The Glycol and Derivatives Report

October 31, 2022

In This Issue

- MEGlobal confirms dropping its US MEG benchmark 1 ct/lb and rolling over DEG on November 1st.
- DEG and TEG spot prices in the Americas appear stable.
- MEG spot in Asia drops below $450/mt CFR CMP last week. Spot prices CIF NWE T2 climb back to Euro 600/mt.
- US MPG spot offers continue to consolidate lower in most regions.
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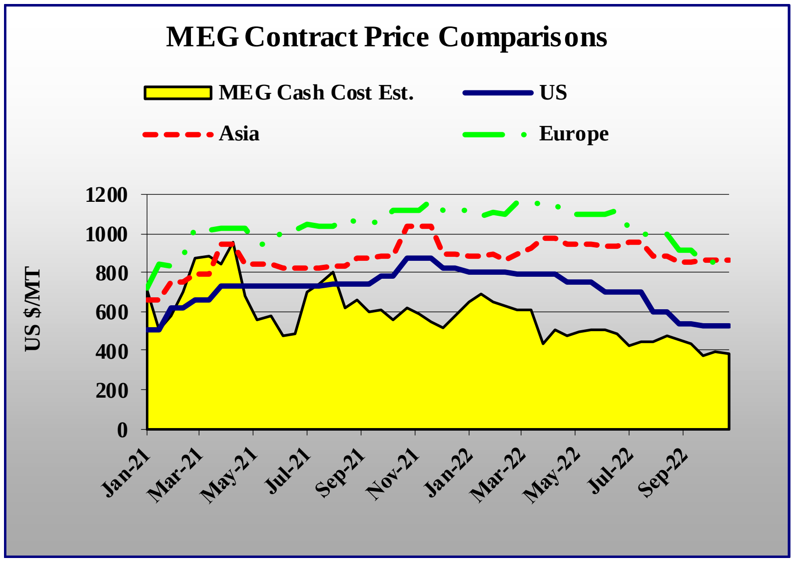
Price Assessments

US (FOB in cts/lb)				
MEG Contract/Posted	***31-Oct***		**September**	**August**
Net EGF	23.00 - 25.00	↓	23.00 - 26.00	26.00 - 28.00
Net EGI	22.50 - 24.50	↓	22.50 - 25.50	25.50 - 27.50
Net EGAF	22.00 - 24.00	↓	22.00 - 25.00	25.00 - 27.00
MEGlobal NAB	34.00	↓	35.00	38.00
MEG Spot				
Export FOB USG	18.25 - 19.00	↓	21.00 - 22.00	18.75 - 19.50
Barge FOB USG	18.50 - 19.50	↓	22.00 - 23.00	20.00 - 21.00
Rail FOB USG	23.00 - 25.00	↓	24.00 - 25.00	25.00 - 26.00
Truck FOB USG	24.00 - 27.00	↓	26.00 - 28.00	27.00 - 30.00
Truck FOB USEC	28.00 - 33.00	↓	31.00 - 34.00	34.00 - 35.00
Truck FOB USMW	29.00 - 34.00	↓	32.00 - 34.00	35.00 - 35.50
Higher Glycols Spot FOB USG				
DEG Barge	31.00 - 32.00	↓	33.00 - 35.00	33.00 - 35.00
DEG Truck	34.00 - 38.00	↓	36.00 - 40.00	36.00 - 40.00
TEG Truck	88.00 - 96.00	↑	75.00 - 92.00	64.00 - 75.00
MPG				
Contract Net PGI FOB USG	146.00 - 164.00	↓	156.00 - 169.00	166.00 - 169.00
Contract Net PGUSP FOB USG	158.00 - 168.00	↓	178.00 - 191.00	186.00 - 191.00
PGI Truck/Rail FOB USG	140.00 - 162.00	↓	155.00 - 170.00	170.00 - 174.00
PGI Truck/Rail FOB USEC	152.00 - 165.00	↓	162.00 - 172.00	174.00 - 178.00
PGI Truck/Rail FOB USMW	148.00 - 168.00	↓	160.00 - 174.00	175.00 - 178.00
PGUSP Truck/Rail FOB USG	156.00 - 167.00	↓	164.00 - 174.00	175.00 - 178.00
PGUSP Truck/Rail FOB USEC	160.00 - 169.00	↓	166.00 - 176.00	178.00 - 182.00
PGUSP Truck /RailFOB USMW	162.00 - 170.00	↓	168.00 - 178.00	177.00 - 181.00
Canada (CAN$/MT)				
Contract				
Net EGAF	950 - 1000	↓	1000 - 1040	1080 - 1110
Spot				
EGAF FOB E. Can	970 - 1020	↓	1030 - 1050	1120 - 1140
EGI FOB E. Can	1020 - 1090	↓	1050 - 1120	1140 - 1200
EGAF/EGI FOB W. Can	1070 - 1210	↓	1100 - 1240	1190 - 1270
Asia (US$/MT)				
MEG Contract				
ACP Average (all major suppliers)	863	↑	853	880
MEGlobal ACP	820	↑	800	820
SABIC ACP	900	↑	890	920
Spot				
MEG CFR CMP	440 - 450	↓	515 - 525	480 - 485
MEG CFR N.E. Asia	440 - 450	↓	510 - 520	475 - 480
MEG USG CMP Netback*	350 - 360	↓	430 - 440	395 - 400
MEG USG NE Asia Netback	355 - 365	↓	430 - 440	395 - 400
DEG CFR CMP*	625 - 630	↑	590 - 600	590 - 595
Europe (Euro/MT)				
Contract MEG NWE	*875 - 875*	⇔	875 - 875	915 - 915
Spot MEG CIF NWE T2	600 - 610	↑	550 - 570	600 - 610
Spot MEG FD NWE	650 - 660	↑	610 - 620	625 - 635
Spot DEG CIF NWE T2	740 - 750	↑	725 - 735	820 - 830

Prices in italics have not yet settled

US MEG Contract



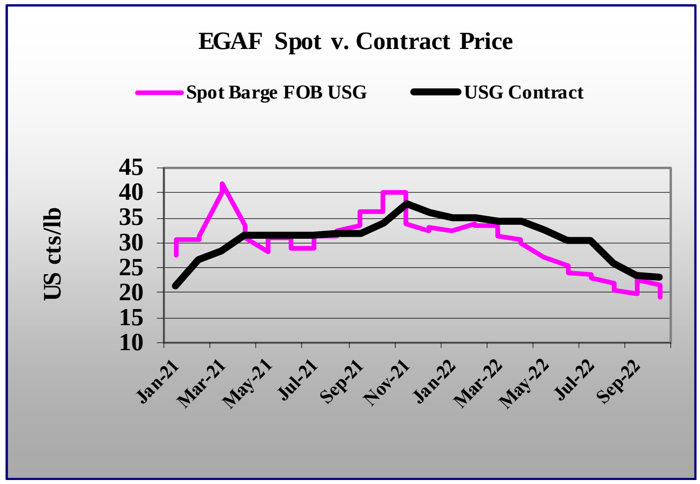
Activity is steady but unpronounced within the Americas with demand among many end users still depressed but regional production also curtailed somewhat, a dynamic that could change next month in part due to improving margins. US contract prices are expected to rollover or head marginally lower depending upon the supplier. There were no increase nominations by mid-month and postings in Asia were announced lower in aggregate. As previously noted, with contract prices expected to rollover or head lower on November 1st buyers continued to order on a just in time basis in many downstream markets and few reported taking long positions. Despite drifting lower this month, large volume spot prices in the Americas are still slightly high relative to export-oriented netbacks. There is confirmation of some volume moving to Europe but the arbitrage to both Asia and Europe remain difficult to work. to Nest month one supplier confirmed it will adjust lower after doing the same this month, while other producers that do not publicly announce drops will likely make concessions again to remain competitive. This month there were reports of many sellers that didn't formally move down adjusting offers lower on a case-by-case basis. Next month MEGlobal confirmed it will lower its US MEG benchmark 1 ct/lb to 33 cts/lb on November 1st after moving the marker down by a penny this month and 3 cts/lb last month. Last month several customers reported their costs dipping as much as 3 cts/lb following drops of 3 to 5 cts/lb the month prior, although many reported suppliers attempting to limit net decreases. (For a list of current and prior MEG nominations and related benchmarks current subscribers can click here to access the client website with your user name and password) Please contact us if you have any difficulty accessing the client website as it was recently overhauled and now includes a news feed of "alerts" as well as a great deal of other information accessible on mobile phones as well as your desktop.

Raw material costs in the form of spot ethylene dipped under 20 cts/lb delivered USG last week after stabilizing somewhat earlier in the month. Prompt spot deliveries in the USG slipped to 19 cts/lb with forward prices near the same level for several months and in modest contango through most of next year. Earlier this month the US ethylene contract benchmark for September settled down 2.75 cts/lb at 37.25 cts/lb after rising 1.75 cts/lb the month prior following a healthy 4.25 cts/lb decrease last month and a marginal half cent increase the month prior. The regional European ethylene contract price for October reportedly settled with a Euro 45 decrease at Euro 1,260/mt following a Euro 120/mt drop last month and a Euro 70/mt concession the month prior.

