POLYETHYLENE

- Oil continues to impact the global resin market.
  - The decline in oil prices renewed the uncertainties of the resin markets. Naphtha prices decreased nearly $50/mt to below $500/mt. The price to produce a pellet from naphtha dropped $0.02/lb.
  - Limited supplies of ethylene due to scheduled plant maintenance in SEA have firmed up the recent price increases in this region. If oil does not rebound before the maintenance projects are concluded, this region can expect another round of decreases.
  - Lower SEA resin cost could open the import opportunities into Latin America again. North America has begun to recapture this export market due to the February increases in naphtha and the tight ethylene supplies.
  - North America needs the exports to maintain a balanced inventory.
- As of today, suppliers have not indicated any downward price moves in March.
- Dow and Ineos are the only suppliers with a price increase announcement for April 1st. Other suppliers have not responded to this thoughtless attempt.
- Secondary market availability is good and prices have firmed in March. The resin buying frenzy in the secondary markets have slowed as the prime and off grade price delta narrowed in March.
- PE export volumes were up more than 10% from January. Although the overall volumes are still on the lower side of average, it does show that producers are meeting the global resin prices. The biggest improvement was seen in LLDPE – at near capacity operations, 20% of the material was sent to the export markets.
- Ethane prices are stable just below $0.20/gal.
- Spot ethylene prices were flat this ending near $0.34/lb. July 2010 was the last time ethylene prices were below $0.30/lb.

RTi Polyethylene Outlook and Suggested Action Strategies

30/60/90 Days: Middle East, China and Southeast Asian prices have increased the first two weeks of March and have since firmed due to the tight ethylene supplies in SEA. Oil prices will be the leading indicator of resin price moves as scheduled maintenance is concluded. The daily and weekly changes in global prices will be a benchmark for North American PE prices over the next 90 days.

Expect North American prices to firm by April, with very little chance of short term upward movement in NA as oil takes the forefront as the main driver for resin prices.

Continue to buy resin as needed and manage inventories to meet demand.

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POLYPROPYLENE

- Contract PGP prices for March are settled at $0.49/lb, down $0.015/lb from February. Spot PGP traded earlier in the week at $0.4575/lb (*APR*). Subsequent offers were seen at $0.455/lb. Spot RGP was traded at $0.385/lb, followed by bids ranging from $0.345/lb to $0.355/lb and offers at $0.40/lb. The way things stand today, it appears that April PGP contracts can settle down by about $0.02/lb, but it is too early to call. The spot market feels like it wants to push lower, but it has been slow going. There is still plenty of time left in the month for markets to move, so we'll have to see how things play out.
- From a supply perspective, the market is still missing RGP supply from refinery and FCC outages. These outages are expected to clear up in the next couple weeks. With the USW strike largely over, hopefully delayed start-ups will be kept to a minimum. Propane and butane are still favored feeds at the steam cracker, so propylene supply from this source has been strong. Both metathesis and PDH supplies are incentivized to run as well. Propylene inventories reported by the EIA grew from 4.51 million barrels to 4.60 million barrels. Inventories are above the 5-year max for this time of year. There are plenty of bearish signals to this market. We think that fundamentals will eventually kick in.
- On the polypropylene side of the market, inventories were down 53 million pounds heading into March with 32.6 days of supply. Total demand is up 3.3% so far this year with domestic demand up 4.0%. This is a strong pace to start the year. We do think there is a portion of this that was a restocking effort by converters, so we will have to see if this pace can hold. Industry operating rates are averaging 89.4% despite the Force Majeure events that have already taken place this year.
- We are seeing some mixed signals on the availability side of polypropylene. In certain cases we are hearing of sold out conditions heading into April. In other cases, we are seeing cars become available where they were not just weeks ago. It appears to be grade specific and even supplier specific for that matter. Copolymers do seem to be tight on a fairly market wide basis. We have also heard that P66 continues to have difficulty out in NJ, and that is causing issues for their customers. Overall, we need to expect that the PP market is going to be tightly balanced more often than not as operating rates have increased steadily for the past several years.

RTi Polypropylene Outlook and Suggested Action Strategies

30 Days: Buy as needed. The threat of higher prices in the short term is minimal, and the potential for lower prices is likely from a monomer cost standpoint. PP price increases from a margin expansion perspective are possible but not consistent throughout the industry.

60/90 Days: Monomer supply is healthy with refinery supply expected to improve. Barring a rally in oil prices or an unplanned outage in supply, we think lower prices are ahead.

