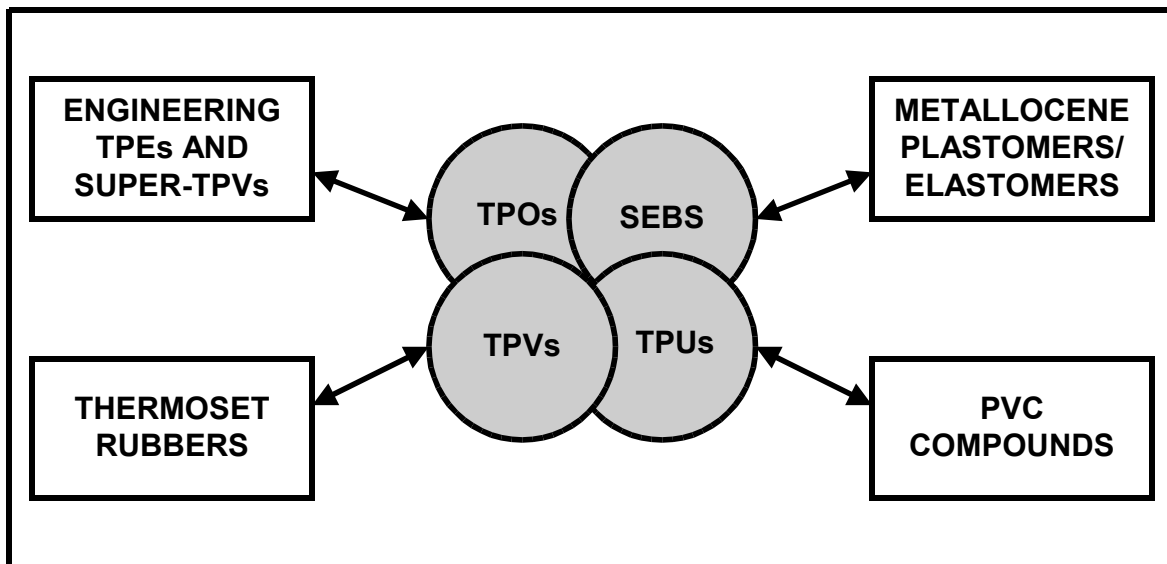


Specialty Thermoplastic Elastomers . . . Markets, Economics, Intermaterials Competition, and Industry Structure in China



Prospectus for a Multiclient Analysis

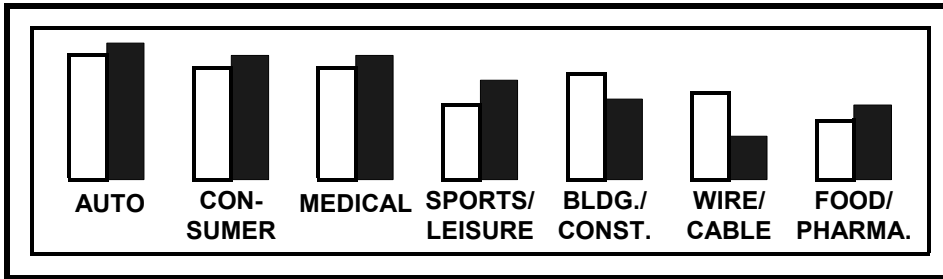
January 2005

Robert Eller Associates, Inc.
CONSULTANTS TO THE PLASTICS AND RUBBER INDUSTRIES

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**TPE MARKET SECTOR GROWTH RATES IN CHINA (2004/2009)
(EXAMPLE ONLY)**

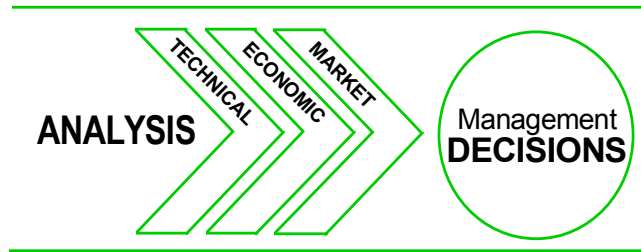


CHINA TPE MARKETS (2004/2009) (EXAMPLE ONLY)

| MARKET SECTOR | 2004/2009 MARKET SIZE, TONNES | | | | | |
|----------------|-------------------------------|-------|-------|------|------|-----|
| | f-TPV | p-TPV | s-TPO | SEBS | m-PO | TPU |
| APPLIANCE/TOOL | | | | | | |
| AUTO | | | | | | |
| BLDG./CONST. | | | | | | |
| CONSUMER | | | | | | |
| FOOD/PHARMA. | | | | | | |
| MEDICAL | | | | | | |
| SPORTS/LEISURE | | | | | | |
| WIRE/CABLE | | | | | | |