In Point Comfort Texas Formosa shut down its 800,000 unit in August for an indeterminate period for economic reasons and as of late last week it remains down with a startup possible whenever the company determines it economically feasible. Raw material costs are lower but prices in Asia are also down once again making it less likely in the near-term. Some sources claimed the older 300,000 mt/yr unit was also down again in September but that it restarted in early October. Several continue to report that the plant is running at roughly 60 to 65% of nameplate only to supply internal needs. This month several sources reported the 300,000 mt/yr Sasol unit in Lake Charles down for a planned turnaround that could extend into early December. In Seadrift Texas Dow's 283,000 mt/yr unit was down this month for a planned turnaround expected to last until possibly this week. In August TCEQ reported the new GCGV unit down and flaring, although some sources reported it up in early September. Despite the downtime customers appeared to be covered this month which suggested suppliers are producing enough to maintain contractual commitments. There were no additional plant problems in Texas reported by TCEQ as of Friday. In Mexico, sources reported that Pemex brought its crackers and derivative units in Morelos and Cangrejera back online in early October after an ethane pipeline explosion in mid-September.

US contract prices are relatively unchanged heading into November after most producers opted to rollover earlier this month, however large volume spot prices came under pressure as export-oriented netbacks to Asia tumbled last week. Although production in the USG is still curtailed traders were still able to find incremental volumes. To see the last near-term forecasts, please login at *www.chemicalintelligence.com.*

US MEG Large Volume Spot



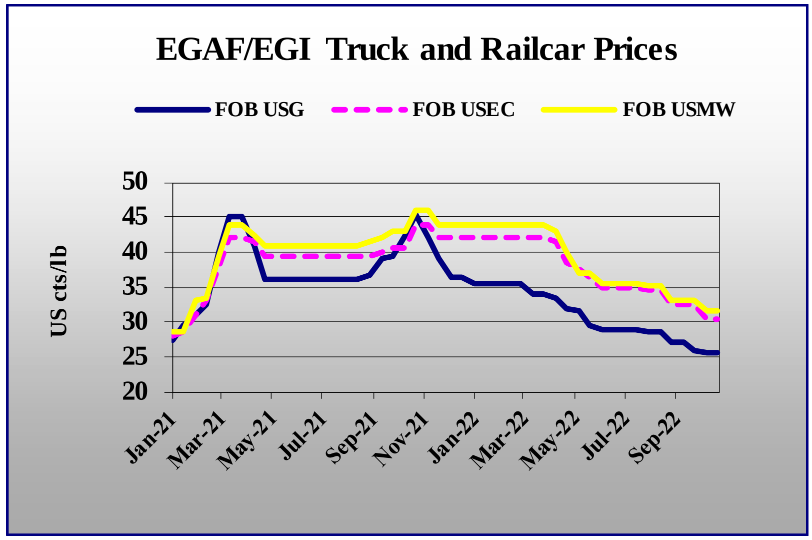
Activity is sporadic and while production is still curtailed in the USG there are reports of some producers supplying traders large spot quantities in recent weeks. Last week several claimed at least two producers had incremental availability for November. By contrast there were also reports of some producers confirming they had nothing to offer for the entire month. Ongoing downtime and voluntary rate cuts, in some cases due to economic pressures, leads many to believe the current situation will change little through the end of the year. Others believe supply could improve in December following expected restarts. Domestic barge demand is tepid at the moment with many consumers covered though contract commitments. However, there are reports of intermittent interest among seasonal buyers seeking to lower their overall cost basis heading into the normally busy month of November. Several traders suggested barge prices remained in the low 20 cts/lb range FOB USG. At least one prompt barge was reportedly sold for roughly 20.50 cts/lb FOB Houston last week, in line with recent export-oriented prices.

Most traders are still focused on exporting to other major centers of trade from the USG, although activity is limited due to constrained supply as well as difficult economics. Spot prices in Asia slipped again last week and with freight rates to China over $90/mt estimated breakeven netbacks to the region from the USG fell towards 17 cts/lb FOB. Markets in Europe are better supported amid reports of recent deals done near 22.5 cts/lb FOB USG (without subtracting any punitive duties), although finding buyers is still difficult. Still, there is conjecture about prices in the region continuing to firm and netbacks FOB USG possibly moving closer to or above 24 cts/lb. Last week there were reports of an 8,000mts export parcel sold for October loading and another 7,500mts sold for November loading done between ASP - $60/mt and - $70/mt (18 to 18.50 cts/lb).

Estimated Export Netbacks				
	31-Oct		September	August
MEG USG to CMP Netback	350 - 360	↓	430 - 440	395 - 400
MEG USG to NE Asia Netback	355 - 365	↓	430 - 440	395 - 400
MEG USG to NWE T2 Netback	470 - 479	↑	431 - 449	478 - 487
DEG USG to CMP Netback	535 - 540	↑	505 - 515	505 - 510
DEG USG to NWE T2 Netback	601 - 611	↑	587 - 597	677 - 686
Freight Assessments				
USG to N.E. Asia (US$/MT)	85	↑	80	80
USG to China MP (US$/MT)	90	↑	85	85
USG to N.W. Europe (US$/MT)	95	↑	87	87
N.W. Europe to USG (US$/MT)	65	⇔	65	65
USEC MEG Upcharge (cts/lb)	6	⇔	6	6
USWC MEG Upcharge (cts/lb)	8	⇔	8	8

3-5KMT exports, barge used for upcharge

US MEG Small Volume Spot



Truck and railcar spot prices across the country are steady to modestly lower following report of minor erosion attributed to increased competition in some regional markets this month. Next month most suppliers are ostensibly rolling over existing offers, although one producer announced a 1 ct/lb decreases after doing the same earlier this month. Many buyers expect sellers to remain competitive and adjust price slightly lower as required, although some at the lower end of the range appear more likely to hold offers steady. Small volume spot availability is healthy across much of the country despite ongoing downtime in the US Gulf. Demand for small spot volume is still sporadic according to many marketers and seasonal needs are still slow to pick up in parts of the Midwest and Northeast due to unseasonably mild weather. With no increases on the horizon and supply seemingly ample many consumers are still purchasing on a just in time basis heading into November. Some sellers also reported their customers ordering contract minimums next month. Last week small volume US chemical sales posted a decrease as the American Railroad Association reported rail traffic rising a scant 0.5 % when compared to a year prior with the year-to-date total now at 2.6% net above last year's level.

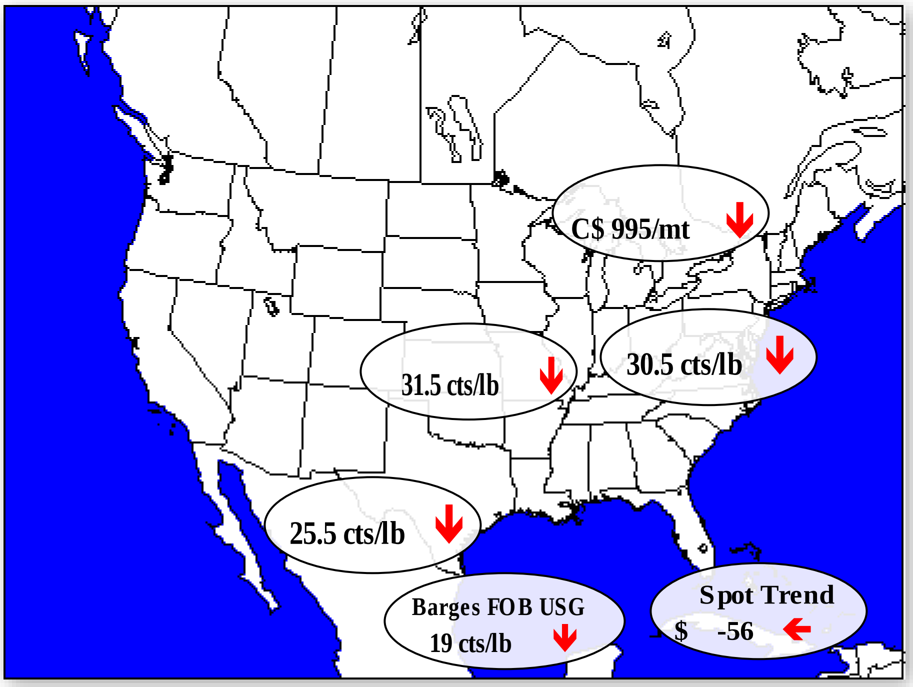
Activity within regional small volume spot markets remains sporadic and prices are competitive heading into next month after coming under pressure this month. Suppliers in the **US Gulf** reported carrying existing offers forward into November following widespread reports of modest competitive easing this month after sellers rolled over. Barge assessments are modestly lower leading to conjecture about the possibility for further, albeit minor, corrections in the weeks ahead. Downstream demand for trucks into seasonal markets is improving but remains slower than expected according to some observers, many of whom continue to purchase only what they need. Small volume availability is healthy despite ongoing production cuts in the USG and with spot prices in other major centers of trade including Asia still low many producers and traders are more focused on domestic sales. Competitive spot truck prices at the bottom of the selling range are reported steady near 24 or possibly 23 cts/lb FOB USG depending upon the supplier. Others report most mainstream offers in the mid-20 cts/lb range. Several suggested most trucks moving near 25 cts/lb with a few single trucks sold to smaller end users at 26 and 27 cts/lb FOB USG.