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POLYSTYRENE

- March prices are firming flat. At the time of this publication, there has been no price direction announcement for April.
- Based on current feedstock prices and tight supplies, April PS prices are expected to receive some upward pressure. The producers may be waiting to see how the April contract benzene price firms before announcing any price direction for PS.
- Styrolution Texas City should be restarting this week. This unit has been down since Q4. LBI will be taking down their POSM unit in April for 60 days, and then in June Total will have a unit down for a quick TAR.
- The SM export arbitrage is open with about 20kt slated for April delivery. Europe continues to be the destination.
- Styrene: Spot prices are around \$0.55/lb, up nearly \$0.20/lb from a month ago. SM contract prices for February were a surprising rollover from January prices (*\$0.525/lb*). The market anticipated at least a \$0.02/lb reduction which would be in line with what the contract benzene price and PS prices firmed at. SM availability has been tight due to an open export arbitrage. Global SM prices have also seen strong escalation, which has pulled the NA prices higher.
  - Benzene: Spot prices have been very volatile lately. Prices jumped as high as \$2.70/gal with forward bids/offers seen at \$3.00/gal. Higher global prices, stronger SM demand, poor economics from other derivatives and a lack of imports have caused the NA price escalation. This week spot prices did fall back to around \$2.35/gal with the forward bids/offers in the same range. The crude oil price has contributed to this price slide.
  - Ethylene: Spot prices are stable (*~\$0.34/lb*). The Evangeline pipeline is expected to be back online within a week.
- Butadiene: Spot prices are ~\$0.35/lb. Contract prices for April are being talked up \$0.03/lb to \$0.05/lb.
- In Europe, spot SM prices spiked up over €250/mt during March. Strong demand and tight supplies prompted the high prices.
- EPS prices have stabilized as benzene moved up modestly in the March contract with expectation for a larger increase in April. Demand is consistent leading into the construction season. Styrene monomer increases around the world are expected to bring upward pressure to EPS pricing later in Q2 along with improved construction/recreation demand. Imported resin will also contribute to upward price pressure, but needs to find more demand in Asia first. Significant SM maintenance in Q2 in Asia and Europe is driving higher prices higher internationally.

RTi Polystyrene Outlook and Suggested Strategies

30/60/90 Days: March prices are flat; expect higher prices in April. Buy more than you need.

Q2 is the start of the PS seasonal demand. Coupled with stronger benzene prices, the PS prices will more than likely firm higher. Continue to increase your orders to avoid price increases.

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ABS

- March contract settlements for feedstock were close to flat as benzene was up fractionally and propylene lower leaving ABS raw material costs flat after a $0.03/lb decrease in February.
- For April, a larger increase than March for benzene and styrene monomer pricing will likely pressure up raw material costs by $0.02/lb to $0.03/lb when contracts are settled.
- ABS pricing is down some 12% to 18% (*including 5% in February and flat so far in March)* over the past four months chasing feedstock reductions, on-going overcapacity and import pressure.
- Import deliveries are improving due to the now resolved West Coast ports labor action.
- The stronger US$ continues to help support exports to the US market from Asia while exports to Europe are suffering from the weaker Euro leaving more ABS for local Asian markets and North America.
- Acrylonitrile: Prices have moved down in tandem with the contract CGP prices for March. There is still no margin in ACN, keeping producers from increasing operations.
- Butadiene: Spot prices are ~$0.35/lb. Contract prices for April are being talked up $0.03/lb to $0.05/lb.
- Styrene: Spot prices are around $0.55/lb, up nearly $0.20/lb from a month ago. SM contract prices for February were a surprising rollover from January prices (*$0.525/lb*). The market anticipated at least a $0.02/lb reduction which would be in line with what the contract benzene price and PS prices firmed at. SM availability has been tight due to an open export arbitrage. Global SM prices have also seen strong escalation, which has pulled the NA prices higher.
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  - Ethylene: Spot prices are stable (*~$0.34/lb*). The Evangeline pipeline is expected to be back online within a week.
- **Asia:** Fresh Asian import shipments are seeing prices stabilizing from benzene and styrene price reversals and improving suppliers as maintenance activity in the region is ending. Demand improvement has been lackluster in the region.
- **Europe:** The expectations of substantial increases in March feedstocks has come to fruition. Styrene monomer contracts moved up €175/mt for March, giving producers plenty of leverage to increase ABS prices. Butadiene settled flat, but increases were also seen in acrylonitrile. Imports have been falling off due to the weak Euro giving domestic producers pricing power to recover raw material increases.

