

# **Fact Book**



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## List of abbreviations - I

1H First Half (of a year)

ABS Acrylonitrile Butadiene Styrene

AC Anorganische Chemie (Inorganic Chemicals)

act. activities

ADPA Aminodiphenylamine

AG Aktiengesellschaft

Al Anorganische Industrieprodukte

Amort. Amortisation

APAC Asia Pacific

ASA Acrylonitrile Styrene Acrylate
ASA Alkenyl Succenic Anhydride

ASRC American Synthetic Rubber Company

BAC Basic Chemicals

BASF Badische Anilin und Soda Fabrik

BBS Bayer Business Services
BIS Bayer Industry Services

bn billion

BTR Butyl Rubber

BTS Bayer Technology Services

BU Business Unit



## List of abbreviations - II

ca. circa

CAGR Compound Annual Growth Rate

Capex Capital expenditure

CEH Chemical Economics Handbook

CEO Chief Executive Officer
CFO Chief Financial Officer

CFS Combined Financial Statements

Chg. Change

cGMP Current Good Manufacturing Practice

CHT R. Beitlich GmbH

CIBA (Gesellschaft für) Chemische Industrie Basel

CPF Composite Production Flow

CPL Caprolactam

CR Chloroprene Rubber

CXO Cyclohexanone/Cyclohexanol

Degussa Deutsche Gold- & Silber-Scheide-Anstalt

Depr. Depreciation

DIN Deutsche Industrienorm

DSM De Nederlandse Staatsmijnen



## **List of abbreviations - III**

EBIT Earnings before interest and tax

EBITDA Earnings before interests, tax, depreciation and amortisation e.g. exempli gratia (Latin: for example)

EKA Elektrokemiska Aktiebolaget

EMEA Europe, Middle East and Africa

Euro

EPA Environmental Protection Agency
EPDM Ethylene Propylene-diene Rubber

EPS Earnings per share

E-SBR Emulsion Styrene Butadiene Rubber

EU European Union

EVM Ethylene Vinyl Acetate Rubber

FCC Functional Chemicals

FCH Fine Chemicals

FDA Food and Drug Administration

Fibers

FMC Food Machinery Corporation

FRNC Flame Retardant Non-Corrosive (cable)

FWA Fluorescent Whitening Agent

FX Foreign Exchange



FIB

€

## **List of abbreviations - IV**

GDP Gross domestic product

GmbH Gesellschaft mit beschränkter Haftung

GVW Garnveredlungswerke (Goch)

HMR Hoechst Marion Roussel

HNBR Hydrogenated Acrylonitrile Butadiene Rubber

ICI Imperial Chemical Industries

i.e. id est (Latin: that is)
ION Ion Exchange Resins

IISRP International Institute of Synthetic Rubber Producers

IP Intellectual Property
IPG Inorganic Pigments
IPO Initial Public Offering
iSL Industrie Spezial Lacke

ISO International Organization for Standardization

IT Information Technology
JSR Japan Synthetic Rubber

JV Joint Venture

KA-Oil Ketone-alcohol oil (mixture of cyclohexanone and cyclophexanol)

kilotons (1,000 metric tons)



kt

### List of abbreviations – V

LATAM Latin America LEA Leather LG **Lucky Goldstar Corporation** LOA **Lubricant Oil Additives** LS **Lackrohstoffe (Coatings and Colorants)** LXS **LANXESS** million m М month MDI Methylene Diphenylene Diisocyanate MPP **Material Protection Products Mergers and Acquisitions** M&A **NAFTA North American Free Trade Area** Nalco **National Aluminate Corporation NBR** Nitrile Butadiene Rubber NJ **New Jersey** NKNK Nizhnekamskneftekhim not meaningful n.m. No. number **Optical Brightening Agent OBA** 

Ohio



ОН

## **List of abbreviations - VI**

per annum p.a. PA Pennsylvania PΑ **Polyamide** PAP Paper **PBR** Polybutadiene Rubber **PBT** Polybutylene Terephthalate PC personal care **Paraphenylene Diamine** PPD PET **Polyethylene Terephthalate** PΚ former Bayer business unit (Pigments and Ceramics) plc **Public Limited Company** ΡU **Polyurethane Polyvinyl Chloride PVC** Q1 First quarter (of a year) R&D Research and development **REACH** Registration, Evaluation and Authorization of Chemicals **RCH RheinChemie** R/O reverse osmosis RoW **Rest of World** RUC **Rubber Chemicals** 



## **List of abbreviations - VII**

S/A Sociedade Anónima

SAN Styrene Acrylonitrile

SC South Carolina

SCP Semi-Crystalline Products

SCUP Specialty Chemicals Update Program

SETA Sociedade Extractiva Tanino da Acácia Ltda

SG&A Sales, General and Administration
SINOPEC China Petrochemical Corporation

SRI Stanford Research Institute

S-SBR Solution Styrene Butadiene Rubber

STY Styrenic Resins

TA-Luft Technische Anleitung zur Reinhaltung der Luft

TFL Together for Leather TMQ Trimethyl Quinoline

TPC Textile Processing Chemicals
TRP Technical Rubber Products

Texas

UK United Kingdom U.S. United States

USA United States of America

w/o without

WTO World Trade Organisation

WV West Virginia



TX



### **Overview**

**Performance Rubber** 

**Engineering Plastics** 

**Chemical Intermediates** 

**Performance Chemicals** 



## Dr. Axel Claus Heitmann (CEO)



Axel C. Heitmann was born on October 2, 1959 in Hamburg, Germany. He studied chemistry at Hamburg University and the University of Southampton (United Kingdom), obtaining a science doctorate in 1988. He joined Bayer in 1989 where he entered the post-graduate trainee program. Between 1989 and 1991 he held various positions in the Central Research Division, and in the Applications Development and Manufacturing sections of the Rubber Business Group.

