

*T-PSI's*

*PLASTIC MARKET MONTHLY*

---

# **POLYPROPYLENE COPOLYMER**

## **SEPTEMBER 2002**

### IN THIS ISSUE

MARKET BRIEF	2-3
MARKET MIX BY PROCESS	4
MARKET SHARE BY PROCESS	5
ECONOMIC TRENDS	5
MONTHLY PRICES	6
FEEDSTOCKS	7
GRADE SHEET	8
REFERENCE	9

**US & Canada Prices/Margins**  
(Cents per Pound)

	Jun	Jul	Aug
Propylene Contract	21.75	21.75	21.75
Ethylene Contract	23.0	23.0	23.0
PP Copolymer Average <sup>(1)</sup>	38.48	40.53	41.50
Injection Molding, Low-Med Impact			32.2-55.0
Injection Molding, High Impact			37.1-54.7
Injectin Molding, Random			33.6-52.8
Sheet & Profile			43.5-57.6
Off-Grade & Wide Spec			27.3-37.6
Producer's Gross Margin <sup>(2)</sup>	16.04	18.09	19.06

**Estimated Capacity Utilization Polypropylene**

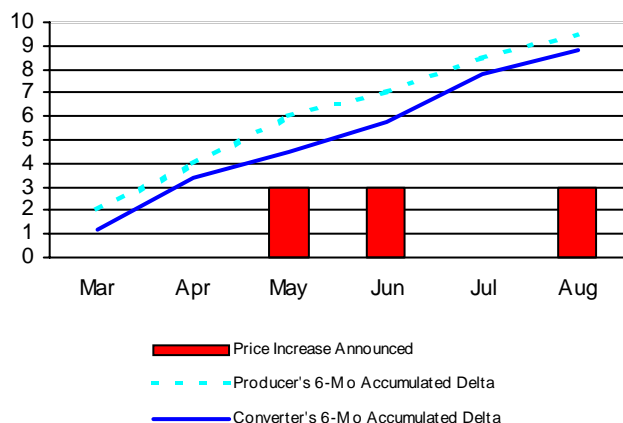
	Jul	2002 YTD	2001 YTD
Resin Producer <sup>(3)</sup>	95%	94%	88% ↑
Resin Converter <sup>(3)</sup>	91%	90%	82% ↑

**US & Canada Polypropylene Resin Producer Statistics**  
(Millions of Pounds)

	Jul	2002 YTD	2001 YTD
Production <sup>(4)</sup>	1,452	10,045	9,345 ↑
Domestic Sales <sup>(4)</sup>	1,307	9,130	8,282 ↑
Total Sales <sup>(4)</sup>	1,410	10,076	9,395 ↑
Inventory Change	42	-31	-50

- (1) Volume weighted average of price paid by converters for all grades; formerly referred to as realizations
- (2) Excludes other variable costs beyond feedstock cost
- (3) Source: Survey by T-PSI & APC statistics
- (4) Source: APC; all sales line items include sales of imports

**Producers vs Converters Price Survey**  
(cents per pound delta)



**Upward Price Trend Continues in August**

The June 3.0 cts/lb nomination continues to work its way into the market. August polypropylene homopolymer prices inched up, on average, 0.89 cts/lb. Copolymer resin moved higher by 0.97 cts/lb. The June nomination encountered less resistance than originally expected due to continued strong demand and tight resin supplies.

The rise in propylene values over the past several months has also aided producers' ability to secure three price increases since the start of the year. Although propylene and ethylene prices have stabilized in the past couple of months, short supplies have kept upward pressure on prices. Propylene rolled over from July's settlement of 21.75 for polymer grade and producers have nominated September up a penny. Sources suspect the September nomination will not hold and the likelihood of a decrease is a strong possibility.

**Producer-Converter Price Delta Remains Small**

The producer-converter price delta, the difference between what producers say has gone through to the market and what converters are actually paying, remains surprisingly small. This story has repeated itself all year due to the ability of producers to push through nearly all their nominations to date. Producers have had much success in balancing supply and demand since January. Given the balance has tipped in favor of demand, producers have been able to maintain a rather tight polypropylene market.

