

investor  day  
2010

## Industrial Chemicals

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*Executive VP in charge of Industrial Chemicals*



# Industrial Chemicals overview



- Large integrated chemical lines
- Worldwide leadership positions
- Growth above GDP
- Proprietary technologies
- Strong process know-how
- World-scale production sites

\* Sales by business unit (as a % of Industrial Chemicals sales)



# Leadership positions on growing markets with a limited number of players

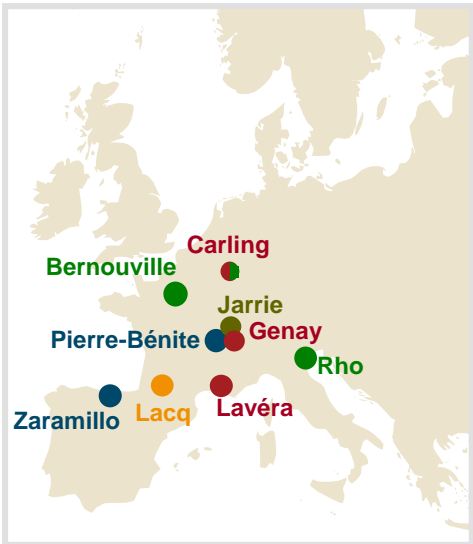
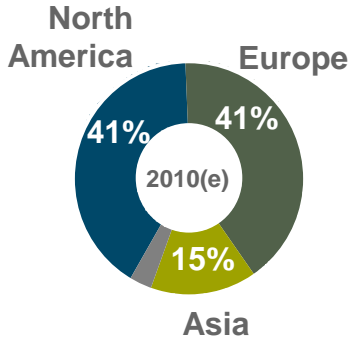
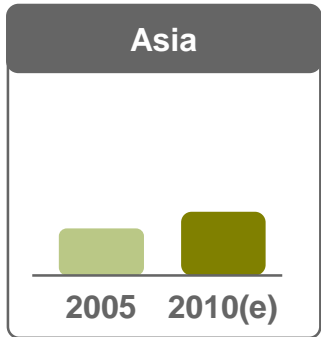
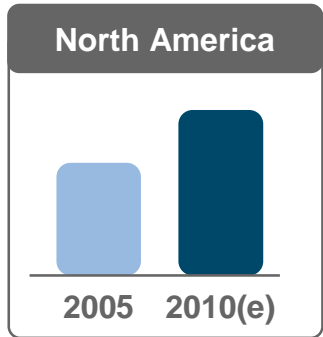
Product	Rank	Competitors	Market size* (mT)			
			NA	Europe	Asia	Total
Acrylic monomers	#3	BASF / Dow / Nippon Shokubai	1.15	1.1	1.85	4.2
PMMA	Co-leader	Evonik / Mitsubishi	0.35	0.35	0.9	1.6
Thiochemicals	#1	Chevron Phillips	0.2	0.2	0.3	0.7
Fluorochemicals	#2	Dupont / Honeywell	0.4	0.2	0.4	1.1
Hydrogen Peroxide	#3	Solvay / Evonik	0.7	1.0	1.4	3.2

\* Source: Arkema estimates, SRI



# A strong global asset base

Sales by region (€m)



