

## A successful transformation

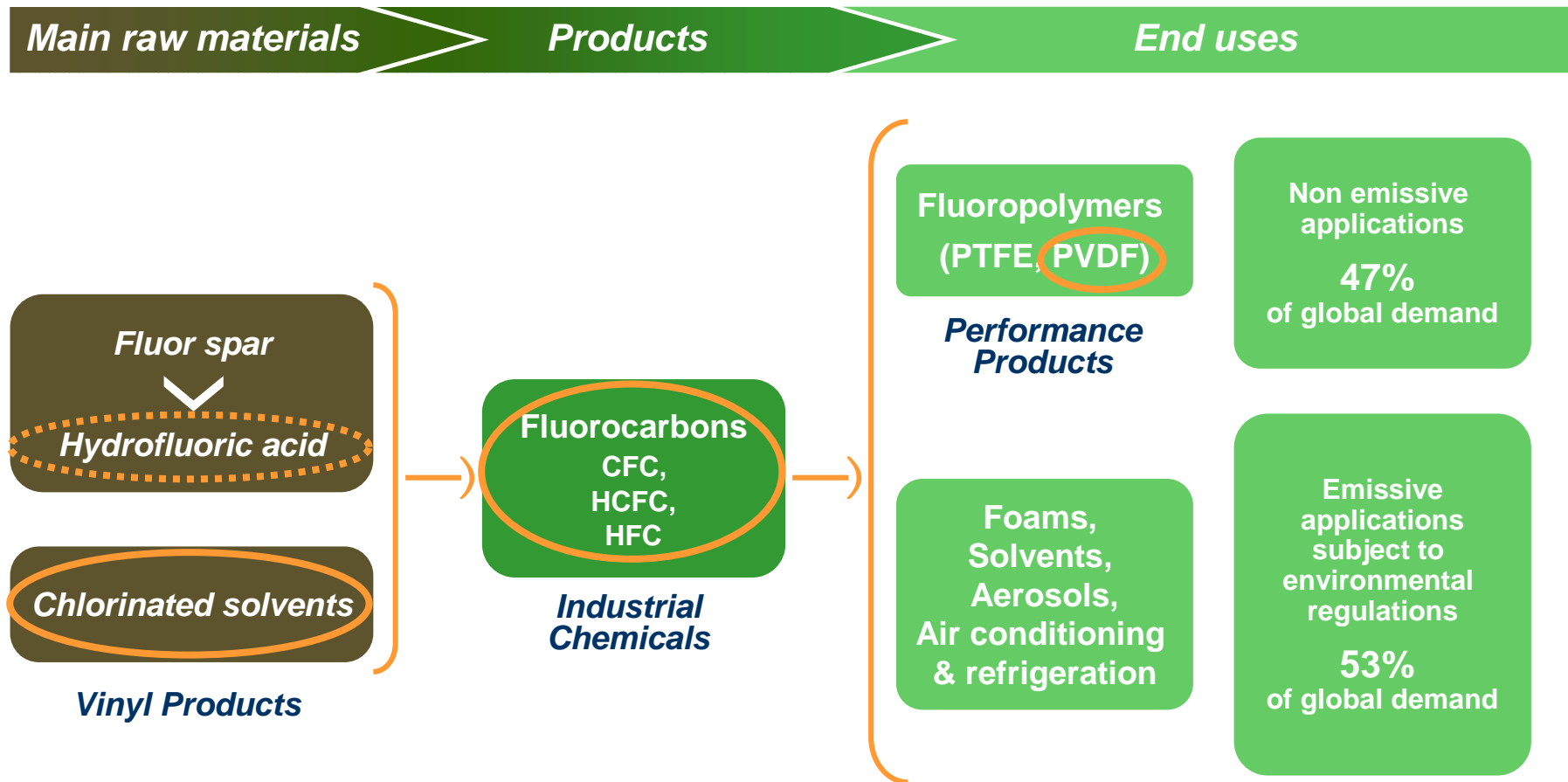
### Fluorochemicals

September 25<sup>th</sup>, 2007

Marc Schuller  
*Executive Vice President*



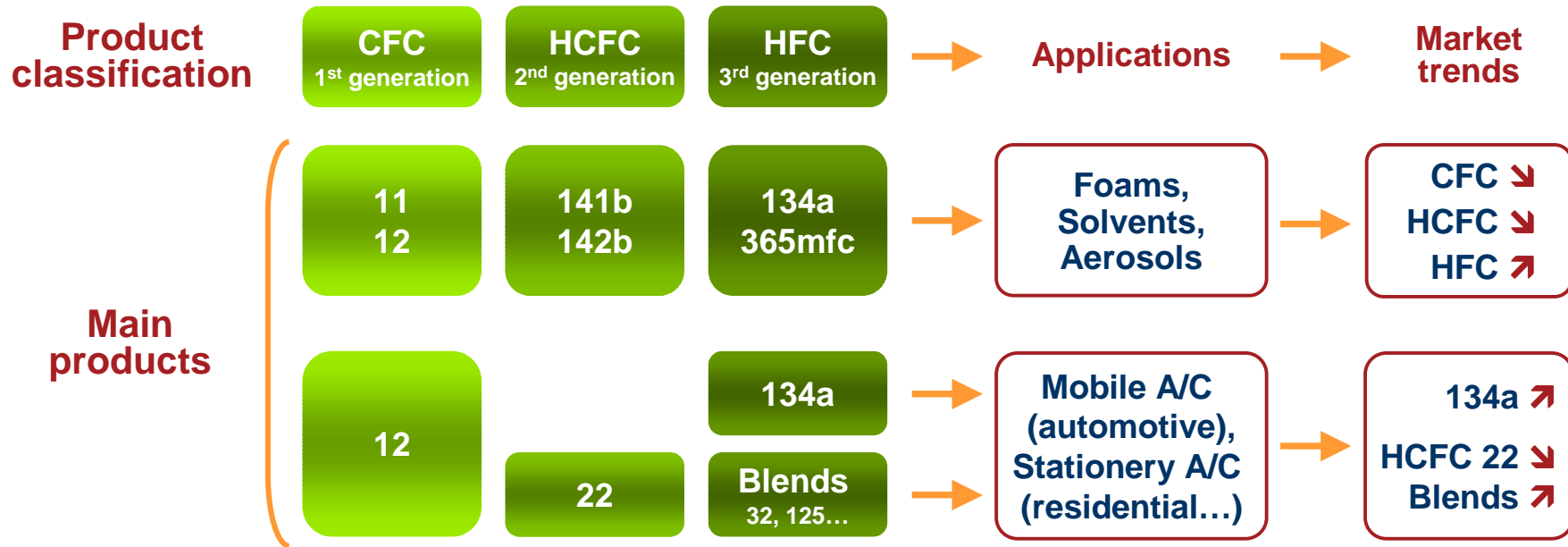
# Fluorochemical chain



 Arkema's products



# New products for a changing environment in emissive applications



## Major impact from environmental regulations leading to new generations of products

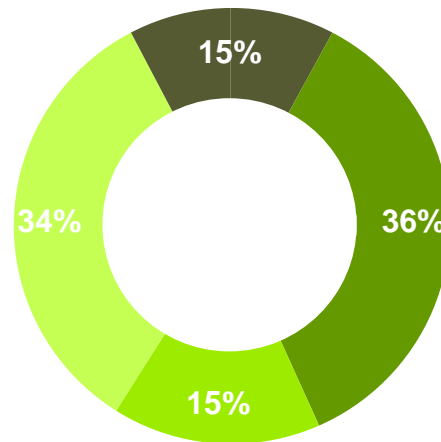
- Montreal Protocol (Ozone Depletion Substances)
- Kyoto Protocol (Global Warming Potential)
- Substantial R&D commitment required
- Intellectual property and patents as key success factors