According to the Producers vs Converters Price Survey graph below, converters report taking increases, from February 1st through August 30th, of 10.18 cts/lb on average for homopolymer resin delivered to their plants. Copolymer increases on the converter side have been somewhat less and amount to around 8.87 cts/lb. Resin suppliers report that 10.8 cents have been successfully implemented for homopolymer resin during the same time period, while 9.5 cents have been secured for copolymer material.

More than two-thirds of the PMM converters surveyed reported that their August resin shipments were under 30- or 60-day price protection. Some converters reported that they had successfully negotiated 90-day price protection, which clearly shows a time lag in the implementation of the June price increase. To explain the small difference between converters and producers deltas, it is worth noting that the converter's price reflects product delivered during the month, while producer's think in terms of product shipped. The bottom of page 6 provides a complete explanation. The rise in price protection suggests that some producers are willing to give some ground during price negotiations over the past two months. This may signal a shift in negotiating power or could be a tactic to ensure producers achieve all their nominations to date.

**Converters See Price Momentum Ease in September**

According to our survey, data collected in August plus conversations with other converters, there seems to be a consensus among polypropylene buyers that September prices will again be higher. Converters reported that they expect to pay, on average, an additional half-cent for their September resin purchases. Many buyers report prices will be flat in September but that is also taking price protection into account. Higher polypropylene prices in September will likely be the result of price protection terms expiring. This will allow producers to claim the rest of the June 3.0 cts/lb nomination and put most buyers resin costs up 11.0 cents for the year.

Due to higher resin production and sales from February through August of this year, producers certainly have had the upper hand in pushing through price increases. Low inventories at the producer level are

*(Continued on page 3)*

(Continued from page 2)

also contributing to the rise in prices. Capacity utilization at the producer level for July was at 95% suggesting resin production is still falling behind demand. Converter utilization rates also remained elevated in July, at about 91%, which may help producers with the August nomination.

**Producers Determined to Implement Aug-Sep Nomination**

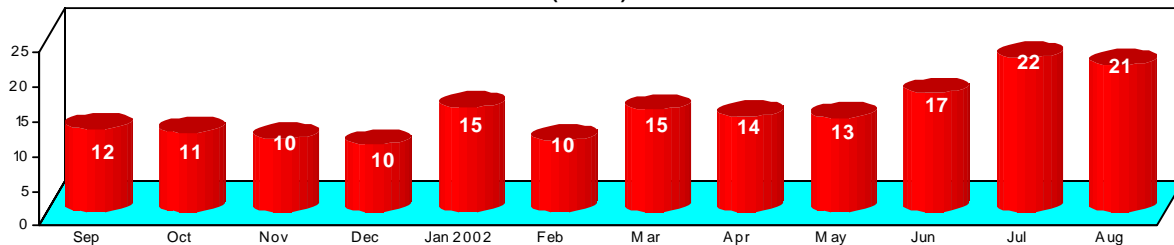
Most producers have announced a 3.0 cts/lb nomination for August 1<sup>st</sup>. Two producers decided to forego an August nomination in lieu of a September 3.0 cts/lb price increase. This brings the total polypropylene nominations for the year to 14.0 cents. The jury is still out whether the fourth nomination of 2002 will be successful. Some buyers point to the weakening spot market and flat monomer costs as a signal that 11.0 cents is all producers will achieve this year. Producers on the other hand are very determined to implement all 14.0 cents tabled this year. Producers counter converters desire for price relief by pointing out that demand

remains robust and margins have yet to recover from the poor market conditions experienced in 2000 and 2001.

**Converter Supplies Remain Flat in August**

The Days of Supply graph suggests that converter inventory levels remained fairly stable in August. Inventories of both homopolymer and copolymer grades dropped by just one day of supply. Some converters reported that their resin inventories actually increased slightly during the July-August timeframe due to a seasonal slowdown in finished goods demand. Homopolymer resin deliveries increased slightly in August while copolymer resin deliveries continued to fall. The change from month to month was quite small but the overall trend for both resin types continues to point to a slow down in buying interest.

**Days of Supply at Converters<sup>(6)</sup>**  
**(Resin)**



(6) Days of Supply (DOS) replaces Inventory Days from previous issues. DOS is the converter's volume weighted average days of resin supply, in inventory, at month end. This figure takes into account plant throughput and days of production.