- PMMA
- Acrylics
- Fluorochemicals
- H<sub>2</sub>O<sub>2</sub>
- Thiochemicals

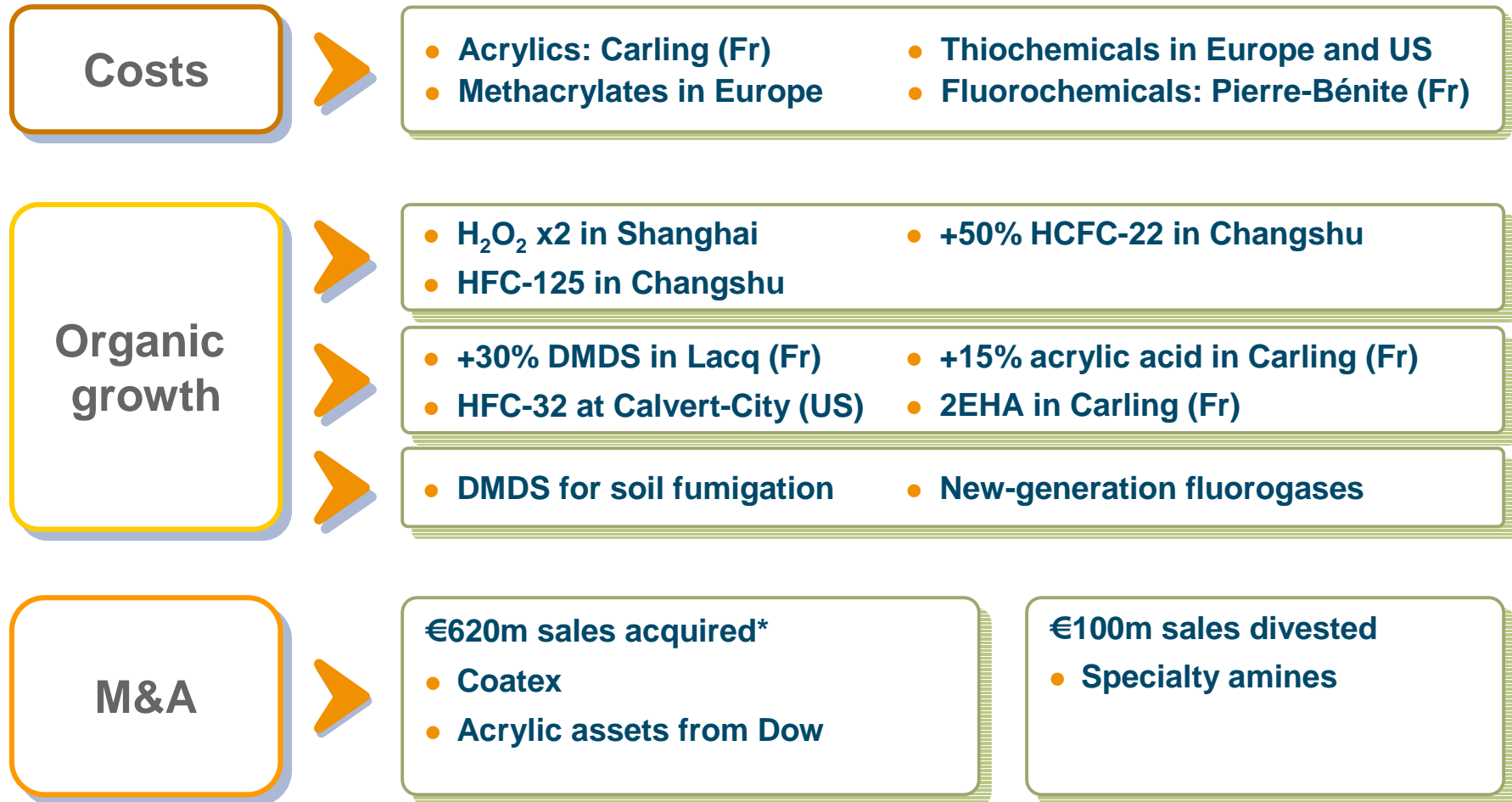


# 2005-2010: Reinforce global leadership positions

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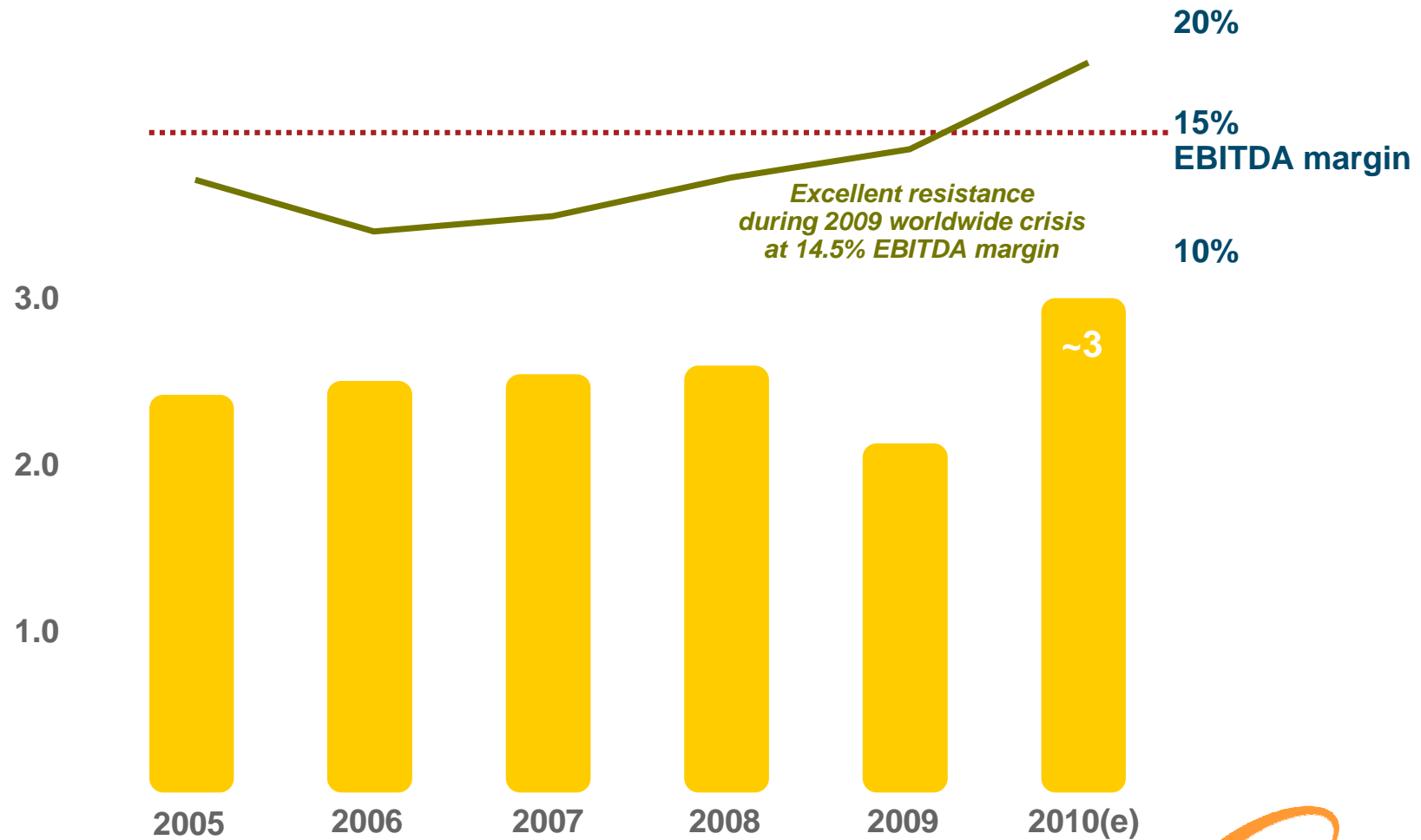
# Strong transformation momentum since 2005



