

Monitor

Chemicals & Plastics

INVENTORY & EQUIPMENT

VOLUME
326

PANDEMIC UNCERTAINTY

COVID-19 CAUSES MARKET UNCERTAINTY

The broad, global impacts of COVID-19 caused temporary weak demand from many key downstream sectors

OIL PRICES PLUMMET AND REBOUND

Oil prices collapsed in early 2020 due to COVID-19 and an international pricing war, followed by a slight rebound

STEADY DEMAND FOR PLASTIC EQUIPMENT

Despite weak exports, domestic demand for plastic processing equipment is expected to exhibit moderate growth

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MONITOR CHEMICALS & PLASTICS

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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	Mixed 	Decreasing ▼
Sales Trends	Decreasing ▼	Decreasing ▼
Gross Margin	Mixed 	Mixed 
Inventory	Decreasing ▼	Decreasing ▼
Selling Prices	Mixed 	Mixed 
Market Prices	Mixed 	Mixed 

NOLVs

- **Chemicals:** Recent NOLVs for chemical engagements have been mixed, increasing or decreasing up to five percentage points, with fluctuations driven by gross margins and shifts in inventory mix.
- **Plastics:** For plastics engagements, NOLVs have declined from three to five percentage points due to weak demand in the wake of the COVID-19 pandemic, as well as unfavorable inventory shifts.

SALES TRENDS

- **Chemicals:** Sales volumes declined due to soft demand in the wake of COVID-19, as well as engagement-specific factors such as unfavorable weather, oversupply in the market, and weak downstream demand.
- **Plastics:** Sales declined due to the impacts of COVID-19 and engagement-specific factors.

GROSS MARGINS

- **Chemicals:** Gross margins have been mixed, increasing or decreasing from one to three percentage points. Margins were impacted by supply levels in the market, as well as sales mix. In some instances, COVID-19 resulted in an oversupply that pressured selling prices downward.

- **Plastics:** Gross margins for plastics were also mixed, with fluctuations caused by engagement-specific factors such as a focus on plant efficiencies or sales mix.

INVENTORY

- **Chemicals:** In most engagements, inventory levels decreased in order to align with lower demand.
- **Plastics:** Inventory levels declined in most engagements to align with weak demand.

SELLING AND MARKET PRICES

- **Chemicals and plastics:** Selling and market prices were mixed over the last few months. At the onset of the COVID-19 pandemic, weak demand and a pricing war between Russia and Saudi Arabia caused global oil prices to plummet. The lower market prices, coupled with slowing sales and oversupply, caused selling prices to follow the same trajectory. However, both market and selling prices have exhibited some upward momentum in recent months as global economies begin to reopen, supply levels decline, and the hurricane season in the U.S. threatens supply disruptions.

Trend Tracker - Machinery and Equipment

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

USED PRICING

- **Chemicals:** While used pricing was consistent through most of the COVID-19 crisis, pricing for reactors and certain types of processing tanks recently exhibited some upward momentum due to limited availability.
- **Plastics:** Pricing within the plastics sector has been relatively static in recent months. Used equipment prices have remained at pre-pandemic levels as companies are cautiously expanding.

USED TRADE MOVEMENT

- **Chemicals:** Sales activity decreased recently. Buyers have taken a “wait-and-see” approach due to the ongoing market turmoil, and buying hesitation is typical in the months preceding a presidential election.
- **Plastics:** Used plastics equipment is trading well, though below the highs of 2016. Equipment from the 1990s and early 2000s is in lower demand. Equipment less than five years old is trading more consistently.

OEM PRICING

- **Chemicals:** Pricing for chemical process equipment has been fairly consistent and trends very close to material costs.
- **Plastics:** OEMs have been meeting demand, while lead times are shortening on large tonnage machines.

Some U.S. OEMs are offering discounts to compensate for reduced revenues since 2016 and competition from China.

TECHNOLOGY ADVANCEMENT

- **Chemicals:** Recent deregulation caused a temporary slowdown in technological advancement relating to environmental issues. Advancement in controls and remote management is undergoing slight deceleration.
- **Plastics:** The level of technological advancement has remained consistent, with strong demand for certain technology, such as electric drive injection molding machines, automation, and data exchange between devices and humans.

AUCTION ACTIVITY

- **Chemicals:** GA has seen an increase in the number of chemical-related auctions, as well as an increase in realized prices. However, orderly liquidation, rather than auctions, remains the preferred method of liquidating chemical processing assets.
- **Plastics:** GA has observed less plastics industry auction activity over the last year, largely due to increased demand from downstream industries as a result of strong economic conditions. Auction activity is expected to grow at the end of 2020 and into 2021.