Following two years as a plant manager, he transferred to Bayer plc in the United Kingdom as Manager of the Rubber Business Group's Bromsgrove site. In 1996 Heitmann was appointed Head of Manufacturing and Technology at PolymerLatex, the then newly formed joint venture between Bayer and Degussa. From March 1999 to January 31, 2002, Mr Heitmann was Head of the Wolff Walsrode Business Group. He was then appointed General Manager of the Rubber Business Group at Bayer AG. In July 2002, he became a member of the Executive Committee of Bayer MaterialScience.

On September 16, 2004, Axel C. Heitmann has been named as the CEO of LANXESS AG.

Mr Heitmann is married and has two children.



## Dr. Ulrich Koemm



Ulrich Koemm was born on October 20, 1950. He studied at the Technical University of Munich and completed his doctorate there. He first worked on the scientific staff at the University of Kaiserslautern before joining Bayer in 1980 as a laboratory manager in the Research Department of the Inorganic Chemicals (AC) Business Group. Between 1983 and 1986, he was a research team leader in this department before moving to AC Manufacturing where he managed the chrome plant and headed the fluorine department.

In 1988, Koemm was transferred to Bayer do Brazil where he was the local general manager of the AC, LS and Pigments and Ceramics (PK) Business Groups. When he returned to Leverkusen in 1992, he became head of manufacturing in the PK Business Group. In 1994, he was made head of manufacturing in the Inorganics (AI) Business Group and in 1997 he took over the responsibility for the Business Unit Inorganic Pigments. In 1998 he became head of the Business Group Inorganics. In April 1999 he took over the position as General Manager of the Coatings and Colorants (LS) Business Group at Bayer AG.

On September 16, 2004, Ulrich Koemm has been named as member of the Board of Management of LANXESS AG.

Mr Koemm is married and has four children.



## Dr. Martin Wienkenhöver



Martin Wienkenhöver was born on August 1, 1956 and attended high school in Lengerich, Germany. He studied chemistry at the Westfälische Wilhelms University in Münster.

Having obtained his doctorate, he joined Bayer AG in 1985 as head of a development and formulating laboratory in the former Dyes and Pigments Business Group. A year later he became a laboratory manager in dyes and pigments research. In 1988 Mr Wienkenhöver moved to Bayer's U.S. subsidiary Mobay Corporation (now part of Bayer Corporation), initially as Group Leader R&D in the Dyes and Pigments Division and from 1992 as Head of R&D in the Organic Products Division. He returned to Bayer's headquarters in Leverkusen in 1993 where he was in charge first of dyes and pigments development and later of key account management in dyes and pigments marketing. He subsequently worked for DyStar Textilfarben GmbH, at that time a 50:50 joint venture of Bayer and Hoechst, where he was in charge of the Reactive Dyes Business Unit.

In April 1999 he was appointed General Manager of the Basic and Fine Chemicals Business Group at Bayer AG. On September 16, 2004, Martin Wienkenhöver has been named as member of the Board of Management of LANXESS AG.

Mr Wienkenhöver is married and has four children.



## **Matthias Zachert (CFO)**



Matthias Zachert was born in Bonn, Germany on November 8, 1967. After graduating from high school, he trained as a commercial assistant at the then Mercedes Benz AG in Stuttgart. From 1990 to 1995, he studied business administration, specialising in finance. During that time, he also spent periods in the United States and France.

He subsequently joined the International Management Program of what was then Hoechst AG, and, in 1996, became head of a special IPO project to establish the Hoechst Marion Roussel (HMR) pharmaceutical business as a separate legal entity world-wide. After holding a number of other management positions at HMR, he assumed responsibility in 1999 for the integration of the finance organisations of the two pharmaceutical companies HMR and Rhône-Poulenc Rorer, which subsequently became Aventis Pharma as part of the merger between Hoechst and Rhône-Poulenc. In January 2000, Matthias Zachert was appointed Chief Financial Officer of the Region International of this company, headquartered in Paris.

In summer 2002, he moved to Düsseldorf to become Chief Financial Officer of Kamps AG, where he was involved in the realignment of the company. On September 16, 2004, Matthias Zachert has been named as the CFO of LANXESS AG.



## Lean organisation, operating globally

# **BOARD OF MANAGEMENT**

U. Koemm

A.C. Heitmann (CEO)