**Top Importing Countries to US**  
 (Millions of Pounds of PP)<sup>(5)</sup>

	Jun	YTD
Canada	30	149
Japan	1	4
Mexico	1	4
Belgium	0.3	1
Germany	0.2	4
Austria	0.2	1
France	0.1	0.4

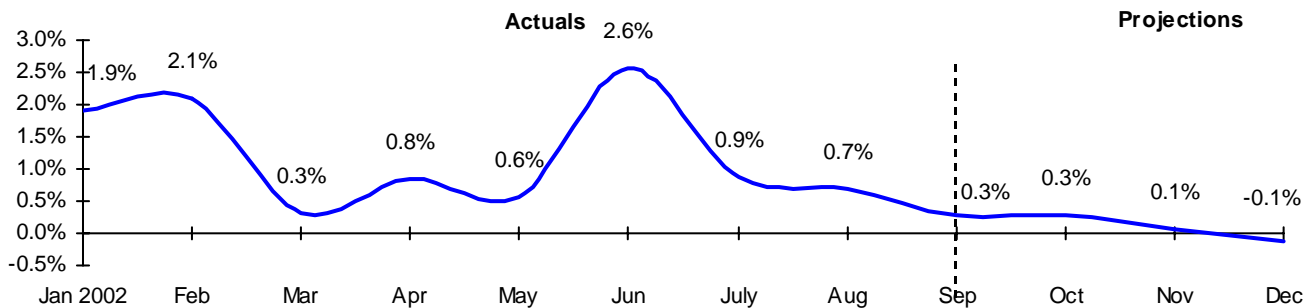
**Top Countries for US Exports**  
 (Millions of Pounds of PP)<sup>(5)</sup>

	Jun	YTD
Mexico	67	456
Canada	57	329
China	21	172
Israel	7	60
Thailand	5	19
Belgium	5	31
Guatemala	5	23

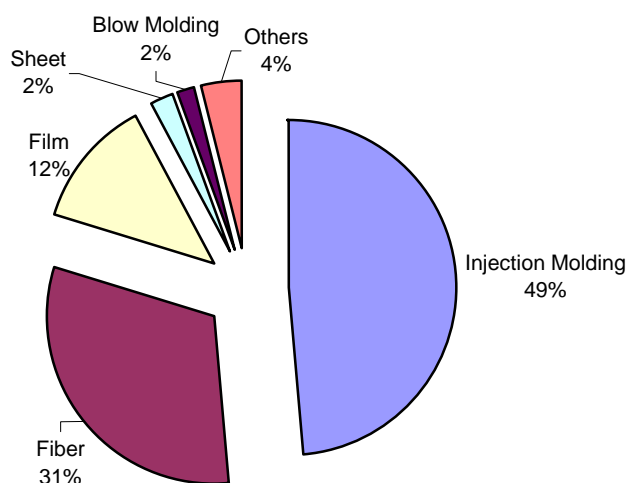
**Net Exports**  
 (Millions of Pounds of PP)<sup>(5)</sup>

	Jun	YTD	2001 Total
U.S. Exports	197	1,362	2,715
Imports to U.S.	33	168	330
Net Exports	164	1,195	2,385

