



# **Westlake Group Of Companies**

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# Westlake Group and Affiliates



## WESTLAKE CHEMICAL

OLEFINS  
POLYETHYLENE  
STYRENE  
VINYL  
PVC PIPE  
PROFILES & FENCE



## TITAN GROUP

POLYETHYLENE  
POLYPROPYLENE  
OLEFINS & AROMATICS



## SUZHOU HUASU

PVC  
FABRICATED PRODUCTS



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# Major Products



**Westlake Chemical**  
US Producer

**Olefins:**

Ethylene  
Low Density polyethylene  
LL/HD Polyethylene  
Styrene Monomer

**Vinyls:**

Chlorine / Caustic  
EDC  
VCM  
PVC  
PVC Pipe, Fence, Windows



**Suzhou Huasu**  
Local Producer

**Vinyls:**

PVC resin  
PVC Film and sheet



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# Westlake Experience in Asia

- Marketed Westlake PE to Asia since 1986.
- Built (1995) and operate a 36,000 MT/year PVC film and sheet fabrication business in Suzhou, China, joint venture with Norsk Hydro.
- Built (1999) and operate a 130,000 MT/year PVC polymer business in Suzhou, China
- Titan, a Westlake affiliate, is a joint venture with PNB (Malaysia) and Sinochem.



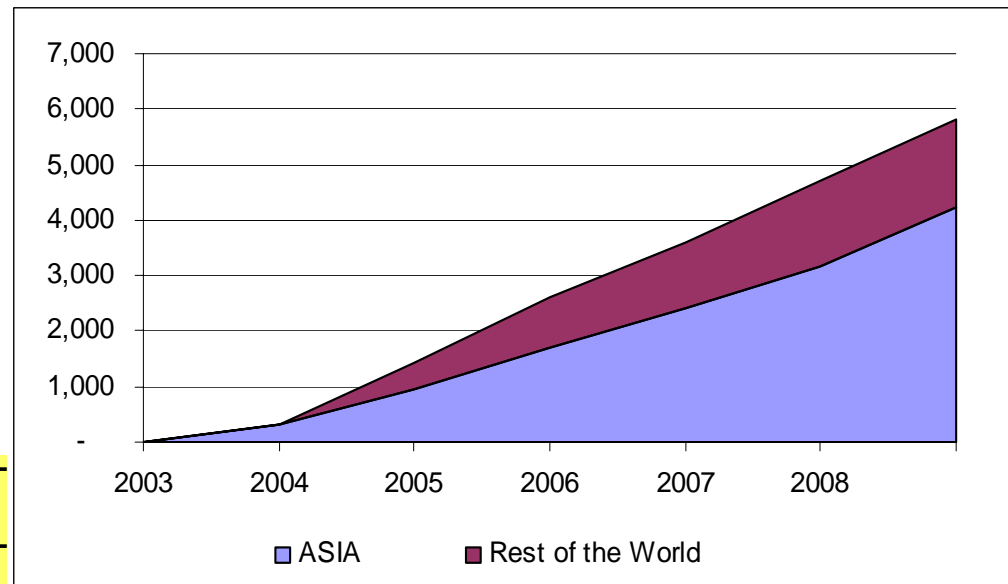
# VINYLS IN ASIA



# World PVC Markets – Demand is Growing

<u>Growth Rates</u>	<u>2003-2008</u>
North America	2.5%
South America	2.3
West Europe	0.4
Central Europe	8.9
Africa / Middle East	2.4
Asia / Pacific	5.7 4.2 MM MT
World	3.8 5.8 MM MT

PVC Growth (MM metric tons)