M. Wienkenhöver

M. Zachert (CFO)

#### **Business Units**

#### **Performance Rubber**

**Butyl Rubber** 

Polybutadiene Rubber

**Technical Rubber Products** 

#### **Engineering Plastics**

Styrenic Resins

Semi-Crystalline Products

**Fibers** 

#### **Chemical Intermediates**

**Basic Chemicals** 

**Fine Chemicals** 

**Inorganic Pigments** 

#### **Performance Chemicals**

Material Protection Products

**Functional Chemicals** 

Leather

**Textile Processing** Chemicals

Paper

RheinChemie

**Rubber Chemicals** 

Ion Exchange Resins

### **Group Functions**

**Board Office** 

Corp. Development

- Strategy
- Portfolio

Corporate Communications

Corporate HR

Treasury

Tax

Corporate Controlling

Accounting

**Internal Auditing** 

Investor Relations

Mergers & Acquisitions

Law & Intellectual Property

Procurement

Technical Services

Logistics / Supply Chain

**Human Resources** 

Information Technology

Industrial & Environmental **Affairs** 



## **Businesses grouped in four segments**

## **LANXESS**

Sales¹: €6.315 bn EBITDA²: €180 m Employees³: 20,423

**Butyl Rubber** 

Polybutadiene Rubber

Technical Rubber Products

Styrenic Resins

Semi-Crystalline Products

**Fibers** 

**Basic Chemicals** 

Fine Chemicals

Inorganic Pigments

Material Protection Products

**Functional Chemicals** 

Leather

Textile Processing Chemicals

Paper

RheinChemie

**Rubber Chemicals** 

Ion Exchange Resins

Performance Chemicals

Performance Rubber

Sales: €1.375 bn EBITDA: €4 m Employees: 2,999 **Engineering Plastics** 

Sales: €1.401 bn EBITDA: €14 m Employees: 3,658 Intermediates

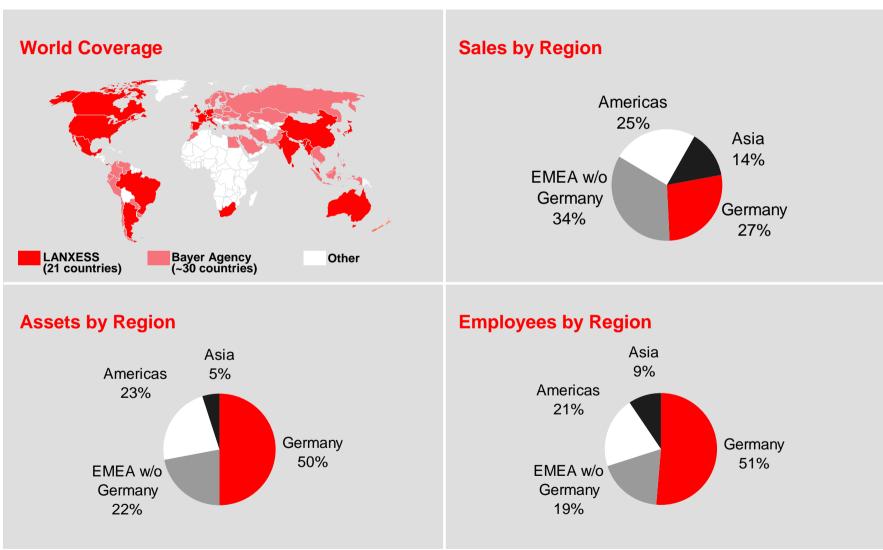
Sales: €1.411 bn EBITDA: €119 m Employees: 4,059

Chemical

Sales: €1.925 bn EBITDA: €96 m Employees: 4,881



# **Global presence**





# **Summary of key financials**

Key financials				
(€ m)	2002	2003	9M 2003	9M 2004
Sales	6,763	6,315	4,828	5,047
Exceptional items	-80	-131	-25	-60
EBITDA excl. exceptionals	587	311	325	385
EBITDA excl. except. /Sales	8.7%	4.9%	6.7%	7.6%
EBITDA	507	180	300	325
EBITDA/Sales	7.5%	2.9%	6.2%	6.4%
Depr. & Amort.	-626	-1,477	-377	-249
EBIT	-119	-1,297	-77	76
EBIT/Sales	-1.8%	-20.5%	-1.6%	1.5%
Capex	393	312	193	158
Number of Employees	21,460	20,423	_	_



## Diversified customer and supplier base

**Customers** 

**Top 10 customers\*:** below 20% of sales

(thereof Bayer <10%)

**Suppliers** 

**Top 10 suppliers\*:** 70% of raw material spend

(thereof Bayer 14%)

**Raw Materials** 

Top 10 raw materials\*\*: 1,3-Butadiene, Styrene, Acrylonitrile,

Cyclohexane, C4 Raffinate 1, Toluene,

Ammonia, Caustic Soda, Chlorine,

Isobutylene

### Manageable impact on operating profit due to

- contractual clauses
- ability to partially pass through higher raw material prices
- hedging (strategy currently being further developed)



<sup>\*</sup>estimates, based on 2003 sales

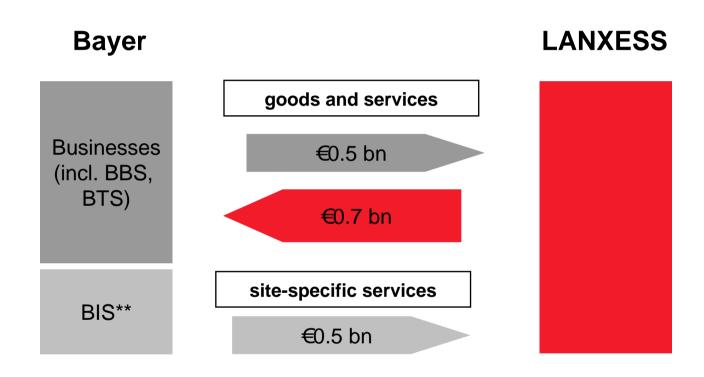
<sup>\*\*</sup>based on 2003 figures

# Culture of strict adherence to all environmental, health and safety standards

- Numerous sites have a formalised Environmental Management System according to DIN ISO 14001
- Accruals of best estimate of liability for investigation and clean-up costs in place
- Environmental liabilities:
  - Bayer and LANXESS performed a level 1 environmental audit for 55 sites in 2004
  - As of Dec 31, 2003, LANXESS had reserved €42 m for environmental matters globally
- Environmental cap:
  - LANXESS liability arising from environmental contamination of real state that was caused or arose prior to the spin-off economic effective date (July 1, 2004) is capped as between LANXESS and Bayer
  - Bayer generally must reimburse LANXESS for all such remedial action in excess of €350 m ordered, carried out or agreed upon before the end of 2009



## **Contractual relationship with Bayer\***





<sup>\*</sup>expected for 2005

<sup>\*\*40%</sup> share held by LANXESS

# LANXESS continues service relationships

	Services	Relationship	LANXESS stake
BBS	<ul> <li>Technical consultancy</li> <li>Accounting</li> <li>Procurement</li> <li>Human resources</li> <li>Logistics</li> <li>IT operations</li> <li>Scientific services</li> <li>Pensions</li> </ul>	<ul> <li>Contractual relationship like with other third parties ('at arms' length)</li> </ul>	none
BTS	<ul><li>Engineering</li><li>Construction</li><li>Process optimisation</li></ul>	<ul> <li>Contractual relationship like with other third parties ('at arms' length)</li> </ul>	none
BIS	<ul> <li>Technical services</li> <li>Environmental</li> <li>protection and safety</li> <li>Waste management,</li> <li>Utilities procurement</li> <li>Infrastructure services</li> </ul>	<ul> <li>LANXESS expected to pay ca.</li> <li>€0.5 bn to BIS in 2005</li> <li>LANXESS is a partner with equal rights for key strategic decisions at BIS</li> </ul>	40%
Benef	its to LANXESS due to outsourcing of	non-core activities and th	rough