There were few changes expected in the **Midwest** heading into next month after most suppliers confirmed rolling over offers earlier this month. Downstream demand among local consumers remains stable but seasonal needs are still somewhat slower than anticipated according to several suppliers. Many buyers continue to purchase only what they need and forgo taking new positions. Small volume spot availability is still healthy and there are no reported shortfalls or delays. Replacement costs in the form of spot barges from the USG remain advantaged after slipping back towards 20 cts/lb FOB and spot railcars are still reportedly offered from Canada with delivered prices roughly at parity with offers FOB Chicago. Most competitive truck and railcar spot offers are rolling this week according to most suppliers. This month producers carried existing offers forward (one moved down a penny) but buyers reported some making very slight concessions to remain competitive. The low end of the selling range for spot trucks and railcars FOB Chicago remains near 29 or 28 cts/lb according to several buyers. Mainstream offers attributed to large distributors and resellers posting were reported carrying forward starting truck offers at or above 30 cts/lb FOB Chicago into November.

Activity in the **Northeast** is slowly starting to gain momentum heading into November according to regional distributors and resellers, although most also claimed their costs appeared steady after either rolling over or adjusting marginally lower earlier this month. Small volume spot availability is healthy despite ongoing production cuts and outages in the USG and there are no material delays or other new logistical issues noted. Downstream demand for trucks and railcars is steady among industrial end users, although with no increases on the immediate horizon many buyers are still purchasing in a just in time basis. At the low end of the selling range competitive truck and railcar spot prices attributed to producers supplying long-time customers are noted stable in the high 20 cts /lb range FOB New Jersey with the bottom according to some near 27 cts/lb with support possible as low as 26 cts/lb. Mainstream truck offers attributed to some distributors are still noted nearer 30 cts/lb FOB USEC.

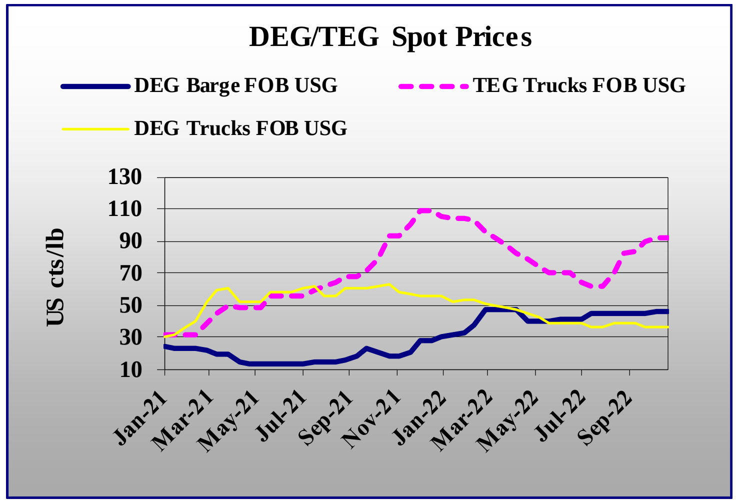
Distributors in the **Southeast** expected few changes as well heading into November after many carried forward existing spot truck and railcar prices earlier in the month. Truck and railcar spot availability is still reportedly healthy despite the outages and operating rate cuts in the USG. With no prices increases on the horizon most buyers are still wary about building inventories, although some have taken in more volume for seasonal packaging. Competitive spot truck and railcar offers attributed to producers supplying larger distributors were reportedly stable with lows near 26 or 27 cts/lb FOB USSE depending upon the supplier. Others noted more trucks moving closer to the 30 cts/lb mark through last week on the same basis with some sales still topping that threshold.

North American MEG Price Averages



** Average of terminal prices and change from previous month indicated by directional arrow unless otherwise listed. Spot flow indicates possible margin for spot movements from the USG to China (estimated USG netback minus the spot export price FOB USG- the smaller the number the less likelihood of exports).*

DEG



Markets in the Americas are still supported as reduced regional production in the US Gulf (which could improve next month) continues to keep near-term availability in check despite diminished demand among some large consumers including UPR consumers. Last week there were ongoing reports of several plants still down for economic reasons, although with ethylene costs lower and MEG prices stable, many believe production could rise as sellers ramp up to supply seasonal MEG end users in the coming weeks. In the USG customers report Formosa shut down its 800,000 mt/yr unit in Point Comfort almost two months ago and is running its 300,000 mt/yr plant at 60 to 70% (others claim the smaller unit was also down last month and restarted earlier this month). Some sources continue to claim the large unit could restart by next month if MEG production economics continue to improve. Both Sasol and Dow's Seadrift unit were also down this month. With domestic prices somewhat elevated, exports to other major centers of trade remain difficult to justify on a spot basis, however there are ongoing reports of volume moving within the Americas. Heading into November one producer formally confirmed it will carry its benchmark forward while others are also expected to rollover after foregoing mid-month increase announcements. Earlier this month producers reported carrying forward posted benchmarks and net prices after doing the same last month and adjusting lower in August. Lats week MEGlobal confirmed it will once again carry forward its US DEG benchmark of 50 cts/lb effective November 1st after rolling over this month and last month. Customers expect other suppliers to roll over net contract prices as well next month after doing the same this month and last month. For a complete list of current and prior nominations and related benchmarks current subscribers can click here to access the client website with your user name and password.

Large volume spot markets in the Americas are still sporadically traded with production in the USG cut and several plants expected to remain down through November impacting incremental availability. Several traders reported they were unable to find large volumes loading in November, although others confirmed securing quantities that ranged from 500mts to 1,500mts through last week. Most interest is still centered on domestic needs or exports within the Americas, but there are reports of interest in Latin America fading somewhat after buyers in the region stocked up in prior weeks. Several buyers reported producer offers near or above $700/mt FOB USG, however others noted more competitive offers available on a limited basis. Last week one trader confirmed purchasing a large parcel form a USG-based producer for export to the Mediterranean in November at $680/mt FOB USG (on a COA). Domestic barge prices in the US are somewhat notional with the few consumers able to take large quantities seemingly satiated. Some observers assessed the market in the mid $700/mt range FOB USG (34 cts/lb), although prices are highly depending upon the relative needs of the buyer and seller. Exports to other major centers of trade are still difficult to justify on a spot basis (and with spot freight). Estimated breakeven netbacks to Asia from the USG are assessed near $500/mt (22.5 cts/lb) with netbacks to Europe near $700 (31.75 cts/lb).

Small volume spot markets in the US are stable and seemingly supported heading into November after many sellers carried offers forward earlier this month. Others reported slightly downward consolidation in prior weeks as a few suppliers with high relative prices adjusted meet lower offers. Spot truck availability is still healthy according to buyers and most claimed there are no material delays or other supply constraints despite ongoing downtime in the USG. Downstream demand for smaller spot quantities is steady according to suppliers, although some observers reported consumers are more comfortable with their inventories as there are no increases looming heading into next month. At the low end of the selling range spot trucks FOB USG are reported stable at 34 or 35 cts/lb depending upon the supplier. Others report producers with reduced production holding prices a penny or two higher on average. A few distributors and resellers continue to post starting offers FOB Houston at 39 cts/lb.

Activity in **Northeast Asia** is sporadic with large volume spot prices reflecting a rise in demand heading into November but domestic offers in China trending lower through last week. Regional availability is still constrained due to numerous plant outages and reports of diminished imports which impacted large volume spot offers, although downstream demand among many end users is also still thin, particularly within China. Large volume spot prices initially rose then stabilized a week ago before moving marginally higher again late last week. Early last week traders reported large volume spot CFR CMP for prompt loading offered near $620/mt with best bids near or below $615/mt. There was little change through mid-week according to local observers, however by Thursday several claimed restocking efforts head of the weekend led best offers towards $630/mt and best bids also higher towards $625/mt. Some sources reported prices steady on Friday. In China, domestic prices eased slightly last week after surging higher over the past six weeks. Local observers reported offers in Eastern markets slid to near CNY 5,450 to CNY 5,700/mt ex-terminal. Offers in the South were reported in a narrower range between CNY 5,750 to CNY 5,800/mt. Mainstream offers in the Northeast were reported around CNY 4,900/mt ex-plant.

Conditions in **Europe** appeared less active according to regional buyers and sellers, some of whom reported diminished demand among end users leading to modest competitive easing within spot markets last week. Earlier in the month restocking efforts initially sent spot prices slightly higher. Downstream demand reported improved slightly but UPR related sales are still slower than normal and many end users are negatively impacted by rising fuel and utility costs. Inland deliveries improved but water levels in the Rhine are dipping again. Availability is constrained according to traders that note regional downtime coupled with fewer imports impacted prompt supply since the start of the month. Ineos was expected to restart its plant in Antwerp a week ago, but several observes claim it remained down through last week. Large volume spot markets are somewhat notionally assessed down slightly near or potentially below Euro 700/mt CIF NWE T2. Small volume spot markets are still more liquid and reported down roughly Euro 20/mt in the last two weeks with bids and offers between Euro 740/mt and Euro 750/mt FCA NWE T2.

