



# The QuiMax Report

March 7th, 2003

Issue No. 11

[www.quimaxlatin.com](http://www.quimaxlatin.com)

## Contents

Highlights	1
Overview	2
Price Pages	3-4
<b>Brazil</b>	<b>7</b>
Feedstock	9
Olefins	10
Propylene	11
Aromatics	11
Styrene/Polystyrene	11
Thermoplastic Resins	11
Convertors	13
New projects	13
<b>Mexico</b>	<b>14</b>
Economy	14
Energy	14
Olefins	15
Thermoplastic Resins	16
Convertors	17
<b>Country News</b>	<b>18</b>
<b>Company Profile</b>	<b>18</b>
Statistics and Tables	21

Electronic (pdf file) services are available for US \$2,200 per year.

Additional hard copies are US \$100 per year.

For additional information please visit our website at [www.quimaxlatin.com](http://www.quimaxlatin.com)

## HIGHLIGHTS

**New QuiMax Format:** The QuiMax Report now covers the Mexican Petrochemical Industry in much more detail. The report will include two price pages covering Brazil and Mexico. The text has been re-arranged to include additional country information. QuiMax will provide a supplement with additional industry data in June and December. Please feel free to send us your comments in order to better service your needs.

**New QuiMax Service:** Now clients can check prices by products for Brazil through our web site. Please contact us for more information at [www.quimaxlatin.com](http://www.quimaxlatin.com)

**USA:** Uncertainty best characterizes the US political and economic scenarios. Fourth quarter 2002 GDP growth rate was revised higher to 1.4 percent-annualized rate. Energy prices (natural gas and naphthas) continue to increase reaching record-high levels in late February. Cost-driven price increases announced for Q1 2003 have been implemented for most products.

**Argentina:** Operational problems at Dow Bahia Blanca's petrochemical site apparently resolved. Argentina met its January targets agreed to with the International Monetary Fund in return for aid. Presidential elections scheduled for April 27, 2003.

**Brazil:** Currency exchange rates continue to fall. High production costs continue to trim down operating rates at major production sites. Polibrasil will use Slurry-Spheripol technology at its PP unit scheduled to start in March 2003. Petrobras increased naphtha prices to the petrochemical industry by 12.5 percent in March.

**Mexico:** Currency devaluation took the Mexican Peso to 11.20 per US \$ dollar. Local economy continues to be strongly link to developments in the USA. Petrochemical industry affected by high feedstock cost. Price increases begin to stick in Mexican downstream industry. Expansion plans for new LLDPE/HDPE swing unit in Mexico endures a new set back.

**Venezuela:** Venezuela's reactivation program to increase crude oil production is slowly implemented. Political and social unrest continue. Many workers that participated in the National Strike are currently unemployed. PDVSA continues to encounter production difficulties. Petrochemical production at El Tablazo is totally down with only chlor-alkali production at 50 percent capacity.

## Market Intelligence provided by:

Rina Quijada, PhD  
Solange Stumpf  
Otavio Carvalho  
Elena D'Arcy,  
US Ph: 305-461-5388

Consultant, Latin America  
Consultant, Brazil  
Consultant, Brazil  
Publisher-Designer  
Brazil Ph:66-51-3328-1078

[rquijada@intellichem.net](mailto:rquijada@intellichem.net)  
[maxiquim@maxiquim.com.br](mailto:maxiquim@maxiquim.com.br)  
[otavio@maxiquim.com.br](mailto:otavio@maxiquim.com.br)  
[darcyecar@prodigy.net](mailto:darcyecar@prodigy.net)

*Distribution outside of the client company is strictly prohibited without the prior written consent of Intellichem and Maxiquim.*

# ECONOMY AND ENERGY WATCH

## Overview

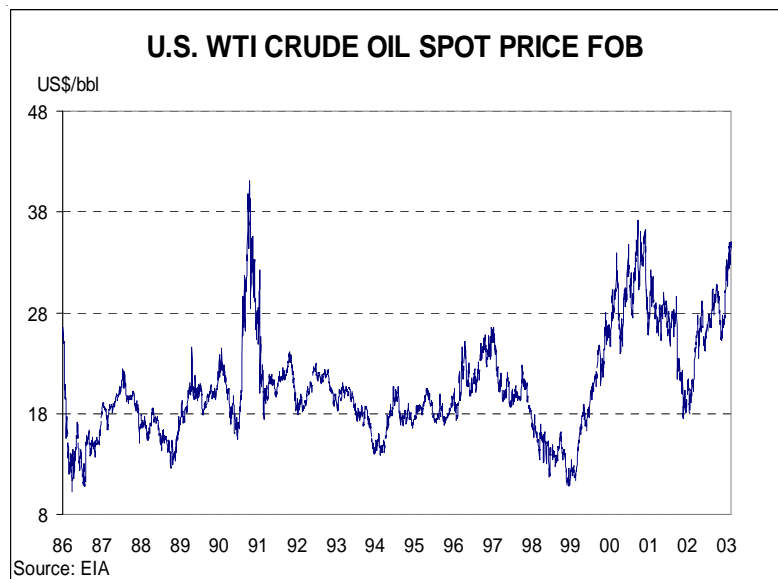
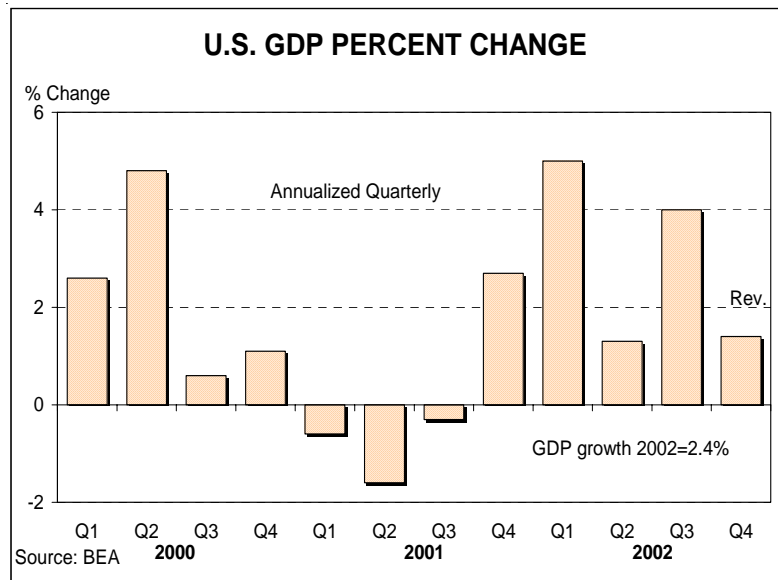
Real US gross domestic product **GDP** increased 2.4 percent in 2002, compared with an increase of 0.3 percent in 2001. The major contributors to the increase in real GDP in 2002 were personal consumption expenditures (PCE), government spending, and private inventory investment. Real GDP was upwardly revised to an annual rate of 1.4 percent in the fourth quarter of 2002, according to the Bureau of Economic Analysis. The first graph to the right illustrates this growth.

*Impact of Crude Oil Prices on Petrochemicals*  
It is of great importance to evaluate the impact of feedstock prices on petrochemicals. Crude oil is a commodity and its market behavior is driven primarily by supply and demand.

The Organization of Petroleum Exporting Countries (OPEC) founded in Baghdad, Iraq, in September 1960, to unify and coordinate members' petroleum policies is currently a key player in the future of crude oil prices. OPEC national oil ministers meet regularly to discuss prices, and to set crude oil production quotas. OPEC members include Iran, Iraq, Kuwait, Saudi Arabia, Venezuela, Qatar, Indonesia, Libya, the United Arab Emirates, Algeria, and Nigeria. The Energy Information Administration (EIA) estimates the current eleven OPEC members account for roughly 40 percent of world oil production and about 77 percent of the world's proven oil reserves. Mexico is not a member of OPEC. The head of OPEC said "There is not a lack of oil," during a recent international energy conference in Brussels. He continued, "The problem with high prices is the threat of war and the war is out of our control," he said, referring to the Iraq crisis. Most basic petrochemicals and derivatives will indeed, be affected by higher energy cost during 2003. A combination of higher energy prices and lower production rates are keeping supply tight. We believe that in the coming months, companies will have to decide whether to keep units running or to shutdown production for a period of time.

The industry is going through a pivotal change, and US Gulf Coast producers are no longer among the most competitive producers in the world. Instead, the competitive cost position appears to have gone to countries with cheaper natural gas availability; these producers are located primarily in the Middle East.

Regarding *energy cost*, a recent cold snap in the Northeastern Coast of the United States, the potential for war with Iraq, and reduced crude production in Venezuela tightened the supply/demand balance for crude oil and derivatives in the US. This has kept crude oil prices high. As seen in the graph to the right,





# BRAZILIAN PETROCHEMICAL DOMESTIC PRICING

February, 2003

Product	Grade	Notes	Contract/Market		
			R\$/Ton	US\$/Ton	Cts/Lb
<b>Feedstock</b>					
Naphtha		2, 3	1020 - 1110	288 - 314	13.1 - 14.2
Natural Gas (\$/MMBTU)		US Gulf	-	-	-
<b>Monomers</b>					
Ethylene		5	1870 - 1980	528 - 559	24.0 - 25.4
Propylene		5	1690 - 1785	477 - 504	21.7 - 22.9
Benzene		5	1640 - 1760	463 - 497	21.0 - 22.6
<b>Polymers</b>					
Low Density PE	General Purpose, Film	1, 4	3040 - 3470	859 - 980	39.0 - 44.5
Linear Low Density PE	Butene, Film	1, 4	3230 - 3470	912 - 980	41.4 - 44.5
High Density PE	Film	1, 4	3250 - 3480	918 - 983	41.6 - 44.6
High Density PE	Blow Molding	1, 4	3300 - 3600	932 - 1017	42.3 - 46.1
Polypropylene	Injection Molding	1, 4	3530 - 3700	997 - 1045	45.2 - 47.4
Polypropylene	Blow Molding	1, 4	3320 - 3630	938 - 1025	42.5 - 46.5
Polystyrene	General Purpose	1, 4	3480 - 3740	983 - 1056	44.6 - 47.9
Polystyrene	High Impact	1, 4	3550 - 3800	1003 - 1073	45.5 - 48.7
PVC	Suspension Rigid Pipe	1.4	2420 - 2670	684 - 754	31.0 - 34.2
<b>Others</b>					
Caustic Soda (DMT)			-	0 - 0	0.0 - 0.0
Methanol			-	0 - 0	0.0 - 0.0
PET		1, 4	4071 - 4425	1150 - 1250	52.2 - 56.7
Urea			-	0 - 0	0.0 - 0.0

- 1) Delivered, bagged      4) Sight  
 2) Before Tax              5) Delivered  
 3) FOB Refinery

Exchange Rate R\$/US\$    3.54

Prices reported are the opinion of QuiMax and based on public information.