Overview

Like many other industries, the chemical and plastic sectors in the U.S. were dramatically impacted by the global COVID-19 pandemic, which exacerbated already declining industrial production and interrupted many key downstream markets.

Demand for chemical and plastic products is linked to downstream consumption and broad economic conditions on both a domestic and global scale. In the wake of COVID-19, experts predict that global and U.S. GDP, a key indicator of economic growth, will decline 4% to 5% in 2020. Other indicators, such as consumer spending and industrial production, are expected to follow similar trajectories.

Two of the most important industries in regard to chemical and plastic consumption are the U.S. automotive and construction sectors. The automotive industry was particularly hard-hit by the pandemic, with most major automakers forced to suspend production at the height of the outbreak in March and April 2020. Automotive dealerships were also forced to close, and when they were allowed to reopen, inventory levels were limited due to the aforementioned closure of the production lines. While estimates vary, most experts predict that sales of new cars in the U.S. will decline between 15% and 20% in 2020 as compared to the prior year.

The construction industry followed a similar course. At the height of the pandemic, many new construction projects were delayed or cancelled. As a result, new construction starts through the summer of 2020 were well below the same months of 2019.

As a result of the falling demand, industry experts forecast that chemical and plastic sales volumes in 2020 will lag behind prior year results. The market will experience a decline in demand from domestic producers, as well as weakened export demand.

However, there have been some silver linings for the industry. For one, chemical and plastic manufacturers were deemed essential businesses by the Department of Homeland Security, which allowed them to continue operating throughout the pandemic. Due to the difficulty in idling and restarting many chemical and plastic production lines, this was a considerable win for many industry participants.

Many industry participants were also able to pivot their operations toward pandemic-specific products that were in high demand, such as personal protective equipment and sanitation chemicals. While these sales could not always offset other losses, they sometimes helped to mitigate the downturn.

Additionally, the pandemic contributed to a significant decline in both oil and natural gas market prices. The lower input costs may positively impact manufacturers during a recovery.

Of course, the near-term outlook for the chemical and plastic markets is very uncertain. Although a slow reopening has started in the U.S. and other countries, localized spikes and resurgences in cases continue to interfere with those efforts. The final and cumulative effect on the global economy remains uncertain, and an extended outbreak of coronavirus within the U.S., Asia, Europe, and throughout the world could dramatically impact the recovery.

Feedstocks

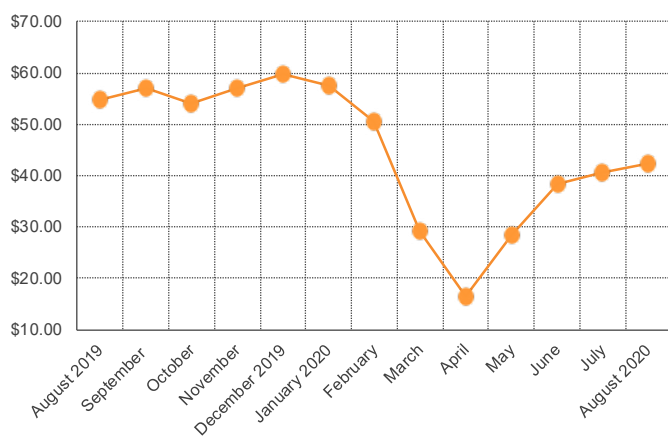
FEEDSTOCKS OVERVIEW

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

In the spring of 2020, the COVID-19 pandemic caused lockdowns across the globe, dramatically reducing the demand for oil. This factor, coupled with a price war between Russia and Saudi Arabia, caused spot prices for West Texas Intermediate (“WTI”) crude oil to fall to \$16.55 per barrel in April 2020, the lowest monthly average in more than two decades and a decrease of over 70% from January 2020. In the following months, oil prices began to rebound due to reduced production and increasing demand, but the market is not expected to fully recover in 2020. Prices for WTI crude oil averaged \$42.34 per barrel in August 2020.

1 Crude Oil Cushing, Oklahoma WTI Spot Price August 2019 through August 2020 (\$ per barrel)



According to the EIA, U.S. commercial crude oil inventory for the week ended August 28, 2020 totaled 498.4 million barrels, a decrease of 9.4 million barrels from the previous week. The EIA notes that inventory levels are slightly above average for this time of year.