\* 2010(e) sales

# Exceeding 15% EBITDA margin target set at spin off

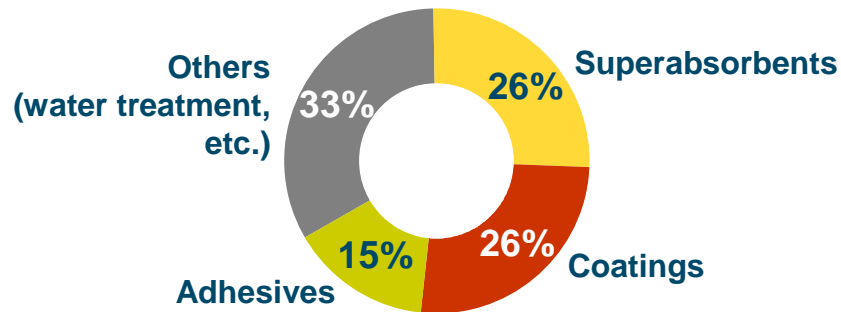
Sales (€bn) and EBITDA margin (%)



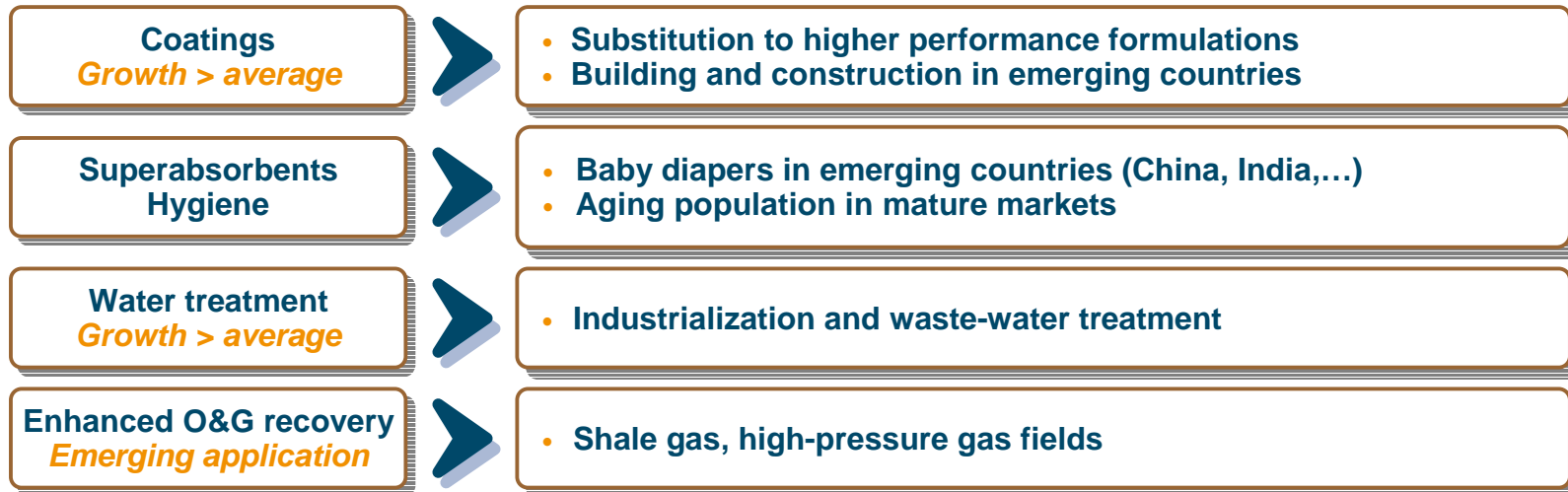
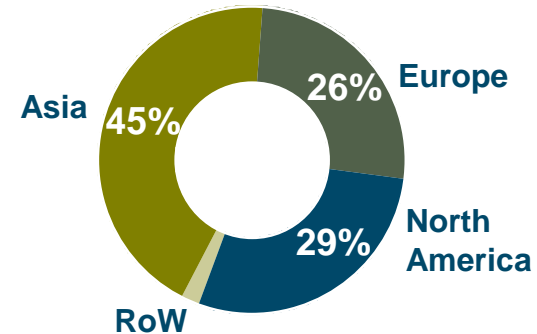


# Key growth drivers in Acrylics

**Demand by end markets**



**Global demand**



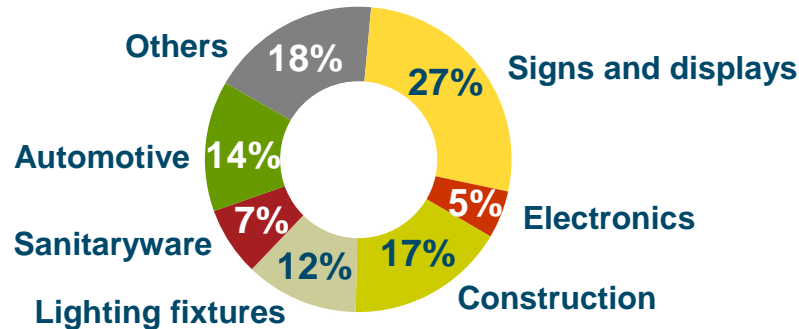
 **Expected average demand growth rate: 4 to 5% a year**