QuiMax assumes no liability as to their use.

Exchange Rate R\$/US\$    3.54

*Reproduction, or use in electronic media, without authorization is forbidden. Intellichem, Inc., makes no warranties with respect to the contents of this report, other than to have prepared it in a diligent and professional manner, and assumes no liability for damages resulting from any use of this report.*



# MEXICAN PETROCHEMICAL DOMESTIC PRICING

February, 2003

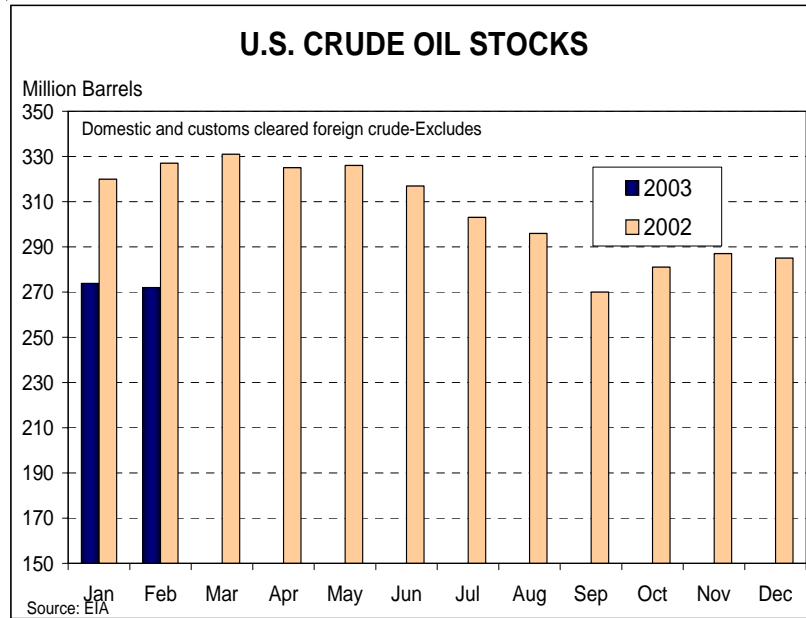
Product	Grade	Notes	Contract/Market		
			Pesos/Ton	US\$/Ton	Cts/Lb
<b>Feedstock</b>					
Natural Gas (\$/MMBTU)		US Gulf	-	6.00 - 9.00	-
<b>Monomers</b>					
VCM		5	5000 - 5200	446 - 464	20.2 - 21.1
Styrene		5	9073 - 11300	810 - 1009	36.7 - 45.8
Benzene		5	-	n/a - n/a	-
<b>Polymers</b>					
Low Density PE	General Purpose, Film	1, 4	9350 - 9380	835 - 838	37.9 - 38.0
Linear Low Density PE	Butene, Film	1, 4	9200 - 9250	821 - 826	37.3 - 37.5
High Density PE	Film	1, 4	9450 - 9500	844 - 848	38.3 - 38.5
High Density PE	Blow Molding	1, 4	9177 - 9200	819 - 821	37.2 - 37.3
Polypropylene	Injection Molding	1, 4	9948 - 9990	888 - 892	40.3 - 40.5
Polypropylene	Blow Molding	1, 4	10170 - 10200	908 - 911	41.2 - 41.3
Polystyrene	General Purpose	1, 4	10594 - 10640	946 - 950	42.9 - 43.1
Polystyrene	High Impact	1, 4	10918 - 10950	975 - 978	44.2 - 44.3
PVC	Suspension Rigid Pipe	4.5	8704 - 8740	777 - 780	35.3 - 35.4
<b>Others</b>					
Caustic Soda (DMT)		6	-	125 - 135	5.7 - 6.1
PET		1, 4	15669 - 15736	1399 - 1405	63.5 - 63.7
1) DAF, Laredo                      4) Sight 2) Before Tax                        5) Delivered 3) FOB Refinery                      6) Spot FOB Exchange Rate Pesos/US\$ 11.2 Prices reported are the opinion of QuiMax and based on public information. QuiMax assumes no liability as to their use.					

Exchange Rate Pesos/US\$ 11.2

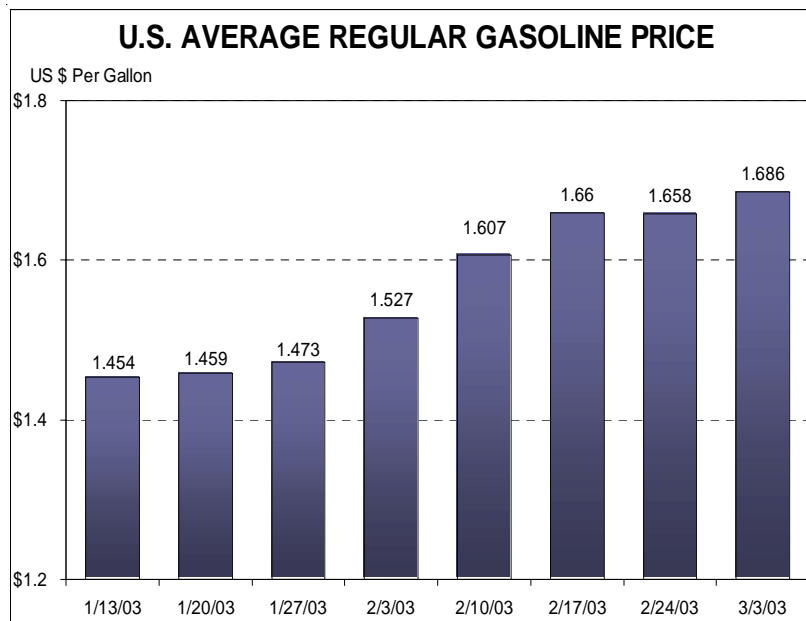
*Reproduction, or use in electronic media, without authorization is forbidden. Intellichem, Inc., makes no warranties with respect to the contents of this report, other than to have prepared it in a diligent and professional manner, and assumes no liability*

oil prices, as well as natural gas prices, reacted quickly to speculations that a war in Iraq is now inevitable and could be set to start within weeks.

As seen in the graph below *crude oil* inventory levels in late 2002 and early 2003 indicate a significant reduction. Low crude oil stocks have coincided with an extremely cold winter in the US. Meanwhile, retail *gasoline* and diesel fuel prices continue to increase in the US.

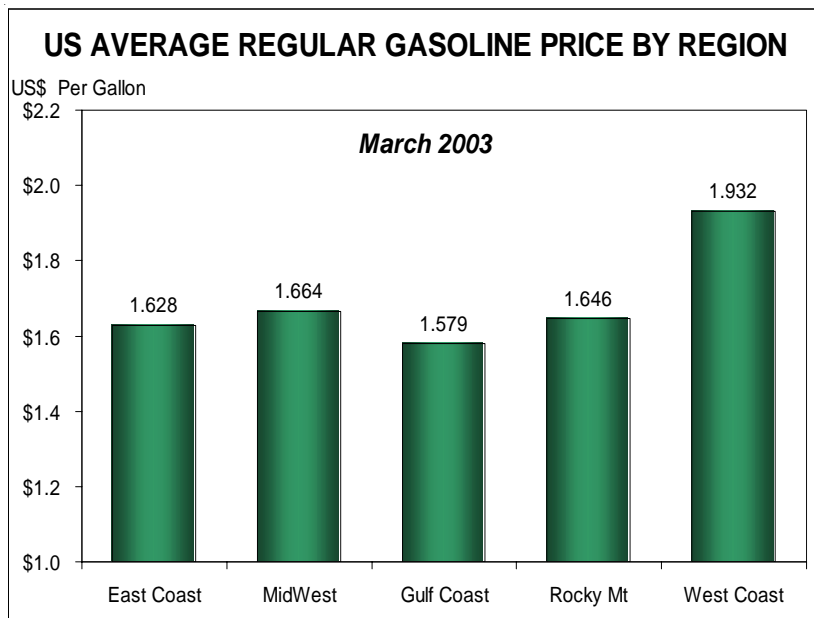


The next graphs illustrate gasoline prices in the US. Prices have increased in the past months and the impact has varied across the country with the West Coast showing the highest price levels.



