



**SOFT TPOs
NORTH AMERICA, EUROPE, & JAPAN
MARKETS, TECHNOLOGIES & TRENDS
2001-2006**

**Prospectus For
An In-Depth Strategic Analysis
Completed May 2002**

How are soft TPOs defined in the Industry?

What are soft flex TPOs?

What led to the development of Soft flex TPOs?

What are soft touch TPOs?

What led to the development of soft touch TPOs?

What are the key drivers of growth for soft TPOs?

What are the major technologies to manufacture soft TPOs?

What are the emerging trends and new markets for soft TPOs?

In-dept strategic analysis with intermaterial competition and replacement potential.



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SOFT TPOS

North America, Europe, & Japan

Markets, Technologies and Trends

2001-2006

INTRODUCTION

Soft thermoplastic polyolefin elastomers are thermoplastic polyolefin elastomers having low flexural modulus, low Shore A hardness and high elastomeric content. In commercial markets soft TPOs are defined in two major ways: (1) by flexural modulus, and (2) by Shore A hardness (commonly referred to as soft touch TPOs).

Typically the flexural modulus of soft TPOs is less than 20,000 PSI and the Shore A hardness is less than 50. Soft TPOs comprises of polypropylene (semi-crystalline/thermoplastic phase) and EPR, EP(D)M (amorphous/elastomer phase). The elastomer content is above 20% by weight. Soft TPOs are a subset of TPVs, reactor made TPOs, and physical blends. Soft TPOs account for 100% of TPV's, 45% of reactor TPOs and 22% of physical blends.

DEVELOPMENT OF SOFT TPOs

Soft TPOs are the product of diversification attempts initiated by TPO producers. In mid 90s TPO producers were confronted with lower growth rates in automotive applications. In order to sustain higher growth rates and profitability TPO producers developed non-automotive applications such as roofing membranes, wire & cable, hoses & tubing, and others. These applications required TPOs having high elastomeric content and low flexural modulus. The term "soft flex TPOs" has become popular for TPOs used in these applications.

Various other applications such as soft toys, grips, automotive interior skins, and others require soft touch feel or low Shore A hardness. The term "soft touch TPOs" has become popular for TPOs used in applications requiring soft touch feel. The general term soft TPOs is used for both soft flex TPOs and soft touch TPOs. New applications for soft TPOs are still being developed and they will continue to grow at a higher rate for next few years.

A NEW MULTICLIENT STUDY

Chemical Market Resources, Inc., with our extensive experience in (1) elastomeric polyolefins (2) polyolefins, (3) other thermoset rubbers and (4) thermoplastic elastomers, is undertaking a global strategic business/technical analysis that reports on this fast-changing intermaterial competition arena. Our in-depth examination and methodology are designed to assist companies in monitoring the rapid developments, analyzing the trends and capitalizing on the many opportunities in these changing markets and technologies.

The report will benefit: (1) present and future TPO suppliers, (2) polyolefin and elastomers suppliers, compounders, and end-users, and (4) the individual end users, entrepreneurs, and organizations attempting to understand these complex issues and capture future growth in the marketplace.

MAJOR OBJECTIVES

Define soft TPOs and position it in the industry.

Assist polyolefin resin suppliers in positioning and evaluating their market and technology development programs

Assist TPO/TPV compounders in assessing the attractiveness of soft TPO markets

Develop detailed strategic and value-based analysis for major TPO/TPV end-use applications

KEY ISSUES TO BE ADDRESSED

In-dept analysis of the global soft TPO markets

Soft TPOs – A new breed of product with great market potential

Role of compounders in the TPO industry

New application development and markets for soft TPOs

Automotive vs. non-automotive applications

TIMING & SUBSCRIPTION INFORMATION

An order form is included as the last page of this prospectus. The report will be issued in **May 2002**. The price of the study is U.S. \$3,000 for two copies of the report. Additional copies are available for \$300 each. To subscribe, simply sign the attached order form and mail or fax to CMR. This study is part of the Polyolefins MT&T series. For further information call us at 281-333-3313.