US TEG

Markets in the Americas are supported and spot prices appear stable following sustained firming in the last two months. Downstream demand in the gas patch is healthy across much of the country heading into the normally busy months ahead. Prompt sot availability was severely constrained through the first half of the month, although some sellers claim it was easier to source product in the last two weeks. Production in the USG is still limited due to ongoing plant downtime and rate cuts in the USG expected to last week into next month and in some cases until early December. However, there are also reports of imports augmenting supply in some markets. Formosa's new unit at Point Comfort is still reportedly down and the smaller unit is reported running at roughly 60% of capacity to supply internal MEG needs so it is likely producing very small amounts of TEG. Sasol is reported down for a planned turnaround that could extend through the end of November. Dow's unit at Seadrift is also down for maintenance that should be concluding soon. Contract prices in the US continue to consolidate higher following a series of producer-led increases with effective dates that extend through November 1st. Dow Chemical sent notice to customers on September 30th raising list and off-list prices in North America 7 cts/lb on October 15th after it raised its list and off-list TEG and TEG HP prices 10 cts/lb effective September 1st. On September 30th Lyondell Equistar confirmed raising its contract prices 5 cts/lb effective October 15th. On October 14th Indorama notified customers it will raise list and off-list TEG prices FCA Port Neches and Clear Lake, Texas 10 cts/lb effective November 1st. Shell also moved its prices up according to some customers.

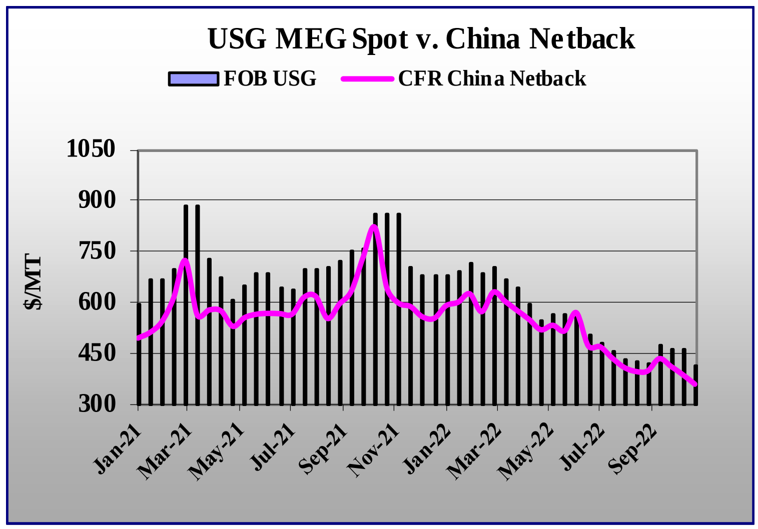
After rising precipitously in prior months, regional truck and railcar spot prices appeared to stabilize in the last few weeks according to buyers and sellers. Earlier this month a few marketers reported posting higher starting offers, but many later confirmed adjusting them down to remain competitive. Although some small volume spot sellers continue to report they have little to offer heading into November, many buyers claim they had fewer problems finding trucks through last week. At the low end of the selling range virgin trucks sourced from USG producers are more widely reported in the low 90 cts/lb range FOB USG. Some observers suggest USG-based producers continue to sell some advantaged customers below the 90 cts/lb mark, but there are also reports of a few distributors and resellers continuing to post starting offers in the mid 90 cts/lb range FOB USG. High-quality non-virgin trucks are reported in the low to mid 80 cts/lb range FOB USG.

Canada MEG

Activity is seemingly steady with both spot and contract prices expected to rollover in most instances on November 1st. Demand among large consumers is still sporadic with seasonal sales slow to pick up heading into the normally busy month of November, particularly in Eastern provinces where mild temperatures continue to undermine antifreeze sales according to some observers. Other consumers are better positioned with more ratable sales reported and seasonal needs in the West are more pronounced by comparison. Last week, the American Railroad Association reported chemical rail traffic in Canada dropping 2.2% when compared to a year prior with the year-to-date total still down -0.9% compared to last year. Availability remains healthy according to buyers and there are no reports of any delays or shortfalls despite ongoing production cuts in the USG and curtailments in Alberta. Production in the West reportedly improved after plants came back up earlier this month following planned outages and rate cuts last month. MEGlobal brought down its 450,000 mt/yr (MEG) Prentiss Unit 2 in Alberta Canada last month for a ten-day outage that concluded and the 440,000 mt/yr Prentiss Unit 1 is also reported back to normal after being cut back due to ethylene supply restrictions attributed to a Nova outage that impacted downstream customers. Customers reported the Shell unit at Scotford was cut back due to ethylene supply constraints as well in September and possibly early October due to ethylene constraints but its status is difficult to ascertain. This month one large supplier announced a minor drop in its contract prices while others reportedly held prices stable following a similar dynamic last month. Many resellers are reluctant to move lower in part due to exchange rate fluctuations in prior weeks. MEGlobal will move down another marginal US 1 ct/lb (CAN 3 cts/lb) on November 1st after doing the same this month and adjusting US 3 cts/lb (CAN 9 cts/kg) lower last month. Other suppliers are expected to carry offers forward next month after many did the same this month and responded to competition on a case-by-case basis last month.

Small volume spot prices across the country are assessed unchanged heading into November following reports that prior producer-led decreases were tempered by the weaker Canadian dollar. Last week the bottom of the spot truck market was noted steady on either side of CAN $1/kg delivered lower Ontario. Mainstream offers attributed to some large distributors are assessed as high as CAN $1.10/kg delivered in the Toronto. A small antifreeze blender confirmed its lowest delivered cost for trucks in Ontario just above the CAN $1/kg mark was expected to rollover this week. Prices in the West remain steady as well with the low end of the selling range noted near or above CAN $1.10/kg and offers attributed to less aggressive distributors near or above CAN $1.25/kg delivered.

Far East MEG



Markets in Northeast Asia remain under pressure with supply continuing to outpace diminished demand among large consumers through Friday sending spot prices sharply lower. Contract postings were announced marginally lower earlier this month leading to conjecture about another round of decreases for December unless market dynamics change dramatically. Downstream demand remains steady but uneventful amid the normal seasonal pickup and while orders are expected to improve many believe sales will remain lower than normal through Q4. Regional PET prices stabilized after coming under pressure earlier this month with recent spot offers near $935/mt FOB CMP. The polyester sales ratio was steady near 80% and operating rates among polyester producers in China are also relatively stable near 84%. Upstream MEG production in Northeast Asia reversed course and dropped heading into November. Production in China faltered once again amid reports of rate cuts due to poor margins. Overall rates slipped back to 57% of installed capacity (coal-based plant production dropped roughly 6% to 33% in the last two weeks due to rising costs). As predicted inventories in China slipped last week with stocks dropping 89,000mts to 834,000mts. As noted, with fewer imports expected to arrive through November many local observers believe stocks could continue to dip. Raw material costs subsided before stabilizing with spot ethylene CFR NE Asia reportedly hovering near $820/mt and prices CFR SE Asia nearer $880/mt. In related news local sources reported Formosa will take its 1.2 mln mt/yr cracker down in Q3 of next year for a planned turnaround.

MEG contract postings will move down next month in aggregate although some suppliers announced rollovers. This month they adjusted modestly higher on average following decreases last month and the month prior. MEGlobal confirmed it will drop its MEG Asian Contract Price (ACP) benchmark $10/mt o $810/mt on November 1st after moving the marker up $20/mt this month following a similarly sized drop last month. Customers reported SABIC will drop its posted price $40/mt to $860/mt next month following a $10/mt increase this month and a $30/mt dip last month. Shell Chemicals will reportedly roll over its regional benchmark of $870/mt on November 1st after doing the same this month and dropping the marker $30/mt last month. (Subscribers can access the last four months of producer nominations on our website)