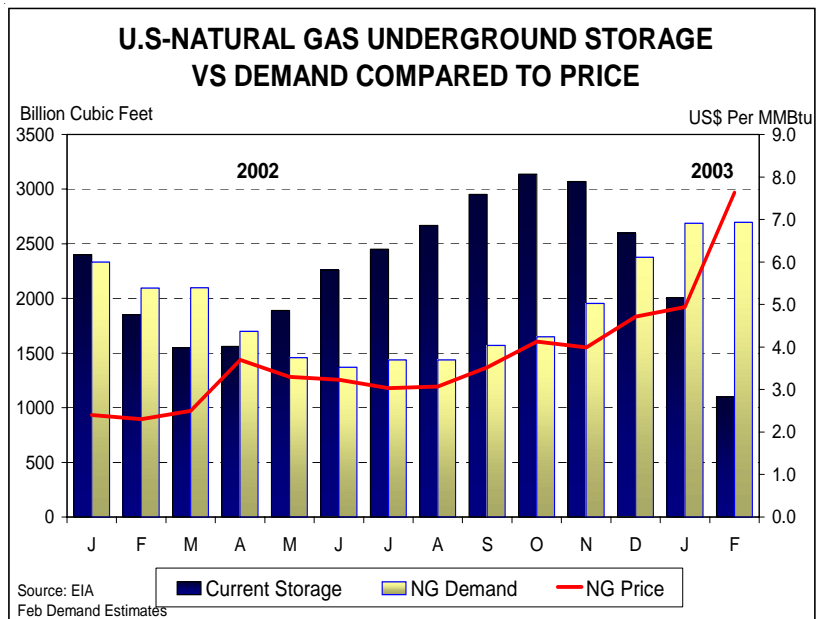
As seen in the graph to the right, federal, state, local and other taxes add an average of 42 cents to the price of a gallon of gasoline. Currently, the US consumes more than 370 million gallons of gasoline a day, up by 2.4 percent from 2002 levels. This is more than 37 percent of world gasoline production. US refineries are operating at high utilization rates. The US consumes about 20 million barrels of oil per day. And 60 percent of that oil is imported.

The next graph illustrates *natural gas* inventory levels, reported consumption levels, and prices in the US Gulf Coast. This information is included on a monthly basis. Natural gas in storage decreased to 1,098 Bcf for the week of February 24.



The impact of the supply/demand balance on natural gas prices is presented in the next graph. In late 2002, prices were not reacting to fundamentals of supply/demand balances. Instead, prices were a direct reflection of speculation on a war with Iraq. During the month of February, prices once again reacted to fundamentals of market forces. Reported low inventory levels during months of high demand were putting upward pressure on natural gas prices. The risk factor of a foreseeable war is clearly adding to the price hike.

We include an interesting statement made by the ACC in late February: *The American Chemistry Council (ACC)*, representing America's largest industrial users of natural gas, called on the Administration and Congress to take immediate steps to avert a looming natural-gas crisis end of February. In letters released to the public, the ACC dramatically described the impact of the energy emergency. The spot price of natural gas spiked to more than \$19.00 mm BTU on February 26. While the drastic price hike lessened, it is still the highest it has ever been, and supplies in storage are at an all-time low. The effects of the continuing shock will be felt throughout the economy. The letter describes how some US chemical production already has been taken off line as it is now too expensive to operate.



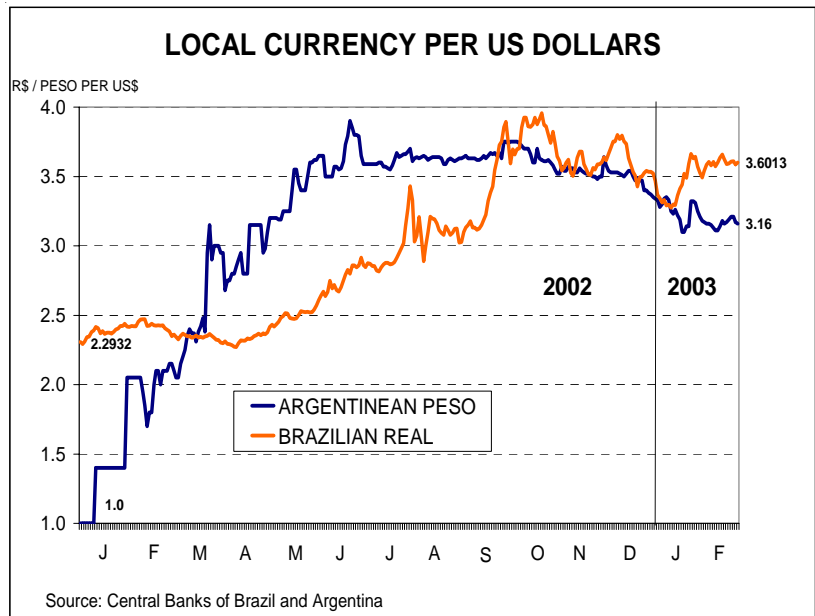
Indeed, these are tough times for the industry. North America will continue to see its competitive position diminished in coming months. The US, and Mexico will see cash margins and production rates reduced due to high production cost.

The next table presents a qualitative evaluation of several countries in Latin America. Most countries in Latin America are loosing purchasing power in international markets due to loss of local currency value versus other hard currencies of the world. This will boost exports but may reduce imports. In the case of

<b>ECONOMY MARKET WATCH</b>				
<i>Quimax-Qualitative Analysis</i>				
<b>Feb-03</b>	<b>Argentina</b>	<b>Brazil</b>	<b>Mexico</b>	<b>Venezuela</b>
<b>Foreign Investment</b>	Scarce	Scarce	Stable	Non Existent
<b>Inflation</b>	Double Digits	Controlled	Controlled	Double Digits
<b>GDP change (%) 2002</b>	-12	1.5	1.0	-25
<b>Consumer Confidence</b>	Cautious	Cautious	Cautious	Non Existent
<b>Currency Exchange</b>	Stable	Stable	Unstable	Unstable
<b>Unemployment(%)</b>	25%+	15%	5%	35%
<b>Must Follow</b>	Economy	Economy	Economy	Political Issues

Mexico where the industry is highly dependent on imports, the impact will be severe. Brazil will reduce imports but the market is prepared to replace most imported goods with local production. Argentina will increase exports in order to accumulate hard currency and help rebuild its economy. The next graph shows currency exchange rates for Brazil and Argentina.

In Venezuela, PDVSA workers lost their jobs and crude oil and derivatives production is slowly increasing. Political and social turmoil continue and the economy is stagnated. No economic growth or foreign investment is expected under current scenario.



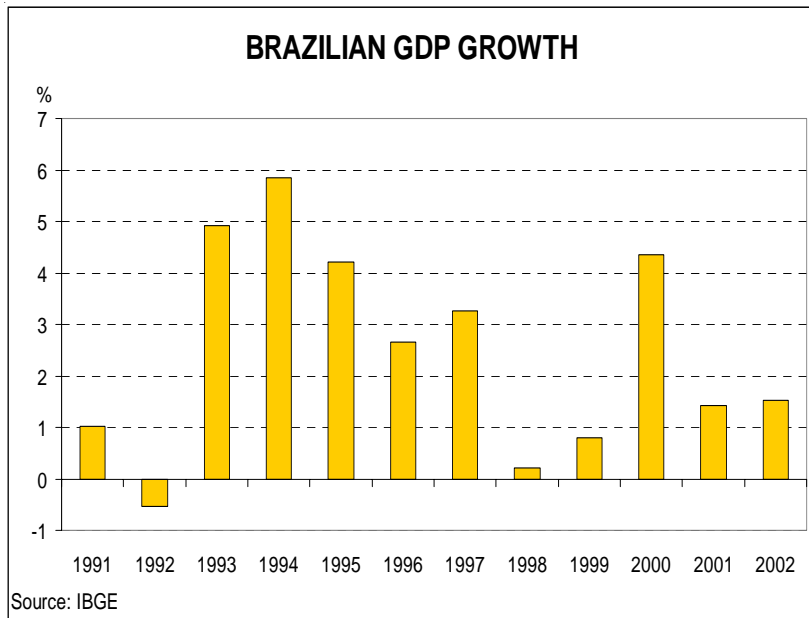
## BRAZIL

### Economy Watch

During 2002, Brazilian GDP grew by 1.52 percent compared to 2001, shown in the following page. During 2001 growth was around 1.42 percent. Fourth quarter numbers show GDP growth at 0.72 percent compared to Q3 2002. Unemployment rates in January reached 11.2 percent compared to December's 10.6 percent growth level.

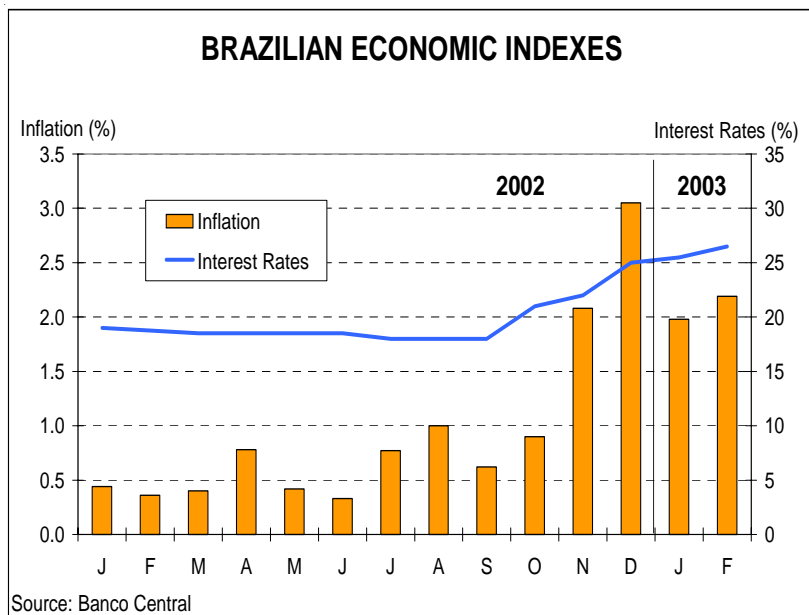
Agricultural products grew by 5.79 percent, due to better prices for commodities in international markets. Industrial output also grew some 1.52 percent pushed by export-oriented segments. Services showed 1.49 percent growth in 2002 compared to 2001.