RTi ABS Outlook and Suggested Action Strategies

30 Day: March is the low water mark for feedstock costs with April moving modestly higher. Imports will help keep prices flat in the domestic market since they are still arriving at a discount. Look to maximize price reductions and orders in March from both domestic and imported material.

60/90 Days: Contract feedstock costs will retain lower averages through Q2 as prices may move up modestly. Look to retain discounted pricing while monitoring the potential for styrene monomer increases going forward and sustained improvement in global demand beyond NA.

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POLYCARBONATE

- Substantial downward raw material cost pressure on PC is at a bottom in February/March with upward movement in April of $0.03/lb to $0.04/lb.
- For March, benzene settled up less than 2% as RGP is now more than $0.015/lb below February.
- Intermediate supplies have seen some tightening as maintenance is conducted. However, BPA imports are expected to increase along with Asian capacity.
- Low cost raw materials are continuing to influence a lower priced PC market as oil levels are sustained below $55/bbl (*and now below $45*).
- At least two producers have nominated increases of $0.13/lb to $0.16/lb as a defensive play against further price erosion, claiming strong demand overtaking supply after the closure of the Styron plant in Texas last year.
- Although demand is strong in NA, product availability is good and global supply continues to be in excess with imports up 9%, offsetting about a 1% of the 4% increase in exports from the 2014 average.
- By every measure, feedstock costs will continue to validate lower pricing for polycarbonate.
    - H1 2015 raw material costs are expected to average 20-25% less than H1 2014.
    - April raw materials are expected 15-20% below Q4 costs.
    - Q1 2015 averaged 30% lower than Q1 2014 costs.
    - February/March raw material costs are more than $0.30/lb below the July peak.
    - PC raw material costs are at their lowest point in more than five years.
- PC supply is strong as producers maximize operating rates to take advantage of low cost feedstock while anticipating a strong year for both auto and construction. At least one producer is seen as more aggressive to secure new business as excess capacity in Europe is also seen as a factor with the low Euro vs the US$.
- PC raw material costs decreased $0.11/lb to $0.12/lb in January from the large drop in benzene contract and RGP spot. February cost is down $0.01/lb. March is up $0.005/lb and April up $0.03/lb to $0.04/lb.
- Benzene spot prices have been very volatile lately. Prices jumped as high as $2.70/gal with forward bids/offers seen at $3.00/gal. Higher global prices, stronger SM demand, poor economics from other derivatives and a lack of imports have caused the NA price escalation. This week spot prices did fall back to around $2.35/gal with the forward bids/offers in the same range. The crude oil price has contributed to this price slide.
- RGP prices have been stable this week, with bids coming in lower, and another trade at $0.385/lb.
- **Asia:** Demand has improved along the PC supply chain as maintenance is scheduled in Q1 & Q2 along with the beginning of the phase out of the Teijin Singapore plant. Pricing during the off demand period of February was seen lower by as much as 5%, as March is seen flat to up.

- **Europe:** Prices moved lower by 1-3% in February as benzene continued to fall but saw a modest uptick in contract benzene for March flattening price movement as price increase announcements have been made, in part to offset the weak Euro. PC exports have gained from the lower Euro, as demand is expected to improve in construction and auto over last year.

RTi Polycarbonate Outlook and Suggested Action Strategies

30 Days: Lowest feedstock pricing in more than five years and a stronger US$ will increase supply as producers maximize operating rates and interest from imports increase. Consider buying heavier while dismissing extreme price increase nominations and pursuing negotiations to more fully account for a greater share of the substantially widened margins in Q1

60/90 Days: A more balanced domestically produced PC market with operating rates approaching 90% will see feedstock costs averaging substantially lower levels vs last year, allowing for pricing stability at lower levels to mid-year. Monitor feedstock spot pricing for stronger uptrends that are expected later in the year.