Benefits to LANXESS due to outsourcing of non-core activities and through securing synergies at premises





### Overview

### **Performance Rubber**

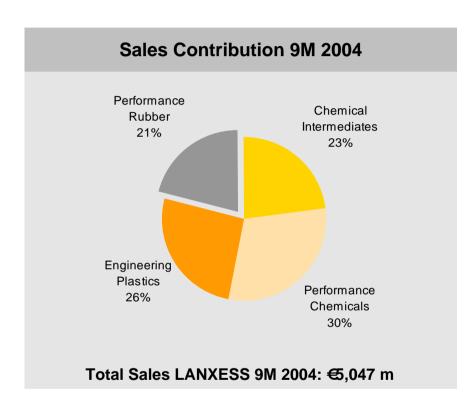
**Engineering Plastics** 

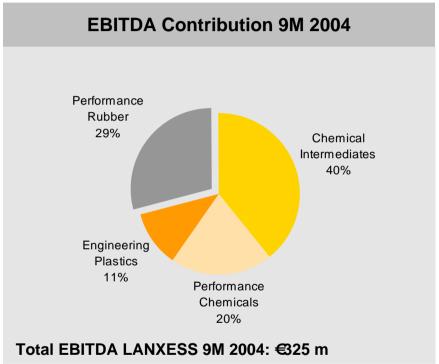
**Chemical Intermediates** 

**Performance Chemicals** 



### **Performance Rubber**







# A leading\* rubber producer with strong market positions in the automotive tyre industry

#### **Butyl Rubber**

 Manufactures butyl rubber, which is a general purpose rubber impermeable to air with wide applications both in tyre and other industries, such as pharmaceutical closures and chewing gum.



#### Polybutadiene Rubber

 One of the world's leading manufacturers of general purpose rubbers polybutadiene- and solutionstyrene- polybutadiene-rubber used principally in tyre compounds



#### **Technical Rubber Products**

 Provides a broad range of specialty elastomers for the rubber processing industry with wide applications e.g. automotive, engineering, construction, electronics, oil exploration, aviation



- Automotive and tyre industries as the major end-users
- Mainly price-, cost- and technology-driven
- Based on butadiene, isobutene, ethylene, propylene, isoprene, acrylonitrile

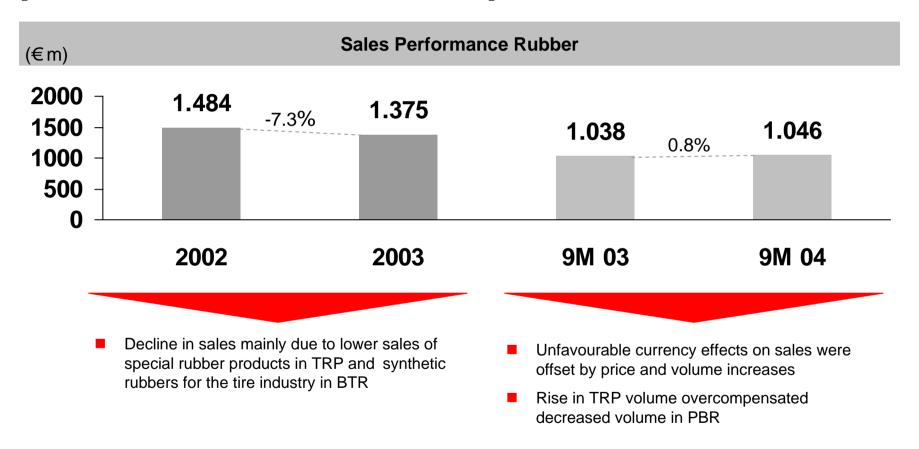


# **Summary of key financials**

Key financials				
(€ m)	2002	2003	9M 2003	9M 2004
Sales	1,484	1,375	1,038	1,046
EBITDA	161	4	37	97
EBITDA/Sales	10.8%	0.3%	3.6%	9.3%
Depr. & Amort.	-163	-250	-88	-55
EBIT	-2	-246	-51	42
EBIT/Sales	-0.1%	-17.9%	-4.9%	4.0%
Capex	78	78	48	43
Number of Employees	3,151	2,999	_	-