As seen in the second graph below, the economy has not shown strong signs of recovery in early 2003. Inflationary pressures began to create concern among monetary policy makers. Inflation has been most visible in the transportation sector, as higher oil prices have been passed along to consumers.



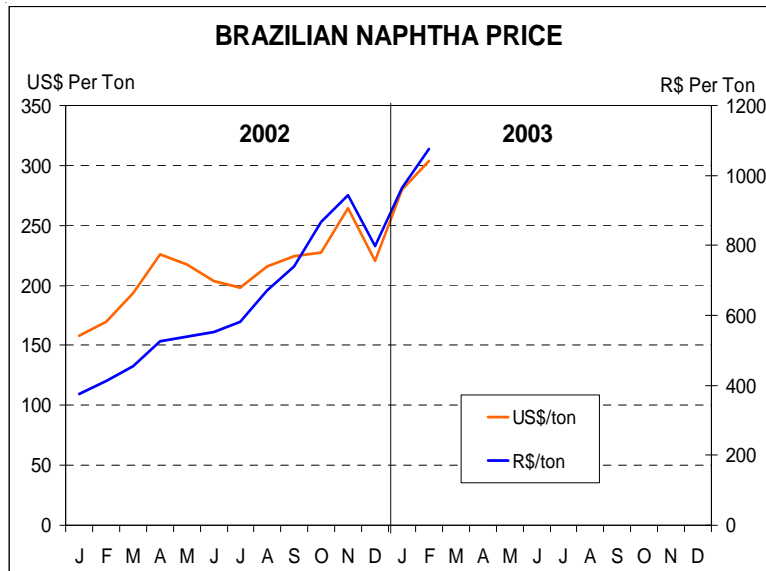
The Central Bank of Brazil increased interest rate by one percent, to a new level of 26.5 percent per year. This is a four year high and the second interest rate increase for 2003. Analysts expect consumers to react to more expensive credit and start a declining trend in demand. However, oil prices are the main reason for inflation, as currency stabilizes.

We believe that current inflation in Brazil is not demand driven. Higher interest rates are likely to slow down economic activity even more. Expectations are that interest rates will remain high until the end of first half of the year and then start a slow decline.

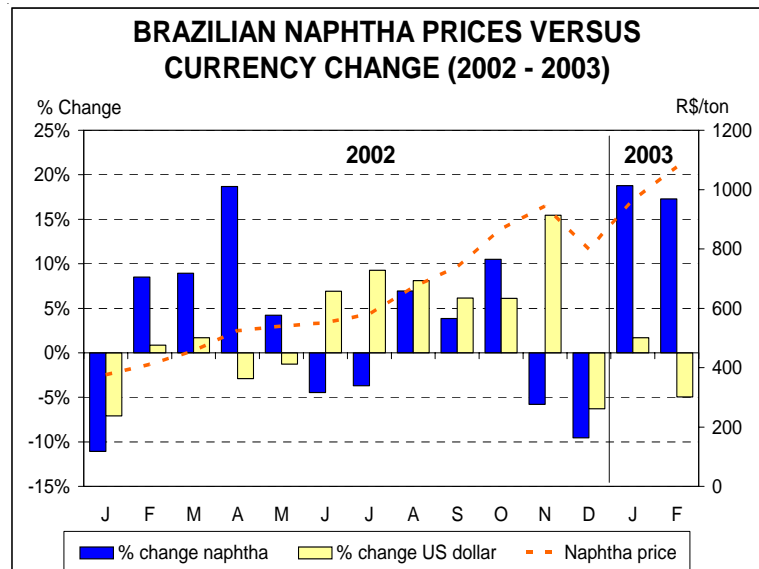


# FEEDSTOCK

During February, Petrobras increased naphtha prices for the second consecutive month. Average price was R\$ 1,065/ton, 11 percent higher than January, following international trend, which was 17 percent higher. Local Brazilian currency decreased by 5 percent since its brief recovery in the month of January. This can be seen in the graph below.



We expect prices in March to increase once again in align with international market prices. Naphtha prices soared to US\$ 330 per ton, in February. Currency has been slightly weaker adding to price increase pressures. Naphtha price increased by 48 percent when the devaluation impact is added to international price increases. This is seen in the graph below.



We expect a price of R\$ 1,180/ton for Petrobras naphtha in the month of March. The State owned company, Petrobras, is having a tough time passing on price increases on a monthly basis to its clients in Brazil. Petrochemical producers are demanding a revision in Petrobras' price policies in order to consider downstream cost structure and cash margins.

# OLEFINS

Braskem reduced its operating rates to 70 percent of installed capacity during the month of February. Supply of olefins and aromatics to consuming companies was reduced but clients were not significantly affected since demand for derivatives was also lower. Copesul, the petrochemical complex in the South of Brazil, showed relatively high production rates in February as they were able to increase exports. Basic petrochemical producers, as well as derivatives producers, in Southern Brazil were able to export a significant portion of their production keeping production rates at attractive levels. We anticipate a small recovery in thermoplastic demand during March, hence, olefins may also increase production rates. A qualitative analysis of the Brazilian petrochemical market is shown in the table below.

<b>PETROCHEMICAL MARKET WATCH</b>	
<b>Qualitative Analysis BRAZIL</b>	
<b>Mar-03</b>	<b>Remarks</b>
<b>Production</b>	Braskem olefins unit at low operating rate
<b>Domestic Prices</b>	Difficult to pass on increases to Convertors
<b>Feedstock Prices</b>	Higher in US dollars and in local currency
<b>Margins</b>	Low due to increased naphtha price
<b>Production Capacity</b>	New capacity at Polibrasil's site
<b>Inventory levels</b>	Increasing at producers sites
<b>Demand</b>	Weak

In our last issue, QuiMax expected a significant price increase for ethylene and propylene in Brazil. This price increase materialized. Ethylene and propylene increased by 13 percent to reach R\$ 1,925 per ton, and R\$ 1,738 per ton respectively. However, prices in US currency increased by only 10 percent to US\$ 543/ton. Following naphtha trends, olefins prices are expected to keep increasing through April. This is shown in the following table.

<b>FEEDSTOCK AND MONOMER PRICES - 2003</b>				
<b>Contract (US\$/Ton)</b>				
<b>Brazil</b>	<b>Feedstock</b>	<b>Monomers</b>		
<b>2003</b>	<b>Naphtha</b>	<b>Ethylene</b>	<b>Propylene</b>	<b>Benzene</b>
<b>January</b>	277	494	455	456
<b>February</b>	304	543	490	480
<b>March</b>				
<b>April</b>				
<b>May</b>				
<b>June</b>				
<b>July</b>				
<b>August</b>				
<b>September</b>				
<b>October</b>				
<b>November</b>				
<b>December</b>				

## Propylene

Braskem is the only propylene producer with surplus capacity. However, most of its surplus production is sent to Southern Brazil by ship for PP production. Braskem also sells part of the propylene needed to Polibrasil's PP unit in Duque de Caxias (RJ). Dow's Propylene Oxide plant in Camacari buys 50 thousand tons per year from Braskem and from nearby refineries. Brazilian surplus propylene capacity is around 80,000 tons per year. Exports are expected to be around 50,000 tons, due to lower operational rates at Braskem's unit and maintenance outage planned for second half 2003. A supply/demand balance for Brazilian propylene is presented in the table to the right.

<b>BRAZIL PROPYLENE SUPPLY / DEMAND BALANCE</b>			
<b>(000 MT/YEAR)</b>	<b>Site</b>	<b>2002 <sup>(1)</sup></b>	<b>2003</b>
<b>Nameplate Capacity</b>		<b>1646</b>	<b>1791</b>
<b>Petroquimica Uniao</b>	<b>Santo Andre, SP</b>	225	225
<b>Braskem</b>	<b>Camacari, BA</b>	570	570
<b>Copesul</b>	<b>Triunfo, RS</b>	581	581
<b>Petrobras</b>	<b>REFINERIES</b>	270	415
<b>Operating Rate (%)</b>		<b>83%</b>	<b>83%</b>
Production		1,360	1,490
Imports		3	7
<b>Total Supply</b>		<b>1,363</b>	<b>1,497</b>
<b>Domestic Demand</b>		<b>1,276</b>	<b>1,447</b>
Polypropilene		918	1,071
Acrylonitrile		87	89
Propylene Oxide		127	136
Cumene		65	67
Others (2)		80	84
Exports		56	50
<b>Total Demand</b>		<b>1,332</b>	<b>1,497</b>
<b>Net Inventory</b>		<b>31</b>	<b>0</b>
Remarks: (1) - Estimated (2) - Include Butanol, Hexanol, EPDM and Perchloroethylene)			

## AROMATICS

Brazilian aromatics exports have been pushed by favorable international prices. *Benzene* international prices rose during February. Benzene prices in Brazil are expected to increase some 27 percent in March. During the month of February an 8 percent increase in prices was reported, compared to January. Benzene prices in Brazil are around R\$ 1,700/ton. Higher benzene and ethylene prices will impact Brazilian styrene and polystyrene markets in Brazil.

## Styrene/Polystyrene

Videolar, the newest PS producer in Brazil, is said to be producing at low rates, if at all. This non-integrated PS polystyrene producer, located in land-locked Manaus Brazil, will continue to struggle because of imported styrene prices.

Brazilian *butadiene* supply has been reduced due to operational problems at PQU's unit in February. Petroflex SBR unit was scheduled for maintenance outage in February. During start-up of the unit, POU had low inventories and was forced to import butadiene. This unit continues to present problems and it is not certain when it will be fully back.

*Regarding oxygenates*, MTBE has been sold at US\$ 500 per ton. Brazilian MTBE production capacity is 518,000 tons per year. MTBE exports are mainly sourced from Petrobras, Copesul and Braskem.