- Provide environmentally friendly solutions

# Regional trends

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## Global demand\*

### RoW



### Asia

- Emerging air conditioning market with high potential
- Export capacity
- Raw material availability (fluor spar for HF)
- IP protection questionable

### North America

- Large air conditioning market
- Transition to blends in progress (2010)
- Limited number of gas producers (IP protection)

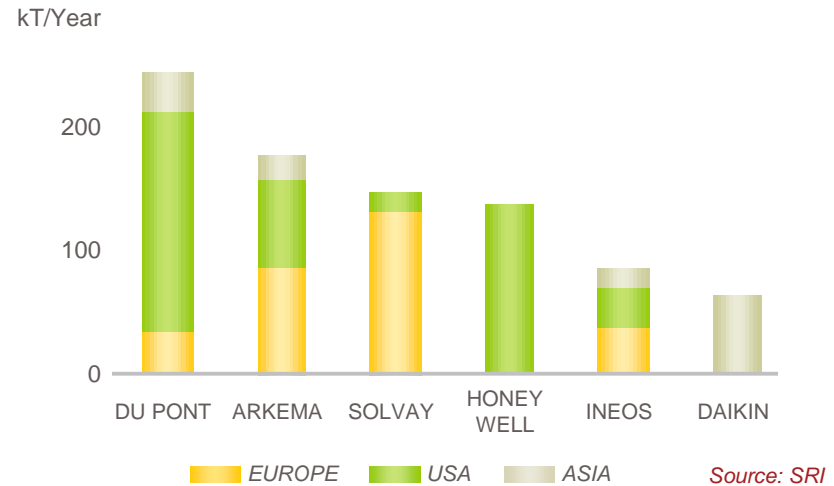
### Europe

- Limited market size and growth potential
- Transition to blends already achieved
- Rapid implementation of environmental regulations

