private growth companies with a path towards public markets.

WEALTH MANAGEMENT

Strategic financial advisory services to address the various needs of individuals, families, business owners, foundations and endowments.

- Individual Client Services
- Business Client Services

WHOLESALE & INDUSTRIAL SOLUTIONS

Provides equipment management and capital recovery solutions through a suite of services in various industries.

- Auctions, Private Treaty & Liquidation
- Valuations
- Asset Planning & Recovery Strategies