SUMMARY OF CHINA TPE SUPPLIER PROFILES (EXAMPLE ONLY)

| TPE SUPPLIER | TPE TYPES | ROLE | | EST. TPE VOL., TONNES | SECTORS SERVED (SHARES,%) | | | | |
|--------------|-----------|-------|---------|-----------------------|---------------------------|-------|------|--------------|----------------|
| | | RESIN | COMP'D. | | AUTO | CONS. | MED. | BLDG./CONST. | SPORTS/LEISURE |
| A | | | | | | | | | |
| B | | | | | | | | | |
| C | | | | | | | | | |
| D | | | | | | | | | |
| E | | | | | | | | | |



Specialty Thermoplastic Elastomers ... Markets, Economics, Intermaterials Competition, and Industry Structure in China

Along with its customers, the TPE market is experiencing rapid growth in China. While many aspects of the technology will be similar to that in other Western and Asian regions, the economics and structure of the supply chain will be unique to the China market. Robert Eller Associates, Inc. (REA) is pleased to present for your consideration this prospectus for an analysis of the key markets and intermaterials competition for olefinic, styrenic, and thermoplastic polyurethanes in China.

Some examples of key trends to be analyzed in the proposed study are:

Demand:

- Impact of the Chinese size, growth rate, and end user demand shift on global TPE demand, pricing, and industry structure
- The shift of customer base from Europe, N. America and Japan
- Increased penetration by TPEs into traditional Chinese rubber markets
- The rise of the domestic Chinese manufacturing sector

Supply:

- The evolution of the TPE supply chain in China
- Competition between large transplant compounders and domestic Chinese compounders
- The role of Japanese resin companies and compounders in the China market
- Role of super-TPVs and nano-TPEs
- Expanded TPE performance envelope (compression set, UV resistance, softness, adhesion, oil resistance, vibration damping) that facilitates entry into new market sectors and increased competition potential with rubber
- Convergence of European, Japanese and North American technologies
- Intermaterials competition between rubber, PVC, and TPEs as it applies to the China market
- The proliferation of vulcanization technology
- New metallocene resin technology and increased penetration of reactor products, which are:
 - altering compounding technology requirements and capabilities
 - shifting the path to market and affecting the value chain
- The impact of intellectual property issues on the China TPE market
- Growth of TPE concentrates and direct compounding, which are shifting path to market
- Price erosion and commoditization of some TPE sectors

REA's analysis will analyze and quantify the effects of these changes on the evolution of the TPE industry in China.

STUDY OBJECTIVES

The proposed study will analyze and characterize all TPE market segments in China with respect to:

- The growth of TPE end use markets
- Market, technology, and economic implications of path-to-market shifts
- Competition between the target TPEs and other plastics and rubbers
- Intra-TPE competition
- Macro-economic and new technology impacts on TPE pricing
- The fit of TPE captive and merchant compounding with Chinese industry structure
- The raw materials pricing in the Chinese market
- Value chain analysis and value-added opportunities
- Driving forces for material and process substitution
- The implications of new fabrication processes on competitive manufacturing economics
- Compounding costs via captive and merchant TPE compounding

ANALYSIS METHODOLOGY

The analysis will be based on:

- Interviews with key supply chain participants in China
- Technical and intermaterials extrapolations from REA's Europe/N. America TPE study, carried out in parallel with the China study
- Macro-economic trends and their effect on per unit TPE demand in key end user industries
- REA's extensive experience in the global TPE sector

SCOPE

TPE Compound Coverage: The target TPE compounds to be analyzed in this study include SEBS (and SEPS), olefinic TPVs (o-TPVs), TPOs (both commodity and specialty types), TPU, and the super-TPVs. Intra-TPE competition as well as competition between the target TPEs, the new generation of metallocene polyolefins, and other polymer families (rubber, PVC, polyolefin resins) will be analyzed.

