

**WORLDWIDE HIGH PRESSURE LDPE  
MARKETS, TECHNOLOGIES & TRENDS  
2002-2007**

**Prospectus For  
An In-Depth Strategic Analysis  
Available for Immediate Delivery**

What is the current status of High Pressure LDPE?  
Why are developing countries more attractive for LDPE?  
Why are some companies developing "LDPE look-alikes"?

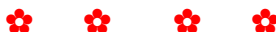
**Why hasn't LDPE disappear as most of "the other" Consultants  
Forecasted?**

What makes LDPE superior to LLDPE? Why couldn't conventional LLDPEs, first generation Metallocenes and Second generation Metallocenes replace LDPE?  
Would you build a grass-roots LDPE plant now? Why? Why not? When? Where?  
What are the basic cost comparisons of the current LDPE vs butene-LLDPE?



What are the critical markets for LDPE's future growth?  
What are the markets for low, medium and high EVA based LDPEs?  
**How should LDPE position itself to capture some of the LLDPE  
markets?**

What are the growth markets? What are the met/unmet needs? By Region  
What is the role of equipment manufacturers to thrive and grow LDPE?



What is the new and competitive position of LDPE compared to LLDPE?  
**Will the current speculation that LLDPE will eventually replace LDPE  
stop?**

What is the future direction of LDPE technology development?

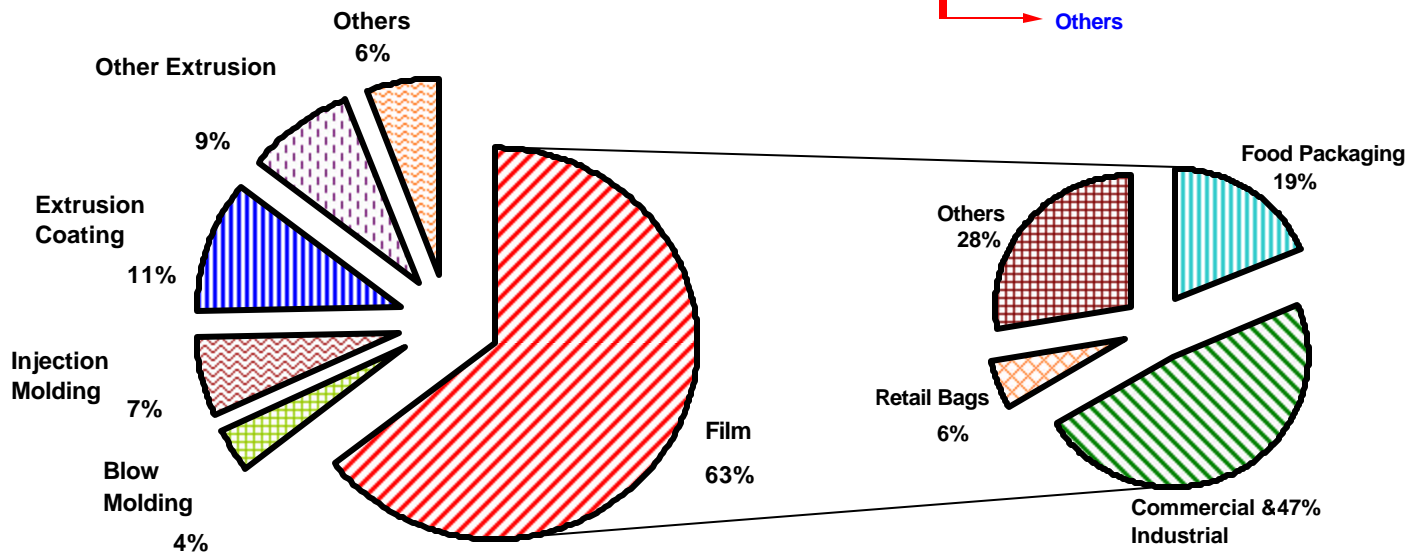
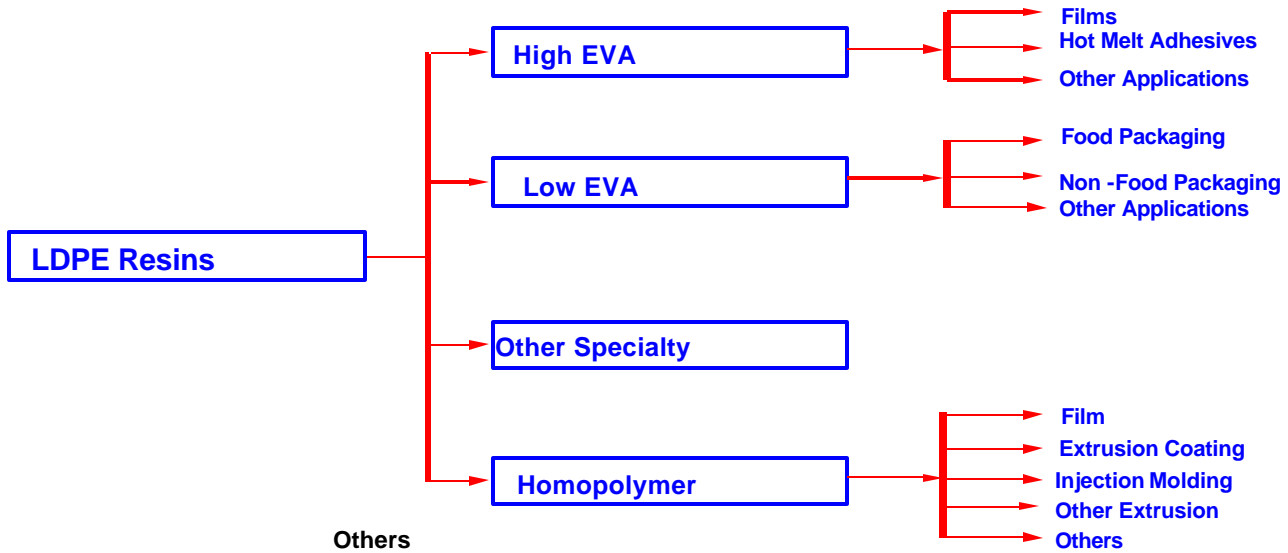


