



ALPHA-OLEFIN UPDATE

PRICING AND MARKET DEVELOPMENTS

MAY 2005

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ALPHA-OLEFINS - U.S. PRICES

CPChem has announced a 4¢/lb price increase for all grades of alpha-olefins effective June 1, 2005 or as contracts allow. The company also confirmed that it had increased alpha-olefin prices 6¢/lb effective February 1, 2005, a change not previously reported here.

After remaining unchanged from March 2003 through September 2004, quoted U.S. alpha-olefin prices have increased substantially since October 1, 2004. Shell and CPChem have each raised prices three times, with Shell's increases totaling 11¢/lb, and CPChem's increases totaling 13¢/lb.

ALPHA-OLEFINS - U.S. IMPORTS AND EXPORTS, JANUARY 2005

According to the USITC, there were no imports of alpha-olefins in March 2005 from countries other than Canada.

The USITC reports that exports of alpha-olefins in March 2005 totaled 72 million lbs (32.7 thousand MT), and they had an average value of 46.3¢/lb (\$1,022/ton). Exports to individual countries in March were valued as follows: Canada - 58¢/lb, Belgium - 45.8¢/lb, India - 29.2¢/lb, Argentina - 69.1¢/lb, Korea - 31.2¢/lb, France - 48.7¢/lb, Venezuela - 42.4¢/lb, China - 36.8¢/lb and Trinidad - 33.7¢/lb.

The following table shows the distribution of alpha-olefin exports for March 2005. Please note that all of these statistics from the Trade Commission do not include C₄ alpha-olefins.

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U.S. EXPORTS OF ALPHA-OLEFINS (C ₆ -C ₃₀)		
Country	March 2005	
	Million lbs	Thousand MT
Canada	14.0	6.3
Belgium	13.1	6.0
India	11.2	5.1
Argentina	8.4	3.8
Korea	8.3	3.8
France	7.1	3.2
Venezuela	6.9	3.1
China	2.3	1.0
Trinidad	0.5	0.2
Others (5)	0.2	neg.
TOTAL ^a	72.0	32.7

^a Total may not add exactly due to rounding.

POLYETHYLENE PRICES - U.S., WEST EUROPE AND ASIA

After falling 2¢/lb in April, U.S. PE prices appear to have stabilized in May, but that may be due to delayed reporting of further decreases. Although a few producers report some improvement in sales in May versus April, the prospects for implementing the 6¢/lb increase announced for June 1st are slim. Domestic demand continues to be sluggish, export markets are soft and feature lower spot prices, and ethylene prices are declining. In April, ethylene contract prices settled down for the first time in over a year, by 1.5¢/lb to 40¢/lb, and they declined another 2¢/lb to 38¢/lb for May following a plunge in ethylene spot prices from around 40¢/lb in April to 28¢/lb in early May.

U.S. - POLYETHYLENE PRICES ^a (¢/lb, FOB)			
Polymer Grade	May 2004	April 2005 ^b	May 2005 ^b
LDPE, Liner Film	66-68	72-74	72-74
LLDPE, Liner Film, C ₄	57-59	62-65	62-65
LLDPE, Liner Film, C ₆ , C ₈	62-64	68-70	68-70
HDPE, HMW Film	65-67	72-74	72-74
HDPE, Blow molding	58-60	67-69	67-69
HDPE, Injection molding	55-57	63-64	63-64
HDPE, HMW Pipe	70-72	77-79	77-79

^a Monthly range for annual purchases larger than 20 million lbs.
^b Prices from February on reflect corrections to database; see February 2005 issue.
Source: *Plastics News*, May 31, 2005 and CAHA database.

In West Europe, PE prices continued their downward trend in April on sluggish demand and ample supplies. LLDPE prices slid roughly €30 per ton, largely due to the availability of imports. HDPE prices were down even more sharply, by €50 per ton. The HDPE market has been oversupplied, and producers were said to be reducing output to tighten up the market and support higher prices for May. Producers of all grades of PE were hopeful that May would bring a reversal in price trends as converters' inventories reached levels that would encourage restocking.