Forward Vision: The primary emphasis of the study is on the analysis and forecast of likely evolution during the next five years (2004-2009). The effect of the anticipated rapid growth of the Chinese end user industries on TPE demand and industry structure will be considered. REA's view of technical, economic, and market implications and our analysis of end use market shifts in China will form the basis for our forecasts.

Pricing: The current/future dynamics of pricing for the target TPEs analyzed with respect to:

- Anticipated shifts in monomer pricing due to global market pressures
- New resin and compounding technologies (including direct compounding)
- Shift in path to market
- The unique conditions of TPE/rubber competition in the China market
- Increased presence of independent and captive compounders in China

- Globalization of TPE markets
- The profitability squeeze on fabricators and TPE compounders
- The cascade effect toward lower cost TPEs

Market Sector Structure: As in REA's first global TPE multiclient study, all major end use market sectors and associated applications for the target TPEs in China will be analyzed and quantified with respect to TPE usage (by type), shifts in TPE demand, implications of a broadened property envelope, and current and anticipated future pricing. The automotive sector will account for approximately 40% of the coverage analysis.

Structural Change: Along with its end user industries, the structure of the TPE supply chain will evolve in China from its current configuration. REA will analyze both the current structure and seek the patterns that will define the likely future structure that will be uniquely Chinese.

Supplier Strategies: The strategies of resin suppliers and compounders will be identified and their strengths and weaknesses defined.

Rubber Replacement: REA will identify and quantify the target rubber markets (roofing, belting, hose, automotive body/glazing seals, building/construction glazing seals) and develop a characterization of substitution dynamics and future TPE substitution potential.

WHO SHOULD SUBSCRIBE

As with all REA studies, this study will provide *analysis* in support of management decisions and formulation of strategy for the participants listed below:

- Resin and elastomer suppliers evaluating TPE participation in China
- TPE and PVC compounders
- Rubber compounders and fabricators seeking growth from the TPE opportunity
- Fabricators (auto, sheet, coated fabrics, medical, consumer products)
- Original equipment suppliers and parts manufacturers evaluating materials alternatives

TIMING AND HOW TO SUBSCRIBE

An order form outlining costs, terms, and conditions is enclosed with this prospectus. To subscribe, fill out the subscription form included with this prospectus and return it to REA via fax. We will invoice you for the pre-publication subscription payment. The remainder of the subscription fee will be due upon delivery of the final report.

Approximately in parallel with the China study, REA is carrying out a comparable study of TPEs in Europe and N. America. Some of the technology and economics from the Europe/N. America study will be applicable to the China analysis. For those companies who elect to subscribe to both the China TPE study and the Europe/N. America study (see prospectus on our Web Site), we are prepared to offer a special combination price as shown in the attached combination subscription agreement.

Our intention is to assemble the initial subscriber group and begin the China study in January 2005.

STUDY OUTLINE

Chapter

- 1 Introduction
 - 2 Executive Summary/Demand Forecasts (By End Use Market, By TPE Type)
 - 3 Industry Structure and Supplier Strategy in China
 - A. Summary
 - B. Unique Factors Shaping the China Market
 - Licensing and Intellectual Property Issues and Strategies (A Reality Check on Winning Strategies)
 - Impact of Rapid Growth in Chinese End Use Markets
 - Role of Asian, N. American, European Transplant Customers
 - Domestic vs. Transplant Compounders
 - Influence of Family Relationships
 - Raw Materials Supply Chain
 - Role of Cost Reduction Agents
 - Paths to Market for TPEs
 - C. Ownership Shifts
 - D. Resin Supplier Strategies
 - 4 Macro-economic Factors Affecting China TPE Markets and Pricing
 - 5 Automotive
 - A. Interiors (Skins, Airbag Doors, Coated Fabrics, Textiles)
 - B. Body/Glazing Seals
 - C. Boots, Bellows, and Hose
 - D. Rubber Target Market Segments for TPE Substitution
 - E. Exterior Applications
 - 6 Market Sector Profiles^(a) and Demand Estimates
 - A. Medical
 - B. Personal Care/Cosmetics
 - C. Fluid Handling/Industrial
 - D. Soft Touch (implications for all markets)
 - E. Coated Fabrics
 - F. Sports/Leisure
 - G. Building/Construction
(e.g., Roofing, Glazing Seals)
 - H. Wire/Cable
 - I. Consumer Products/Housewares
 - J. Appliance/Tool
 - K. Electrical/Electronics and
Personal Communications
 - L. Food/Pharmaceutical Packaging
 - M. Elastic Film, Sheet, and Fiber
- ^(a) Market sector profiles include current/future demand estimate, TPE shares, supplier participation, identification of key applications, substitution drivers
- 7 Intra-TPE and Intermaterials Competition (The TPE Property Envelope, Color/Texture/Feel Issues in the China TPE Market; Impact of Recently Developed Metallocene Technologies)
 - 8 Profiles of Key Participants
(A series of profiles of TPE suppliers showing location, ownership, product line, market sectors served, key supplier/customer relationships, intellectual property strategies, plant capacities)