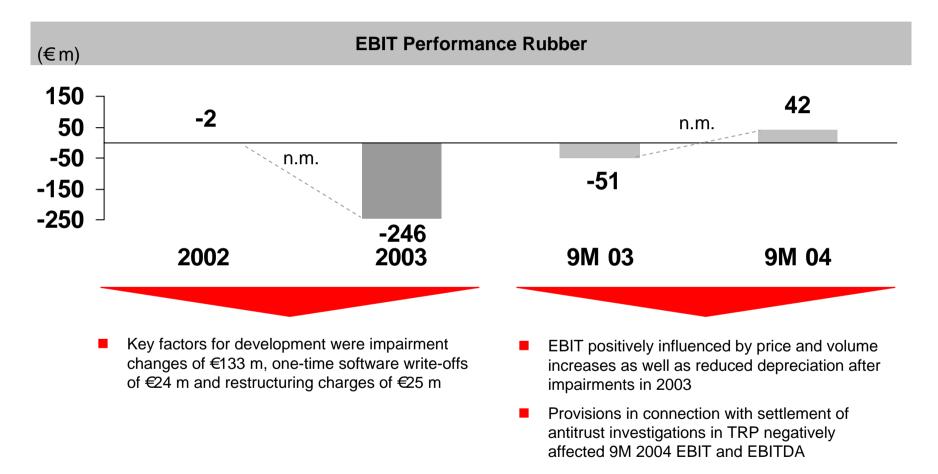


# Slight increase in sales due to strong overall price and volume development



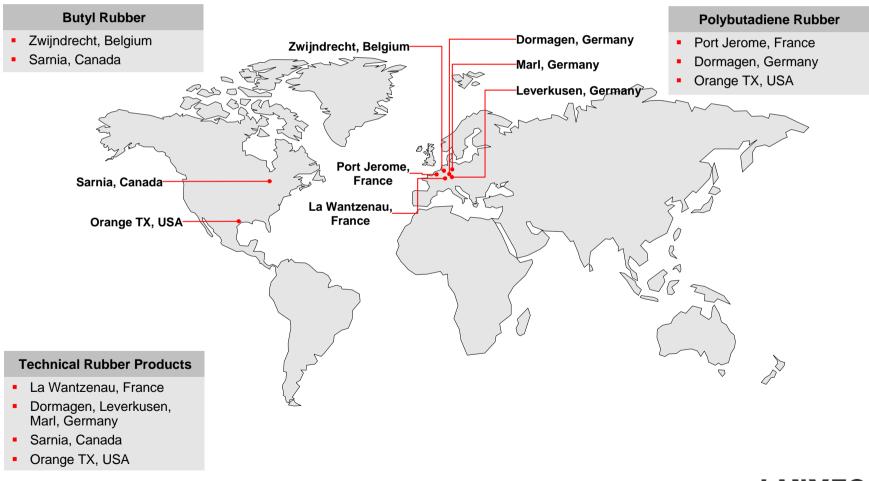


# Lower depreciation base and price increases lead to a turnaround for the first 9 months 2004





# World-class European and North American manufacturing base





## Turning market leadership into value

- Butyl rubber, polybutadiene rubber and technical rubber products managed independently in order to achieve full flexibility and accountability
- Behave as market leaders in rubber
- Stronger participation in Asian growth
- Realize significant cost advantages through concentration on world-scale plants
- Selective expansion for promising sub-segments
- Development of non automotive markets and rubber specialty segments





Overview

Performance Rubber

**Engineering Plastics** 

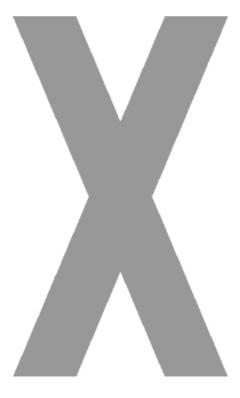
**Chemical Intermediates** 

**Performance Chemicals** 

**Butyl Rubber** 

Polybutadiene Rubber

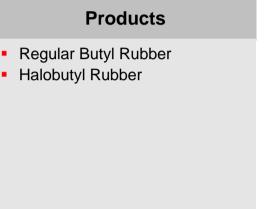
Technical Rubber Products



# Strong market & technology position as basis to participate in attractive growth areas







#### Competition

- 1. ExxonMobil
- 2. LANXESS
- 3. Russian Producers (NKNK, Togliatti)
- 4. Yan Hua

based on volume terms Source: IISRP World-wide Rubber Statistics 2003

#### **Market Development**

- Based on currently installed capacities, constraints or even shortages in capacity likely midterm
- Expected volume growth (CAGR 02–08):
  - North América ~1%
  - Europe ~2%
  - Asia ~6%

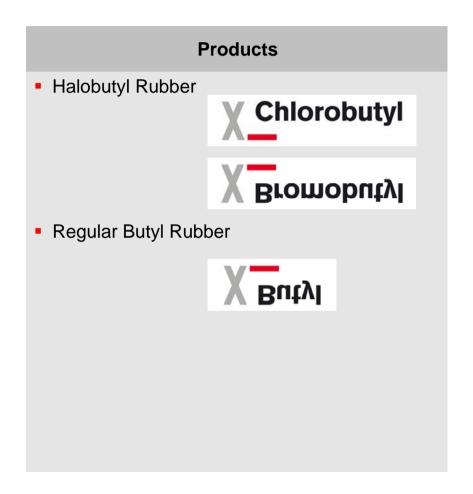
Source: LXS estimates

#### **Cost/Technology Position**

- Together with ExxonMobil only major producer of halobutyl rubber
- World-scale plants allow cost efficiencies



# Tyres are the main applications for Butyl Rubber

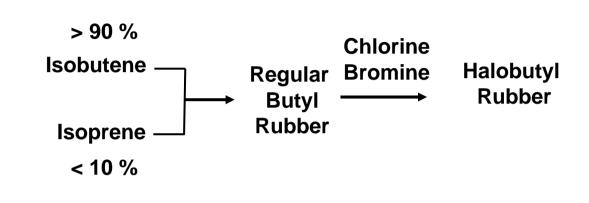


#### **Main Applications**

- Tyre inner-liners
- Inner-tubes for tyres
- Tyre curing bladders / envelopes
- Chewing gum
- Tyre sidewalls



## A leading producer of Butyl Rubber

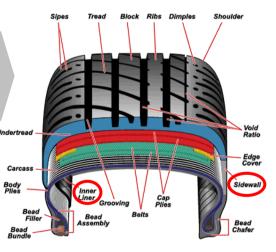






ation Halogenation

Finishing & Logistics









# A leading market and technology position as well as strong customer relationships

#### **Competitive Advantages**

- A leading\* market position in overall market for Butyl Rubber
- Low cost, high efficiency world scale plants for manufacturing in Belgium and Canada allow flexible production of butyl and halobutyl rubber
- Leading technology
- Strong customer relationships based on collaborations with tyre manufacturers to meet specific customer needs

#### **Challenges**

- Capacity expansion of Chinese competition
- Change of Air-Retention-Technology as competitor and customer tendency



<sup>\*</sup>based on volume, source: IISRP World-wide Rubber Statistics 2003



Overview

Performance Rubber

**Engineering Plastics** 

**Chemical Intermediates** 

**Performance Chemicals** 

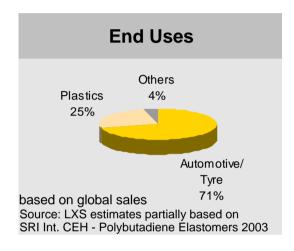
**Butyl Rubber** 

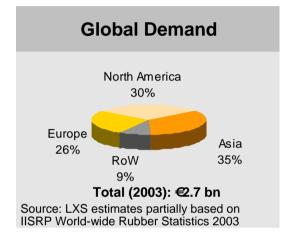
**Polybutadiene Rubber** 

Technical Rubber Products



# Leading market positions and world-scale plants in important markets







- Polybutadiene Rubber
- Solution Styrene-Butadiene Rubber

### Competition

- 1. LANXESS
- 2. Goodyear
- 3. Sinopec
- 4. Firestone
- 5. Michelin / ASRC

Based on volume terms
Source: IISRP World-wide Rubber

Statistics 2003

### **Market Development**

- Capacity expected to grow below market growth, with no major investments expected apart from efficiency gains or debottlenecking
- Expected volume growth (CAGR 03–07):
  - Americas ~3%
  - Europe ~3%
  - Asia ~5%