WEST EUROPE - POLYETHYLENE PRICES ^a (€/ton, FOB)			
Polymer Grade	April 2004	March 2005	April 2005
LDPE, Liner Film	930-950	1175-1185	1155-1165
LLDPE, Liner Film, C ₄	880-900	1105-1115	1075-1085
HDPE, Film	840-850	1000-1020	950-970
HDPE, Blow molding	790-820	970-990	920-940
HDPE, Injection molding	800-830	950-980	900-930
^a Monthly range. Source: ECN May 2-8, 2005 and CAHA database.			

Asian PE prices declined by about \$40-50 per ton in May, but producers have been enjoying good margins due to plunging ethylene prices. One factor depressing both ethylene and PE prices was the April start-up of Shanghai Secco's ethylene and PE plants. Scheduled maintenance shut-downs at PE plants in both Asia and the Middle East in May and June are expected to tighten up the market somewhat.

ASIA - BULK POLYMER PRICES (\$/ton, CFR)						
	May 2004		April 2005		May 2005	
	NE Asia	SE Asia	NE Asia	SE Asia	NE Asia	SE Asia
HDPE						
Film grade	840-860	850-870	1120	1120	1070-1080	1070-1080
Blow molding	840-860	850-870	1090-1100	1090-1100	1070-1080	1070-1080
Injection molding	840-860	850-870	1090-1100	1090-1100	1070-1080	1070-1080
LLDPE						
GP film grade	n.a.	n.a.	1130-1140	1130-1140	1090-1100	1090-1100
LDPE						
GP film grade	n.a.	n.a.	1300	1300	1220-1240	1220-1240
Note: These prices are to be used only as a guide to levels for large to medium-size buyers. Source: Asian Chemical News May 9-15, 2005 and CAHA database.						

SASOL TO ADD HIGHER ALCOHOLS CAPACITY

Sasol is planning two projects that will add to its global detergent alcohol capacity. Although neither utilizes alpha-olefins as the raw material, this news should be of interest to our readers because new alcohol capacity affects the alcohols market overall, and can thus impact alpha-olefins.

The first project is a debottlenecking of Ziegler alcohol capacity in Brunsbüttel, Germany that will add 50,000 tons/year of capacity. The plant makes C₆ to C₂₀₊ ethylene-based alcohols, and the detergent range alcohol capacity is estimated at 55,000 tons/year. Sasol hasn't confirmed how much of the additional capacity will be for detergent range alcohols. The expanded alcohol production will require additional feedstock, and to this end, Sasol began construction of an ethylene pipeline from an ethylene storage facility in Stade, Germany to Brunsbüttel in 2004. The pipeline and the alcohol plant debottlenecking are both scheduled for completion in 2007.

The second project is a joint venture with Singapore-based Wilmar Holdings Pte Limited to build an alcohols plant in China. The two companies executed an MoU in May to form a joint venture company to build a 60,000 ton/year fatty alcohols plant at Lianyungang by mid-2007. The feedstock will be fatty acid produced at the site by Wilmar, who is a leading processor and distributor of lauric oils with substantial interests in palm oil plantations. Sasol will have the exclusive right to market the output of the JV. Although still subject to approval by the respective boards of Sasol and Wilmar, construction of the new plant is expected to begin in September 2005. The plant will be the first world-scale fatty alcohol plant in China and it is intended to serve Sasol's multinational customers as their Chinese operations grow.

BASELL SOLD TO CONSORTIUM

Roughly ten months after announcing that they would consider divesting their respective 50 percent stakes in Basell, their polyolefins JV, Shell and BASF have reached an agreement to sell Basell to a consortium led by Access Industries and The Chatterjee Group (TCG) for €4.4 billion (US\$5.49 billion as of 5/31/05). The sale is expected to close in the second half of 2005, following regulatory approvals.