Although inventories dipped, near-term availability in Northeast Asia improved with regional production augmented by a steady stream of imports. Later this month Yulin Chemical is expected to startup a new 600,000 mt/yr MEG unit in Shaanxi. Last month in China Hengli's 1.9 mln mt/yr unit in Dalian went down September 13th due to problems with its associated cracker which had an immediate impact on spot offers. It was unclear as to whether it was back up. The 300,000 mt/yr Sinopec Yangzi was reported still down as well after initially planning to restart last month. Fujian Gulei Petrochemical's 700,000 mt/yr MEG unit also reportedly went down mid-month for a two-week turnaround that reportedly ended on October 9th. Shanghai Petrochemical's two units (normally making 600,000 mt/yr MEG) shutdown due to a fire but local sources report both units back up on September 28th. In Jiangsu the 500,000 mt/yr Far Eastern plant was expected to begin a turnaround last month that should be concluded. In Nanjing the 340,000 mt/yr BASF-YPC unit is reportedly operating at half rates. In Zhejiang the 800,000 mt/yr ZPC Unit 2 that went down April 20th has yet to restart. In Hubei the 600,000 mt/yr Sanning unit was expected down last month for a turnaround. In Taiwan, NanYa's 360,000 mt/yr unit 2 is reportedly back up but may go down again next month. The 720,000 mt/yr Unit 4 offline since March 29th was down until mid-September according to local sources (extended from July according to some observers). The 360,000 mt/yr Unit 1 went down for brief maintenance this month but will also undergo a catalyst change in mid-November. In South Korea Lotte reportedly took two units with 280,000 mt/yr of capacity down mid-September for two-month turnarounds. In Singapore the 900,000 mt/yr Shell unit was expected to take a turnaround starting in July for two months that should have concluded. In Malaysia the 750,000 mt/yr PrefChem unit is reportedly still down following a planned turnaround. In India, Indian Oil Corp Ltd (IOC) shut down its MEG facility with a nameplate capacity of 303,000 mt/yr at Panipat, India on September 25th for scheduled repairs expected to extend into December. There are also reports Reliance has cut rates due to an integrated cracker turnaround. In the Middle East Equate's 570,000 mt/yr unit in Kuwait was reported down September 2nd due to a technical issue, although principals claim it is back up. In Saudi Arabia Sharq I and Sharq II are expected down for turnarounds in November.

Large volume spot prices appeared to stabilize roughly a week ago before coming under pressure early last week and easing through Friday. On Monday traders reported prompt parcels offered at $470/mt with bids near or below $465/mt CFR CMP. By midweek best offers reportedly dropped to $460/mt with best bids at or below $455/mt and on Friday several sources claimed prompt offers plummeted towards $440/mt with best bids dropping to $435/mt. Others suggested deals were done nearer the $440/mt mark. Mainstream domestic prices in China eased slightly last week amid limited interest and despite balanced to snug supply. Large volume spot supply appeared constrained and some domestic production was impacted by upstream ethylene outages. Spot prices eased slightly last week with offers in Eastern markets noted near CNY 3,800 to CNY 3,910/mt ex-terminal. Offers in the South were reported slightly higher between CNY 4,000 and CNY 4,050/mt. In the North most offers appeared largely unchanged around CNY 4,200/mt ex-plant. Sources in the Northeast reported their offers also as flat closer to CNY 4,000/mt.

Europe MEG

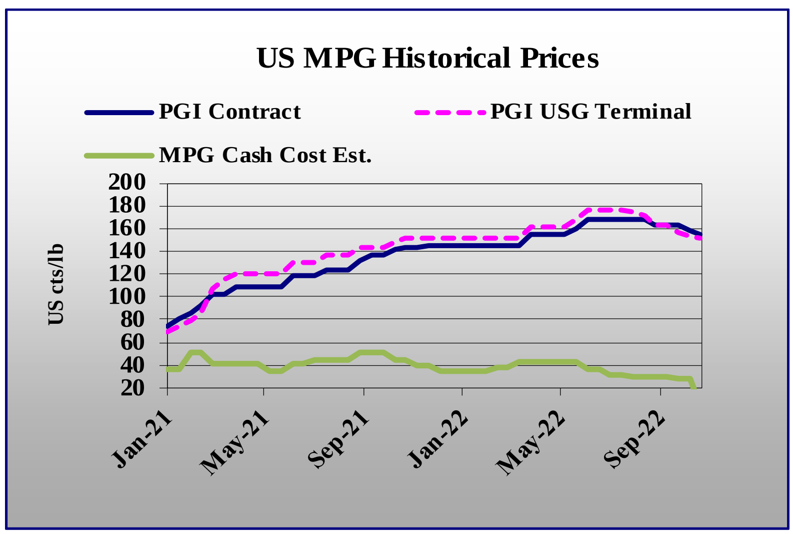
Prompt availability is somewhat constrained this month and producer margins improved after ethylene and EO prices dropped precipitously, although electricity and utility costs remain elevated (but also subject to change). Ineos reportedly took its integrated plant in Antwerp (with nameplate capacities of 420,000mts/yr EO and 290,000mts/yr MEG) down for planned maintenance last month but customers claimed it remained down last week. One large regional marketer is reportedly tight in part due to an extended outage at a plant in the USG that could last through the end of November precluding any shipments until well into December. Without a COA and advantaged freight rates, spot movements from North America are still difficult to justify and there are fewer imports. Inland deliveries improved but remain somewhat low with another drop expected this week. Late last week levels at Kaub were back near 166cm but forecasts noted levels could decline below 150cm by midweek. Downstream seasonal demand among antifreeze manufacturers improved according to sellers amid reports of more widespread restocking efforts. Although there were reports of more restocking efforts, PET related demand remains less pronounced with availability augmented imports. Belgian PET producer JBF restarted last month following extended downtime, although another German PET manufacturer was expected down for a turnaround this month and inventories are still reportedly elevated among some companies. Spot PET prices were reported dropping beneath Euro 1,500/mt FD NWE. Upstream raw material costs in the form of ethylene continued to drop following the most recent contract settlement setting the stage for another MEG contract decrease, although as of late last week there were no confirmed settlements. Some sources claim a two-month deal is likely this week. The regional European ethylene contract price for October dipped Euro 45/mt to Euro 1,260/mt following a Euro 120/mt decrease last month and a Euro 70/mt drop the month prior. Ethylene spot prices were reported back above Euro 800/mt FD NWE late last week. Last month the MEG posted price settled with a decrease of Euro 40/mt at Euro 875/mt following protracted negotiations after a drop of Euro 60/mt in August and Euro 85/mt in July.

Large volume spot prices rose roughly Euro 15mt to Euro 20/mt during the last two weeks and many traders believe near-term supply constraints could lead to additional firming in the weeks ahead. Prompt parcels CIF Antwerp T2 initially climbed above the Euro 600/mt mark mid-month, although last week several sources reported there was little offered below Euro 610/mt. Others reported deals near Euro 605/mt CIF Antwerp T2 and higher prices in the Mediterranean. A few expect bulk offers in November to trend towards Euro 650/mt. Small volume markets are still more liquid, but prices didn't appear to rise by the same magnitude through last week. Some suggested there were more deals between Euro 650/mt and Euro 660/mt FCA NWE T2.

US EO

Markets are stable and many producers in the USG continue to maximize EO production according to observer, although overall production is still curtailed due to planned downtime. At Seadrift Dow's plant was expected to come back up soon following its turnaround. Sasol's unit in Texas is reportedly still down until possibly early December. Formosa's Unit 2 also remains down until possibly December as well, although startup is still predicated upon improving MEG-related margins. Formula based EO prices are modestly lower following the last ethylene contract settlement and many expect additional softening. Raw material costs in the form of spot ethylene dipped under 20 cts/lb delivered USG last week after stabilizing somewhat earlier in the month. Prompt spot deliveries in the USG slipped to 19 cts/lb with forward prices near the same level for several months and in modest contango through most of next year. Earlier this month the US ethylene contract benchmark for September settled down 2.75 cts/lb at 37.25 cts/lb after rising 1.75 cts/lb the month prior following a healthy 4.25 cts/lb decrease last month and a marginal half cent increase the month prior. The regional European ethylene contract price for October reportedly settled with a Euro 45 decrease at Euro 1,260/mt following a Euro 120/mt drop last month and a Euro 70/mt concession the month prior. As previously noted, following the most recent US ethylene contract decrease formula-based EO prices adjusted slightly lower with additional decreases expected following the next settlement. EO prices to large end users (20 mln lbs or more) are assessed between 60 and 64 cts/lb, medium sized consumers (10 to 20 mln lbs) 64 to 67 cts/lb and small end users (under 10 mln lbs) near 68 cts/lb.

US PG



Although producers have not announced formally dropping contract or spot prices in the last few weeks there are more widespread reports of prices consolidating lower heading into November. Last week many consumers confirmed their suppliers lowering net contract prices as well as spot offers 20 cts/lb or more in the last month. Others reported less price movement at the lower end of the selling range. As previously noted, imported volume along with increasing competition attributed to some domestic producers led to mounting downward pressure in September and October, although some suppliers turned away competitive bids and many intermediaries attempted to hold prices higher due to the elevated cost of their existing inventory. Despite converging somewhat through last week spot price ranges remain relatively wide. Downstream demand among large consumers including UPR manufacturers is still reportedly slow according to several suppliers and seasonal demand is steady but expected to pick up in parts of the Midwest and Northeast in the coming weeks. Many buyers continue to purchase on a just in time basis or work off inventories in anticipation of further decreases. Upstream spot propylene prices tumbled in early September setting the stage for a sizeable contract decrease earlier this month. Incremental availability is healthy with US production reported as steady and imports of both PGI and PGUSP continuing to augment supply across the country. Dow Freeport was expected to go down for a planned turnaround last month, but the company did not confirm its status. This month there are no formal US MPG contract adjustments and no confirmation of new nominations as of Friday. The last round of increases occurred in May and June when producers moved up 6 to 7 cts/lb following a string of hikes in prior months.