Source: LXS estimates partially based on SRI Int. CEH - Polybutadiene Elastomers 2003

#### **Cost/Technology Position**

- Dewatering and reaction considered to be leading edge
- Only player in merchant market with production sites in two regions
- World-scale plants with advantageous scale in finishing



# Automotive and tyre industries are the main customers of Polybutadiene

#### **Products**

- Solution Styrene-Butadiene Rubber (S-SBR)
- Polybutadiene Rubber (PBR)



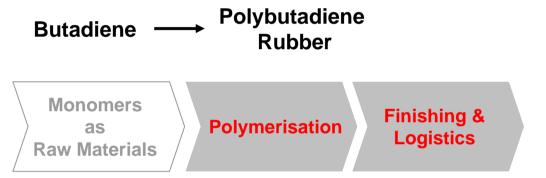
#### **Main Applications**

- Tyre treads, e.g. low-rolling-resistance tyre
- Tyre sidewalls

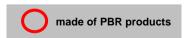
(\*) not registered in the USA



### One of the world's major suppliers









# Broad and innovative product portfolio combined with good reputation

#### **Competitive Advantages**

- Broad and innovative product portfolio offered to both tyre manufacturers and plastic producers
- Only player in the merchant market covering 2 regions with modern, cost efficient world scale production sites located close to customers
- Scale advantages
- Strategic raw material (butadiene) is secured structurally
- Closure of plants at Sarnia and Marl improved cost structure and utilisation
- Reputation with customers for reliable performance and delivery

#### **Challenges**

- Purchasing power of concentrated and backward integrated customers
- Natural rubber price decline
- Customer expansion into Asia leading to:
  - Tyre capacity inflation
  - Price pressure in tyre market likely to occur





Overview

**Performance Rubber** 

**Engineering Plastics** 

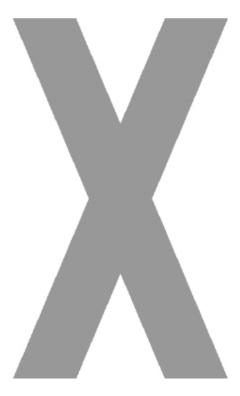
**Chemical Intermediates** 

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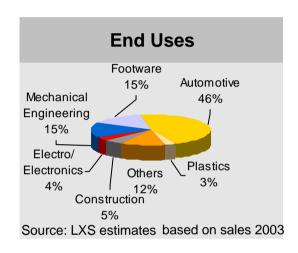
**Butyl Rubber** 

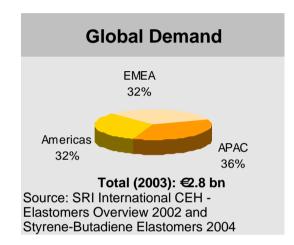
**Polybutadiene Rubber** 

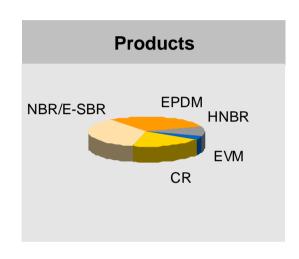
**Technical Rubber Products** 



# Leading market positions, state-of-the-art technology and world-scale plants







### Competition

- 1. LANXESS
- 2. Dupont Dow Elastomers
- 3. Nippon Zeon
- 4. Polimeri Europa
- 5. DSM
- 6. JSR

Based on volume terms Source: IISRP World-wide Rubber Statistics 2003

### **Market Development**

- For EPDM and NBR price pressure expected to slow down as supply and demand narrowing
- Expected volume growth (CAGR 03–06): ~3%
  - CR: ~1%
  - EPDM: ~3%
  - NBR: ~3%
  - HNBR: ~6%
  - EVM: ~9%

Source: LXS estimates

### **Cost/Technology Position**

- State-of-the-art process technology
- Attractive cost position due to world-scale plants
- High innovation potential in HNBR (e.g. Therban AT), EVM and E-SBR



### Focus on non-tyre applications

#### **Products**

- Chloroprene rubber (CR)
   Baypren
- Nitrile-butadiene rubber (NBR)



- Emulsion styrene-butadiene rubber (E-SBR)
- Ethylene-propylene diene rubber (EPDM)



Hydrogenated nitrile-butadiene rubber (HNBR)



Ethylene-vinyl acetate rubber (EVM)





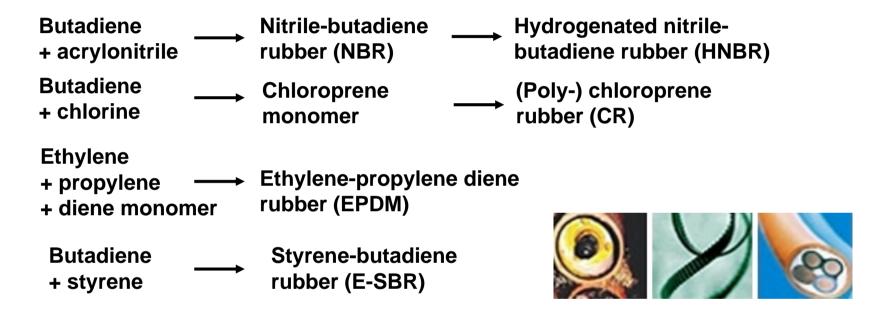
#### **Main Applications**

- Functional, safety & performance parts for automotive (belts, hoses, wiper blades, weather strips, seals)
- Mechanical engineering (hoses, tubes, cables, gaskets, membranes, roll covers)
- Leisure industry (sponges, shoe soles)
- Building materials (membranes, seals, FRNC cables)