**Converters Change in Deliveries from Previous Month**



MARKET MIX BY PRIMARY CONVERSION PROCESS



SUPPLIER MARKET MIX BY PRIMARY CONVERSION PROCESS

	Injection Molding	Fiber	Film	Sheet	Blow Molding	Others	Totals
ATOFINA	12.4%	47.0%	28.3%	5.1%	1.0%	6.2%	100.0%
Basell	58.9%	21.9%	8.4%	4.9%	2.2%	3.7%	100.0%
BP Chemicals	23.8%	68.9%	1.7%	2.3%	2.0%	1.3%	100.0%
Compounder	94.4%	0.2%	0.0%	0.2%	0.2%	5.0%	100.0%
Distributors/Brokers	83.9%	4.9%	0.2%	1.9%	2.6%	6.4%	100.0%
Dow Chemical	35.4%	48.7%	12.3%	1.5%	0.3%	1.8%	100.0%
Epsilon	22.9%	38.3%	37.4%	0.0%	1.2%	0.2%	100.0%
Equistar	66.0%	22.5%	2.5%	3.6%	0.9%	4.5%	100.0%
ExxonMobil/Imperial	34.6%	31.4%	32.3%	0.6%	0.2%	0.9%	100.0%
Formosa	12.4%	3.6%	84.0%	0.0%	0.0%	0.0%	100.0%
Huntsman	75.5%	8.5%	5.8%	3.7%	4.1%	2.4%	100.0%
Others	58.6%	30.5%	10.9%	0.0%	0.0%	0.0%	100.0%
Phillips Sumika	64.2%	12.8%	0.1%	0.0%	7.8%	15.2%	100.0%
Pinnacle Polymers	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%	100.0%
Sunoco Chemicals	24.1%	54.4%	12.6%	3.6%	0.2%	5.2%	100.0%
Unspecified	69.3%	15.7%	6.4%	0.9%	2.2%	5.5%	100.0%
<b>Average Supplier</b>	<b>48.7%</b>	<b>31.1%</b>	<b>12.4%</b>	<b>2.3%</b>	<b>1.7%</b>	<b>3.8%</b>	<b>100.0%</b>

Source: T-PSI Market Share Report

SUPPLIER MARKET SHARE BY PRIMARY CONVERSION PROCESS

	Injection Molding	Fiber	Film	Sheet	Blow Molding	Others	Totals
ATOFINA	2.0%	11.9%	17.9%	17.6%	4.4%	12.8%	7.9%
Basell	15.8%	9.2%	8.8%	28.2%	16.4%	12.6%	13.0%
BP Chemicals	6.3%	28.7%	1.8%	13.3%	15.3%	4.3%	13.0%
Compounder	10.4%	0.0%	0.0%	0.6%	0.6%	7.1%	5.4%
Distributors/Brokers	14.6%	1.3%	0.1%	7.1%	13.0%	14.2%	8.5%
Dow Chemical	5.0%	10.7%	6.8%	4.4%	1.0%	3.3%	6.8%
Epsilon	0.8%	2.0%	4.9%	0.0%	1.1%	0.1%	1.6%
Equistar	3.2%	1.7%	0.5%	3.7%	1.3%	2.8%	2.3%
ExxonMobil/Imperial	6.6%	9.4%	24.3%	2.6%	1.0%	2.2%	9.3%
Formosa	0.8%	0.3%	20.5%	0.0%	0.0%	0.0%	3.0%
Huntsman	9.9%	1.7%	3.0%	10.4%	15.5%	4.0%	6.4%
Others	0.7%	0.5%	0.5%	0.0%	0.0%	0.0%	0.5%
Phillips Sumika	4.0%	1.3%	0.0%	0.0%	13.9%	12.3%	3.1%
Pinnacle Polymers	0.0%	6.9%	0.0%	0.0%	0.0%	0.0%	2.2%
Sunoco Chemicals	2.2%	7.9%	4.6%	7.2%	0.5%	6.3%	4.5%
Unspecified	17.7%	6.3%	6.4%	4.9%	16.1%	18.0%	12.4%
Totals	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Source: T-PSI Market Share Report

**ECONOMIC TRENDS**

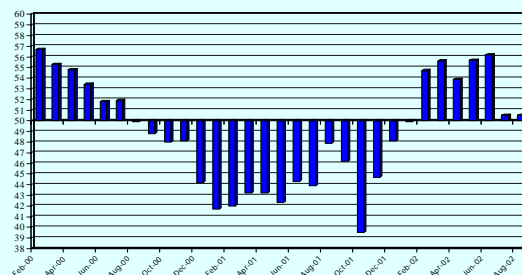
The U.S. economy continues to show improvement albeit at a slower pace than most analysts expected. The Commerce Department recently reported that the preliminary estimate for second quarter GDP remained stable at a 1.1% annual rate. This was a marked deceleration from the 5.0% growth rate achieved in the first quarter of 2002. The slowdown in GDP was largely due to a decrease in private inventory investment and in personal consumption expenditures. A sharp increase in imports, which are a subtraction in the calculation of GDP, also helped slow second quarter growth.

