

WORLDWIDE FLEXIBLE PVC MARKETS, TRENDS AND OPPORTUNITIES 1998 - 2003

INTRODUCTION

There is an increasing emphasis within the plastics industry to develop materials to compete effectively in the low flexural modulus applications. The traditional low flexural modulus materials include: (1) flexible PVC, (2) thermoset rubbers, (3) thermoplastic elastomers and (4) EPRs and (5) polyolefins.

The total demand for compounded PVC in flexible applications in North America in 1997 was 6.7 billion pounds in 1997. The demand for PVC in flexible applications in North America is projected to grow at the rate of 2.2% annually for the next five years. The demand for compounded PVC in flexible applications in Western Europe was 9 billion pounds, and the growth rate is projected at 1.7% annually for the next five years. The total demand for compounded PVC in flexible applications in Japan in 1997 was 4.1 billion pounds, and it is projected to grow at the rate of 1.4% annually for the next five years.

PVC dominates the industry in applications that require less than 500 Mpa flexural modulus. Polyolefins and other elastomeric materials have long participated in this industry segment but have lacked the cost/performance characteristics to successfully penetrate the flexible PVC markets. The last decade has seen unprecedented developments in both resins manufacturing and application developments of polyolefins and polyolefin based elastomers. The newer materials are more competitive on a price/performance basis and present viable challenges to flexible PVC in various end use markets. The newer technologies are targeting the flexible PVC markets as potential opportunities because of its market size and vulnerability in certain end uses. An independent analysis of the current status of flexible PVC issues, alternatives and opportunities for alternative materials is in order.

A NEW MULTICLIENT STUDY

Chemical Market Resources, Inc., with our extensive experience in: (1) polyolefins, (2) flexible PVC, (3) EP(D)M/EPM rubber and (4) thermoplastic elastomers, is undertaking a comprehensive global strategic business/technical analysis that reports on the dynamic, ever-changing intermaterial competition in the low flexural modulus area. Our in-depth examination and methodology are designed to assist companies in monitoring the rapid development, analyzing the trends and capitalizing on many opportunities in these ever-changing markets and technologies. The report will assess the strategies and opportunities for developing these markets.

The report will benefit the following: (1) present and future polyolefin market participants, (2) PVC producers, (3) PVC compounders, (4) plasticizer and stabilizer suppliers and (5) individual end users, entrepreneurs, and organizations attempting to understand markets, technologies and growth.



Chemical Market Resources, Inc.
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OBJECTIVES

Detailed analysis of the flexible PVC market status in terms of: (1) markets, (2) trends and (3) replacement opportunities

Assist polyolefin producers in effectively positioning their resins for the flexible application/low flexural modulus market

Evaluate and quantify the impact of metallocenes and other "New Generation" polyolefins on global flexible PVC markets

Assist polyolefin resin producers and end users in assessing market trends and intermaterial competition

Assist major end users in selecting the appropriate type of flexible PVC end use market and understanding the latest manufacturing cost economics

KEY ISSUES ADDRESSED

Outline of the global PVC markets in flexible applications

In-depth opportunity analysis for mergers and acquisitions in the North American, Western Europe and Japanese marketplace

Current & future technologies for PVC resin manufacturing

Market/technology positions of major PVC resin producers

End use requirements for polyolefin resins to compete more effectively in flexible PVC markets

Impact of new generation polyolefins on flexible PVC markets

Detailed cost analysis to compare cost/performance ratio between PVC and conventional/metallocene polyolefins in major end use applications

APPROACH

The information, data and conclusions of this analysis will be developed from sources in North America, Western Europe and Japan, and are based upon, but not limited to, the following methods:

Search, review and interpretation of information from government sources, trade and industry groups, published articles, database search and product promotional information

A thorough search of relevant patent technology and process details from producers

Information from industry experts and CMR proprietary projects

Interviews with leading suppliers of PVC resins, plasticizers, film converters and major end users in each market segment

Other multiclient studies completed by Chemical Market Resources, Inc.