## THERMOPLASTIC RESINS

Thermoplastic markets in Brazil in February showed little change from January. Operational levels at producer's plants were slightly lower than expected due to weaker than anticipated demand while higher feedstock prices continue to squeeze margins at producer's sites. Imports of resins in Brazil were lower during February. Currency devaluation and operational problems at Dow's Bahia Blanca-Argentina- swing unit were among the reasons for imports to decline in February. During March, we expect increased import volumes to enter Brazilian local markets, primarily from Argentina.

Resin prices increased in February in accordance to announcements made in January. Many converters anticipated February price increases and purchased more than required in order to avoid paying higher prices.

Due to high volatility in current resin prices, QuiMax prices cover a wider than usual price range. The low and high ends are now separated by a greater delta. We expect this wide range to continue during the first half of 2003.

Polyethylenes increased 10 to 15 percent while polypropylene increased by 15 to 20 percent compared to January prices. Additional price increases are expected for polypropylene. Price increases are mainly cost driven. PP homopolymer was sold in February at an average price of US\$1,000 per ton. Polyethylenes reached US\$ 950 per ton. Polystyrene and PVC prices increased by 10 and 5 percent respectively. PVC prices have been slightly more stable. PET prices increased by 5 percent in US\$ currency and 8 percent in local currency. This can be seen in the table to the right.

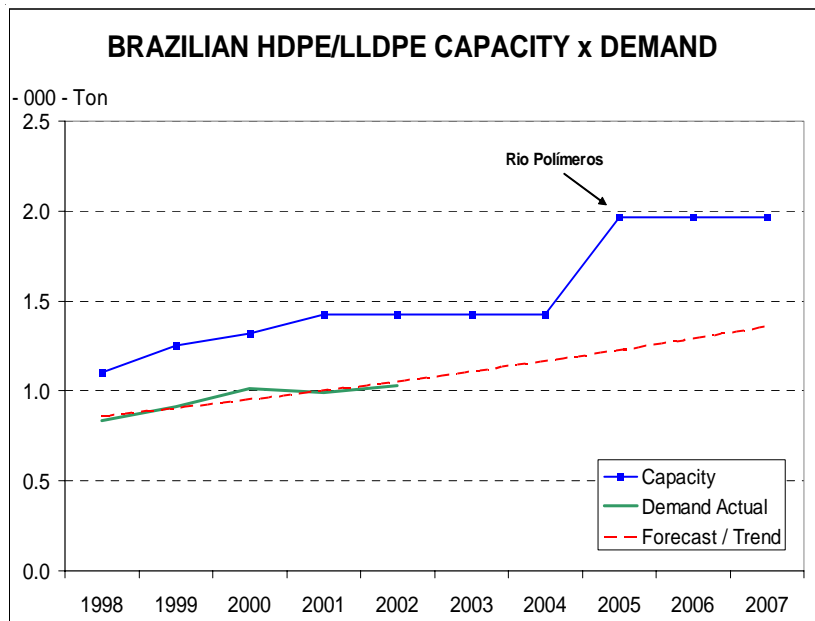
<b>BRAZIL POLYMER PRICES IN 2003</b>							
<b>Polymers Prices</b>		<b>R\$/ton</b>			<b>US\$/ton</b>		
		<b>Jan-03</b>	<b>Feb-03</b>	<b>Change</b>	<b>Jan-03</b>	<b>Feb-03</b>	<b>Change</b>
<b>Low Density PE</b>	<b>GP, Film</b>	2,990	3,349	12%	898	920	2%
<b>Linear Low Density PE</b>	<b>Butene, Film</b>	2,910	3,259	12%	863	946	10%
<b>High Density PE</b>	<b>Film</b>	3,025	3,328	10%	877	950	8%
<b>High Density PE</b>	<b>Blow</b>	3,050	3,355	10%	920	975	6%
<b>Polypropylene</b>	<b>Injection</b>	3,070	3,531	15%	902	1021	13%
<b>Polypropylene</b>	<b>Blow</b>	2,890	3,324	15%	861	982	14%
<b>Polystyrene</b>	<b>GP</b>	3,200	3,520	10%	964	1020	6%
<b>Polystyrene</b>	<b>HI</b>	3,300	3,630	10%	988	1038	5%
<b>PVC</b>	<b>Pipe</b>	2,350	2,468	5%	703	719	2%
<b>PET</b>	<b>Bottle</b>	3,950	4,266	8%	1140	1200	5%

For March, we anticipated another round of price increases. Resin producers have announced 10 to 15 percent price increases for polyethylenes, 20 percent for polypropylene and 10 percent for polystyrene and PVC. This upward trend in prices may continue through April. We expect continued price increases to gradually have a negative impact on resin demand. Substitution for less expensive products may occur if prices continue to raise at this rate. During 2002, the newly appointed Administration announced plans to feed millions in Brazil and plastic packaging demand was expected to grow at high rates. However, high prices may trigger substitution of paper for packaging rather than plastic resulting in a loss of plastic market share.

QuiMax prepared a forecast for 2003 thermoplastics demand in Brazil, considering historical growth and main markets trends. The table to the right presents our estimates, predicting a 5.4 percent growth rates for resins market. This growth considers a surprise-free scenario. Following QuiMax issues, will continue to monitor changes in the markets and update these estimates.

<b>BRAZILIAN DOMESTIC DEMAND - 2003 FORECAST</b>			
<b>Polymers</b>	<b>Domestic Demand (000 Ton)</b>		<b>% Change 03 / 02</b>
	<b>2002</b>	<b>2003</b>	
<b>LDPE</b>	545.5	559.7	<b>2.6%</b>
<b>LLDPE</b>	342.3	366.3	<b>7.0%</b>
<b>HDPE</b>	696.4	725.0	<b>4.1%</b>
<b>PP</b>	928.2	1,001.5	<b>7.9%</b>
<b>PS</b>	298.4	306.2	<b>2.6%</b>
<b>PVC</b>	691.4	726.7	<b>5.1%</b>
<b>PET</b>	469.9	503.3	<b>7.1%</b>
<b>TOTAL</b>	<b>3,972.1</b>	<b>4,188.5</b>	<b>5.4%</b>

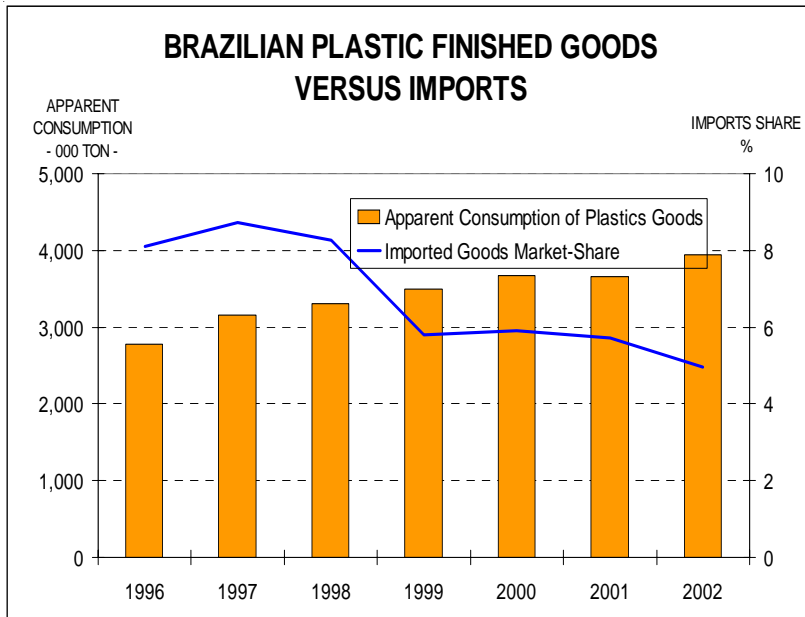
The chart to the right shows the long term supply/demand balance for LLDPE and HDPE. Rio Polimeros new unit start-up is expected for 2005. Production capacity in Brazil for LLDPE and HDPE is 1.4 million tons per year and will increase to 1.96 million tons when Rio Polimeros starts commercial operation. Considering an average growth rate of 7.0 and 4.7 percent for LLDPE and HDPE, respectively, demand in 2005 is expected to reach 1.3 million tons. Current excess capacity is 28 percent and is expected to reach 39 percent in 2005.



## CONVERTORS

As anticipated by QuiMax, convertors struggled to pass on portions of their price increases from raw materials to end-users. Margins are reported to be at record low levels. Resin demand in Brazil is not strong. Despite the fact that March has been traditionally a good demand month for convertors, no quick recovery in demand is anticipated for March.

Low margins will keep operational level low and investment levels in new equipment and machinery also low.



Due to higher currency exchange values, local convertors have substituted imports of plastics goods for local produced goods. As seen in the chart to the left, imports have gradually lost market-share in the last 5 years. Local stake has fallen from 8.7 percent in 1997 to 5 percent in 2002. During these years, apparent consumption of plastics finished goods grew at 4.4 percent yearly rate. In 2002 the result was 7.5 percent higher than 2001, closing the year at 3.9 million tons.