After stabilizing near 45 cts/lb in early September prompt polymer grade in the USG dropped shed almost 20 cts/lb in the following weeks before stabilizing near 25 cts/lb and rebounding slightly back above 28 cts/lb and forward month deliveries in contango well into next year. US propylene contract prices for September settled late last month with a 5 cts/lb decrease following a modest 2 cts/lb increase the month prior and a moderate 4 cts/lb drop for July. The decrease put polymer grade at 44 cts/lb and chemical grade at 42.50 cts/lb. In Europe the October regional propylene contract price dropped Euro 50/mt to Euro 1,180/mt following a significant Euro 165/mt decrease last month and a Euro 85/mt dip the month prior.

Small volume spot activity in some markets remains sporadic leading to slower price consolidation, although most distributors and resellers acknowledge offers trended lower in the last few weeks amid increasing competition among both domestic producers and importers. Activity in the **US Gulf** is steady but competition among suppliers increased in the last few weeks as an influx of imports along with reports regional production also rising led to improved availability. Many buyers continue to work off existing stocks leading to sporadic conditions in some markets, but most reported offers trending lower. Last month several regional distributors reported prices attributed to some producers rolling over and initially changing little heading into October, although there were more reports of producer offers dropping 20 cts/lb or more from high points noted this summer. Last week at the low end of the price range there are more reports of PGI offered in the mid-$1.40/lb range FOB USG amid a few reports of imports offered at or just below that mark, however the bottom of the range appeared to stabilize somewhat. Wide-spec PGI unsuitable for some end uses was reportedly offered FOB USG near or slightly above $1.30/lb last week. Spot PGI trucks attributed to USG-based producers were more frequently reported in the low to mid $1.50/lb FOB range. Some producers reportedly continue to post PGI starting offers above $1.60/lb FOB USG, although there were few reports of offers at higher levels last week. As previously noted, it is conceivable some sales to customers that require specific product in their formulas might still be at a perceived premium. Spot PGUSP prices are also consolidating lower, although there was less import-derived pressure in recent weeks according to some observers. However, several resellers claim competition among producers led to competitive offers also dropping as much as 20 cts/lb from prior high points. Spot PGUSP truck offers attributed to aggressive producers supplying existing customers are reported on either side of $1.60/lb FOB USG with some mainstream truck prices in the low $1.60/lb range FOB. Spot DPG truck offers also reportedly eased with recent spot competitive offers in the mid to high $1.60/lb range FOB USG reflecting a smaller premium over PGUSP. Mainstream DPG spot offers attributed to some distributors was noted near or just above $1.70/lb FOB.

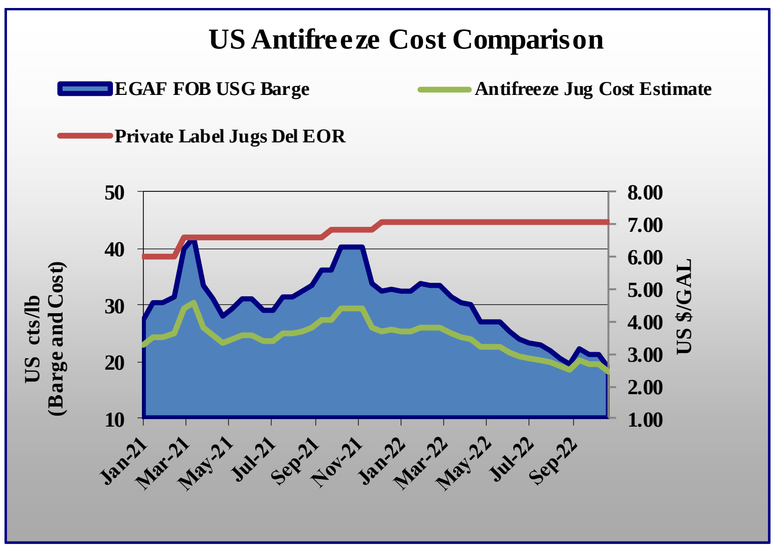
Small volume spot prices also continue to drop on average in the **Midwest** a swell heading into November as imported volume as well as increasing competition among domestic producers continues to impact local markets. Activity is steady but many buyers are still reluctant to take positions or augment supply. Seasonal demand is still somewhat slow with an uptick expected in the coming weeks as temperatures start to dip. PGI and PGUSP availability is healthy and there are no material delays or other major logistical issues noted according to consumers and intermediaries. Last week prompt PGI spot offers at the low end of the selling range attributed to imports and producers supplying to established customers were noted dipping into the mid to high $1.40/lb range FOB Chicago. Others noted their domestic holding starting truck offers between $1.50/lb and $1.55/lb range with a few posting starting offers on either side of $1.60/lb FOB. There was no confirmation of spot PGI trucks moving near or above $1.70/lb last week. PGUSP spot prices are still slightly better supported according to several regional intermediaries with competitive truck offers attributed to producers selling to established customers assessed in the low to mid $1.60/lb range FOB Chicago. There were reports of some distributors continuing to post starting offers above $1.70/lb but no confirmation of recent deals done at those levels.

Regional distributors and resellers in the **Northeast** confirm spot MPG prices continuing to consolidate lower last week as well amid ongoing reports of domestic producers increasingly willing to move down in order to meet competition. Several noted more producers dropping PGI, PGUSP as well as DPG prices as much as 20 cts/lb from high points established during the summer months. Small volume spot availability is healthy and there are no reports of material delays or other delivery issues. Downstream demand for small spot volumes is steady but many buyers continue to report working off existing stocks or otherwise buying on a just in time basis. Seasonal demand is improved with sales expected to ramp up in the coming weeks. Last week competitive PGI truck offers attributed to imports and aggressive domestic producers were reported more consistently in the mid $1.50/lb range FOB New Jersey with fewer competitive offers much above the $1.60/lb mark. One consumer confirms its PGI truck offers ranged from roughly $1.54/lb to $1.65/lb FOB USEC last week with little now offered above the top of that range. As in other regions it is still possible some customers constrained by formula requirements are paying a perceived premium. Spot PGUSP offers continued to decline as well through last week amid heightened competition. At the low end of the selling range there are reports of trucks offered slightly below $1.60/lb FOB New Jersey with the bottom of the market according to some near $1.57 or $1.58/lb. One active marketer reported a range of $1.60/lb to $1.64/lb for PGUSP delivered locally in the USEC last week. A few noted spot PGUSP truck offers attributed to less competitive USG-based producers offers as high $1.69/lb FOB, but there was no confirmation of deals done at or above $1.70/lb. Spot DPG prices dropped as well through last week with decreases in some instances exceeding expectations. Several sources reported imports and domestic trucks offered under $1.70/lb FOB New Jersey with lows possibly near $1.63/lb or $1.64/lb FOB USEC depending upon the supplier. Some observers reported DPG trucks offered between $1.65/lb and $1.70 delivered USEC.

PO/MPG Shutdowns				
Date	**Company**	**Location**	**PO Capacity**	*Details*
Oct 2022	BASF	Ludwigshafen, Ger.	240,000	Reported T/R
Sep 2022	Dow	Freeport, TX	725,000	S/D Sep 40 days
Sep 2022	Sinopec Guangzhou	Guanzhou, China	50,000	T/R Sep 12
Aug-Sep 2022	Sinopec Changling	Hunan, China	100,000	T/R 20 days
Jul-Sep 2022	Tianjin Bohai Chemical	Tianjin, China	20,000	T/R
Sep-Dec 2022	PTT	Map Tha Phut, Thailand	200,000	Feedstock shortage
Jul 2022	Indorama	Port Neches, TX	240,000	S/D 4 days
June 2022	CSPC	Huizhou, China	290,000	T/R June 2 weeks
April 2022	Indorama	Port Neches, TX	240,000	S/D 5 days
April 2022	Lyondell	Channelview, TX	550,000	T/R unconfirmed
Mar 2022	Dow	Freeport, TX	725,000	S/D Mar 10 days
April-May 2022	Dow	Plaquemine, LA	330,000	S/D due to Olin fire

US Antifreeze

Mild weather across much of the Midwest and Northeast continues to impact retail antifreeze sales according to some marketers, although many believe restocking efforts will pick up during the second half of November. Raw material costs in the form of EGAF are lower both on a spot and contract basis, although as previously noted packaging and logistical costs are still high. Many buyers including resellers continue to work off higher priced inventory and some buyers are taking in only what they need on a just in time basis given there is little likelihood for firming prior to the end of the year. There are still intermittent reports of some majors issuing promotions but there are no widespread reports of across-the-board price changes or discounts. Last week several regional blenders suggested dropping prices wouldn't generate new sales and seasonal demand should remove any supply length in the coming weeks. After recovering from Covid related downtime and semiconductor chip shortages OEM related demand continues to exceed expectations given the current economic environment. Recently General Motors reported record revenue and robust demand in Q3. For the quarter, GM reported revenue of $41.89 billion, slightly below analyst expectations of $42.37 billion. GM also reaffirmed its full-year EBIT estimate (earnings before interest and taxes) of $13 billion to $15 billion, which many thought might be reduced. As of late last week, there was still no confirmation of any official price adjustments from either majors or regional marketers heading into November and many expect few changes through the end of the year. The last official increases among majors as well as many large regional blenders occurred last Spring. There were subsequent reports of some majors pushing through fuel surcharges after that, although several customers claimed most of those were subsequently rescinded.