The manufacturing cost economics based on our extensive cost databases and interviews

The intermaterial competition was analyzed based on "indifference analysis", a technique used by Chemical Market Resources, Inc. and well accepted by our major clients.



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PROJECT MANAGEMENT TEAM

DR. BALAJI B. SINGH, president of Chemical Market Resources, Inc., obtained his Ph.D. in Chemical Engineering from Texas A&M University and an M.B.A in Marketing Research and Strategic Planning from the Ohio State University. He has seven years of experience in the oil/chemical industry in process research, process economics and marketing research. His key area of expertise is in opportunity evaluation and competitive assessment for technology value added specialty products in petrochemicals and functional chemicals. Balaji has successfully completed over 500 proprietary studies, in high technology specialty products in various end use industry sectors for clients worldwide.

TIMING, SUBSCRIPTION & ORDERING INFORMATION

An order form is included as the last page of this prospectus. The report will be issued in the **FIRST QUARTER OF 1999**. Companies subscribing to the study before October 15, 1998 and which include half payment will be entitled to the purchase price of \$9,500. After publication, the price per report will be \$12,000. Additional copies are available for \$400 each. To subscribe, simply sign the attached order form and mail/fax to us. For further information call (281) 333 – 3313 and ask for Dr. Balaji Singh.



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ABOUT OUR COMPANY...

CHEMICAL MARKET RESOURCES, Inc. was founded in 1990 to focus in the areas of marketing research and strategic planning. Our global clientele is concentrated within the chemical, petrochemical, plastics and related industries.

Prior to joining CMR, Inc. our associates held responsible positions in chemical and allied industries. Our team of professionals has strong technical backgrounds combined with hands-on business experience. Compilation of data, strategic analyses, writing and editing are entirely conducted in our state of the art facilities in-house to assure quality control at each stage of development. Our strength is in closely interacting with our clients to maximize effectiveness. We provide in-depth analyses with actionable statements in a cost-effective and timely fashion.

Our recently completed multiclient studies:

MULTICLIENT STUDIES

New generation Polyolefins vs. SB Copolymers - North America, Europe and Japan 1995-2000 - Markets, Technologies & Trends - Completed January 1995

Intermaterial Competition of fPVC, Flexible Range TPEs and EP(D)M vs. Polyolefins North America, Europe & Japan 1995-2005 - Completed January 1996

High EVA Copolymers - North America, Europe and Japan 1996-2001 - Markets, Technologies & Trends - Completed June 1997

Polypropylene Films - North America, Europe and Japan 1996-2001 – Markets Technologies & Trends - Completed December 1996

PERIODICALS

New Generation Polyolefins - Bimonthly Global Review of Technologies & Trends. On-going service, published six times a year - Call for a complimentary copy!

PROPRIETARY STUDIES

We have positioned numerous polyolefin products in the markets in North America, Europe and Japan. We have conducted studies for most of the major polyolefin suppliers and end users - Call us for a list of proprietary studies.

CONFERENCES

We conduct a highly successful Annual Conference – FlexPo- that covers Intermaterial competition among flexible polymers including fPVC, polyolefins, TPEs and rubbers.



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SUBSCRIPTION INFORMATION

A systematic update and analysis of each technology in terms of concept, process, product properties and processing with comparisons among competing technologies made whenever appropriate

A quantitative analysis of markets and trends for key products produced by these technologies with comparisons made among products from competing technologies made whenever possible or appropriate

Comments and updates on key events regarding these new generation polyolefins

The first issue of NGP appeared in August, 1995. Subscribers can purchase a one-year subscription (six issues) for the price of \$15,000 or \$25,000 for two years. Additional copies are available at \$600 per set of six issues. Past issues are available for \$1,000 per issue plus \$50 for each additional copy. An order form is included on the last page of this prospectus.

For fresh and innovative ideas on Polyolefins Market Research

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