## New Projects

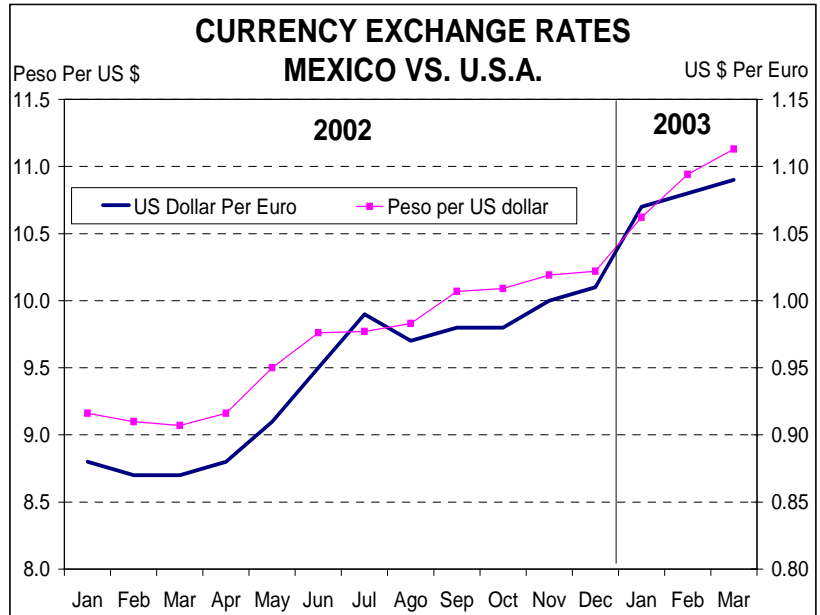
Rio Polymeros will start pre-marketing HDPE and LLDPE from Braskem in March. The product will be sourced from NorthEastern Brazil. Braskem's unit at Bahia shares the same technology as Rio Polimeros.

# MEXICO - NEW ADDITION TO THE REPORT

Quimax will provide in-depth market information on Mexico. During Q1 2003, Quimax will re-structure the monthly report to include more data and market analysis relevant to Mexico and Brazil. We welcome your comments and suggestions.

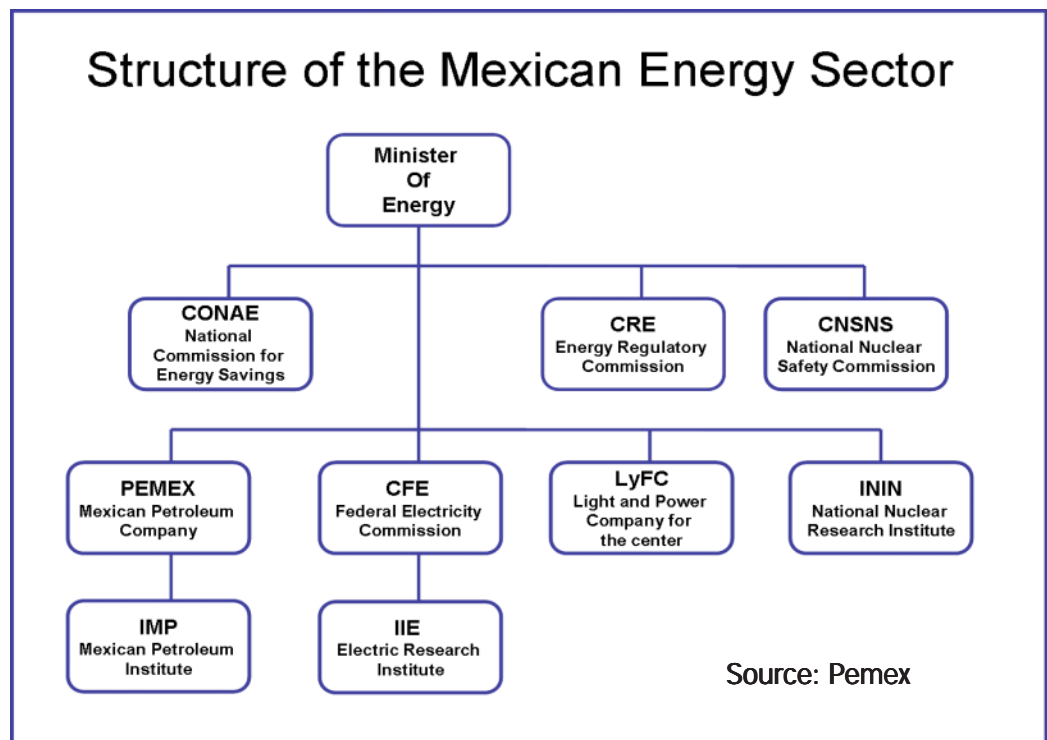
## Economy

The financial community in Mexico is estimating GDP growth for 2003 at around 2.8 percent compared to 2002. The outlook is that first half of 2003 will show little growth but a significant recovery is expected for the second half of 2003. The Mexican economy is highly dependent on US economic growth. A graph is included to the right, comparing local currency value for the US dollar and the Mexican Peso. As expected, they both follow similar trends. Currently, both currencies have lost value to other currencies in the world. The Peso devalued significantly in the last 12 months while the US dollar has also lost value when compared to the Euro.



## Energy

In Mexico revenue rose 10 percent in January because of higher oil prices and improved tax collection, helping the country post a 9.7 billion-peso (\$872 million) surplus for the month of January. Mexico, the world's fourth-largest producer of crude, is exceeding its expectations for revenue this year. On the other hand, high energy prices have had a negative impact on petrochemical production costs. We expect to see reduced operating rates at Pemex's production facilities if natural gas continues at US \$9 per MMBtu or higher. In Mexico, Pemex is the sole producer of basic



petrochemicals to supply local industry with raw materials for derivatives production. Pemex Petroquimica is the petrochemical division for Pemex. However, The Ministry of Energy -Secretaria de Energia- monitors Petróleos Mexicanos' activities and the Secretary of Energy acts as the chairman of the board of directors of Petróleos Mexicanos. We expect to see intense negotiations between The Ministry of Energy and Pemex in the coming months. The chart on the preceding page shows how the Ministry of Energy is structured in Mexico.

## OLEFINS

Current feedstock prices have drastically increased production costs in North America. Natural gas prices at US\$ 9/MMBtu or higher make production costs for ethylene extremely high and margins almost non-existent for US Gulf Coast producers. We expect a similar situation will affect Mexican producers. Natural gas prices and ethane prices in Mexico are closely linked to Southern Texas prices and ethane is the feedstock of choice in Mexico since there is no flexibility in the system to crack heavier feedstock.

The following table shows ethylene capacities in Mexico and estimated production loss due to planned maintenance work. Mexico's ethylene nameplate capacity for 2003 is expected to reach approximately 1.38

ETHYLENE QUARTERLY OPERATING CAPACITY - 2003												
MEXICO (000 tons)					Quarterly Operating Schedule							
					2003	Days Lost				Production Lost		
Company	City	State	Proc.	Ann. Cap.	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Pemex	Cangrejera(1,a)	Vz	ethane	600	20	10			33.3	16.7	0.0	0.0
Pemex	Morelos (1)	Vz	ethane	600	10	5			16.7	8.3	0.0	0.0
Pemex	Pajaritos (3)	Vz	ethane	182					0.0	0.0	0.0	0.0
Pemex*	Poza Rica(2)	Vz	ethane	-182					0.0	0.0	0.0	0.0
<b>Total</b>				<b>1382</b>	<b>30</b>	<b>15</b>	<b>0</b>	<b>0</b>	<b>50.0</b>	<b>25.0</b>	<b>0.0</b>	<b>0.0</b>
<b>Remarks:</b> (1) Maintenance and 100,000 ton per year Debottlenecking by end of 2002-Cangrejera (a)March 2003 (2) Reduced Capacity due to limited ethane availability. HDPE unit at this site down since April 02. (3) Pajaritos unit is small -with high production cost- hence limited production. Quimax Estimates Vz=Veracruz High production cost may impact operating rates in Mexico												

million tons per year. Capacity at Poza Rica (Escolin) is 182,000 ton per year; however, production is negligible due to ethane limitations. Pemex's plants at Cangrejera, Pajaritos and Morelos are the main suppliers of ethylene to local industry. We anticipate 60,000 tons of ethylene will not be produced during Q1/Q2 due to planned maintenance shutdown and additional work for upcoming debottlenecking at Cangrejera. We also expect reduced production rates at Pajaritos, due to high production cost within the Pemex system.

The Mexican petrochemical industry imports much of its monomer requirements and raw materials for derivative production. However, new capacity additions have been announced. Current capacity at Pemex's production sites are presented in the table to the right.

SELECTED CAPACITIES IN PEMEX-MEXICO		
2002 (000 ton/yr)	Capacity	Location
<b>LDPE</b>	55	Escolin
	80	Cangrejera
	80	Cangrejera
	80	Cangrejera
<b>HDPE</b>	50	Morelos
	50	Morelos
	50	Morelos
<b>Styrene</b>	150	Cangrejera
<b>VCM</b>	200	Pajaritos
	70	Pajaritos
<b>Ethylene</b>	600	Morelos
	500	Cangrejera
	182	Pajaritos
<b>Benzene</b>	270	Cangrejera

Source: Pemex Web site

Pemex is currently working on a 100,000 ton per year ethylene capacity increase at Cangrejera. Planned outages at Cangrejera is part of the expansion program. During July 2002, a second HDPE line was added at Morelos site. Capacity to produce blow molding HDPE has been increased by 50,000 tons per year. There is no PP production at Morelos at this time.

The legal process to award bids for the construction of Pemex's new LLDPE/HDPE swing unit was postponed once again. Apparently, there are significant discrepancies in the paper work required by companies to enter the bidding process in Mexico. However, this is considered to be a slight delay in the process and Pemex expects this situation be solved soon. Once the project is awarded, they expect the plant to be completed in a period of 900 days. This new plant will have a capacity to produce 300,000 tons of LLDPE/HDPE to be completed by end 2005 at Morelos.