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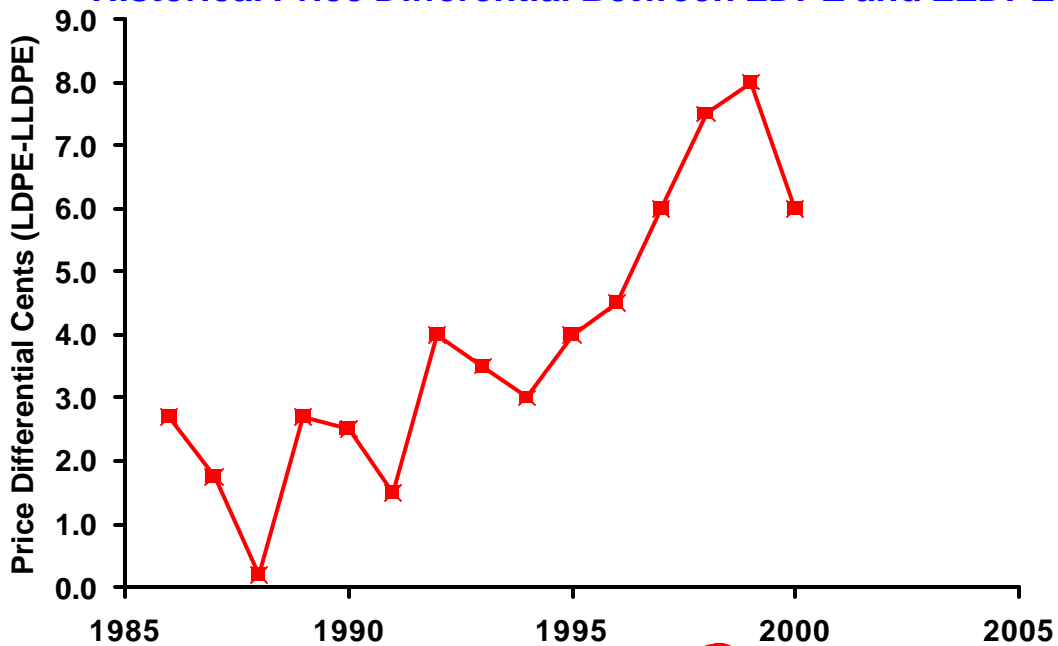
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## Growth Driver Tree Analysis for LDPE