Appendix - TPE Grades and Suppliers, Photos of Key Applications in China

REA QUALIFICATIONS

REA is a strategic, technology, and market consulting resource specializing in providing decision-quality analysis in support of management decision-making, and investment and acquisition analysis in the global plastics and rubber sectors.

REA associates have carried out pioneering technical, economic, and market multiclient and single client studies in most major plastic and rubber sectors. Our experience in the rubber sector provides unique perspective for the analysis of TPE growth opportunities. In addition to REA's first edition of the TPE multiclient study (completed in 2000), we have recently completed multiclient analyses of automotive interior soft trim and new generation nonwovens in automotive applications.

Recent strategy, market, technology, and acquisition analyses have included:

- Analysis of long-glass fiber reinforced PP compound markets and technologies
- Analysis of TPE opportunities in building/construction glazing
- Growth prospects for TPEs in consumer and medical markets
- Numerous product positioning studies for new TPEs
- Analyses of the role of metallocene polyolefins and styrenics
- Several acquisition and joint venture analyses in the automotive and non-automotive industries in the U.S. and Europe
- TPO and other TPEs in automotive applications
- Automotive PP resins and compounds in the U.S. and Europe
- Compounding strategy for TPE and resin suppliers
- Joint ventures and alliances in the TPE compounding sector
- Compounding, fabrication cost analyses, and supply chain management
- Development of rubber and TPE formulations to meet target requirements
- Opportunities for tire recyclate in TPE formulation

The study will be conducted by Robert Eller and Roger Young. Prior to establishing REA, Mr. Eller directed plastics consulting studies at Arthur D. Little, Inc. in the U.S. and Europe, and has served as General Manager of Multibase (USA). He has directed numerous analyses of the technology, economics, and markets for TPEs, and arranged several joint ventures and acquisitions in the sector.

