

Overview of the PU Business in South America

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ABSTRACT

Following extensive research into the Polyurethane industry, an overview of demand for polyurethane chemicals and products will be presented, with a focus on the South American markets. Main figures will be broken down in terms of major end-use products: rigid foams, flexible foams and CASE (coatings, adhesives, sealants and elastomers). The factors affecting demand and the trends for the next few years will also be explained.

INTRODUCTION

Starting with a brief review of the economic trends affecting the main countries of the region and their impact upon the PU business, this paper will cover the current demand for flexible foam, rigid foam, coatings, adhesives, sealants and elastomers (CASE). The data on CASE has been derived from our global multiclient study, published in May 2001. In conclusion, I shall make some comments on the future potential demand for polyurethane goods and chemicals across this region of the world.

The Asian crisis in 1997 and devaluation of the Real in 1999 has had a profound impact both on the Brazilian economy and the region as a whole. Argentina has suffered three economic downturns in the past three years and is currently suffering the highest unemployment rate, the country is suffering from the “ free market” economy. This has opened its markets to lower cost goods from India and China, resulting in the collapse of the country’s manufacturing base. Venezuela has suffered from severe flooding during 1999/2000 causing a major economic disruption. Therefore, market forecasting in the region is difficult, however some economic indicators can be used to track some PU products.

Brazil requires more large-scale chemical investment if it is to reduce its balance of trade. The country remains far from self sufficient in many major raw materials. Changes in GDP across the world have been found to correlate closely with the production of flexible PU foam. This is not too surprising since it is a general economic indicator of wealth, which in turn reflects ability to afford new vehicles and furniture. A new mattress is often one of the first “ luxury items that a family can purchase. Furniture is also amongst the first items replaced following a natural disaster. In 1999, Brazil alone manufactured over 1.4 million foam mattresses.

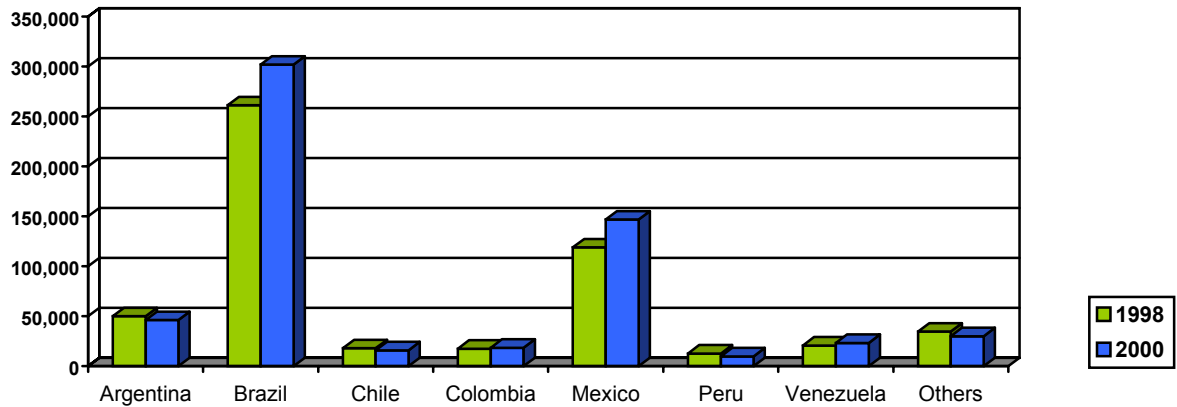
Although Brazil avoided an economic recession through the devaluation of the Real, its impact upon neighbouring economies has affected demand for PU products. Argentina is suffering from the introduction of “ free market” economics with cheap imports from India and China flooding many markets and forcing domestic manufacturers out of business. Chile and Colombia are also suffering a similar fate. Meanwhile, Mexico has experienced a flood of new investment from US and Asian manufacturers wanting to take advantage of the low labour costs and of access of the North American

This chart below the importance of the Brazilian market within Latin America, this is due in part to the relative strength of its automotive industry, with many of the major European OEMs producing in the country. Mexico, as discussed above produces the full range of PU products for both its domestic and export markets, and continues to exhibit growth, although the impact of the US economic slowdown remains to be seen. Argentina, the third largest consumer of

PU raw materials, is an important manufacturer of cold storage and refrigerators for its food industry. Production elsewhere in the region is primarily based upon demand for flexible slabstock and some rigid foam products.