## Historical Price Differential Between LDPE and LLDPE



# **WORLDWIDE HIGH PRESSURE LDPE MARKETS, TECHNOLOGIES & TRENDS 2002-2007**

## **INTRODUCTION**

High Pressure Low Density Polyethylene (HP – LDPE) is a highly versatile and economic plastic material with major applications in five categories: (1) film, (2) injection molded parts, (3) extrusion coating, (4) adhesives & sealants and (5) wire & cable. LDPE since its development has been the workhorse of the polyolefin industry for several decades. The inherent shortcomings of LDPE including: (1) high pressure operation, (2) wider molecular weight distribution, (3) lack of gas phase process and a (4) higher density and nonlinear chain structure than the incumbents, always kept LDPE as the material with lower preference for new facilities. In spite of the last three product/end use related shortcomings, LDPE has successfully maintained its advantage in some of the critical applications. The high-pressure operation and the related higher costs and dependence on high-pressure compressors, had been the most important factor in making the industry scrutinize LDPE more closely. The higher pressures required combined with capacity limitations have made LDPE less competitive to the LLDPE processes. The recent developments in the newer high pressure technologies that have opened up higher capacities (up to 400 KT when needed) have made LDPE once again cost competitive against incumbent processes and yet again become a viable product with unique characteristics.

The current world demand for LDPE including that for high EVAs is approximately 17,000 KT. The high EVA LDPEs are expected to maintain their higher growth and specialty status, with low EVAs growing at the GDP level of 1-2% per year. The impact of the newer technologies has not yet been felt in the markets. The new technologies ideally could increase the growth rates of LDPE to match those of LLDPE in future, to the extent most of the LLDPE producers will develop "LDPE Look-Alikes" using their current and/or future LLDPE technologies.

## **A NEW MULTICLIENT STUDY**

Chemical Market Resources, Inc., with our extensive experience in (1) Worldwide LDPE markets (both high and low EVAs), technologies and intermaterial competition issues, (2) all other polyolefins, (3) all of the other flexible polymers, is undertaking a comprehensive 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 LDPE market participants, (2) polyolefin and elastomers producers, compounders and end users, (3) other polyolefin industry participants, and (4) the individual end users, entrepreneurs, and organizations attempting to understand these complex issues and capture future growth in the marketplace.



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## OBJECTIVES

- ❖ *Define the worldwide status of LDPE markets in terms of: (1) type –Low EVA, Med EVA & High EVA, (2) end use markets, (2) trends and (3) regional differences*
- ❖ *Assess the global LDPE market trends and intermaterial competition issues against LLDPE – conventional, metallocenes and New Generations*
- ❖ *Present the latest cost issues for LDPE plants in a detailed fashion*
- ❖ *Provide an accurate assessment of the future of LDPE in face of all the forecasts, which have proven wrong in the past three decades*
- ❖ *Assist flexible LDPE producers and converters with an assessment of the current and future intermaterial competition and possible product substitution strategic options*
- ❖ *Assist compounders, and suppliers in assessing the impact of these issues in the near future.*

## KEY ISSUES TO BE ADDRESSED

- ❖ *The worldwide LDPE market/technology status and concerns of: (1) end users, (2) producers and (3) competing material suppliers in North America, Europe, Japan, Far East, MidEast, Africa and Rest of the World*
- ❖ *Worldwide resin, compound and additive supplier responses to key issues*
- ❖ *Suppliers' current and future impact of key issues on LDPE markets and their vulnerability in selected end use markets with multi-attribute analysis of met/unmet needs of LDPE vs LLDPE in over 50 end uses.*
- ❖ *Status of "LDPE Look Alike" material developments*

## TIMING & SUBSCRIPTION INFORMATION

An order form is included as the last page of this prospectus. The report is **AVAILABLE FOR IMMEDIATE DELIVERY**. The price per report will be \$12,000.

## 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 LDPE, LLDPE PVC, EP(D)M and TPE suppliers, end users and distributors .*
- ❖ *The major technology suppliers and ENC organizations*
- ❖ *The systematic approach to market quantification, assessment and opportunity analysis by end use and region*



## 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 polyolefins production. Prior to joining CMR, Faisal worked for 3M Company in St. Paul, Minnesota in the Electronics Material Applications Research Division.

**MR. FRED STEININGER** is a Chemical Engineering Graduate of Purdue University, where he also earned a Masters Degree in Industrial Administration. His expertise in this field comes as a result of his 34 year career at Exxon Mobil Corporation and Exxon Enterprises, where he held a number of management positions in polymers, plastics, elastomers, and solar energy. He has also held key roles in customer alliance process development, technology licensing, and venture management.

**MR. JIGNESH SHAH** has a MS in Applied Chemistry and obtained his MBA from Virginia. He has worked on several proprietary studies on polyolefins and elastomers including LDPE, Polypropylene Films, High EVAs, Acid Copolymers & Ionomers, PVC, TPUs, SB Copolymers, TPEs, and Soft TPOs. Most of his work focuses on industry trend assessment, new product introduction strategies, intermaterial substitution opportunities, and cost analysis.



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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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