Regional activity is picking up across the country, although sales are still somewhat slower than anticipated in some markets according to local sellers. Several antifreeze marketers in the **South** reported steady inquiries and somewhat sporadic sales through last week, although packaged prices are reportedly stable heading into November. Universal green jug offers attributed to private label marketers appear unchanged in the high $6/gal to very low $7/gal range delivered with branded universal green jug prices also steady between roughly $7.25/gal and $7.60/gal delivered with LTL prices hovering in the mid to upper $7/gal range delivered locally. Universal green drum offers FOB USG were noted unchanged in the mid $6/gal range delivered locally. Universal green bulk offers at the low end of the selling range attributed to majors and large regional blenders are noted in the mid to upper $5/gal FOB USG range with branded and premium green sold by majors offered closer to $6/gal.

There were few changes noted in the **Midwest** last week according to regional blenders, although most claimed sales are steady heading into the normally busy month of November. Mild weather continues to impact demand somewhat, but many believe restocking efforts will increase later this month. Competitive universal green private label concentrate jug offers attributed to aggressive sellers were reported stable near or above $6.50/gal delivered. Others reported majors and some large regional blenders with prices in a wide range approaching $7/gal delivered. Branded green jugs are reported in a wide range as well depending upon the company near and above $7/gal delivered. Universal green drum prices appeared steady near lows just above $6/gal FOB USMW with mainstream drum offers in the mid $6/gal range. Competitive universal green bulk offers attributed to majors remain assessed were noted holding in the mid $5/gal FOB range delivered locally with mainstream bulk prices also unchanged in the high $5/gal range.

There are few relative changes noted in the **Northeast** as well heading into November with sales slowly starting to pick up according to several local blenders but prices stable. Many buyers are placing orders as needed with no increases on the horizon and weather conditions still relatively mild. Competitive universal green jug private label concentrate offers are reported stable in the mid to high $6/gal range delivered. Mainstream jug offers attributed to majors are assessed unchanged as well in the low $7/gal range delivered. Universal green concentrate drum prices appeared steady in the high $5/gal to low $6/gal range delivered, while universal green bulk prices were also assessed unchanged in the low to mid $5/gal range FOB USEC.

Canada Antifreeze

Seasonal demand reportedly surged in parts of Western Canada as customers prepared ahead of colder weather expected in the coming weeks. Conditions in the Eastern provinces remain mild and many customers are reported purchasing on a just in time basis heading into November. As previously noted, there were reports of some blenders adjusting prices higher after the Canadian dollar lost value relative to the US, although others claimed there were few changes. Raw material costs in the form of EGAF drifted slightly lower on a USD basis, although due to exchange rate fluctuations as well as rising logistical and packaging costs, many blenders reported prices remain supported. While retail sales are somewhat slower than normal in some markets, OEM related sales reportedly improved as auto manufacturers started to recover following Covid derived downtime. Finished antifreeze prices are reportedly steady heading into November with no new formal announcements noted. At the low end of the selling range, universal green jug concentrate prices in the competitive Ontario market attributed to majors reportedly stable between CAN $8.25/gal and CAN $8.50/gal, while competitive universal green jug concentrate offers delivered Quebec remain largely unchanged as well in the mid to upper CAN $8/gal range delivered according to local blenders.

Antifreeze Prices in US$/gal				
	Posted	Net EOR	Net WOR	Net CAN (CAN $/Gal)
6x1s				
Branded	7.40 - 7.70	7.00 - 7.45	7.10 - 7.55	8.50 - 8.80
Private label	7.20 - 7.35	6.90 - 7.10	7.00 - 7.20	8.30 - 8.50
PG-based	9.00 - 9.50	8.90 - 9.50	8.30 - 10.20	N/A
Non-virgin	7.00 - 7.20	6.80 - 7.00	6.90 - 7.10	N/A
DRUMS				
Branded	6.50 - 6.90	6.20 - 6.50	6.30 - 6.60	7.85 - 8.25
Private label	6.20 - 6.70	5.90 - 6.30	6.00 - 6.40	7.90 - 8.30
PG-based	N/A	9.50 - 11.00	9.60 - 11.10	N/A
Non-virgin	N/A	5.80 - 6.10	5.90 - 6.20	N/A
BULK				
Branded	5.80 - 6.30	5.55 - 5.85	5.65 - 5.95	6.85 - 7.25
Private label	5.60 - 6.00	5.40 - 5.75	5.50 - 5.85	6.70 - 7.00

- **EOR** = del. East of Rockies, **WOR** = del. West of Rockies, **CAN** = del. Canada
- Antifreeze prices usually do not include premium brands such as Prestone, Peak and Zerex
- All Canadian prices (CAN) are quoted in Canadian dollars (current exchange rates at time of publication are listed in the exchange table near the end of the report

NOTICES

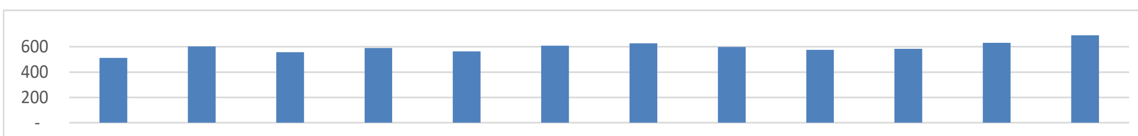
- Next month the NACD annual meeting will take place in Coronado California, for details and to registered follow this link.
- Please note our change of mailing address: Chemical Intelligence 9901 Brodie Lane, Suite 160-881, Austin TX 78748

Current Exchange Rates		
Currency	***USD/1 unit***	***1 unit/USD***
Euro	1.00	1.00
UK Pound	1.16	0.86
Canadian Dollar	0.73	1.36
Japanese Yen	0.01	148.15
Swiss Franc	1.00	1.00

THE AMERICAS 2022

Estimated Days of Production Lost

COMPANY	Location	KMT/YR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Remarks
United States															
Dow	Seadrift, TX	283						10			21	31	5		Poss S/D June, T/R Sep
Dow	Taft, LA	31													
Eastman	Longview, TX	105													
GCGV	Gregory, TX	1100	20	20	15	15	5				5				Startup Jan 5, severely RR
Lyondell	Bayport, TX	265													
Formosa	Point Comfort, TX	300	3	3	6	30	30	8	5	5					RR to 60-70% June-Aug, S/D March
Formosa 2	Point Comfort, TX	800	21	28	23	7	26	8	23	31	30	31	15		RR 60-70% June-Aug, S/D Jul
Indorama	Port Neches, TX	365			6	5	31	13	4						T/R April
Indorama	Clear Lake, TX	380	31	5	21										S/D & FM Dec 23, T/R Mar
Lotte	Lake Charles, LA	770		15											Unplanned S/D Feb. T/R Sep
MEGlobal	Oyster Creek, TX	750													T/R 2024
Sasol	Lake Charles, LA	280							5			20	30		T/R Oct, RR Jul
Shell	Geismar 2, LA	125			16	30									T/R mid-March for 45 days
Shell	Geismar 3, LA	250													
Canada															
MEGlobal	Ft Saskatchewan, AB	340													
MEGlobal	Prentiss 1, AB	440								7	7				RR Aug-Sep
MEGlobal	Prentiss 2, AB	450						30		10	7				T/R June, Aug, RR Aug-Sep
Shell	Scotford, AB	450	30	28											Extended S/D, restart end Feb
Mexico															
Idesa	Morelos	200													EO curtailements.
Pemex	Morelos	200													EO curtailements.
Brazil															
Oxiteno	Camacari-Bahia	285													
Oxiteno	Maua	25													
Venezuela															
Pralca	Jose	95													
Estimated production lost			178	195	134	100	128	82	62	93	114	107	60	0	
Regional Total Capacity Max		**8,289**	**513**	**604**	**557**	**590**	**563**	**609**	**628**	**598**	**577**	**583**	**631**	**691**	