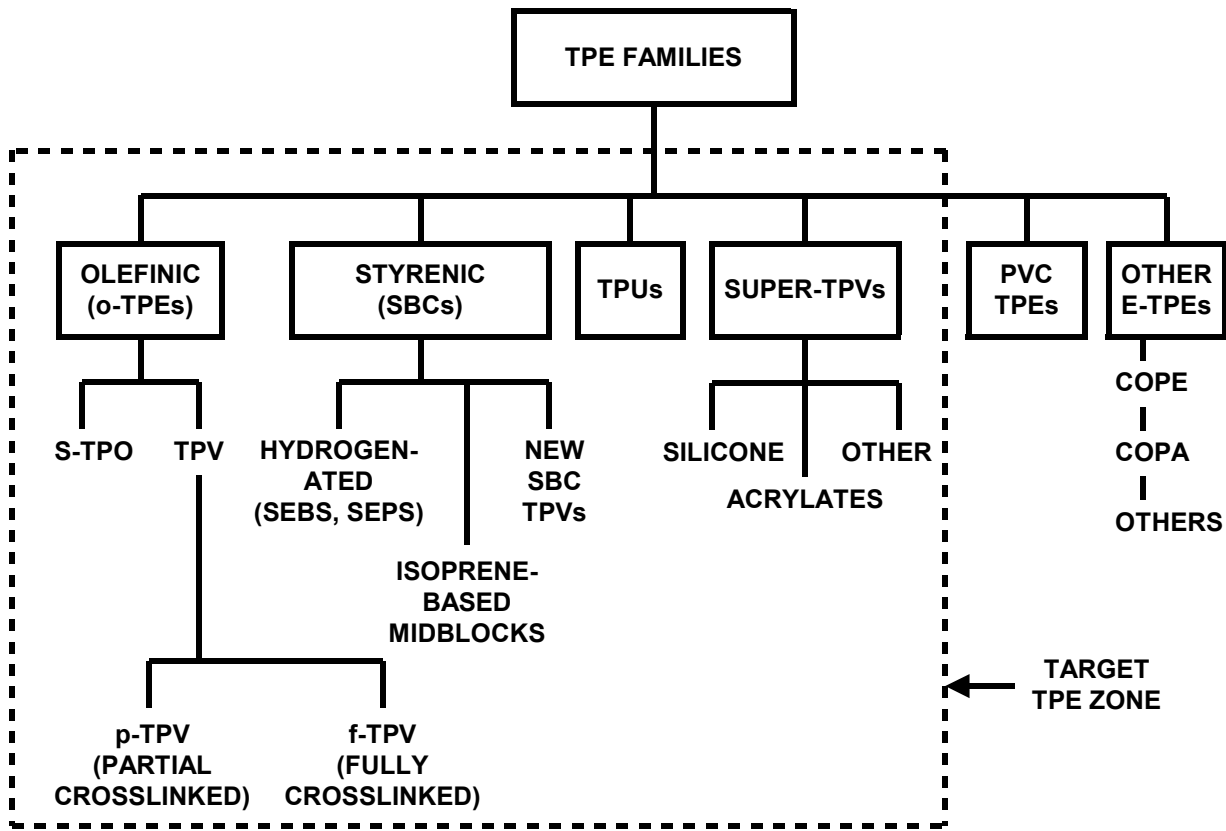
Mr. Young was formerly employed by Dow Chemical where he had a number of notable successes, including:

- The introduction and development of low gloss ABS grades into the automotive market
- Directed development and positioning of Isoplast
- Directed early stage development of Questra
- Management of the development of Pulse.

Mr. Young is a 1973 graduate of Lafayette College with a B.S. in Chemistry. After graduation, he went to work with for the Dow Chemical Company. He developed the functional values program that has significantly enhanced Dow understanding and positioning of new products and new technology into the marketplace. He is the author of over fifteen papers involving plastics and plastics processing technology as well as teaching *Modern Plastics Magazine* "Business of Plastics" course for several years. Mr. Young has been associated with REA since 1994.

Other REA associates operating in China will form part of the analysis team.

TARGET TPE ZONE



SOURCE: ROBERT ELLER ASSOCIATES, INC., 2005



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PURCHASE ORDER FORM AND SUBSCRIPTION AGREEMENT (CHINA ONLY)

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This signed order form constitutes an agreement to subscribe to this multiclient study. To subscribe, mail, fax, or e-mail the completed order form to our Akron office, indicating billing coordinates. This order form may also be downloaded from the REA Web Site. Please contact REA for more information on study contents, scope, and approach.

The price of the study for initial subscribers is US\$17,000. 50% of this amount is due upon your authorization to subscribe. The remainder will be due upon completion of the study. The price after completion will be US\$20,000. The subscription includes three (3) copies of the final report and a searchable compact disk. Additional copies of the report will be available to subscribers for US\$200 each.

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- b. Specialty Thermoplastic Elastomers . . . Markets, Economics, Technology, Intermaterials Competition (Europe/N. America)

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This signed order form constitutes an agreement to subscribe to these multiclient studies (a and b above). To subscribe, mail, fax, or e-mail the completed order form to our Akron office, indicating billing coordinates. This order form may also be downloaded from the REA Web Site. Please contact REA for more information on study contents, scope, and approach.

The price of the combined initial subscriber China study and the completed Europe/N. America TPE studies is \$30,000. \$23,000 is due upon your authorization to subscribe. The remainder (\$7,000) will be due upon completion of the China study. (The subscriber price for the studies ordered individually is \$17,000 (initial subscriber China) and \$20,000 (the completed Europe/N. America study). The subscription includes three (3) copies of the final reports and a searchable compact disk. Additional copies of the reports will be available to subscribers for US\$200 each.

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