The Federal Reserve decided to hold interest rates steady at its August meeting. The Federal Funds Rate remains at 1.75%. Some analysts predicted an interest rate cut in August, but the Fed defended its decision by pointing to the underlying strength of the economy. Low interest rates have helped support the economic recovery by encouraging consumers to take advantage of low mortgage rates and zero-percent automobile financing. The evidence is clear that low interest rates are driving much of the current economic growth with new homes sales in July up 6.7% and auto sales increasing 3.3% in the same time period.

Although GDP growth continues to stagnate and interest rates are at historic lows, inflation remains subdued. The Consumer Price Index (CPI) increased only marginally in July rising 0.1%. The GDP Chained Price Index, the broadest measure of inflation, also increased in the second quarter but only slightly. Low inflation rates are to be expected as price deflation historically coincides with the first year of an economic recovery.

The economic outlook for the rest of the year is mixed. After a sharp drop in July, the August ISM manufacturing index remained unchanged at 50.5. The reading of 50.5 implies the manufacturing sector is still expanding, but the slow down in August has some economists debating the issue of a double-dip recession. Even though some areas of weakness persist, most economists believe the current growth of the economy is sustainable and should continue to improve into 2003.

**Purchasing Manager's Index**  
Expansion & Contraction of US Manufacturing



Source: Institute for Supply Management™, [www.ism.ws](http://www.ism.ws)

**Key Economic Indicators**

GDP, Annualized Growth Rate	Q2	1.1%	
Capacity Utilization, US Manufacturing	Jul	76.1%	↑ 0.1%
Housing Starts (millions)	Jul	1.649	↓ 2.7%
Building Permits (millions)	Jul	1.698	↓ 0.5%
Unemployment Rate	Aug	5.7%	↓ 0.2%
Prime Rate	Aug	4.75%	↔ 0.0%
Consumer Price Index (1984=100)	Jul	180.1	↑ 0.1%
Industrial Production Index (1992=100)	Jul	140.7	↑ 0.2%
Producer Price Index (1982=100)	Jul	138.9	↓ 0.2%

Source: US Government

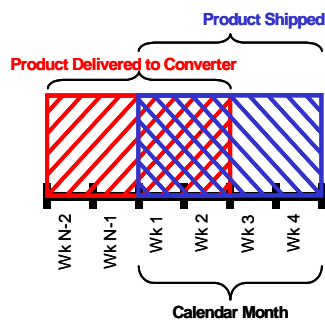
# POLYPROPYLENE COPOLYMER

## MONTHLY PRICES IN CENTS PER POUND

PMM Sep 2002

	Converter Actuals				Delta		Converter Projections
	May	Jun	Jul	Aug	Current Month	6 Mo's To Date	Sep
<b>Injection Molding, Low - Med Impact</b> [Grade # 132100]							
90th Percentile	50.1	51.7	53.9	<b>55.0</b>	1.1	8.5	<b>55.3</b>
Vol Wtd Avg	33.1	34.7	36.8	<b>37.8</b>	1.0	7.9	<b>38.1</b>
10th Percentile	28.0	29.2	31.2	<b>32.2</b>	1.0	7.2	<b>32.5</b>
<b>Injection Molding, High Impact</b> [Grade # 132110]							
90th Percentile	50.2	51.6	53.9	<b>54.7</b>	0.8	7.7	<b>55.1</b>
Vol Wtd Avg	39.9	41.2	43.5	<b>44.1</b>	0.6	7.0	<b>44.4</b>
10th Percentile	33.1	34.3	36.5	<b>37.1</b>	0.6	6.5	<b>37.4</b>
<b>Injection Molding, Random</b> [Grade # 132130]							
90th Percentile	48.1	49.4	51.7	<b>52.8</b>	1.1	8.0	<b>53.1</b>
Vol Wtd Avg	37.3	38.5	40.6	<b>41.7</b>	1.1	7.4	<b>42.0</b>
10th Percentile	29.6	30.6	32.6	<b>33.6</b>	1.0	6.7	<b>33.9</b>
<b>Sheet &amp; Profile</b> [Grade # 132500]							
90th Percentile	53.2	54.3	56.4	<b>57.6</b>	1.2	7.0	<b>58.1</b>
Vol Wtd Avg	46.9	48.0	50.0	<b>51.1</b>	1.1	6.5	<b>51.5</b>
10th Percentile	39.5	40.5	42.4	<b>43.5</b>	1.1	6.1	<b>43.9</b>
<b>Off-Grade &amp; Wide-Spec</b> [Grade#s 131900, 132900]							
90th Percentile	34.2	35.7	36.5	<b>37.6</b>	1.1	8.2	<b>37.9</b>
Vol Wtd Avg	29.3	30.6	31.2	<b>32.3</b>	1.1	7.3	<b>32.4</b>
10th Percentile	24.7	25.8	26.3	<b>27.3</b>	1.0	6.6	<b>27.3</b>