Source: Arkema estimates

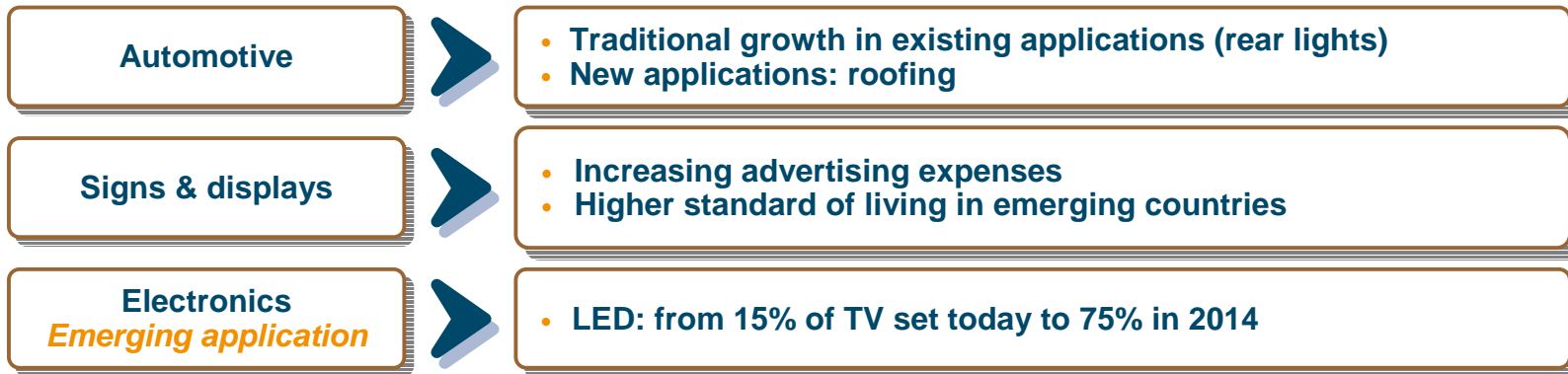
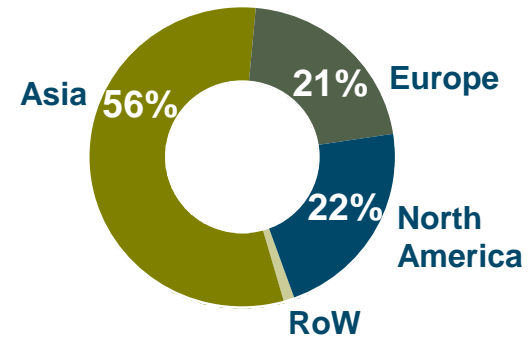


# Key growth drivers in PMMA

**Demand by end markets**



**Global demand**

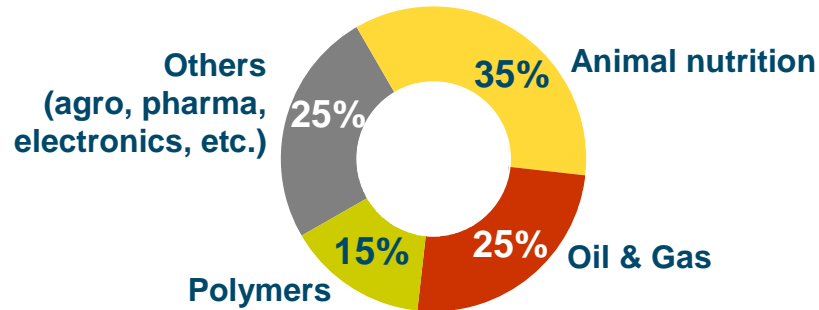


**Expected average demand growth rate: ~4% a year**

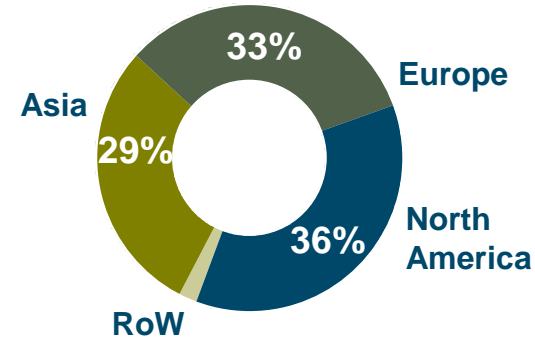
Source: Arkema estimates, SRI

# Key growth drivers in Thiochemicals

Demand by end markets in H<sub>2</sub>S derivatives



Global demand in H<sub>2</sub>S derivatives



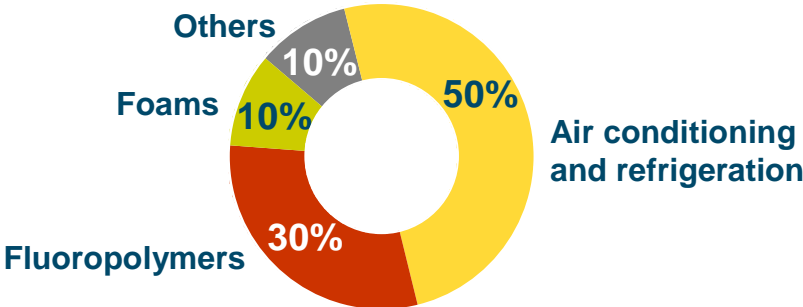
**Expected average demand growth rate: 4 to 5% a year**