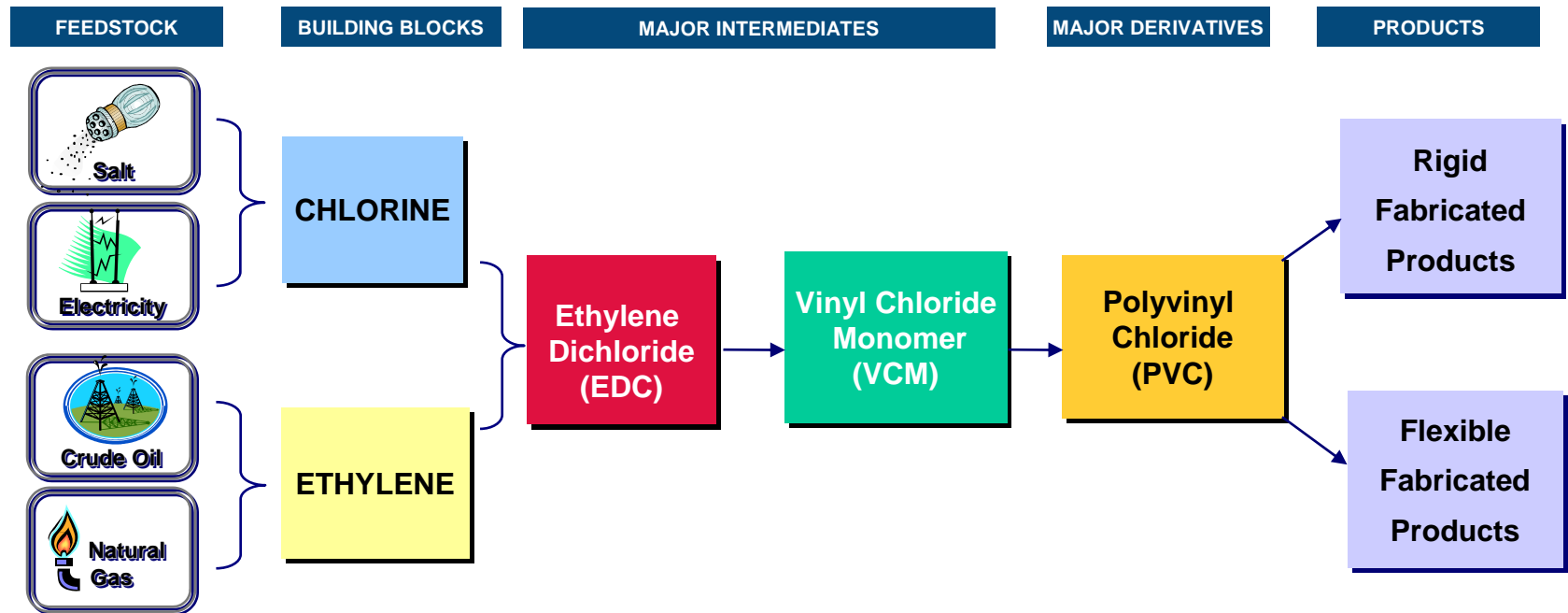
Source: CMAI

The largest growth in domestic demand will be Asia / Pacific. By 2008, growth will be more than 70% of the growth in the world. China's share will be 3.0 MM M/T, or over 50%.



# Structure of Supply – Ethylene Route

PVC is the end result of a complex chain of intermediate chemicals. The structure of the world PVC markets depends on the availability and cost competitiveness of each segment of the chain.