### EXPLANATION OF MONTHLY PRICES



Prices are based on monthly survey of converters that subscribe to PMM. Converters fill in a data form for each grade; see last page of publication for sample data form and more details about methodology.

The Vol Wtd Avg price is weighted by delivered quantities while the 90th and 10th percentiles are not volume-weighted. Therefore, for contract purposes, we DO NOT recommend the use of the 10th or 90th percentile indexes.

Prices are for bulk quantities of prime material delivered to converters and received during the calendar month by either rail car or truck. "Product delivered" to converters will vary from "product shipped" by a supplier due to transit time. The following example illustrates differences that may occur between the product received by converters and product shipped by producers.

For illustrative purposes only, transit time is two weeks in this example and the calendar month is defined as weeks 1, 2, 3 & 4 in the diagram at left.

Shippers, represented in blue, tend to consider a month in terms of the volume shipped, the prices for each of those shipments, and the resultant average price generated. Buyers, represented in red, based on PMM's methodology, define a month as the product received during a calendar month. Given the two week transit time assumed for this example, a buyer would receive product shipped in weeks N-2, N-1, 1 and 2 during the calendar month. In relatively stable markets this creates no issue. In rapidly rising or falling markets however, this difference in time buckets can cause misunderstanding.

**Propylene Prices Rollover in August**

Propylene contracts in August have remained stable at 21.75 cts/lb. Chemical grade (CG) propylene also rolled over at 20.25 cts/lb. Although a couple of large polypropylene suppliers are holding out for a decrease in August, the majority of propylene buyers settled contracts flat from July's level. There was also some talk of a two-month settlement in which August would remain unchanged and September prices would decrease. This pricing idea has basically died due to the large number of one-month settlements concluded in August.

**Propylene September Contracts Nominated Higher**

Most propylene producers have decided to nominate September contracts higher by 1.0 ct/lb. This is somewhat surprising given the fact that August was nominated up 1.0-2.0 cts/lb. Other producers have decided to stay on the sidelines and not announce an increase for September. The lack of consensus regarding September nominations has many buyers looking for a decrease in September. Buyers eyeing a decrease point to propylene prices that have increased over 26% since the start of the year and demand that has tapered off since Q1-Q2. Producers counter that the surge in crude oil and ethane prices in August justify some upward movement in propylene values.

**Propylene Spot Prices Retreat in August**

Contributing to propylene buyers resolve in seeking a September price break, spot prices have been weak. All three grades of propylene; polymer (PG), chemical (CG), and refinery (RG) have experienced a drop in spot values. Although PG and CG have eased only a penny during August, RG propylene in early September was heard selling for as low as 15.75 cts/lb. Export demand continues to be strong although a slight dip in export prices in August has added to the growing uncertainty of where propylene prices will settle out in September.

**Ethylene Flat? Or not?**

The majority of the market has not settled on an ethylene contract price for August. According to our sources, only one buyer settled a contract flat from July. They expect that they may experience an increase of 2.0 cts/lb in September. This isolated case, however does not mean that an agreement is being reached at the contract level. In fact, another major buyer mentioned that no one wants to negotiate right now as both suppliers and buyers are hoping that the market will dictate a move in their favor.

Presently, availability of supply and spot prices as low as 16.0 cts/lb probably point to a flat settlement for August. September's ethylene contract price is still very much in question. While major producers are pushing for a 2.0 cts/lb increase, converters are looking for a decrease. Producers may not have much of a case with cash costs remaining about the same since May and natural gas prices dropping in early September from their August price levels.

**Ethylene Spot Re-Appearing in the Picture**

Spot ethylene is more available than last month. Trades were reported in the 16.0 - 17.0 cts/lb range in late August and early September. With spot prices moving down, there is pressure to keep contract prices flat or lower them.