Source: Arkema estimates

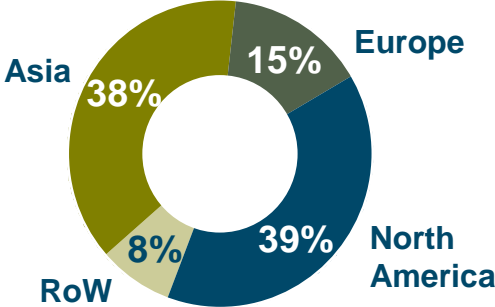


# Key growth drivers in Fluorochemicals

**Demand by end markets**



**Global demand**

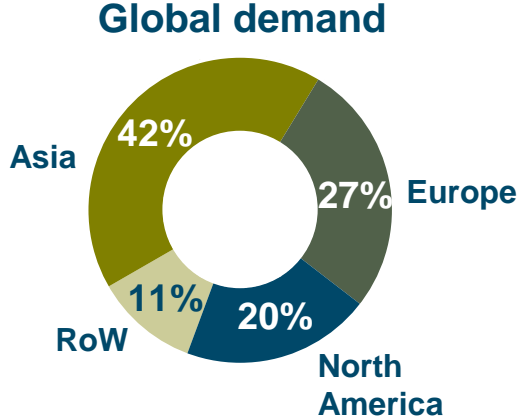
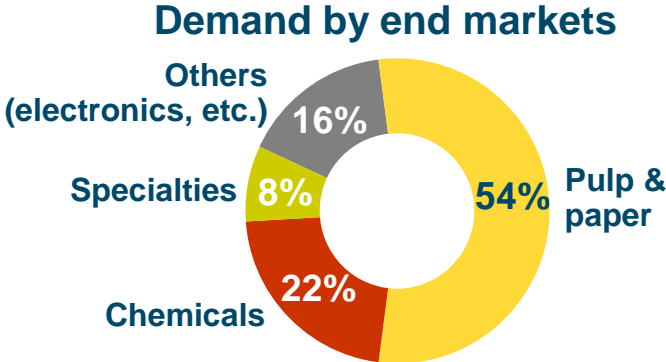


 **Expected average demand growth rate: 2 to 3% a year**

Source: Arkema estimates, SRI



# Key growth drivers in Hydrogen Peroxide



<p><b>Pulp &amp; Paper</b></p>	<ul style="list-style-type: none"> <li>• Growing demand (standard of living) in emerging countries</li> <li>• Enhanced brightness</li> </ul>
<p><b>Specialty grades</b> <i>Growth &gt; average</i></p>	<ul style="list-style-type: none"> <li>• Electronics: semiconductors, LCD</li> <li>• Cleaning/disinfection: more stringent standards and regulations</li> </ul>

 **Expected average demand growth rate: 2 to 3% a year**

Source: Arkema estimates, SRI



# Enhancing Industrial Chemicals growth potential in next 5 years

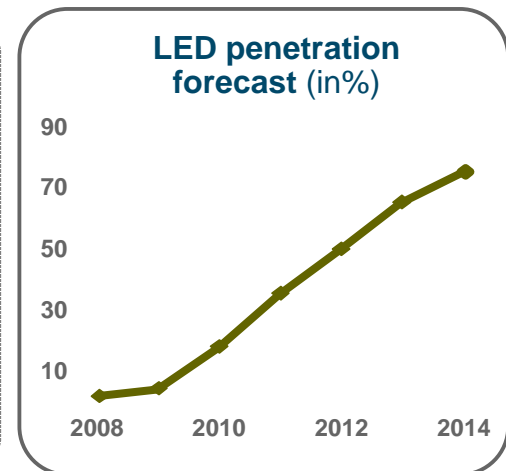
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- **Accelerate growth**
  - Increase downstream integration in Acrylics
  - Expand in emerging countries
  - Capture growth from innovation
- **Confident in our ability to deliver in next 5 years**
  - **In Acrylics**
    - Mid-cycle conditions expected
    - Well positioned to serve growing specialty acrylic monomers end markets (ADAME™, 2EHA)
    - Build a base in Asia
  - **A true growth potential in other businesses**
    - PMMA for LED TVs market
    - DMDS for soil fumigation
    - Detergents in H<sub>2</sub>O<sub>2</sub>
    - Fluorochemicals in Asia



# Capture growth from innovation: PMMA for LED TV

LED		LCD
Uses <b>LEDs</b> for Edge-lighting (light-emitting diodes)	Light	Uses <b>CCFLs</b> for Back-lighting (cold cathode fluorescent lamps)
<b>PMMA</b> clear sheet	Material	<b>Polystyrene</b> diffusion sheet
<b>1.5</b> centimeters	Thickness	<b>8</b> centimeters
<b>140</b> Watt (40-inch TV)	Energy	<b>190</b> Watt (40-inch TV)



- **PMMA growth on LED TVs market comes mainly from the substitution of Polystyrene and Polycarbonate in LCD TVs**
- **LED TVs are expected to replace LCD's**
- **LED TVs: from ~15% of the total TV set global market in 2010 to ~75% by 2014**