Access Industries is a privately-held, U.S.-based industrial holding company with worldwide investments in oil, aluminum, coal and telecommunications. It was founded in 1986 by Russian billionaire Leonard Blavatnik, who in addition to his own business interests, serves on the boards of TNK-BP, OAO SUAL, Svenska Bredbandsbolaget AB and other companies.

TCG is also a privately-held, U.S.-based investment company, and it has significant holdings in India, including a controlling interest in Haldia Petrochemicals. Haldia uses Basell technology for its production of PP and LLDPE. Dr. Purnendu Chatterjee, chairman of TCG, wants Haldia to join the consortium acquiring Basell, and has made the case for this with the deciding parties: Haldia's board of directors, the West Bengal government, who owns a 48 percent stake in Haldia, and Haldia's corporate debt restructuring committee. Dr. Chatterjee's proposal, which includes the option of TCG buying the government's stake in Haldia, is under consideration, and a final decision is expected sometime in June.

WESTLAKE TO LICENSE NOVA - INNOVENE CATALYSTS

Nova Chemicals has agreed to license its NOVACAT[™] advanced Ziegler-Natta PE catalysts to Westlake Petrochemicals for use in its LLDPE production facilities at Lake Charles, LA. Westlake operates two trains with a combined capacity of 250,000 tons/year utilizing the Innovene[®] gas-phase process.

The NOVACAT[™] catalysts were co-developed by Nova and BP (now Innovene) for use in gas-phase PE processes (see our February 2001 issue). They are claimed to offer enhanced control of the molecular weight distribution of the resins and to increase reactor throughput by as much as 20 percent. They are also said to enable lower usage of comonomers, as well as additives. They enable the production of a full range of butene and hexene based PE resins with improved performance.

LME PE FUTURES TRADING BEGINS

After more than a year and a half of debate, analysis, criticism, presentations, objections and negotiation, the London Metal Exchange began trading PP and LLDPE futures contracts on May 27th. LME claims that the trading of futures contracts will help manage the risk of price volatility, and at least a few polyolefins producers see benefits in participating. LLDPE producers willing to be included in the groundbreaking new approach include Dow, Innovene, Reliance and Thai Polyethylene. The initial LLDPE product to be offered is a butene-based, general purpose resin for blown film and blending applications.

Sempra Metals of London, an LME member, began trading LLDPE and PP futures contracts earlier this year as a trial run for the project, and as of May 17th, LLDPE futures contracts for September were around 47¢/lb (US\$1036/ton). As of the beginning of official trading on May 27th, LME required market players to deposit €74 (US\$92.3) for every ton of material they intended to buy or sell on the exchange. (This amounts to roughly 4¢/lb.)

According to London's Financial Times, trading on the first day was light, as expected. LLDPE futures fluctuated in the range of US\$960 to 985 per ton during the day after opening at US\$965 per ton, but dropped to US\$935 per ton overnight. By Tuesday May 31st, LLDPE futures contracts had risen to US\$939 per ton in continued light trading.

LME is considering revising contract terms because LLDPE and PP producers are concerned about the shelf-life launch contract specifications, which call for the resins to be placed in an approved LME warehouse within two calendar months of production, and prohibit delivery of material that is older than six months. Producers worry that the relatively short shelf life could inhibit liquidity. LME may decide to extend the contracts' shelf life to ten months or possibly a year, but it could take up to a year to implement such a change. LME has approved warehouses in Singapore, Houston and Rotterdam.

EXXONMOBIL EXPANDS PAO CAPACITY

ExxonMobil Chemical has completed a series of process improvements and debottlenecks at its PAO plant at Beaumont, TX, resulting in an expansion of its capacity to produce high viscosity grades of PAO. The plant, which is believed to have had a total capacity of about 60,000 tons/year prior to the expansion, produces both low and high viscosity grades, in separate trains. According to ExxonMobil, the expansion raised high viscosity PAO capacity by 20 percent. The company claims that the additional capacity was needed to meet growing demand for high viscosity PAOs in both industrial and driveline lubes.

ExxonMobil is also upgrading the low viscosity PAO train, but has not disclosed whether capacity will be increased. The upgrade is scheduled for completion by August.

