Demand to reach 4.7 billion pounds in 2004

Demand for phenolic resins in North America is forecast to grow 2.2 percent per year to 4.7 billion pounds in the year 2004. Gains will be supported by repair and remodeling building construction activity in the US, increased industrial activity in Mexico and a rebounding housing market in Canada.

Product mix to favor more resin per board

Wood panels are the largest outlet for phenolic resins, accounting for more than half of total demand in 1999. Demand in this application will remain favorable due to ongoing shifts in the wood panel product mix favoring oriented strand board and particleboard over softwood plywood. These wood panels have more intensive adhesive requirements than plywood, thus promoting increased resin demand per square foot of board produced.

Motor vehicles to buoy molding compounds

Phenolic molding compounds — including both general and engineering grades — face competing materials such as engineering thermoplastics (e.g., nylon, polybutylene terephthalate, polycarbonate) and various metals. Nevertheless, the molding compounds segment will experience modest gains, partially due to developing applications in the motor vehicle market, such as poly-v pulleys and camshaft sprockets.

Cost/performance favors phenolic resins

Good performance at a reasonable cost has long been an important selling point for phenolic resins, especially in applications such as wood bonding and insulation, where discoloring and other drawbacks can be overlooked because of cost savings.

In addition to cost, phenolic resins are valued due to their excellent dimensional stability, and resistance to heat, moisture, chemicals and creep. Other thermosetting resins (e.g., urea and melamine resins) used in adhesive and bonding applications cost less than phenolics but also tend to have higher formaldehyde contents, which has become more of an issue due to concerns about indoor air quality.

Study coverage

Details on these and other findings are available in the 239-page Freedonia study, Phenolic Resins in North America, priced at $3600. The study provides historical data and forecasts to 2004 and 2009 by market, application and country. It also examines the market environment and feedstock considerations, evaluates market share and profiles 40 industry participants.

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### Adhesive & Bonding Applications

#### Phenolic Resins in Wood Panels

Demand for phenolic resins in wood panel production in North America is forecast to expand at a 2.2 percent per year to 3.2 billion pounds in 2004. Due to their high moisture resistance, phenolic resin panels compete primarily with urea-formaldehyde, melamine and isocyanate resins in this application. In addition to conditions in the major end-use industries, demand for phenolic resin panels is also affected by the outlook of individual types of wood panels, since the various boards have differing adhesive requirements. In 1999, wood panels accounted for 73 percent of phenolic resin demand in adhesive and bonding applications.

Wood panels, unlike solid wood, are produced from wood particles, flakes or veneers (thin sheets of wood peeled from logs) that are bonded with resins such as phenolic, urea-formaldehyde, melamine and isocyanate, and then processed into various end-products. Phenolic resins are primarily used to produce exterior grades of wood panels, due to the fact that phenolics offer enhanced moisture resistance but have a tendency to discolor the end-product. Urea-formaldehyde and melamine resins are typically less moisture-resistant than phenolics and so are typically used for interior grades of wood panels.

Wood panels are used extensively in the construction industry, and to a lesser extent in manufactured products such as furniture. As such, demand for wood panels, and thus phenolic resin, is closely linked to the North American construction industry. Within the construction industry, demand for wood panels is related to building construction spending patterns, particularly within

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**TABLE VI-4**

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* US indicator, excludes computer & office equipment

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#1382 ___________ 01/2001 ___________ $3700

World Adhesives
Growth in global demand for adhesives will be driven by favorable activity in the paper and paperboard packaging industry. Total market value will continue to benefit from long term shifts away from commodity adhesives toward more environmentally benign formulations such as hot melts and emulsion polymers. This study analyzes the US $18.6 billion world adhesives industry to 2004 and 2009 by type, market, region and for 27 countries. It also profiles leading adhesive suppliers and presents market share data.

#1335 ___________ 12/2000 ___________ $4600

Sealants & Caulks
Annual growth in US sealant and caulk demand will outpace real gains in the general economy. Strong demand in residential repair and improvement will partially offset slowing OEM growth. Construction will remain the largest market, while the most rapid gains are forecast for aerospace and other transportation equipment. This study analyzes the 2.2 billion pound US sealant and caulk industry to 2004 and 2009 by raw material, type and market. It also presents market share data and profiles key companies.

#1287 ___________ 06/2000 ___________ $3600

World Thermoset Resins
Thermoset resin demand worldwide will grow over 4% annually through 2004. Construction products, household durables and transportation equipment will remain the dominant markets. Ongoing reformulation of coatings and adhesives to non- or low-solvent types will continue to benefit polyurethanes, epoxies and silicones. This study examines the 20 million metric ton world market for thermoset resins to 2004 and 2009 by resin, market, region and 24 countries. It also details market share and profiles key firms.

#1255 ___________ 04/2000 ___________ $4200

Epoxy Resins in North America
Gains in North American epoxy resin demand will be supported by Canadian and Mexican markets, and ongoing shifts to higher solids, low solvent formulations in coatings and adhesives. Coatings will remain the largest application, with the construction and household markets growing the fastest. This study analyzes the 603 million pound North American epoxy resin industry to 2004 and 2009 by market and application. It also reviews technology and feedstock trends, details market share and profiles key firms.

#1237 ___________ 03/2000 ___________ $3600

Decorative Laminates
Demand for decorative laminates in the US will grow nearly 5% annually. High pressure laminates will grow the fastest based on its strong performance in flooring. Growth is also being impacted by low pressure laminates supplanting high pressure material in horizontal uses (e.g., desk and workstation tops which do not need extra durability). This study analyzes the $4.2 billion US market for decorative laminates to 2003 and 2008 by type and market. It also presents market share and profiles selected companies.

#1219 ___________ 01/2000 ___________ $3500

Acrylic Resins
Growth in US demand will continue to be spurred by greater use of acrylics in coatings, adhesives, and paper and textile finishes, due to their compatability with waterborne, high-solids and radiation curable products. These products have been replacing traditional formulations based on chemical solvents. This study analyzes the $1.7 billion US acrylate and methacrylate monomers industry to 2003 and 2008. It presents demand by type and by market, evaluates market share and profiles selected industry participants.

#1197 ___________ 12/1999 ___________ $3400

Phenolic Resins in North America

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