TOTAL PU DEMAND IN LATIN AMERICA

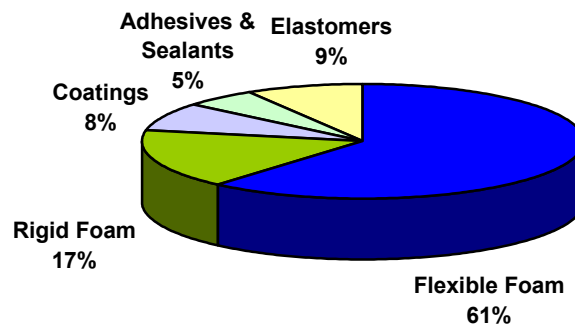
Total Demand for PU Raw Materials in Latin America by Country 1998-2000 (Tonnes)



Source: IAL Consultants

This paper will principally cover the demand for PU materials only, that is to say the demand for the isocyanates and polyols used in the production of PU goods in the region and so excludes the use of other materials such as additives, blowing agents, fillers etc. This provides more insight into the size of the current PU business than an analysis of the demand for finished products, which in the main will probably be imported from other parts of the world. Demand in 2000 for PU materials was an estimated 575,000 tonnes split between the main product types as shown. Flexible foam dominates the picture and this is true of all countries in the region. This is often the first polyurethane to be produced in newly developing markets and so this is fairly indicative of the stage of development. In a more mature market such as Western Europe, were all sectors of the business are well-established, flexible foam accounts for nearer 35%.

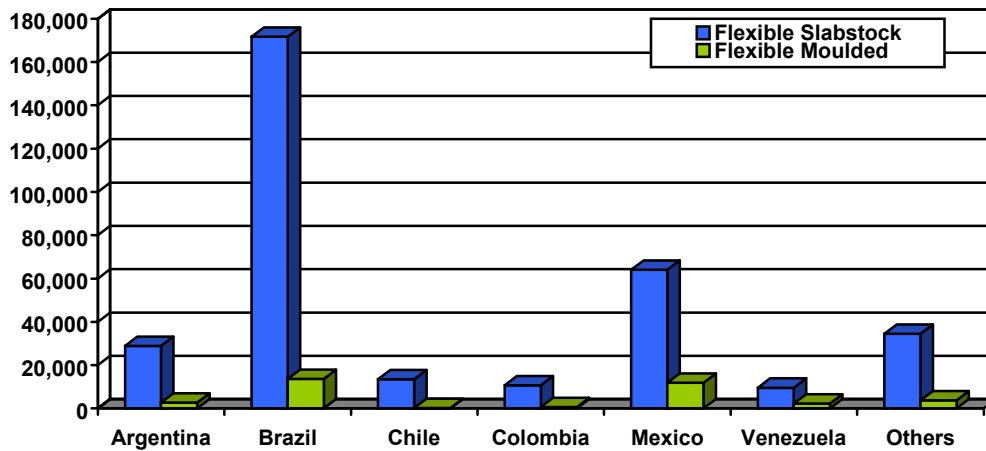
PU Demand by Major Product Type, 2000 (Tonnes)



Total Demand = 575,000 tonnes

Source: IAL Consultants

Demand for PU Materials in Flexible Slabstock in Latin America, 2000 (Tonnes)



Source: IAL Consultants

FLEXIBLE FOAM

Flexible foam dominates the picture and this is true of all countries in the region. This is often the first polyurethane to be produced in newly developing markets and so this is fairly indicative of the stage of development. In a more mature market such as Western Europe, where all sectors of the business are well-established, flexible foam accounts for nearer 35%.

Brazil dominates the production of flexible foam due largely to its significant automotive and furniture industries. The above graph shows the proportion of slabstock to moulded foam produced in the region in 2000. Moulded foam includes semi-rigid foams and integral skin foams largely used for automotive components. However, there has been a decline in automotive production in Brazil and Argentina in the past 2-3 years, so that they are back to 1996 levels, resulting in a decline in the production of auto components such as seats, seat sets, gear knobs, steering wheels and other PU components.