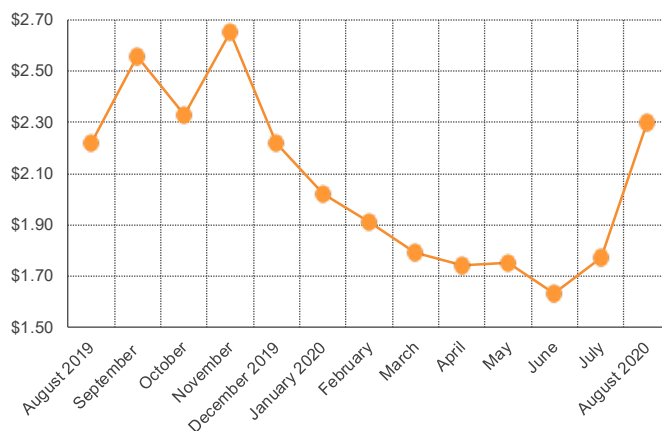
NATURAL GAS

According to estimates from the EIA, working gas in underground storage totaled 3,455 billion cubic feet (“Bcf”) for the week ended August 28, 2020, which represents an 18.4% increase from the previous year. The following table illustrates working gas in underground storage in the lower 48 states (units in Bcf):

Region	8/28/20	8/28/19	% Change
East	789	705	11.9%
Midwest	924	816	13.2%
Mountain	212	176	20.5%
Pacific	304	277	9.7%
South Central	1,225	943	29.9%
Total	3,455	2,917	18.4%

Henry Hub natural gas prices peaked at \$2.65 per million BTUs (“MBTU”) in November 2019 before entering a seven-month slide to \$1.63 per MBTU in June 2020. The decline in natural gas prices was caused by warmer-than-average temperatures in the winter months and was exacerbated by the global pandemic in the spring and summer. More recently, prices climbed to \$2.30 per MBTU in August 2020.

2 Henry Hub Gulf Coast Natural Gas Spot Price August 2019 through August 2020 (\$ per MBTU)



Chemicals

PROPYLENE

Propylene is a colorless gas that can be liquefied under pressure. A large portion of domestic propylene is derived from the processing of naphtha in ethylene steam crackers, while the refinement of petroleum into gasoline also yields propylene. Growth in demand for propylene has also resulted in some purposeful propylene manufacturing operations, as opposed to sourcing the material as a byproduct.

The COVID-19 pandemic caused reduced activity at refineries in the second quarter of 2020, which resulted in lower supplies of propylene. At the same time, downstream demand also fell. More recently, the reopening of global economies has caused both supply and demand to rebound, though activity is not expected to reach historical levels until later this year or next year, and some production outages have impacted propylene supplies.

ETHYLENE

Ethylene is a colorless and flammable gas and one of the world's most-produced compounds. One of the largest downstream uses is the production of polyethylene resin, which is one of the most commonly used plastics across the globe, and other polymers such as polyethylene terephthalate (or PET), polyvinyl chloride (PVC), and polystyrene. Ethylene is produced in the steam cracking of ethane, as well as the cracking of naphtha.

Ethylene supplies remained fairly consistent throughout the second and third quarters of 2020. However, downstream demand suffered due to the pandemic, and feedstock prices declined early in the year. As a result, ethylene pricing trended downward. Pricing may increase as demand recovers through the balance of 2020 and into 2021.



Plastic Resins and Polymers

POLYPROPYLENE

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

Polypropylene, a polymer which is derived from propylene, is one of the world's most commonly-used plastics. It is a versatile material with countless end use applications, including packaging, plastic parts, apparel, consumer goods, and many other products.

In the spring of 2020, market prices for polypropylene decreased fairly steadily from March through May. The decline was driven by a number of factors, not the least of which was the global COVID-19 pandemic that dramatically eroded demand from many downstream markets. Prices also fell due to the collapse in feedstock pricing and plentiful supplies of polypropylene in the marketplace.

Since bottoming out in the late spring and early summer months, polypropylene prices have exhibited relatively consistent upward momentum. Gains were driven partially by the reopening of the U.S., which benefited demand. The price increases were also largely attributed to higher feedstock costs for propylene monomer following some outages. Despite these gains, pricing in September 2020 was below 2019 levels.

POLYETHYLENE

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

Polyethylene, which is a plastic that is derived from ethylene feedstock, is another of the world's most widely used plastic materials. Similar to polypropylene, it is very versatile, with end use applications including films (food wrap, plastic bags), plastic containers, durable plastic parts, packaging, and countless other goods.