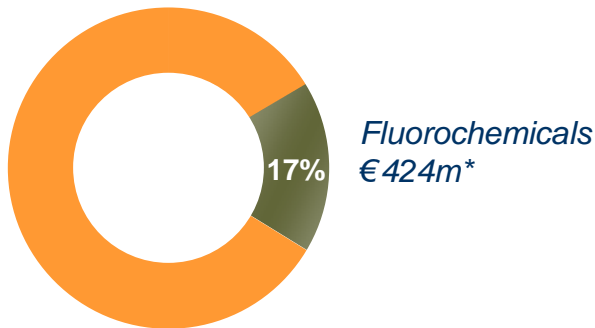
# Business unit overview

- **A wide range of products**
  - HCFC (22, 140)
  - 134a
  - HFC – blends
- **N<sup>2</sup> worldwide**
- **Proprietary technologies**
- **Major integration with fluoropolymers: substantially growing captive use**

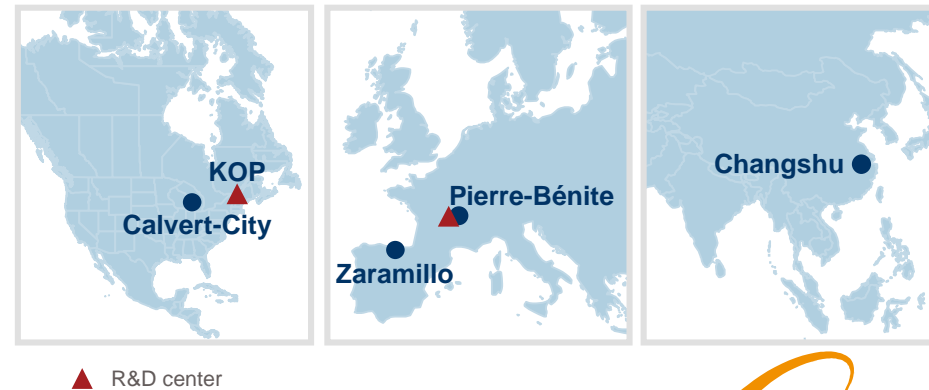
## Production capacities



## 2006 sales % of Industrial Chemicals segment



## Global presence



**2004-2010**

**Building a major competitive long term player**



# 2004: a business to be reshaped

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## Several key issues in 2004

- 🗑️ Lack of clear strategic vision
- 🗑️ Limited commitment to the future



- Poor plant reliability
- Insufficient global marketing
- No major development projects
- Limited R&D program

but

## Valuable strengths

- 🗑️ Strong market positions in North America and Europe
- 🗑️ Existing asset base in Asia
- 🗑️ Well-known brand: Forane<sup>®</sup>
- 🗑️ Downstream integration through fluorinated polymers (Kynar<sup>®</sup>)
- 🗑️ Shelved R&D projects

*A new management team convinced  
of the business potential*

# A regional approach to a global strategy

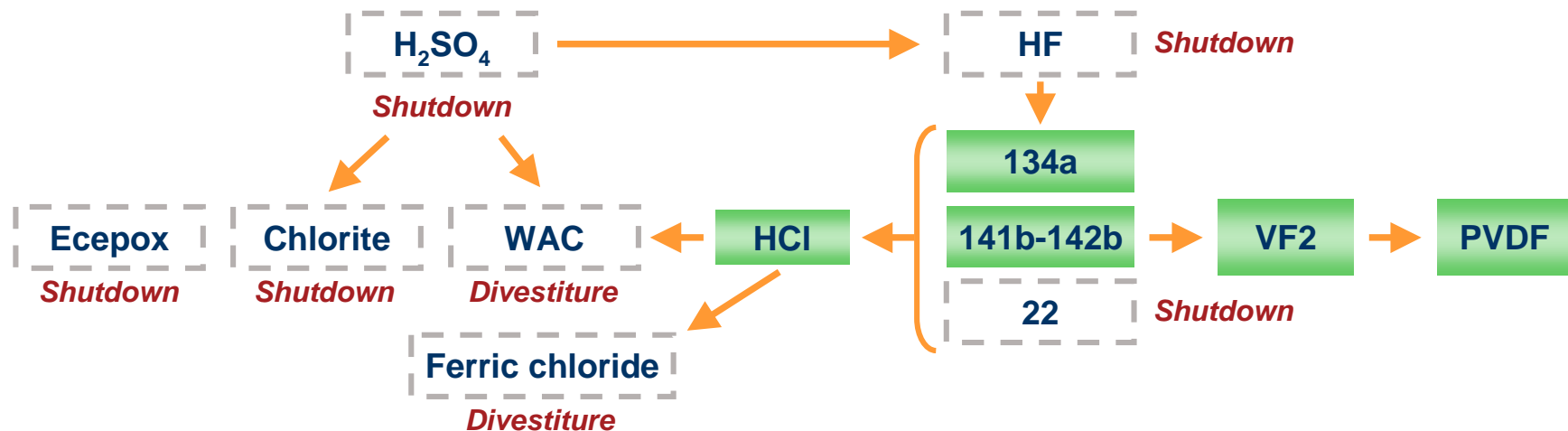
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-  **Restore competitiveness of European assets**
-  **Participate in the transition towards blends in North America**
-  **Become a major competitive player in Asia**