Flexible slabstock, also known as 'bunstock' accounts for around 58% of all PU raw materials consumed for flexible foam applications. Approximately 97% of all slabstock production uses polyether polyols. Although the use of polyester-based foam is small and the product is more expensive, carmakers are increasingly demanding its use for seat covers and headrests. Although the North American automakers use predominantly polyether-based foam for these applications, polyester slabstock is used in South America due to the influence of European manufacturers.

The furniture industry is the largest user of slabstock, accounting for over 80% of total slabstock production. Brazilian furniture production levels continue to increase due to growing domestic demand and strong export markets. Major furniture manufacturers from the US, Italy and Germany have invested in Brazil since it offers more flexible labour, lower production costs and excellent raw materials.

The moulded foam market is almost entirely dependent upon the automotive industry, since auto seating accounts for approximately 70% of production in the region, with Brazil manufacturing well over half of this. Smaller amounts of moulded foam are used for acoustic insulation in the automotive sector as carpet backing and in door panels. Even if auto production does increase in Brazil and Argentina, growth in the production of moulded foam

may not be significant due to demands for lower density, lighter weight seating materials from the automakers.

RIGID FOAM

Production of rigid foam products consumed around 105,000 tonnes of PU raw materials last year, with the main consumers being the large refrigerator manufacturers in Brazil and Mexico, with Argentina a distant third. The production of sandwich panels in the region is also small due to low demand from the construction industry, where more traditional materials are still preferred. The main demand for sandwich panels comes from the cold storage and refrigerated truck industries. Rigid spray foam products are growing in popularity due to their versatility and ease of use, although much of this demand is met by imports. A small but growing application for both spray foam and slabstock is in the creation of movie sets and specialist decoration in shopping malls.

The refrigeration industry accounts for over 50% of rigid foam production and whilst is still offers good growth potential across many markets, production declined during the period of 1995-97. Some of the major manufacturers including Electrolux and Multibras continue to report falling sales during 2000, resulting in consolidation of some manufacturing facilities. However, on the "positive side" the overall size of a domestic refrigerator is increasing, so that consumer patterns in Brazil and Mexico are following those of the US. Elsewhere in South America, units are typically smaller, averaging around 200- 250 litres. Another problem facing the refrigeration industry is the high level of cheap imports from China and Korea. Chile is currently investigating claims from its refrigerator manufacturers that Brazil and South Korea have been dumping white goods here. Korean manufactured goods account for some 65% of total refrigerator sales.

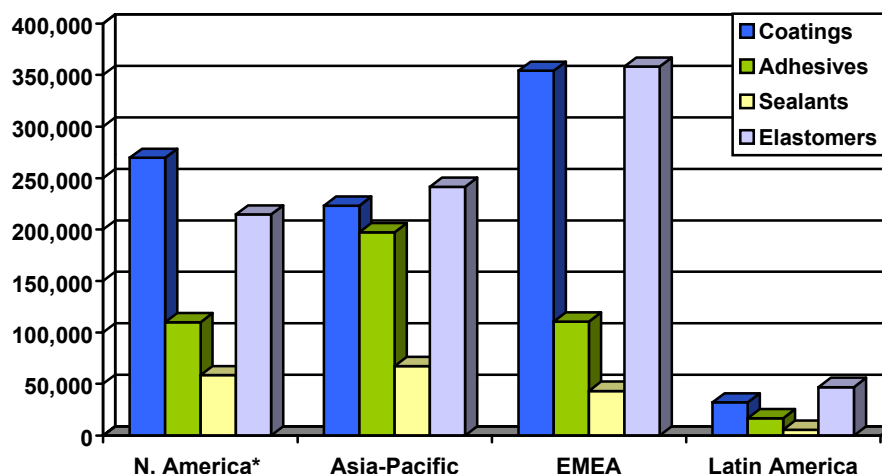
Consumption of rigid foam in the production of sandwich panels accounted for 30,000 tonnes of PU raw materials during 2000, with production dominated by Brazil and Mexico. This is hardly surprising since the cold storage and construction industries are more developed in these markets than elsewhere in the region. US and European panel manufacturers have also chosen to invest in these two countries due to their relative economic stability, access to raw materials and relatively high demand due to their large urban populations.

All of these factors have fuelled the demand for chilled and frozen foods, stimulating demand for panels for construction of agricultural storage, refrigerated trucks, cold storage facilities and food production plants. The use of PU panels in more conventional construction applications remains small and also faces competition from other lower cost insulation materials such as mineral fibre and polystyrene. In smaller markets such as Chile and Venezuela, more traditional methods are used in panel manufacture and it is largely done on a discontinuous basis.