## THERMOPLASTIC RESINS

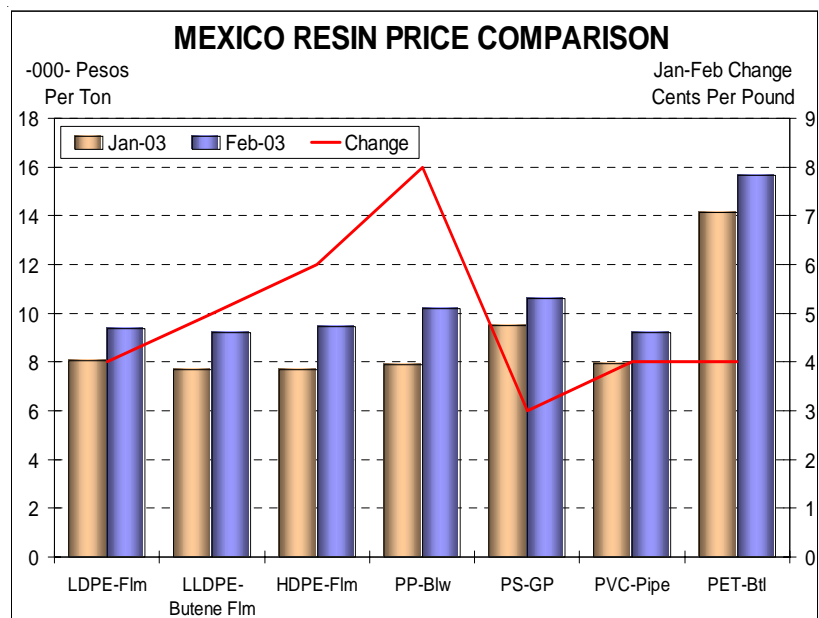
The next table shows selected resins price changes in Mexico during Jan-Feb time period. During Q1 2003, price increases for most resins in Mexico has taken front seat in all major negotiations. These price increases are across the board and are mainly a result of higher production cost. Cost related price increases are difficult to implement if demand is not strong and product is not short. Higher resin prices in the US Gulf Coast

MEXICO POLYMER PRICES 2003						
Changes in Q1 2003		Jan-03	Jan-03	Feb-03	Feb-03	Change
Lower End of Price Range		Peso/Ton	Cts/lb	Peso/Ton	Cts/lb	(Cts/lb)
Low Density PE	GP, Film	8050	34	9351	38	4
Linear Low Density PE	Butene, Film	7670	32	9202	37	5
High Density PE	Film	7670	32	9450	38	6
High Density PE	Blow	7900	33	9177	37	4
Polypropylene	Injection	8150	34	9948	40	6
Polypropylene	Blow	7900	33	10171	41	8
Polystyrene	GP	9500	40	10594	43	3
Polystyrene	HI	9800	41	10918	44	3
PVC-DAF	Pipe	7920	33	8704	35	2
PET	Bottle	14144	59	15668	63	4

are having a tightening effect on Mexican converters. It seems like converters are not being offered as much resin from Gulf Coast producers at this time. The graph to the right illustrates price changes in the Mexican resin industry mentioned in the previous table.

A weak Mexican Peso and significantly higher international market prices for resins do not make imports an attractive option for converters in Mexico. As stated in our last report, in Mexico, polyolefins demand is much higher than production, hence, most demand is supplied with imported product.

Although there is LDPE and HDPE production, there is no LLDPE production

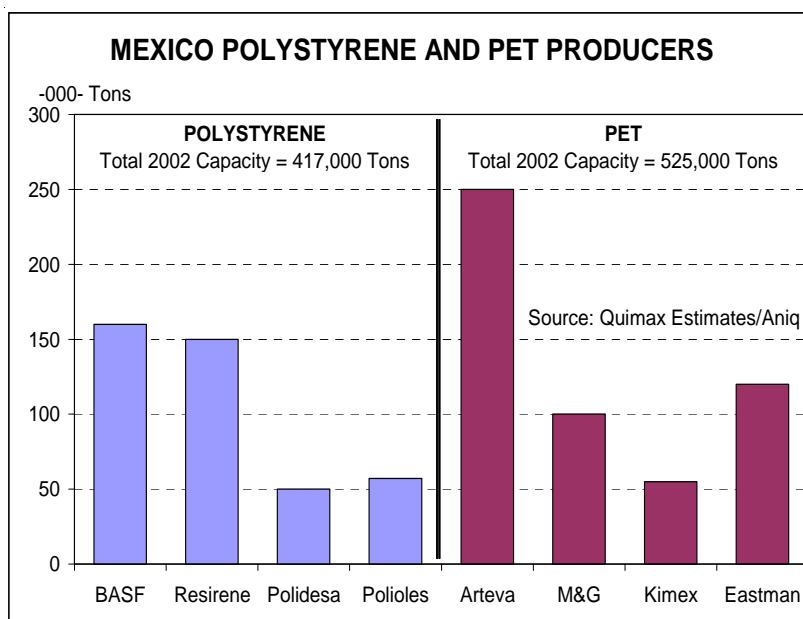


in Mexico. Supply by local producers has been steady in February. All Pemex's polyolefins units were producing at capacity in February 2003. PVC, PS and PET capacities seem to suffice local demand with some export capacity. On the monomer side, Mexico shows a deficit and most resin producers purchase monomer in the merchant market. Pemex supplies part of VCM and styrene requirements for local PVC and PS producers. PS producers find it difficult to produce PS with current styrene prices due to low margins.

Is demand for resin in Mexico real or is it speculative in anticipation of higher prices? We found that resin demand in Mexico is similar to that seen in 2002, however, supply although enough to meet market needs is not as plentiful as seen in previous years. In the past, Mexico was able to satisfy its demand with competitively produced resins from the US Gulf Coast. Current production costs do not make exports an attractive option. Hence, a shortage of imported resin from US Gulf Coast may develop in coming months. Though there is enough production capacity in the US Gulf Coast to supply Mexican resin deficit, at this time production costs do not justify high production rates in the US where margins are negligible.

Mexico was able to absorb most price increases announced for February 2003. The table on the previous page shows changes in the price for resins within Mexico. The price increase in Mexican resin is expressed in peso, in cents per pound and the last column indicates how many cents per pound was accepted by the markets. In the case of polyolefins, most producers announced significant price increases. However, demand in Mexico is not strong enough to justify total price increases. Expectations of additional price increases have increased pre-buying at convertor's level, thereby, inflating demand.

The chart to the right shows installed capacity by producers of PS and PET in Mexico. These resin producers are not integrated upstream. In the case of PS, producers purchase part of their demand from Pemex and a significant volume comes from imports. In the case of PET, most raw materials are imported. The petrochemical industry in Mexico is very fragmented. Little integration exists today within the production chain.



## CONVERTORS

Convertors in Mexico are finding it tough to accept price increases but they have little choice. Imports from the US Gulf Coast are not as abundant as in 2001-2002 and prices are not attractive. Convertors are approaching other markets. Product from the Far East, Malaysia for example, is expected to arrive in Mexico early March. Participation of US-based producers in the Mexican market has been significantly reduced in the past month. However, local currency devaluation makes imported product much more expensive in Pesos and very risky to convertors. Constant fluctuations in the Mexican Peso, make it impossible to maintain prices stable from purchasing to delivery. Hence, convertors will prefer to pay in local currency and not worry about international exchange rates. Convertors in Mexico are highly fragmented in nature and have not developed a strong purchasing power of resins. Tough negotiations are expected for March when similar price increases have been announced. Convertors are going to fight to survive under current market conditions.

# COUNTRY NEWS

## Argentina

As expected, apparent consumption for resins dropped 16.2 percent during 2002, compared to 2001. Production, however, dropped only 3.3 percent. Imports shrunk by 41 percent while exports also dropped 6.8 percent.

In the case of LLDPE and PET, demand declined by only 7.1 percent and 8.7 percent respectively. End use markets for these resins continued to grow despite economic chaos in 2002.

<b>ARGENTINA APPARENT CONSUMPTION - 2002</b>			
<b>Polymers</b>	<b>Apparent Consumption (000 Ton)</b>		<b>% Change 02 / 01</b>
	<b>2001</b>	<b>2002</b>	
<b>LDPE</b>	149.0	124.0	<b>-16.8%</b>
<b>LLDPE</b>	98.0	91.0	<b>-7.1%</b>
<b>HDPE</b>	195.0	155.0	<b>-20.5%</b>
<b>PP</b>	177.0	145.0	<b>-18.1%</b>
<b>PS</b>	59.0	50.0	<b>-15.3%</b>
<b>PVC</b>	99.0	75.0	<b>-24.2%</b>
<b>PET</b>	149.0	136.0	<b>-8.7%</b>
<b>TOTAL</b>	<b>926.0</b>	<b>776.0</b>	<b>-16.2%</b>

On the other hand, PVC and HDPE demand dropped significantly by 24.2 percent and 20 percent respectively. Exports increased and imports decreased for many resins during 2002. This is shown in the table above.

## Venezuela

Not much has changed since our last report. Production at El Tablazo has not resumed. The only unit currently operating at 50% capacity is the chlor-alkali membrane cells. Chlorine production for water treatment continues to be available. Caustic soda is slowly becoming available for domestic and export markets. However, no ethane/propane feed is available to the crackers and all derivative production is down. We expect to see little production activity at El Tablazo during 2003. The Jose site might begin production of its fertilizer and methanol/MTBE units by end of Q2 2003.

# COMPANY PROFILES

The tables that follow will include information on petrochemical companies in the region.

Regarding companies in Brazil, we have included Copesul.

The profile table on Copesul identifies products sold by the 1.4 billion US\$ dollar per year company situated in Southern Brazil. Copesul offers business opportunities in aromatics since they export primarily benzene.