The pricing trajectory of polyethylene over the past six months was similar to that of polypropylene. During the early stages of the COVID-19 pandemic, when states were instituting stay-at-home orders and businesses were shutting down, prices for polyethylene fell. The decline lasted from late March through the end of May.

Declines were followed by steady pricing increases in subsequent months. The bullish pricing was caused by the reopening of the U.S., which spurred demand. Stocks of the resin declined, bolstering the price hikes. More recently, fears of hurricane activity drove increased purchasing as manufacturers sought to avoid potential supply issues. Pricing in September 2020 was slightly above year-ago levels.



Plastic Processing Equipment

The plastics processing industry relies heavily on downstream demand for plastic products. Despite a forecasted decline in export sales, downstream demand is expected to improve, particularly from the construction, food and beverage, auto, and medical markets. Consolidations of plastic manufacturers have tempered over the last five years, and industry revenues are stable at present, though down from the highs of 2016.

Technology and automation continues to be at the forefront for plastic processing manufacturers. Buzz words like the “Internet of Things” and “Industry 4.0” are very loud right now. These terms are about the automation and exchange of data between devices and humans to provide a more efficient, self-diagnosing, self-correcting, and leaner manufacturing landscape. Plastics equipment will not only speak with itself, but with the advancement of more complex sensors, cameras, and digital data, the equipment will become more predictive in its ability to not only report an error, but predict when an error is imminent and either fix it or report it before it occurs. These notifications will ultimately reduce downtime. These efficiency gains will be important as demand for plastic products becomes increasingly varied. In light of the recent shutdowns, manufacturers are looking at how to operate their plants with fewer people. Efficiency is an insurance policy against potential shutdowns or staff reductions mandated by the government. Product runs have shortened, and mold changes have increased. The ability to meet these ever-increasing demand variations with new technology will require properly trained and educated equipment operators.

The secondary market for plastics equipment has remained stable. Equipment vintages of five years or less are the most desirable and are trading well for injection molding equipment (and 10 years or less for extrusion equipment). Demand for plastics equipment from the late 1990s to mid 2000s has fallen sharply in part due to its age, but also due to the surplus of older equipment in the secondary marketplace. Global auto production was projected to decrease 22% as of the first

quarter of 2020. This will slow purchases of higher tonnage, higher dollar plastics equipment until a better forecast is seen. Machines of this size are expensive to remove and transport, and the resale market is smaller. Conversely, as the housing, remodeling, and construction markets improve, production of PVC trim, pipe, conduit, composite decking, roof tiles, and appliance components will stabilize demand for mid-range injection molding and extrusion machines. As the pandemic has more people staying at home, consumers are evaluating how to make their houses more livable, driving construction of new decks, home offices, and other upgrades. Demand for consumer goods increased this year in the areas of packaging and single serve items. More items are being delivered to the home, and more restaurant carry out items are needed. The medical plastic market has been very strong recently as plastic is a major component of medical equipment, syringes, testing equipment, and personal protective equipment.

Chinese built injection molding machines have had an impact on the plastics machinery resale market. Favorable pricing has some manufacturers reconsidering their equipment supply chain. New machines from China are available at the same price point as a five- to seven-year-old tier one brand and often come equipped with energy saving technology, name brand controls, and better warranties. However, COVID-19 and the recent tariff war have made access to machinery and parts from China a major concern for plastics processors. Furthermore, China is contending with steel tariffs and may have to start raising prices. So far, equipment from Japan, which is considered to be higher quality, has a better foothold than machines from China.

To remain competitive, U.S. manufacturers need to monitor pricing against new competition, and also watch interest rates and their effect on the housing and construction industries, which are key downstream demand industries. Some U.S. manufactures have discounted new machines to combat drops from the highs of 2016.

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 BR 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 BR's 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. BR does not make any representation or warranty, expressed or implied, as to the accuracy or completeness of the information contained in this issue. Neither BR 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

BR 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.

BR 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.

BR also maintains extensive appraisal experience with a variety of plastic bottle and plastic container manufacturers, as well as foam and foam product manufacturers. BR has also appraised a variety of small and middle market commodity and specialty chemical manufacturers and distributors. BR 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, BR 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, BR maintains contacts within the chemicals/plastics industry that we utilize for insight and perspective on recovery values.

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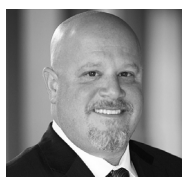
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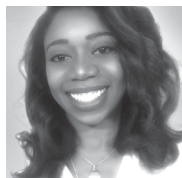
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