# Turn Pierre-Bénite into a competitive European site

- 📦 **Shutdown of 5 production units including HF**
  - Headcount reduction: 196 positions
  - Closure of production units effective in 4Q'07
- 📦 **Streamlining of site organization**
- 📦 **Divestiture of 2 non-core business plants (water treatment)**
  - 20 positions



*Refocus Pierre-Bénite on its core businesses*

# New HFC plant in Calvert-City

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## Retrofit of an HCFC plant into HFC 32 component for new HFC blends

- HCFC 22 progressively replaced by HFC blends
- HFC32 is a component to manufacture HFC blends
- Supply HFC32 needs in North America
- Capex: around US\$45 million
- Largest plant in the world  
Capacity: 25,000 tonnes/year
- Start-up in July 2007



## Reinforce Calvert-City as an integrated fluorochemicals site

## Viewed as a commitment to remain long term in Fluorochemicals

## Competitive supply to large A/C OEMs especially in North America

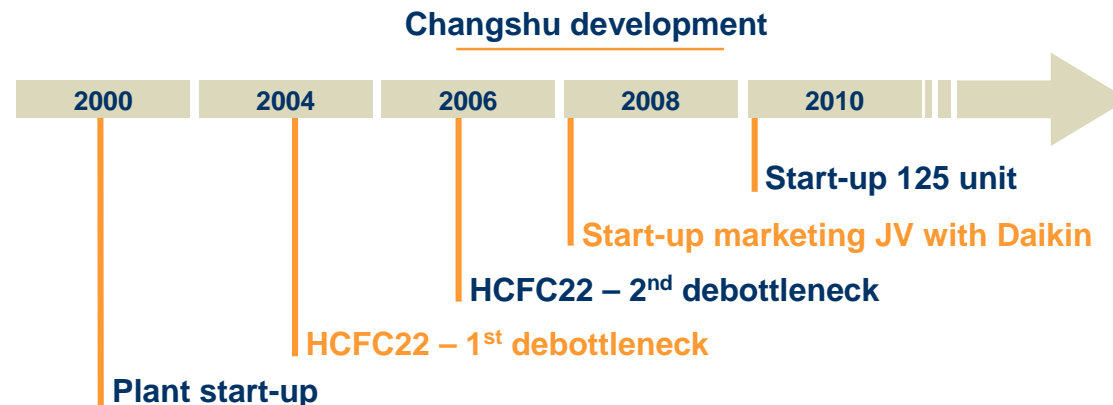
*Position Arkema among the world leaders  
in next-generation refrigerant fluids*



# Accelerate growth in Asia



- 📦 **Increase production capacity of HCFC 22 in Changshu (China)**
  - + 50% in 2006
  - Supply of Asian markets and PTFE requirements
- 📦 **Regional alliance with Daikin, a leading global air conditioning manufacturer**
  - Arkema to bring proprietary technology and the Changshu industrial platform
  - Daikin to bring 125 requirements for A/C integration
  - Creation of a 60/40 manufacturing JV Arkema/Daikin to produce and market 125\*
  - Creation of a 40/60 JV Arkema/Daikin for the marketing of HFC blends
  - Start-up early 2010



*Become a leading competitive player in Asia*



# Adapt R&D programs to changing environmental regulations

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## **Development of 125 proprietary technology**

- From lab-bench to pilot plant in less than 2 years
- Proprietary technology contributed to the JV with Daikin

## **Improvement of HFC32 production process**

- Capitalize on Zaramillo (Spain) experience
- Develop a world-scale plant in Calvert-City (US)

## **Low Global Warming Potential**

- Identify the next generation low GWP solutions for car industry

*Allocate significant R&D resources  
to build the future*



# 2010: a profitable and growing business

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- 📦 **A competitive and integrated asset base in each region**
  - Restored profitability in Pierre-Bénite
  - Development of Calvert-City
  - New partnership in Asia with Daikin
  
- 📦 **Next-generation products to meet new regulations and prepare the future**

*A successful transformation  
to efficiently adapt to new challenges  
of changing environmental regulations*