<b>COMPANY PROFILE</b>		
<b>COPEsul-BRAZIL</b>		
<b>Mar-03</b>		
<b>OWNERSHIP (Million US Dollars-MUSDlls)</b>		
Ipiranga Petroquímica S.A.		
Braskem S.A. e Controladores		
<b>TOTAL ANNUAL SALES (MUSDlls)</b>	US\$ 1,300	
<b>PRODUCTS</b>		
Basic Petrochemicals		
<b>PLANTS</b>	<b>CAPACITY</b>	<b>LOCATION</b>
	<b>(000 tons/yr)</b>	
Ethylene	1,135	Triunfo - RS
Propylene	581	Triunfo - RS
Butadiene	105	Triunfo - RS
Benzene	265	Triunfo - RS
Toluene	91	Triunfo - RS
Xylene	66	Triunfo - RS
Solvents	76	Triunfo - RS
Gasoline	1,135	Triunfo - RS
MTBE	115	Triunfo - RS
<b>CONTACTS</b>		
<b>Export Manager</b>	Mr. Edison Salvadoretti	
<b>Commercial Director</b>	Mr. Bruno Albuquerque Piovesan	
<b>CEO</b>	Mr. Luiz Fernando Cirne Lima	
<b>Address:</b>	BR 386 Rod Tabai Canoas Km 419	
<a href="http://www.copesul.com.br">www.copesul.com.br</a>	III Pólo Petroquímico do Sul	
	Triunfo - RS / Brasil	

In the case of Mexico, we included a company profile table with information relating to Resirene. Resirene is a PS producer in Mexico and it is part of Girsra. Girsra has many other chemical companies operating under its umbrella, among others: Dynasol, Fenoquimica, Industrias Negromex (INSA), and Resirene. Girsra operates under Desc's Chemical Sector management (formerly GIRSA, which merged into Desc during the last quarter of 2001) and is responsible for the chemical business. Desc is one of the largest business groups in Mexico, concentrating activities in five business lines: autoparts, petrochemicals, consumption, food and real estate. Girsra has 12 product lines in 20 plants located in 10 states throughout Mexico and Spain. Resirene is part of Girsra with 150,000 tons per year PS capacity in two locations. Girsra is a partner in the carbon black business with Cabot Corporation and in the synthetic rubber business with Repsol Chemicals of Spain. Desc's Chemical Sector is the only producer of synthetic rubber, methyl methacrylate and carbon black in Mexico. As a group, DESC has more than 100 companies and its sales exceed 2.1 billion US\$ dollars in 2001.

<b>COMPANY PROFILE MEXICO</b>	
<b>RESIRENE-PART OF GIRSA GROUP</b>	
<b>Mar-03</b>	
<b>OWNERSHIP (Million US Dollars-MUSDIs)</b>	
Girsra Net sales was 700 million US\$ during 2001.	
Belongs to the DESC Group- with annual sales of over 2.1 Billion US Dollars.	
<b>Resirene Total Annual Sales (US Dollars)</b>	
82 Million US dollars is part of DESC group via its Petrochemical Division GIRSA.	
Girsra is the petrochemical sector of DESC with production of Synthetic Rubber, Polystyrene, Carbon Black, Phenol and Emulsions. Resirene accounts for PS production	
<b>PRODUCTS</b>	
Glass PS	
HIPS	
Transparent Styrene Co-polymers	
High Impact Extruded Poystyrene (Resilar)	
<b>PLANT CAPACITY</b>	<b>LOCATION</b>
<b>75,000 ton/yr</b>	Xicohtzinco, Tlaxcala
<b>75,000 ton/yr</b>	Coatzacoalcos
<b>BUSINESS OPPORTUNITIES:</b>	
Disposable Containers	Toys
Electronic Appliances	Refrigeration
Not integrated to Styrene. Purchase all styrene requirements.	
<b>CONTACTS</b>	
<b>Commercial Manager</b>	Mr. Miguel Angel Aguirre <a href="mailto:maguirre@mail.girsa.com.mx">maguirre@mail.girsa.com.mx</a>
<b>Director</b>	Mr. Cesar Ramos <a href="mailto:cramos@mail.girsa.com.mx">cramos@mail.girsa.com.mx</a>
<b>Main Offices:</b>	
Ciudad de México, Bosque de Ciruelos No. 180 Piso 6, Bosques de las Lomas.	
Mexico City , Mexico	
<b>Phone: 011-52-55-5723-2800</b>	

## Statistics and Tables

We have included statistical information in the following tables. We expect to continue to supply the industry with reliable and updated market information as it becomes available.

<b>BRAZILIAN RESIN PRICES - 2003</b>										
<b>Contract (US\$/Ton)</b>										
<b>2003</b>	<b>LDPE GP, Film</b>	<b>LLDPE Film</b>	<b>HDPE Film</b>	<b>HDPE Blow</b>	<b>PP Injection</b>	<b>PP Blow</b>	<b>PS GP</b>	<b>PS HI</b>	<b>PVC Pipe</b>	<b>PET Bottle</b>
<b>January</b>	898	863	877	920	902	861	964	988	703	1140
<b>February</b>	920	946	950	975	1021	982	1020	1038	719	1200
<b>March</b>										
<b>April</b>										
<b>May</b>										
<b>June</b>										
<b>July</b>										
<b>August</b>										
<b>September</b>										
<b>October</b>										
<b>November</b>										
<b>December</b>										

## EXPORT/IMPORT TABLES - BRAZIL

BRAZILIAN PETROCHEMICAL EXPORTS 2003							
000 Ton	Benzene	Ammonia	EDC	MEG	Caustic Soda	Toluene	Urea
2002	231	81	130	87	30	63	98
2003							
Jan	28	19	9	16	2	0	0
Feb							
Mar							
Apr							
May							
Jun							
Jul							
Aug							
Sep							
Oct							
Nov							
Dec							
<b>Total</b>	<b>28</b>	<b>19</b>	<b>9</b>	<b>16</b>	<b>2</b>	<b>0</b>	<b>0</b>

Source: MDCI

BRAZILIAN PETROCHEMICAL IMPORTS 2003									
000 Ton	Styrene	Ammonia	Acetone	Phenol	Methanol	VCM	Caustic Soda	Urea	Xylene
2002	88	268	23	26	261	60	412	1,103	113
2003									
Jan	5	31	2	0	20	4	35	59	12
Feb									
Mar									
Apr									
May									
Jun									
Jul									
Aug									
Sep									
Oct									
Nov									
Dec									
<b>Total</b>	<b>5</b>	<b>31</b>	<b>2</b>	<b>0</b>	<b>20</b>	<b>4</b>	<b>35</b>	<b>59</b>	<b>12</b>

Source: MDCI

<b>BRAZILIAN POLYMER EXPORTS 2003</b>							
<b>000 Ton</b>	<b>LDPE</b>	<b>LLDPE</b>	<b>HDPE</b>	<b>PP</b>	<b>PS (*)</b>	<b>PVC</b>	<b>PET</b>
<b>2002</b>	<b>138</b>	<b>76</b>	<b>222</b>	<b>63</b>	<b>54</b>	<b>58</b>	<b>57</b>
<b>2003</b>							
<b>Jan</b>	14	11	29	9	4	3	5
<b>Feb</b>							
<b>Mar</b>							
<b>Apr</b>							
<b>May</b>							
<b>Jun</b>							
<b>Jul</b>							
<b>Aug</b>							
<b>Sep</b>							
<b>Oct</b>							
<b>Nov</b>							
<b>Dec</b>							
<b>Total</b>	<b>14</b>	<b>11</b>	<b>29</b>	<b>9</b>	<b>4</b>	<b>3</b>	<b>5</b>
(*) - EPS included Source: MDCI							

<b>BRAZILIAN POLYMER IMPORTS 2003</b>							
<b>000 Ton</b>	<b>LDPE</b>	<b>LLDPE</b>	<b>HDPE</b>	<b>PP</b>	<b>PS (*)</b>	<b>PVC</b>	<b>PET</b>
<b>2002</b>	<b>46</b>	<b>101</b>	<b>109</b>	<b>81</b>	<b>48</b>	<b>142</b>	<b>149</b>
<b>2003</b>							
<b>Jan</b>	2	5	6	6	1	8	11
<b>Feb</b>							
<b>Mar</b>							
<b>Apr</b>							
<b>May</b>							
<b>Jun</b>							
<b>Jul</b>							
<b>Aug</b>							
<b>Sep</b>							
<b>Oct</b>							
<b>Nov</b>							
<b>Dec</b>							
<b>Total</b>	<b>2</b>	<b>5</b>	<b>6</b>	<b>6</b>	<b>1</b>	<b>8</b>	<b>11</b>
(*) - EPS included Source: MDCI							

# ORDER FORM

**Markets covered:** The Brazilian petrochemical industry will be our main focus at this time. We expect to gradually include information from other countries such as, Argentina, Chile, Colombia, Mexico and Venezuela

This report will be available to clients during the first week of each month as hard copies as well as electronic copies.

The annual fee (12 issues) can be paid in Real or US Dollars

US\$ 2,200. R\$ (Exchange rate of the day) through March 2003.  
After March 2003 the annual fee will be US\$2,500.

The QuiMax Report is published by:



Tear along the dotted line

Company: \_\_\_\_\_

Name: \_\_\_\_\_

Address: \_\_\_\_\_

\_\_\_\_\_

Phone: \_\_\_\_\_ Fax: \_\_\_\_\_

E-Mail \_\_\_\_\_

You will be contacted via e-mail for information on payment methods.  
US 2,200 in US dollars only through March 2003. After March 2003 the annual fee will be US\$2,500.  
For payment in Brazilian Currency, the exchange of the day of purchase will be used.  
Contact us at our web site at: [www.quimaxlatin.com](http://www.quimaxlatin.com)

**Intellichem, Inc**  
P.O. Box 14-4155,  
Coral Gables, FL 33114, USA  
Dr. Rina Quijada  
Phone: 305-461-5388  
Fax: 305-476-1314  
Email: [rquijada@intellichem.net](mailto:rquijada@intellichem.net)  
Web site: [www.intellichem.net](http://www.intellichem.net)

**Maxiquim, Ltda.**  
R. Furriel L. A. Vargas, 380/206 POA/RS-BR  
CEP: 90470-130—Fone/Fax: +55-51-3328-1078  
e-mail: [maxiquim@maxiquim.com.br](mailto:maxiquim@maxiquim.com.br)  
web: [www.maxiquim.com.br](http://www.maxiquim.com.br)