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March 20, 2015

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PVC

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- February PVC pricing held flat as producers kicked increase nominations down the road by a month putting nominations at $0.03/lb for March, $0.03/lb for April and in at least one case $0.02/lb for May.
- Producers continue to bank on restricted supply from plant maintenance, increased demand even as ethylene costs are at more than a four year low.
- Spot ethylene is seeing a $0.20/lb premium east of the Mississippi as Evangeline pipeline from Texas is out till mid-year and the Williams cracker is not expected to be operational till Q2.
- Shintech has completed their maintenance. Axiall and Oxy are starting theirs, the last in a series.
- Any increase in March is getting some support from tight supplies that has elevated limited spot export trades to the $0.39/lb level. This suggests that we could see pressure to implement a $0.01/lb to $0.02/lb, if not in March, then in April.
- Demand improvement is expected to coincide with the end of maintenance in April.
- Back to back increase nominations are designed to prevent margin erosion and translate that into a margin gain if supplies prove tight enough.
- PVC raw material costs in February cost is down $0.005/lb. March and April are forecast flat to down with upward pressure from chlorine offset by lower pressure from ethylene.
- Ethylene spot prices are stable (*~$0.34/lb*). The Evangeline pipeline is expected to be back online within a week.
- Chlorine pricing was also flat this week. Upward movement is possible in April with strengthening demand and relatively tight supply.
- **Asia:** PVC prices moved higher this week, mostly on stronger demand in India. In East Asia, buyers are getting more hesitant as oil prices have made some declines that have yet to translate into the ethylene markets. Overall, the outlook appears to be for flat to higher pricing, assuming oil stabilizes.
- **Europe:** The combination of higher ethylene contract prices, weak currency against the US dollar, and tight supply have helped PVC producers secure €80/mt of increases for March. There has been a softening of naphtha and oil prices this week, but this has not been reflected in spot ethylene yet.

RTi PVC Outlook and Suggested Action Strategies

30 Days: Leverage low feedstock cost and end of maintenance in April to minimize complaints of tight supply that are more relevant to the export market than to the domestic market.

60/90 Days: As ethylene and PVC supplies strengthen, look to push out/minimize increase nominations while keeping an eye out for opportunities to roll back margin increases from last year as export markets are returning to more competitive levels.

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NYLON

PA 66

- Contract pricing in March has settled near flat for all major feedstocks with benzene up slightly, butadiene flat and propylene down $0.015/lb.
- Spot volatility in March for benzene suggests a more significant upward move for April contract based on fewer Asian imports and poor economics for benzene on-purpose units as demand for styrene is higher.
- Oil moved to fresh lows this year as oversupply pressures along with a stronger US$ moved the market.
- Even with moderate Q2 feedstock increases over Q1, H1 2015 PA66 raw material costs are expected to average 25-30% less than H1 2014.
- Formula based PA66 contracts are reflecting the steep feedstock drops since October. Reductions will continue into March based on February raw materials drops before flattening/bottoming in April.
- Negotiated pricing has been more resistant to reductions depending on market, starting point and degree of competition, with reductions ranging from 2% to as much as 11% since the beginning of the year.
- PA66 reductions have been out paced by PA6 opening the delta between the two nylon types and allowing additional incentive beyond the usual $0.10/lb delta for making switch to PA6 compounds.
- Strong demand to auto continued, with sales growing more than 5% YOY in February, but slowing to a 16.2MM/year pace, Truck/SUV sales grew to more than 50% of the February number, a good sign for plastics demand which is higher on per unit basis for this class of vehicles.
- Falling factory orders over the past 6 months in the US and slower growth overseas is leading to a well-supplied market from strong operating rates as producers take advantage of lower cost raw materials.
- The medium term view is that domestic PA66 producers will export less due to the strong US$ and advantaged European imports will increase, making for an increasingly competitive market for those buyers able to bring these suppliers into the mix.
- US exports for all nylons were in line with the 2014 average for January 2015.
- Propylene based PA66 production raw material costs are down $0.14/lb in January with February down $0.005/lb. March is down $0.005/lb with April forecast up $0.01/lb to $0.02/lb.
- Butadiene based PA66 production raw material costs fell $0.09/lb in January. February costs are down $0.03/lb to $0.04/lb. March is forecast up $0.005/lb with April increasing $0.02/lb to $0.03/lb.
- Benzene spot prices have been very volatile lately. Prices jumped as high as $2.70/gal with forward bids/offers seen at $3.00/gal. Higher global prices, stronger SM demand, poor economics from other derivatives and a lack of imports have caused the NA price escalation. This week spot prices did fall back to around $2.35/gal with the forward bids/offers in the same range.
- Butadiene spot prices are ~$0.35/lb. Contract prices for April are being talked up $0.03/lb to $0.05/lb.
- March CGP contracts settled down $0.015/lb. The outlook is for continued flat to down prices.
- **Asia:** Post the Lunar New Year holidays, there was some increased demand, but with feedstock pressure reversed and a lack of a more substantial improvement in demand has moved pricing down 5% give or take (*adding to reductions in Q4 and January*) in the month of March. PA66 pricing had remained largely flat in February.