Our May 2004 issue reported that ExxonMobil was planning to upgrade its PAO plant to produce new products which it classified as Group IV+. The products were scheduled for commercial introduction in the third quarter of 2005. No further details of the new products have been disclosed in connection with the recent announcement of expansion and upgrade.

EXXONMOBIL - QATAR PETROLEUM TO BUILD ETHYLENE AND PE COMPLEX

ExxonMobil and Qatar Petroleum have signed Principles of Agreement to build what they claim will be the world's largest petrochemicals plant – a 1.6 million ton/year ethylene cracker that will feed three 420,000 ton/year PE plants. The three derivative plants will produce LDPE, LLDPE and HDPE, respectively.

The partners have completed an economic feasibility study, and they expect to sign a Letter of Intent for the US\$2 billion project in July. The final agreement is expected to be executed sometime next year. The complex is scheduled for completion by the end of 2010, with commercial production to commence in early 2011.

IRAN PROJECT UPDATE

There have been several recent developments involving PE projects in Iran:

Iran's National Petrochemical Company (NPC) has set up a wholly-owned subsidiary, Persian Gulf Petrochemical Co., to operate its proposed Olefins 12 complex at Assaluyeh. Originally India's IOC was to participate as a partner in the complex, but the two companies have not yet been able to reach an agreement, and so NPC is proceeding on its own. The complex will include a 300,000 ton/year swing PE plant. (For further details of the Olefins 12 complex, see our May 2004 issue.)

NPC has announced that its Amir Kabir Olefins 6 project started up at the beginning of May. It has not yet confirmed that the 520,000 ton/year cracker is producing on-spec material. The complex also includes a 140,000 ton/year HDPE plant and a 208,000 ton/year LLDPE plant.

It is reported that Thailand's National Petrochemical Co. and Cementhai Chemicals, together with Japan's Itochu Corp., are negotiating to take part in another NPC project, – a 300,000 ton/year HDPE plant at Assaluyeh. Iran's NPC would hold a 40 percent stake in the US\$250 million project, while the other three investors would form a joint venture to hold a 60 percent share. The ownership of the joint venture would not be split equally among the three foreign investors; instead, Cementhai would hold the equivalent of 38 percent of the total project, Itochu would own 12 percent, and National Petrochemical Co. 10 percent. The plant is expected to start up in 2008 or 2009.

Our March issue reported that the start-up of Jam Petrochemical's 300,000 ton/year HDPE plant at Assaluyeh was being pushed back to September 2005 in order to coincide with the expected start-up of Arya Sasol Polymer's ethylene cracker. The company now says that there are problems with work carried out on the cracker by two local contractors, and it will not start up until early March 2006. Thus the HDPE unit will not come on line until mid-April 2006.

Iran's NPC has released preliminary details of its fifth five-year development plan, which includes a total chemical production capacity of 23 million tons/year of main products. The plan, which will run from 2005 through 2010, include facilities for the production of 6 million tons/year of ethylene and 3 million tons/year of polymers. Further details are not yet available.

GAZPROM AND DOW DISCUSS BUILDING PE PLANT

Russian natural gas producer Gazprom is planning to build a new PE plant at the site of its Novi Urengoy gas-chemical complex (known as NGKHK), and Dow Chemical may participate. NGKHK, wholly-owned by Gazprom, had planned to include a PE plant when the complex was begun in 1993, but in 1996, work stopped due to insufficient financing. Gazprom now wants to move ahead with one or more partners and is negotiating with several potential foreign investors.

A delegation from Dow Chemical in the U.S. recently visited Novi Urengoy, which is in the Yamal-Nenets autonomous region, just below the Polar Circle. They inspected the site and discussed the possibility of a joint venture, but stressed that the NGKHK project is just one of many around the world in which Dow has an interest.

Gazprom estimates that the total cost of the PE plant and related construction will be US\$740 million. It plans to raise \$250 million of this by selling a stake in the NGKHK plant to one or more strategic investors. The rest will be borrowed. The type of PE to be produced has not been disclosed.