(\*) not registered in the USA



# A leading supplier of specialty elastomers for the rubber industry



Monomers as Raw Materials

Chlorination (in case of CR)

**Polymerisation** 

Hydrogenation (in case of HNBR)

Finishing & Logistics



# Strong innovation capabilities combined with world-scale plants to enable future growth

#### **Competitive Advantages**

- Broad and deep product portfolio with strong brand marketing
- World-scale plants with state-of-the-art production facilities and processes
- Significant improvements in manufacturing performance
- Strong position in premium EVM and HNBR segments
- Strong innovation capability and promising new product pipeline
- Broad customer basis
- Customer approvals especially in HNBR

#### **Challenges**

- Raw material cost development vs. market price
- Customer migration to Asia
- Market consolidation on customer side
- Overcapacities/ lower capacity utilisation
- Substitution of TRP products by alternative rubber materials





Overview

**Performance Rubber** 

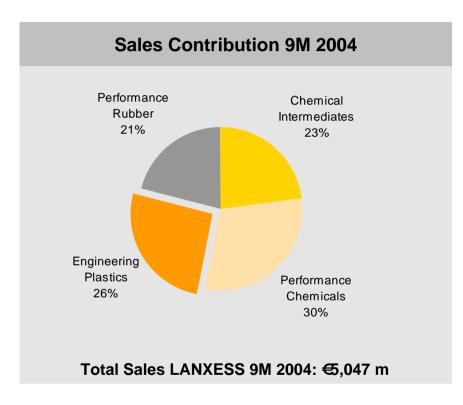
**Engineering Plastics** 

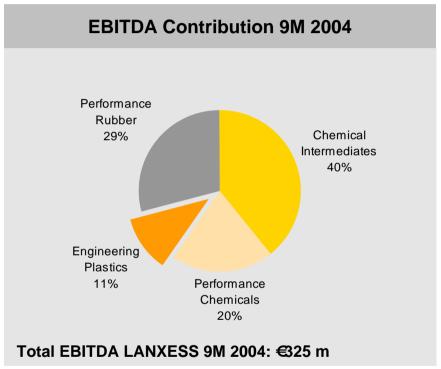
**Chemical Intermediates** 

**Performance Chemicals** 



### **Engineering Plastics**







# Engineering Plastics is a leading\* provider of thermoplastic resins and fibers

### **Styrenic Resins**

- Provides a range of thermoplastics resins for household, automotive, electronics and medical applications
- Acknowledged supplier of ABS, SAN and ABS-PA resins with 50 years of experience in serving the engineering plastics market



### **Semi-Crystalline Products**

 Provides a range of PA and PBT resins and compounds and blends principally to the automotive and electrical industries



#### **Fibers**

 Develops and produces high quality synthetic elastic fibers for nearly all fields of textile production and polyamidebased monofilaments for technical applications



- Broad range of product and system solutions
- The segment's products often rank among the leaders in their core application areas and are known for their durability and dimensional stability

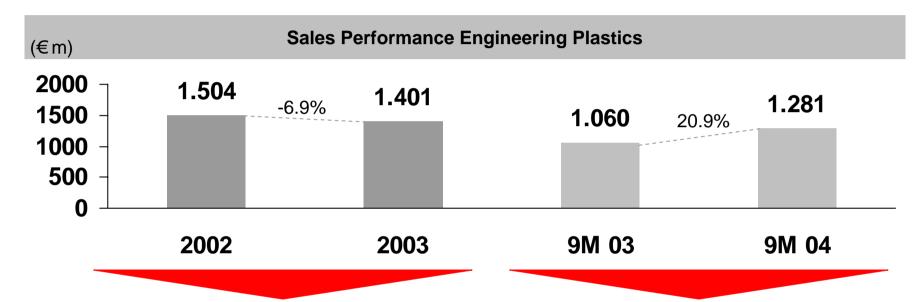


### **Summary of key financials**

<b>Key financials</b> (€ m)	2002	2003	9M 2003	9M 2004
Sales	1,504	1,401	1,060	1,281
EBITDA	25	-14	32	38
EBITDA/Sales	1.7%	-1.0%	3.0%	3.0%
Depr. & Amort.	-171	-474	-89	-22
EBIT	-146	-488	-57	16
EBIT/Sales	-9.7%	-34.8%	-5.4%	1.2%
Capex	72	85	53	26
Number of Employees	3,844	3,658	_	_



# Strong volume growth in STY and SCP triggered significant sales improvement

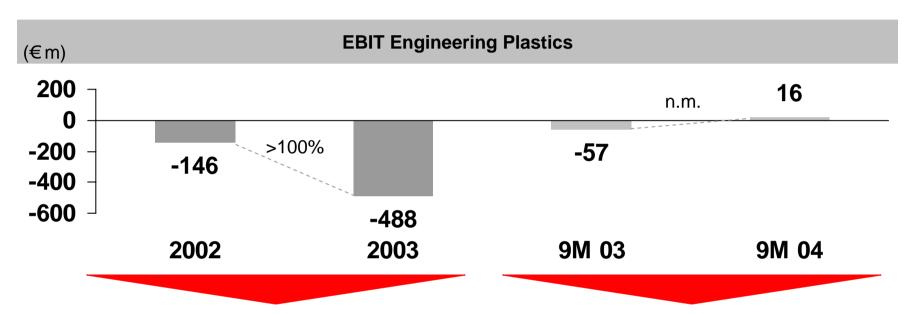


- Decrease mainly due to STY and FIB
- STY suffered from a sharp fall in prices caused by global overcapacities
- FIB suffered from weaker global demand in textiles and price reductions due to global overcapacities

- Overall increased volumes and prices drive sales growth
- Sales increases in STY as well as positive volume- and price-driven sales performance of SCP more than offset slight sales decline in FIB