- **Europe:** PA66 prices for Jan/Feb were seen lower by 3-5%, based on lower feedstock, with the potential for more reductions in March offset by currency pressure to raise prices in terms of US$. Demand is seen as improving as supplies are good.

PA 6

- This is not a fluid market. Although feedstock prices have moved upwards, PA producers have been unable to capitalize them. PA producers continue to see downward price pressure on the PA resins.
- Monthly negotiated buyers still have the leverage as PA6 on a global basis, as it is over supplied. A strong supply/demand position has over shadowed any pressure from feedstocks.
- This past week crude oil prices dropped to a six year low; this has prompted benzene prices to retract from earlier gains. This essentially has put even more strain on the PA producers to recover margins.
- Sources have indicated that the market is "ugly" right now for the PA producer. Producers are reacting to one another's price moves to shore up markets.
- Benzene spot prices have been very volatile lately. Prices jumped as high as $2.70/gal with forward bids/offers seen at $3.00/gal. Higher global prices, stronger SM demand, poor economics from other derivatives and a lack of imports have caused the NA price escalation. This week spot prices did fall back to around $2.35/gal with the forward bids/offers in the same range. The crude oil price has contributed to this price slide. Contracts are almost sure to increase in April.
- Caprolactam spot prices on the week saw a mild gain of $15/mt. Putting spot prices at a range of $1,650/mt to $1,670/mt. Contract prices are being talked up around $1,700/mt. Strong demand from inventory replenishment and higher benzene prices are pushing the caprolactam prices upwards.
- DSM has announced that they have sold off their caprolactam business unit to an investment group. However, DSM PA business has a 15 year agreement for caprolactam at the transfer price, so basically there should be no adverse effect to the PA business unit.
- UBE recently announced a restructuring to their organization. They have combined their Chemicals Business unit and their Specialty group into one company called the "Chemicals Company". They indicated this was necessary to improve efficiencies and profitability.

RTi Nylon Outlook and Suggested Action Strategies

30 Days: PA66: Buy as needed with continued reduction pressure supported by competitive activity and significantly lower average feedstock costs than 2014 continuing into Q2. **PA 6**: Lower price opportunities have surfaced again. The threat of lost business has producers scrambling to meet price competition. Do not buy any extra pellets; be as lean as possible because a price bottom has yet to be established.

60/90 Days: PA66: Lowest feedstock averages in years through mid-year will help leverage prices lower and set up resistance to increases in the future. Competition is key with increased participation by European importers and compounders. **PA6:** Same recommendation as above. Unless benzene prices have a dramatic, sustainable price gain and strong PA demand, the PA processors should not see any increases.

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- March PET contracts are seeing upward pressure, with at least one producer looking for a $0.04/lb increase from February.
- Paraxylene contracts remain unsettled for the month, but the spot movements have been trending lower after peaking during the first week. The overall spot average is virtually flat from last month, so there will be less pressure on the contract price.
- If the PX contract price were to settle up a few pennies, as initially projected, PET pricing will see upward movement. MEG prices are up in Asia, as well as the US, and PET demand is picking up globally.
- Although producers are seeking $0.04/lb, the estimated production cost increases are only up $0.02/lb to $0.03/lb at this time.
- After bouncing back up above $50/bbl, WTI crude oil prices have moved down to the low/mid-$40's. This movement has at least temporarily put a stop to the consistent increase in feedstock and PET prices in Asia.
- Warmer weather is arriving in the US, and is likely to bringing some strong seasonal demand along with it. As the demand does improve, supply should no longer be an issue:
  - PTA production is no longer a threat.
  - The euro is weak and turning off imports from other regions.
  - The West Coast ports are clearing up and should not cause any serious delays going forward.
- In Europe, PET prices are continuing higher. This is due to improved seasonal demand, weak currency, and generally trending higher feedstock and energy prices.

RTi PET Outlook and Suggested Action Strategies

30 Days: March feedstock contracts are not settled, but are projected higher at this point. This will need to be watched carefully, as well as strength of demand in the US and Asia, and will determine how much material would be worth buying.

60/90 Days: There is not a lot of downside potential going forward, unless the current demand is not sustainable. April could see further increases, but oil will continue to be a big factor. If prices stay where they are at now, the primary driver will be demand. And at this time it is unclear what is pre-buying before expected increases and what is true demand.

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