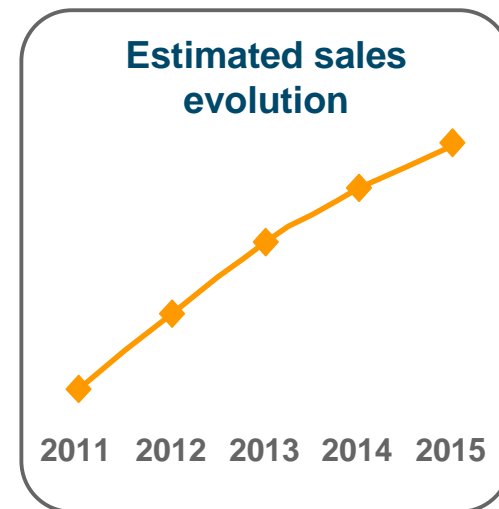


**Arkema is actively involved in this market with its PMMA BU (Altuglas)**



# Capture growth from innovation: DMDS for soil fumigation

- **A new application for an existing product (DMDS) of Thiochemicals**
- **Paladin® is used:**
  - As a product to get rid of different pests (nematodes, weeds and soil disease) before planting
  - For high-value crops (strawberries, tomatoes)
  - To improve yields
- **Key growth drivers**
  - Substitution of banned methyl bromide
  - Take shares on current fumigants which have higher toxicity than Paladin®
- **First tangible results of this innovation**
  - Paladin® received US EPA approval in July 2010
  - First sales in Israel in August





# Accelerate growth in Asia



- **Take advantage of fast-growing Asian markets**

- **H<sub>2</sub>O<sub>2</sub> production capacity x2**

- Increasing demand for pulp & paper bleaching supported by growing standard of living in Asia
- First western producer in China

- **New HFC-125 production unit**

- Fast-growing demand for air-conditioning supported by urbanization and higher living standards
- In partnership with Daikin, a leading global air-conditioning producer

- **New Coatex and Emulsions production units**

- Be positioned to supply locally global coating customers and to meet local demand

- **Longer-term thoughts in Acrylics and methacrylates monomers, and Thiochemicals**



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Build  
an integrated  
and global  
Coatings materials  
platform

 ARKEMA  
The world is our inspiration

# Arkema offers key materials to coatings industry



Coating composition	ARKEMA
~48 % binders (latex, etc.)	<ul style="list-style-type: none"> <li>• Monomers (acrylics, MMA)</li> <li>• UCAR™* (Emulsions)</li> <li>• Kynar® 500 PVDF (base resin for long life coatings)</li> </ul>
~30 % pigments	
~14 % solvents	
~8 % additives	<ul style="list-style-type: none"> <li>• Coatex (dispersants, thickeners)</li> </ul>

- **Market growth > GDP**

- **Mature markets**

- Growing demand for better performance
- Environmental-driven new technologies

- **Emerging countries**

- Growing population and construction demand

\* For latex products in the United States, Mexico and Puerto-Rico



# Arkema's position in the coatings supply chain

## Coatings materials

- Monomers (acrylics, MMA)
- Emulsions
- Coatex (dispersants, thickeners)
- Fluoropolymers (Kynar® 500, Kynar® Aquatec)

Coatings producers

End User

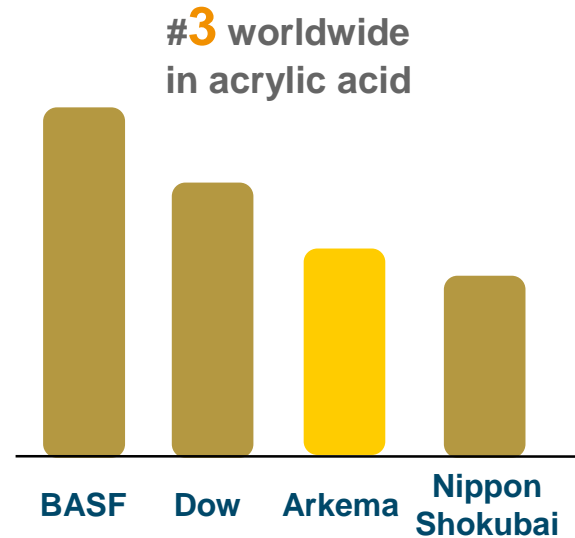


<i>Arkema's position</i>	Worldwide	North America
Acrylic monomers	#3	#2
Latex for architectural coatings		#2
Kynar® binders	Co-leader	Co-leader
Rheology additives	#3	#3



# Acrylics BU overview

- Leadership positions
- Proprietary and recognized technology on complex chemical processes
- ~30% downstream integration
- 2 world-class industrial sites
- ~€800m sales in 2010(e), i.e. 14% of Group sales



## Strong industrial presence



Clear Lake



Carling

\* 50/50 JV with Nippon Shokubai  
 \*\* Oxochimie JV with Ineos Oxide



# Specialty Acrylic Polymers BU overview (Coatex)

- High-value added acrylic or urethane based specialty polymers used as dispersants and thickeners
- R&D expertise
- Strong customer focus
- 4 industrial sites and 1 new site to open mid 2011 (China)
- ~€170m sales in 2010(e), i.e. 3% of Group sales

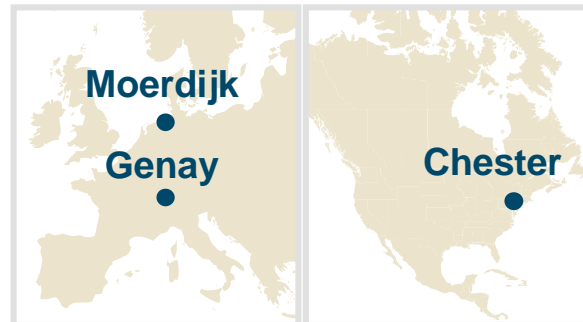


## Asset base in the US and Europe



Genay  
(Production + R&D)

Moerdijk  
(Production)



Chester  
(Production + R&D)