According to Troika Dialog, Russia produced 1.066 million tons of PE in 2004 and exported 260,000 tons. Domestic demand was 978,000 tons, and imports totaled 173,000 tons. The Russian PE market is reportedly growing at a rate of 7.3 percent/year.

MITSUI TO COMMERCIALIZE NEW ELASTOMER

Mitsui Chemical has developed a new alpha-olefin based elastomer, and will commercialize the material under the trade name Notio^R. The elastomer is made using metallocene catalysts to control the

crystalline structure on the nanometer level. Mitsui claims that compared to conventional materials, the new elastomers achieve a better balanced set of properties including heat resistance, transparency, flexibility and rubber elasticity. Initial applications include automotive, packaging and construction materials. Because of their superior properties, Mitsui also expects the Notio^R elastomers to find application in protective films and sealants used for electronics and optical materials. The new products will be commercially available in November. Mitsui is targeting sales of ¥1 billion (US\$9.3 million) by 2008.

U.S. LUBRICANT SALES NEARLY LEVEL IN 2004

The NPRA has released fourth quarter and full-year 2004 data from its Quarterly Index of Lubricant Sales, which includes input from producers who account for about 72 percent of total U.S. sales volumes. Total lubricant sales volumes declined only 0.5 percent in 2004, and finished lubricant sales were up 0.4 percent. These results are far better than the significant declines reported for the previous four years.

Volume sales of lubricants to the automotive sector advanced 0.3 percent in 2004, industrial lubricants 0.6 percent and greases 2.5 percent. However, sales of process oils declined 4.2 percent.

In spite of some improvement last year, NPRA notes that total lubricant sales in 2004 were 12.2 percent below 1997 levels, the base year for the survey. The automotive sector was 5.6 percent lower, industrial lubes were 22.9 percent lower, grease sales were 37.3 percent below 1997 levels, and process oils were down 18.3 percent.

In related news, the U.S. Dept. of Energy's Energy Information Administration (EIA) has released data for base oil production in 2004 showing an increase of 2.3 percent, to 62 million barrels (434 million tons) from 60.6 million barrels in 2003. The increase occurred in spite of Shell's closure of two base oil plants, one in March and the other in September.

LOWER SALES FOR EUROPEAN LUBRICANTS

Lubricant sales volumes in Europe declined 3.3 percent in the first nine months of 2004 compared to the same period in 2003, according to EuropaLub. Automotive lube sales were down 1.6 percent vs 2003 and industrial lubricants declined less than 1 percent, but process oils sales volumes fell 13 percent. Within the industrial lubricant category, gear oils increased nearly 11 percent, but industrial greases declined over 12 percent. Full-year data is not yet available.

On a country basis, Germany had the largest decline in overall lube sales in the first nine months of 2004 – an 8 percent drop versus 2003 – while sales in Italy and the U.K. both declined roughly 4.5 percent. Germany's results were affected by a 30 percent drop in process oils sales.

EuropaLub says that the 2004 results are in line with long-term trends. During the period from 1979 to 2003, lubricant sales volumes fell 17 percent, representing an annual volume loss of 930,000 tons. Automotive lube sales declined 26 percent during that period and industrial lubes fell 18 percent. Surprisingly, process oil sales volumes increased 35 percent from 1979 to 2003.

In 2003, European volume sales of lubricants totaled 4.7 million tons. Automotive lubes accounted for 46 percent of the total, followed by industrial lubes at 37 percent and process oils at 17 percent.

MISCELLANEOUS ITEMS OF INTEREST

Formosa Plastics Group - the Taiwan-based conglomerate - is planning to combine four of its U.S.-based plastics-related companies into one corporate entity and then launch an IPO in the U.S. in 2006. The four companies are Formosa Plastics Corp. USA, which makes HDPE and LLDPE in Point Comfort, TX; Formosa Plastics Corp. America; Nan Ya Plastics Corp. USA and Nan Ya Plastics Corp. America. Formosa Plastics Corp USA has several subsidiaries, including J-M Manufacturing Co., the world's largest producer of PVC pipe. The combined sales of the four companies was roughly \$5 billion

in 2004. The IPO is intended to raise cash for a large project in China planned by the Taiwan-based parent company. The Formosa Group also plans to cut its global workforce by 4,000 over the next three years.