**Natural Gas Price Fluctuates**

During the last weeks of August, the natural gas price rose to \$3.68 per MMBtu on the NYMEX, but is returning to the \$3.00 per MMBtu level in early September. Ethylene suppliers believe natural gas will move up overall in September.

US & Canada Prices				
	June	July	August	Change
Propylene Contract P Grade,	21.75	21.75	21.75	↔
Propylene Contract C Grade,	20.25	20.25	20.25	↔
Propylene Contract R Grade,	18.0	18.0	17.5	↓
Propylene Spot P Grade,	21.0 - 22.0	20.0-21.0	19.0-20.0	↓
Propylene Spot C Grade,	19.5-20.5	19.0-20.0	19.0-19.0	↓
Ethylene Contract, cents/lb	23.0	23.0	23.0	↔
Ethylene Spot, cents/lb	20.0 - 20.5	17.5-18.5	16.0-17.0	↓
Ethane, cents/gallon	24.75	23.5	23.0-24.0	↑
Natural Gas, \$/MMBtu	3.20 - 3.60	2.80-2.95	3.10-3.68	↑
WTI Crude Oil, \$/Barrel	25.52	26.95	28.65	↑
Brent Crude Oil, \$/Barrel	23.63	25.69	26.81	↑
Arab Light Crude Oil, \$/Barrel	21.98	23.09	23.38	↑

The price roller coaster for natural gas is not steep, yet it has definitely been on the move throughout the first part of September and very late August, making price forecasting a tough task. We saw a surge in prices for the last weeks of August with a drop in early September. Henry Hub on the Gulf Coast was at \$3.20 - \$3.28 per MMBtu; the Pacific Northwest and the Northwest Pipeline at Sumas averaged \$2.80 per MMBtu and \$2.30; East coast prices at the New York - Zone 6 fell slightly to \$3.58 - \$3.64 per MMBtu; and Columbia Gas Transmission prices moved down to \$3.35 - \$3.52 per MMBtu in the first ten days of Sep.

**Cracker Capacity Back in August**

August brought back all the ethylene capacity that has been shutdown for maintenance or repair over the last few months. Consequently, market supply is stable and is expected to remain constant unless unexpected shutdowns unfold.

**Ethane Stable in August**

Ethane prices have not experienced major changes since last month. Prices for Ethane feedstock remained in the 23.0 - 24.0 cts/gal range, revealing a stable market with no immediate price increases perceived.

**International Ethylene Markets in Good Shape**

The Asian Ethylene market seems to be steady with shutdown capacities coming back on track. Market prices rose \$20/ton to an average of \$450/ton indicating increased demand in a well-supplied market. At the same time North West European markets had some operation improvement with capacities coming back on line. With supplies up, spot activity remained slow at levels of \$392 - 412/ton.

**POLYPROPYLENE COPOLYMER**  
**GRADE SHEET**

*PMM Sep 2002*

<b>GRADES</b>	<b>TYPICAL SPECS</b>	<b>TYPICAL APPLICATIONS</b>	<b>GRADE #</b>
<b>Injection Molding</b>			
<i>Low-Med Impact</i> (not to include any random copolymers)	4+ MFR, Less than 2 Izod	Batteries, Interior Trim	132100
<i>High Impact</i>	4+ MFR, 2 - 4 Izod	Automotive, Industrial Applications, Housewares, Cassette Cases	132110
<i>Ultra High Impact</i>	4+ MFR, Greater than 4 Izod	Bumpers	132120
<i>Random</i> Greater than 1.2 Izod, Nucleated (Clarifier)	Greater than 10 MFR,	Housewares, Packaging, Cassette Cases	132130
<b>Blow Molding</b>			
	2 MFR, Random Copolymer	Rigid Food Packaging, Medical Containers	132200
<b>Film</b>			
	2 - 5 MFR, Random Copolymer	Snack Food Packaging, Dairy Products Packaging, Cigarette Packaging	132300
<b>Sheet &amp; Profile</b>			
	4 MFR or less	Food Packaging, Automotive Parts, Microwaveable Packaging	132500
<b>Off-grade &amp; Wide-spec</b>			
		The PMM considers wide-spec and off-grade as synonymous terms. Recycled or reclaimed material data is collected but is not included here.	131900

**METHODOLOGY**



The **Plastic Market Monthly (PMM)** is unique among resin market information and pricing services, in that it is the only service to obtain its information through a database of thermoplastic resin converters. All information, unless otherwise noted, is derived from a standardized survey of hundreds of converters conducted at the beginning of each month. In particular, the resin prices reported are those paid by converters for resin volumes that have been delivered during the calendar month (see Delivered Product section below); resin prices are not estimated nor are they list prices.