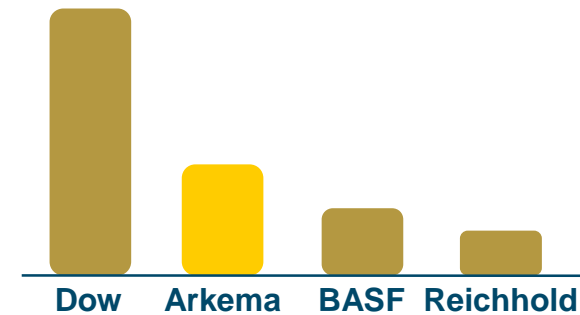




# Emulsion Systems BU overview

- A leading US latex producer
- Well-known UCAR™\* brand name
- Strong relationships with leading customers
- 1 R&D center in Cary (US)
- 3 industrial sites in the US
- ~€210m sales in 2010(e), i.e. 4% of Group sales

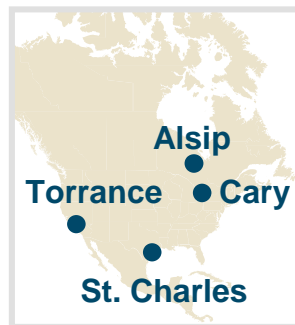
#2 in US architectural coating latex



## A strong industrial presence in the US



Saint Charles



## Latest innovations

**EnVia™**

*Certified for the latest green formulating standards*

**SNAP™**  
STRUCTURED NANO-ACRYLICS

*Outstanding film hardness at low or no VOC*

\* For latex products in the United States, Mexico and Puerto-Rico





# Arkema's ambition for acrylic value chain

- **Develop world-scale competitive monomer production sites**
  - Continue to optimize in Europe
  - Strengthen presence in the Americas (selective developments on mega-trends)
  - Secure competitive production capacities in Asia in the mid-term
- **Increase acrylic downstream integration to 40%**

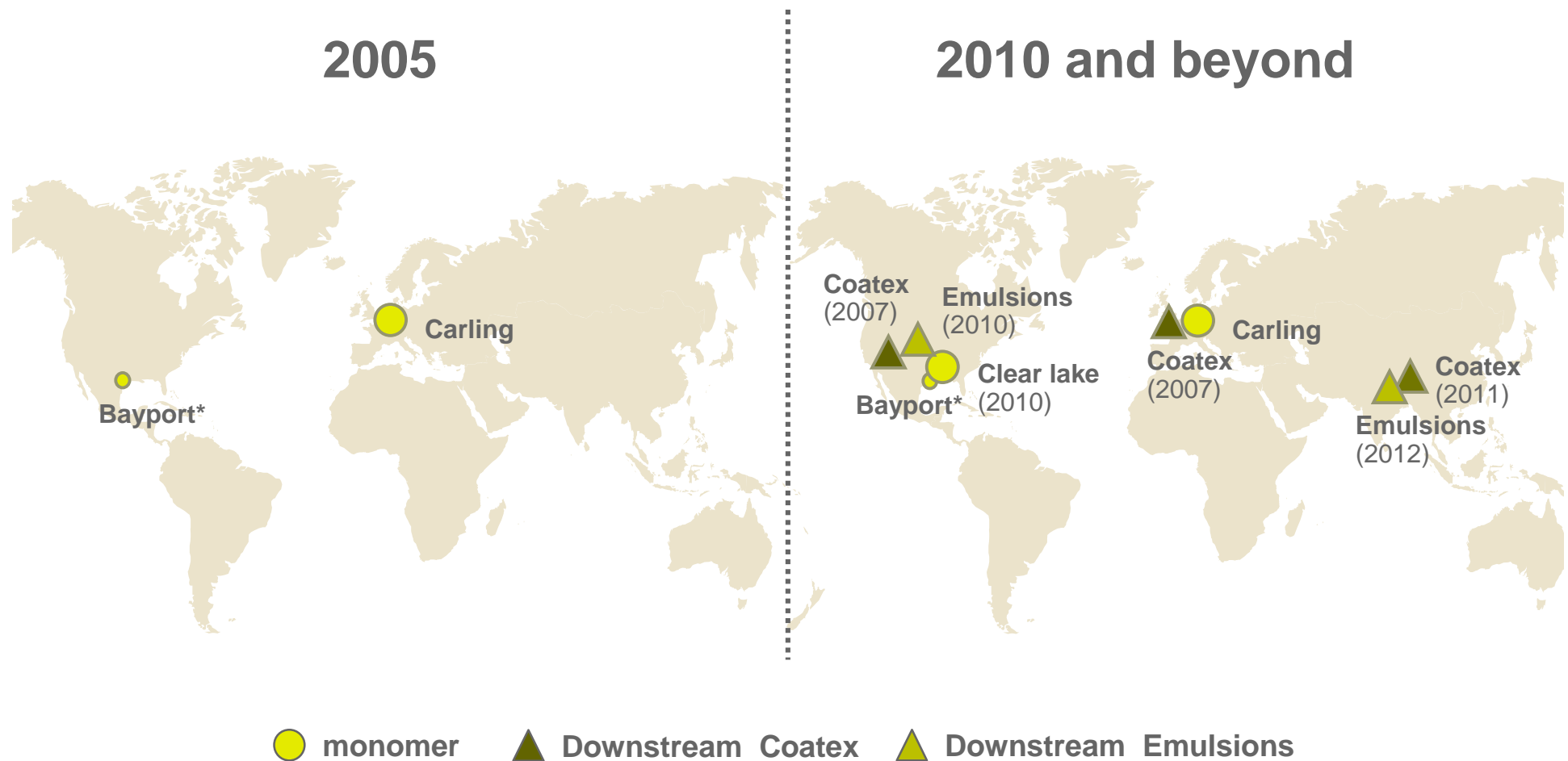
	North America	Europe	Asia
Acrylic monomers	✓	✓	Under study
Acrylic binders	✓		2012
Kynar <sup>®</sup> binders	✓	✓	2011
Coatex additives	✓	✓	2011