CASE PRODUCTS

The smallest consumer of raw materials in the PU industry is the CASE sector. However, in many situations, it represents the most profitable part of the business. In global terms, the CASE sector in Latin America is very small, accounting for some 103, 000 tonnes of product compared to a total global production of 2.3 million tonnes. European production remains the highest, although production of these products in Asia Pacific is growing fast and is expected to overtake Europe by 2005, largely due to the high growth in demand for these products in many manufacturing applications including automotive and footwear.

Global Demand for PU Raw Materials in CASE Products by Region, 2000 (Tonnes)



Source: IAL Consultants

Production of PU CASE materials is dominated by elastomers, principally used for footwear soling materials and some automotive components, they account for 46% of production. Coatings account for 32% of raw material demand, whilst adhesives and sealants represent together 22%. The lower production levels of PU adhesives and sealants is due to the availability of lower cost alternatives, which are largely solvent-based, and also to the technical difficulties in manufacturing these high-performance PU products.

Again the dominance of Brazil and Mexico in the production of CASE products can be seen, with Argentina in third place. This pattern more or less mirrors the level of activity in the automotive sector where the majority of CASE products are used. Unlike parts of Europe, where auto refinish coatings are declining, in Latin America auto refinish products are important, reflecting the high levels of traffic congestion and accidents and hence vehicles requiring repair.

Coatings is the second largest market for CASE products in the region after elastomers. PU coatings are used for a wide range of applications, but as this chart demonstrates, most of the market is concentrated within a small number of sectors, namely automotive, architectural and wood and furniture. Just over a 45% of total PU coatings demand in the region is met by domestic production. This is largely due to Mexico and Brazil that together account for over 80% of total production in Latin America.

Automotive applications account for 22% of raw materials used for PU coatings, with around three-quarters of this used for auto refinishes. As a result of the economic situation over the last few years, many local paint makers cited 1999 as a 'disastrous year' for auto coatings in the region. Improvements in the economies of the regions and indeed in car production, which is forecast to continue recovering in Brazil during 2001 and 2002, should have a positive impact on this business.

Wood and furniture coatings also represent a sizeable market, again linked to the size of furniture output. However, the market is characterised by a large number of small coatings manufacturers, working on a small scale. This fragmented nature makes the market difficult to define and track.

Also of note within the coatings sector, is the decline of the marine coatings market, not only for polyurethanes, but for all coating types. In Brazil for example, the market has shrunk by up to 25% over the last 10-15 years, due to the decline in the shipping industry.

The majority of production of PU adhesives in the region is for domestic consumption, with the exception of Brazil. Even in Brazil, polyurethanes only account for around 10% of the total adhesives market. As a whole demand for PU adhesives and sealants is low due to the presence of cheaper alternatives on the market.

Footwear presents a significant market for PU adhesives in the region in terms of both production and consumption. Brazil is the 3rd largest producer of footwear in the world, producing well over 500 million pairs in 2000.

Another area of interest within PU adhesives is sandwich panels. As I've already touched upon in the rigid foam section, sandwich panels represent a growing market in the region, largely fuelled by demand for refrigerated transport and cold storage facilities and this inevitably has an impact on demand for PU adhesives, the main product used.

Despite the significance of the footwear industry in Latin America, it is suffering from the effects of cheap imports from China and India. This is impacting production and forcing some businesses to close. Polyurethane materials and other polymers still compete with traditional material, such as leather soles, largely due to the significance of the tanning industry in Brazil.

Due to high labour costs and the devaluation of the Real, the cost of producing footwear in Argentina is now 2 times higher than in Brazil and this is having a significant impact on the industry. For the region overall however, average annual growth of 7.7% is forecast for PU soling production between 2000-2005.

Future Perspectives

The polyurethane industry in Latin America is relatively small, when compared with other parts of the world. Recent economic events have jeopardised short term growth, however, growth rates forecast for the next few years are on average higher than more mature markets such as Western Europe or the USA.

The fortunes of the major end-use industries such as furniture, automotive, refrigeration and footwear will have major implications for growth in polyurethane demand. In addition, future economic stability and growth within Latin America are key to the industry's long term development. Growth rates are difficult to predict with certainty, but current indications are optimistic.

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