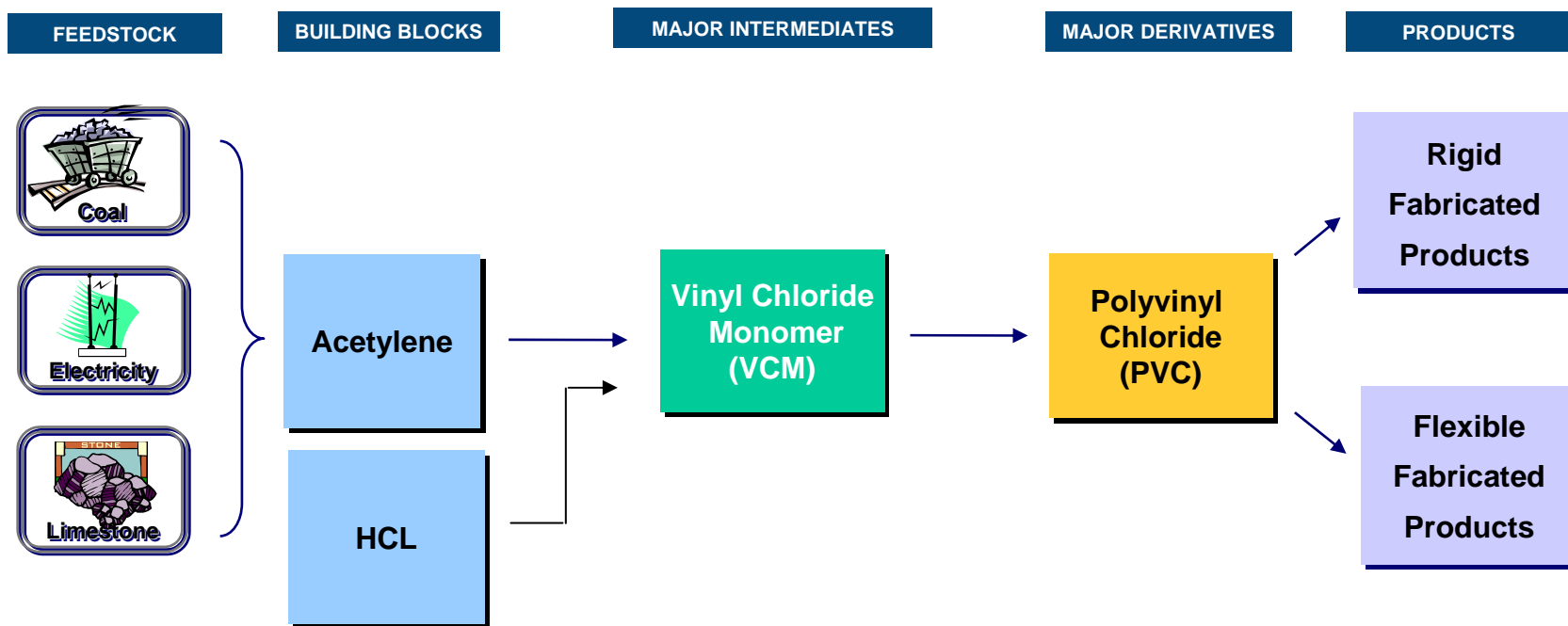


Most commonly produced PVC starts with chlorine and ethylene.



# Structure of Supply – Acetylene Route

50% of China's production is based on the acetylene or "carbide process". The older carbide based plants in China do not produce high quality PVC resins.