**Towards a global and competitive supplier  
of coating materials**



# Establish Arkema as a global leading player of the acrylic value chain



\* 50/50 JV with Nippon Shokubai

24 - PARIS-FRANCE - November 23, 2010



# Two key milestones: Acquisitions of Coatex & former Dow acrylic assets

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- **Perfect fit with Arkema's strategy**
  - **Build a strong position in monomers in the US (Clear Lake site acquired from Dow)**
  - **Expand downstream positions**
    - Specialty acrylic polymers (Coatex) acquired end 2007
    - Emulsions acquired from Dow end January 2010
- **Attractive deals**
  - **Acquisition of former Dow acrylic assets delivering significantly above initial expectations**
  - **Strong synergies with Coatex (G&A, taxes, benefits from a global coating approach in the US or in Asia, etc. )**
- **Strong potential from a global coatings approach**
  - **Combine UCAR™\* ('Emulsion Systems' BU), Coatex and Kynar® (Arkema's Fluoropolymers)**
  - **Close relationship with customers**
  - **Strong brands combined with innovation**



**Strong acquisition track-record with value accretive deals**

\* For latex products in the United States, Mexico and Puerto-Rico

# Two downstream units on the Changshu site

## Coatex project

- New production capacity of rheology modifiers
- New application laboratory
- Start-up expected mid 2011
- \$20m capex



## Emulsions project

- Construction of a latex plant for use in coatings and adhesives markets
- Start-up expected late 2012
- \$30m capex

- Support our global customers operating and/or expanding in the region
- Meet increasing local demand for coatings, paper and construction
- Increase acrylic downstream integration
- Benefit from synergies between the two units



**Build an acrylic downstream in Asia**



# Strengthen our position to serve growing applications in the US

- **Expand and balance our offer of acrylic monomers in the US**
  - **Implement synergies at Clear Lake**
    - Optimize production, yields and process efficiency
    - Total production capacity of the site early 2013: 270kt / year
  - **Increase capacities of Methyl Acrylate in Clear Lake (+45kt/year) and 2EHA in Bayport (+40kt/year)**
- **Focus on growing applications**
  - **Waste-water treatment**
  - **Enhanced oil & gas recovery (shale gas)**
  - **Adhesives**
- **Expected timing:**
  - Early 2012 for 2EHA
  - Early 2013 for acrylic acid
  - 2Q'13 for methyl acrylate
- **Total capex: \$110m**



**Strengthen our position as a major player  
of the acrylic monomers in the US**



# Follow high growth for specialty acrylics in Europe

## Carling – DMA (ADAME™)

- **+30% production capacity of DMA, a base product for flocculants**
- **Rationale:**
  - **Strengthen Arkema's position as a leader in Europe**
  - **Meet fast-growing demand in Europe and Asia:**
    - Increasingly stringent standards for municipal and industrial wastewater treatment
    - Growing volumes of effluents to be treated
- **Start-up expected 1H'12**

## Carling – 2EHA

- **+50kt / year 2EHA production capacity**
- **Rationale:**
  - **Meet strong growth on pressure sensitive adhesives**
- **Start-up 1Q'10**



# Committed to enhance Industrial Chemicals growth potential

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- **Confident in profitable growth potential for Acrylics**
  - Sustained growth expected from end markets
  - Increase downstream integration
  - Expand successfully in Asia
  - Keep focus on competitiveness
- **A true potential of growth in other businesses**
  - Well established leadership positions on markets growing above GDP
  - Well positioned to capture growth from new applications (LED, soil fumigation, detergents, alternative energies, LGWP fluorogas, etc.)
  - Existing base in Asia which will be further strengthened





# Disclaimer

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- The information disclosed in this document may contain forward-looking statements with respect to the financial condition, results of operations, business and strategy of Arkema. Such statements are based on management's current views and assumptions that could ultimately prove inaccurate and are subject to risk factors such as among others, changes in raw material prices, currency fluctuations, implementation pace of cost-reduction projects and changes in general economic and business conditions.
- Arkema does not assume any liability to update such forward-looking statements whether as a result of any new information or any unexpected event or otherwise. Further information on factors which could affect Arkema's financial results is provided in the documents filed with the French Autorité des Marchés Financiers.
- Financial information for 2010, 2009, 2008, 2007, 2006 and 2005 is extracted from the consolidated financial statements of Arkema. Quarterly financial information is not audited.
- The business segment information is presented in accordance with Arkema's internal reporting system used by the management.
- The definition of the main performance indicators used can be found in the 3Q'10 results press release available on [www.finance.arkema.com](http://www.finance.arkema.com)
- A global chemical company and France's leading chemicals producer, Arkema is building the future of the chemical industry every day. Deploying a responsible, innovation-based approach, we produce state-of-the-art specialty chemicals that provide customers with practical solutions to such challenges as climate change, access to drinking water, the future of energy, fossil fuel preservation and the need for lighter materials. With operations in more than 40 countries, 14,000 employees and seven research centers, Arkema generates annual revenue of around €5.8 billion and holds leadership positions in all its markets with a portfolio of internationally recognized brands. The world is our inspiration.