ASIA 2022

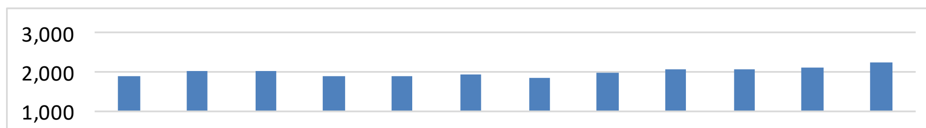
Estimated Days of Production Lost

COMPANY	Location	KMT/YR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Remarks
Australia															
Huntsman	Botany Bay	19													
China															
BASF/Yangzi	Nanjing	340		5	5	30	15								T/R April, 50% May
Beijing Dongfang Chem	Beijing	40													
Beijing Dongfang Chem	Yanshan	60													
Beijing Dongfang Chem	Yanshan	220													
China North Chemical	Liaoning	200													
CNFG Hongsifang	Hefei	300				3									
CNOOC/Shell	Guangdong	350													
CSPC 1	Nanhai	400	2	2	2										RR
CSPC 2	Nanhai	400	2		15	5									RR, one unit down mid March
Far Eastern	Yangzhou	500				15	15	30							50% Apr-May, T/R June
Fujian Refining	Quanzhou, Fujian	400													
Henan Anhua	Henan	200													
HNEC	Yongjin	200							10						Reported S/D
HNEC Anyang	Yongjin	200													
Hengli I	Liaoning	900									15				Unplanned S/D
Hengli II	Liaoning	900									15				Unplanned S/D
Hualu Hengsheng	Shandong	550													
Jianyuan	Mongolia	260	31	3											S/D
Ningbo Fude (Fund Energy)	Zhejiang	500	25	20	5	5									T/R early Dec, RR
Petrochina	Fushun	60													
Petrochina	Sichuan	360													
Petrochina	Jilin	160													
Petrochina	Liaoyang	50													
Petrochina	Liaoyang	150													
Petrochina	Dushanzi	60			15	15									T/R March
Qianxi Coal Chemical	Qianxi	300													
Sanjiang	Zhejiang	380				15	31								Rumor of econ S/D end Apr
Sanning	Hubei	600							10	20					T/R July
Satellite	Jiangsu	1800	15	12	15		15		15	15					RR Q1, 1 unit down May, July
Shanxi	Yangmei	220													
Sinopec Beijing	Yanhua	80													
Sinopec Hubei Chemical	Wuhan	280		20	20										OR 30%
Sinopec Maoming	Maoming	130	15	14	15	21	15								RR, T/R April
Sinopec Shanghai	Jinshan, Shanghai	605						22	30						S/D June
Sinopec Tianjin	Tianjin	100													
Sinopec Yangzi	Yangzi	300			21	20	31	30	31						T/R March
Sinopec Zenhai (ZRCC)	Zenhai	650	6												RR

Continued on next page

Sinopec/SABIC	Tianjin	450													
Tongliao Jinmei (GEM)	Tongliao, Mongolia	300	15		1	4									RR
Weihe Binzhou	Shaanxi	300	15												S/D Jan
Yangkuang	Mongolia	400				30	10								T/R April 40 days
Yulin	Shaanxi	400					10	10							T/R May
Xinhang	Mongolia	400	7	28	15	6									S/D Jan, RR
Xinxiang	Yongjin	200			31	15									Reported down to mid Apr
Zhejiang (ZPC)	Zhejiang	700	13			6	6								S/D early Jan. RR Apr-May.
Zhejiang (ZPC) II	Zhejiang	800	25			30	15								S/D most of Jan, poss TR Apr
India															
Indian Glycols	Kashipur	150													
India Oil	Haryana	325									5	31	30		
Reliance	Baroda	15													
Reliance	Nagathane	60													
Reliance	Gandhar	240													
Reliance	Hazira 1	150													
Reliance	Hazira 2	150													
Reliance	Hazira 3	150													
Reliance	Jamnagar	750													
SM Dyechem		80													
Nocil	Bombay	15													
Indonesia															
Polychem	Merak 1	90													
Polychem	Merak 2	126													
Japan															
Mitsubishi	Kashima	300													
Mitsui Toatsu	Senboku	50													
Nippon Shokubai	Chidori	165													
Nippon Shokubai	Ukishima	165													
Maruzen	Yokkaichi	82													
Korea															
Hanwha Total	Daesan	125													
LG	Daeson	108													RR
Lotte	Yeochon 1	120					15	30	15						T/R
Lotte	Yeochon 2	120													
Lotte	Yeochon 3	160					15	30	15						T/R
Lotte	Daesan 1	300			16	30	31	30							T/R March delayed S/U
Lotte	Daesan 2	400													
KPIC	Daesan	205									15	30			T/R Sep

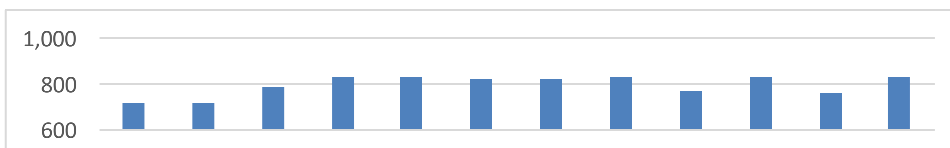
North Korea State Plant	Payangtang	8													
Malaysia															
Optimal	Kerteh, Terengganu	365				10									10-day maintenance
PRefChem	Johor	750						30	25		15	31			T/R
Singapore															
Ethylene Glycols Sing.	Ayer Merbau	122													
Shell Eastern Petro.	Jurong Island	900							30	30					T/R July
Taiwan															
China Man Made Fibre	Kaohsiung	220	15	30											T/R Jan
China Man Made Fibre	Kaohsiung	75													
China Man Made Fibre	Kaohsiung	75													
Nan Ya Plastics Corp.	Unit 1 Mai Liao	360											15	15	T/R Nov
Nan Ya Plastics Corp.	Unit 2 Mai Liao	360	21	28	31	30	15			15					S/D Jan 10, S/D Aug
Nan Ya Plastics Corp.	Unit 3 Mai Liao	360													
Nan Ya Plastics Corp.	Unit 4 Mai Liao	720	30			30	30	30	31	30	30	31	30	25	T/R Dec-Jan, S/D Apr-Dec
Oriental Union Chemical	Kaohsiung	260													
Thailand															
PTT (TOC)	Map Tha Phut	400		28	3										30 T/R Feb
Estimated production lost			352	223	226	357	349	282	369	255	177	169	101	0	
Regional Total Capacity Max		**26,750**	**1,877**	**2,006**	**2,003**	**1,872**	**1,880**	**1,947**	**1,860**	**1,974**	**2,052**	**2,060**	**2,128**	**2,229**	



MIDDLE EAST 2022

Estimated Days of Production Lost

COMPANY	Location	KMT/YR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Remarks
Saudi Arabia															
SABIC/Mitsubishi	Jubail, Sharq I	450											30		T/R Nov
SABIC/Mitsubishi	Jubail, Sharq II	450											30		T/R Nov
SABIC/Mitsubishi	Jubail, Sharq III	450													
SABIC/Mitsubishi	Jubail, Sharq IV	700	15	28	7										T/R Dec 50 days
Yanbu/Mobil	Yanbu, Yanpet I	400		2	28										T/R Feb 1 month
Yanbu/Mobil	Yanbu, Yanpet II	530	20												Reported S/D, unconf.
Yanbu/Mobil	Yanbu, Yanpet III	625													
Jubail United	Jubail I	700													
Jubail United	Jubail II	700		28											T/R Feb
Petro Rabigh	Jubail	700													
Yansab	Yanbu	900	10												Reported S/D Jan
Saudi Kayan	Jubail	573													
Kuwait															
Equate 1	Shuaiba	550									30				Unconfirmed T/R
Equate 2	Shuaiba	650	17												2.5 week T/R Jan 2022
Iran															
NPC	Arak	105													
NPC	Marun, Bandar Imam	445									15				T/R
NPC (Farsa)	Assaluyeh	400													Poss S/D Mar
NPC Moravid	Bushehr	550													
Turkey															
Turkey Petkim	Aliaga	89					15	30	31						S/D for economic reason
Estimated production lost			113	110	44	0	4	7	8	0	63	0	74	0	
Regional Total Capacity Max		**9,967**	**718**	**721**	**786**	**831**	**827**	**823**	**823**	**831**	**767**	**831**	**757**	**831**	



EUROPE 2022

Estimated Days of Production Lost

COMPANY	Location	KMT/YR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Remarks
Belgium															
BASF	Antwerp	360													
Ineos	Antwerp	290					20	5			21	21			T/R Sep-Oct
France															
Ineos	Lavera	15													
Germany															
BASF	Ludwigshaven	40					21								TR Q2
BSL	Schkopau	140													
Clariant	Gendorf	140													
Celanese	Kelsterbach	45													
Ineos	Dormagen	175						21							TR Jun
Sasol	Marl	15													
Italy															
Enichem	Gela	50													
Enichem	Priolo	40													
Netherlands															
Dow	Terneuzen	10													
Shell	Moerdijk	195													
Poland															
PKN	Plock	84													
Romania															
Arpechim	Pitesti	25													
Petrobrazi	Brazi	24													
Slovakia															
Slovchemia	Bratislava	80													
Spain															
IQOXE	Tarragona	100						10							Economic RR
Sweden															
Akzo Nobel	Stenungsund	7													
Russia															
NKNK	Nizhnekamsk	200													
JSC Sibur	Dzerzhink	250													
Estimated production lost			0	0	0	0	2	29	0	0	17	17	0	0	
Regional Total Capacity Max		**2,285**	**190**	**190**	**190**	**190**	**188**	**162**	**190**	**190**	**174**	**174**	**190**	**190**