Each month the **PMM** receives hundreds of data forms from participating subscribers (resin converters) throughout North America. No other chemical or plastic publication collects such specific data from so many market participants. In some of the 60+ grades published, **PMM's** data represent more than 70% of the market. This method of collecting data enables subscribers to evaluate (1) pricing in the marketplace, (2) days of supply at converting sites and (3) converters' anticipated short-term demand.

**DATA FORM**

Participants fill in data forms for each grade that they purchase, as shown in the example at right. Converters provide regular & spot supply delivered, volume weighted average price paid, expected deliveries over the next 4 months and expected average prices for the following months; resin usage, end-of-month resin inventory and days of production are also provided to generate Days of Supply. Data is submitted to **PMM** via fax or it's website. All data is verified and checked as it arrives; copies of invoices are requested when necessary and on a random basis.

The **PMM** is committed to the highest level of security and maintains proprietary data collected on data forms according to its policies and procedures.

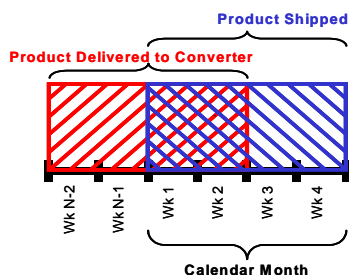
**PRICING BENCHMARKS**

The following are derived from data collected from hundreds of participating subscribers

- **90<sup>th</sup> Percentile:** A calculation to indicate the top of the price range; about 10% of our panelists are paying above this level. Not volume weighted.
- **Volume Weighted Average (Vol Wtd Avg):** A calculation of prices, weighted by resin purchased, then averaged.
- **10<sup>th</sup> Percentile:** A calculation to indicate the bottom of the price range; about 10% of our panelists are paying below this level. Not volume weighted.

**DELIVERED PRODUCT**

Prices reported on data forms and thus in the **PMM** are for bulk quantities of prime material delivered to converters and **received during the calendar month** by either rail car or truck. "Product delivered" to converters will vary from "product shipped" by a supplier due to transit time.



The diagram at left illustrates differences that may occur between the product received by converters and product shipped by producers. For illustrative purposes, transit time is two weeks in this example and the calendar month is defined as weeks 1, 2, 3 & 4 in the diagram at right.

**Shippers, represented in blue,** tend to consider a month in terms of: the volume shipped; the prices for each of those shipments; and the resultant average price generated. **Buyers, represented in red,** based on **PMM's** methodology, define a month as the product received during a calendar month. Given the two week transit time assumed for this example, a buyer would receive product shipped in weeks N-2, N-1, 1 and 2 during the calendar month. In relatively stable markets this creates no issue. In rapidly rising or falling markets however, this difference in time buckets can cause misunderstanding.

**REPORTS AVAILABLE**

All reports are published monthly on the 15th, unless a holiday or weekend occurs on the 15th in which case reports are published on the nearest working day. There are 8 reports to choose from with delivery via email or access via our website, [www.t-psi.com](http://www.t-psi.com).

- |                |       |                           |             |
|----------------|-------|---------------------------|-------------|
| HDPE Molding   | LDPE  | Polypropylene Homopolymer | PVC         |
| HDPE Extrusion | LLDPE | Polypropylene Copolymer   | Polystyrene |

**CONTACT DETAILS**

Email: [pmm@t-psi.com](mailto:pmm@t-psi.com)  
 Website: [www.t-psi.com](http://www.t-psi.com)  
 Phone: (281) 873-8733  
 Fax: (281) 875-2977  
 Address: PO Box 90327, Houston TX 77290 USA  
 Director, PMM: Frances Moore-Jones  
 Managing Editor: Craig Fisher  
 Market Analyst: Jose Rovira