APPROACH

The information, data and conclusions of this analysis will be developed from sources in North America, Western Europe and China, Asia 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, public interest groups, government agencies, published articles and product promotional information

Information from private experts and CMR proprietary projects (over 20 of them related to these topics in the last two years)

Interviews with leading SB copolymer, polyolefin, PVC, EP(D)M and TPE suppliers, end users and distributors .

PROJECT MANAGEMENT

As usual, this report will be a result of diligent efforts of our lead team members and a shining example of our dedication to quality and thoroughness. Brief experience summaries of the project team members follow:

DR. BALAJI B. SINGH, President of Chemical Market Resources, Inc., obtained his Ph.D in Chemical Engineering from Texas A&M University and a M.B.A. in Marketing Research and Strategic Planning from Ohio State University. He has several 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 directed Chemical Market Resources, Inc.'s successful study on "Intermaterial Competition of SB Copolymers vs. New Generation Polyolefins 1996-2005." He completed over 500 proprietary studies in various end use industry sectors for clients worldwide. He has been actively analyzing SB copolymer markets since 1984 and has conducted proprietary studies for most of the major SB copolymer suppliers worldwide.

DR. FAISAL H. SYED obtained a B.S.E. in Chemical Engineering from the University of Minnesota and a Ph.D. in Chemical Engineering from Worcester Polytechnic Institute, with emphasis on reactor design and kinetic modeling. Faisal also has an MBA from Worcester Polytechnic Institute in managing technological innovations and process development. He has conducted a variety of projects in the field of catalysts and process technology evaluation related to polyolefin production.

MR. JIGNESH SHAH obtained his MBA from James Madison University and an MS in Applied Chemistry from MS University of India. In addition, Jignesh has been a principal in a wide variety of polymers related studies ranging from SEBS, acrylics, and geomembranes.

MR. VIPOOL BHATT obtained his B .S degree in Chemical Engineering from University of Wales in England. Vipool has several years of experience in product and process development. He has been actively involved in analyzing the worldwide SB copolymer markets.

**DEFINING SOFT TPOS
NORTH AMERICA, EUROPE, & JAPAN
MARKETS, TECHNOLOGIES, & TRENDS
2001-2006**

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ABOUT OUR COMPANY ...

CHEMICAL MARKET RESOURCES, Inc., was founded in 1990 to focus on 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 the chemical and allied industries. Our team of professionals have 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 providing our clients close interaction to maximize effectiveness. We provide in-depth analyses with actionable statements in a cost-effective and timely fashion.

Our recently completed multiclient studies:

1. APP/APAO and SB Copolymers vs. New Generation Polyolefins, Markets, Technologies and Intermaterial Competition Trends 1995-2000
2. New Generation Polyolefins - A Bimonthly Global Review of Markets, Technologies & Trends - Ongoing
3. Intermaterial Competition of Flexible PVC, TPEs and EP(D)M Rubbers vs. new Generation Polyolefins - North America, Europe and Japan - Markets, Technologies and Trends 1996-2000
4. Chemical Market Resources, Inc., Polyolefins MT&T™ Series - An in-depth benchmark analysis of significant markets and technologies that will impact the global polyolefin industry over the next decade on: (1) PP Films, (2) High EVAs, (3) Polyolefin Foams, (4) Polyurethanes, (5) Metallocenes, (6) Elastomeric Polyolefins – TPOs, Plastomers and Elastomers, (7) PP Fibers, (8) Acid Copolymers and Ionomers, (9) EP(D)M and EPM, (10) Tie Layer Resins

OTHERS

5. U.S. Markets for Plastic Eyeglass Lenses
6. North American Unsaturated Polyesters - Markets, Technologies & Intermaterial
7. North American Antifreeze Recycling Markets: An Industry Analysis of Markets
8. Consumption Database of Ethylene Glycol and Higher Glycol Markets, U.S., Canada and Mexico
9. Consumption Database of Propylene Glycol and Higher Glycol Markets, U.S., Canada and Mexico
10. Consumption Database of Phenol/Acetone Markets - U.S., Canada and Mexico

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