Crompton Corp. - which is acquiring Great Lakes Chemical, announced that when the two companies are merged, they will adopt a new name, Chemtura Corporation. Crompton produces specialty high-viscosity grades of PAO in Elmira, Ontario, Canada.

ChevronTexaco Corp. - one of the parent companies of Chevron Phillips Chemical - is changing its name to Chevron Corp. in order to present a single corporate identity across the 180 markets where it does business. It will maintain its "CVX" trading symbol on the New York Stock Exchange. Chevron Corp. will also retain its Texaco and Caltex retail brand names.

Brazil - According to the Brazilian plastics industry association, Siresp, Brazil's domestic consumption of plastic resins was 904,000 tons in the first quarter of 2005, representing a 3.7 percent increase from the same period in 2004. HDPE consumption rose 3.9 percent. Overall plastic resin consumption is forecast to grow 8 percent in 2005, somewhat less than the 12 percent growth experienced in 2004. This reflects overall economic growth; in 2004, Brazil's GDP grew 5.2 percent, but it is expected to expand by only about 4 percent in 2005.

ExxonMobil and Pequiven - have taken another step toward implementing their ethylene and derivatives JV in Jose, Venezuela (see our September 2004 issue). A dispute over oil royalties had threatened to derail the project (see our March 2005 issue). The two companies have agreed to appoint a financial adviser for the proposed investment in June. Since signing an agreement to proceed last August, twenty people have been working on the project in Houston and five in Caracas, studying costs and financial arrangements.

Basell - shut down its 250,000 ton/year HDPE plant at Wesseling, Germany for about ten days in May to address processing problems. The company cited some resulting shortness in the availability of medium density resin grades, but no major supply disruption.

Dow - shut down its 500,000 ton/year LLDPE plant at Terneuzen in the Netherlands for 3 to 4 weeks beginning the weekend of May 21-22 in order to resolve technical problems and carry out routine maintenance. LLDPE demand in Europe has been lackluster and Dow and other producers have been unable to maintain, much less increase prices (see PE pricing section).

Marubeni - plans to sell its 24.59 percent stake in Indonesian ethylene and PE producer Chandra Asri to Commerzbank International Trust (CIT) of Singapore, a subsidiary of Commerzbank of Frankfurt, Germany. CIT will take over US\$581 million worth of loans that Marubeni has made to Chandra Asri. At the same time, Marubeni will acquire CIT's stake in two pulp and paper companies in Indonesia.

Euro Packaging - a global producer of HDPE bags - doubled the capacity of its HDPE bag production line in Boston, MA in April to 36,000 tons/year. It plans to double the HDPE bag production capacity of two other plants as well, raising the capacity of its plant in Kuala Lumpur, Malaysia to 120,000 tons/year by mid-2006, and increasing the capacity of its plant in Tianjin, China to 24,000 tons/year by 2006. The company also plans to begin construction of a 36,000 ton/year HDPE bag plant in Jebel Ali Free Zone in Dubai in June or July of this year.

Petkim - Our April issue reported that the Turkish government would offer 30 percent of the shares of Petkim, which produces HDPE and other chemicals, on the Istanbul stock exchange. The sale was a success; all the originally planned shares, plus optional shares representing an additional 4.5 percent of the company, were quickly sold.

EVENTS CALENDAR**2005**

- Sept. 20-21 ICIS-LOR Middle Eastern Base Oils & Lubricants Conference, Dubai
- Sept. 24-28 EPCA 2005 Annual Meeting, Monte Carlo, Monaco

REMINDER

This May 2005 issue of Alpha-Olefin Update - Pricing and Market Developments is available online at: <http://www.alpha-olefins.com/ao>