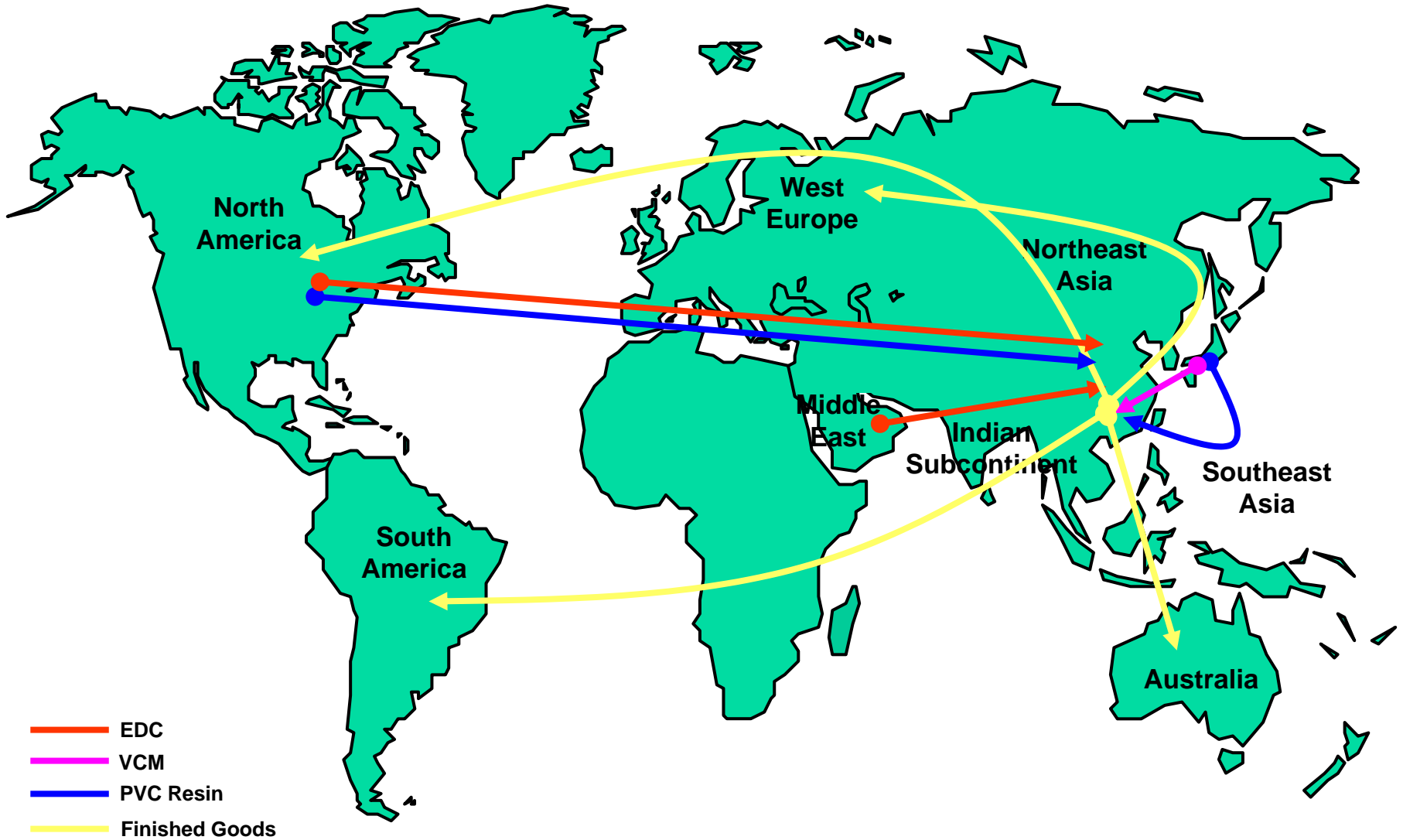


China is currently expanding its carbide facilities to help meet its vinyls shortfalls however, the ethylene process will eventually predominate.





# Vinyls World Trade Patterns



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# Trade flows of Vinyls

- China is the largest importer of vinyls in the world. Despite significant growth domestically, it will remain an importer for several years to come.
- VCM and chlorine are in short supply in China. The vinyls chain is dependent on power supply and hydrocarbon feedstocks, which are not locally abundant or advantaged.
- High energy costs and insufficient capital investment in China will create an EDC export opportunity for low cost areas of the world.
- VCM is supplied to China from within the region. EDC imports will be sourced from the Middle East and North America.



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# Strategic Implications for Global Vinyl Producers

- Investment in PVC necessitates upstream facilities in EDC, VCM, Chlor-Alkali, and Ethylene. Capital Cost for a world scale vinyls complex is more than \$1 billion making the investment decision in China more complex.
- There is significant new capacity of PVC planned for China in 2004 and 2005. However, VCM and EDC shortages are likely to continue, hampering production.
- China's chemical production is not advantaged on a world scale however, downstream fabrication, which is labor intensive, represents a significant competitive advantage for China.
- Westlake's strategy in China consists of using its PVC production to support growth in its downstream fabrication business.



# Relative Competitiveness – Fabrication China vs. North America

	<u>Direct Cost</u>	<u>% Reduction in China</u>	<u>% Cost Reduction</u>
1. Raw Materials	50%	0-20%	0-10%
2. Labor	20%	60-75%	12-15%
3. Overhead	30%	30-40%	<u>9-12%</u>
<b>Total</b>			<b>21-37%</b>

- Downstream fabricated products become more labor intensive as the product is closer to the finished goods stage.
- Higher labor costs as a percentage of total costs significantly increase the advantages of manufacturing in China. China's per capita income is approximately \$1,000 per year.



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# SUZHOU HUASU PLASTICS COMPANY, Ltd.

- Established 1992, J.V. with Westlake and Norsk Hydro.
- Located in Suzhou, Jiangsu Province, China - Operations include:
  - 130 KTA PVC resin plant
  - 36 KTA Calendering facility
- SHPC is vertically integrated from PVC resin to printed and laminated products.
- Closer proximity to customers allows for faster delivery over import materials.
- SHPC sells essentially all of its PVC resin, film and sheet products in China which are then converted into finished products for both the domestic and re-export markets.
- SHPC is a quality supplier in China with brand recognition, credibility and service.



# A Tale of Two Markets:

Infrastructure growth will fuel demand for rigid PVC, primarily for construction applications such as pipe and profiles.



## Domestic Markets

- Competition with local producers for local customers
- Local reputation and customer relationships are key
- Tax benefits to local companies – VAT
- Credit issues
- Price is key consideration for buying decisions

Export markets, primarily flexible film and sheet will also grow rapidly.



## Re-Export Markets

- Competition with local and regional producers for global customers
- Global reputation and relationship are a factor
- Tariff Exemption
- Little credit risk
- Price and quality are both important



# The Learnings and Challenges of doing business in Asia

- Local Presence



- Low Cost

- Cultural affinity (language plus business)

- Government Relationship

- Creativity



- Flexibility

- Patience





THANK YOU