# EBIT improvement, however operationally still unsatisfactory

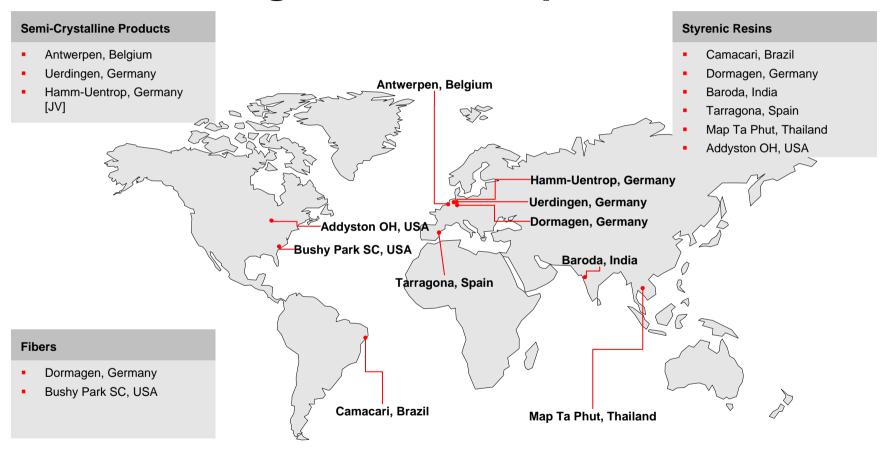


- Impairment charges of €356 m, restructuring charges for FIB of €18 m and general restructuring expenses as well as depreciation of software in the amount of €34 m led to a strong decline of the 2003 EBIT compared to the previous year
- Adjusted for these charges, the 2003 EBIT was
   €-80 m compared to €-62 m in 2002

- Despite higher raw material prices, EBIT increased on
  - higher volumes
  - €13 m asset write-backs in STY
  - lower depreciation



# **Engineering Plastics has a strong manufacturing base in Europe and NAFTA**





## Focus on enhancing profitability and customer value-added

- Defend leading\* positions in Europe, Americas and India
- Participate in Asian growth
- Capture growth opportunities in promising sub-segments
- Shift to differentiated and customer-specific products
- Strengthen profitability through continuation of cost and efficiency programs



<sup>\*</sup>based on LXS estimates



Overview

**Performance Rubber** 

**Engineering Plastics** 

**Chemical Intermediates** 

**Performance Chemicals** 

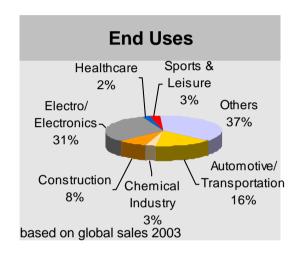
**Styrenic Resins** 

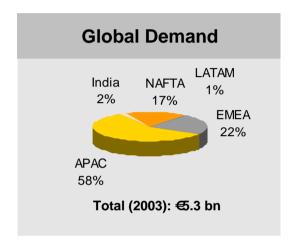
Semi-Crystalline Products

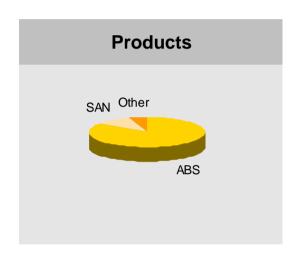
**Fibers** 



## Strong market positions in Europe, Americas and India







### Competition

- A leading position in Europe, Americas and India
- Global No. 3 position in volume terms behind ChiMei and LG

### **Market Development**

- Expected global market increase by ~6% (annual 04-05) driven by double digit growth in China and India
- Global capacity increase averages 5% p.a., mainly driven by China with growth forecasted at about 14% p.a. (annual 03-04)
- Strong trend to transfer injection moulding business to China
- Fast-growing segments are mainly using specialty grades

### **Cost/Technology Position**

- Sufficient capacities in all relevant regions with exception of China
- In EMEA special technology for low volatiles ABS
- Innovative TRIAX® and CENTREX® technology allows for future value driven portfolio improvements





# **Key products NOVODUR® and LUSTRAN®** have applications in various industries

#### **Products**

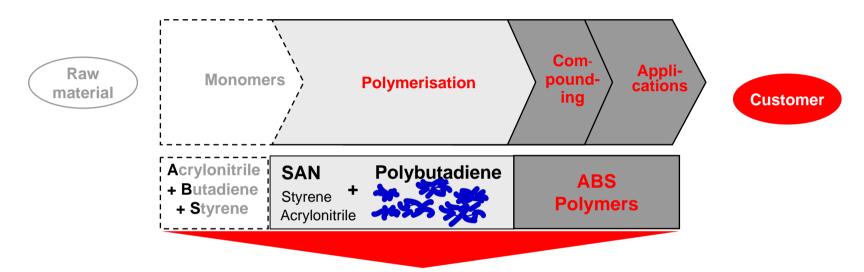
- ABS types: NOVODUR®, LUSTRAN® and ABSOLAC™. The range of grades includes general-purpose injection moulding grades, grades with an improved heat resistance and products for extrusion, chemical electroplating and special glass fiber-reinforced grades
- SAN types: LUSTRAN® and ABSOLAN™
- PA-ABS blends: TRIAX®
- ASA and AES polymers: CENTREX®

#### **Main Applications**

- ABS types: appliances, automotive industry, construction & housing, electrical/ electronic products, furniture, information technology and medical applications
- SAN types: appliances, electrical/ electronic products, information technology, medical applications and packaging
- PA-ABS blends: automotive industry (interior and exterior car parts)



## Styrenic Resins is forming a colourful difference



Business strategy: Focus on differentiated and coloured grades





# Global manufacturer with regionally focussed product portfolio

#### **Competitive Advantages**

- Regional organisation and manufacturing facilities are focussing on individual market requirements
- Backward integration into polymerisation enables STY to produce the necessary building blocks for differentiated grades and specialties
- Strong expertise in differentiated and coloured grades supported by development laboratories in all regions ensuring close proximity to customers

### **Challenges**

- High complexity in "small lot" business
- General business driven by raw material costs and scale of manufacturing
- Processes and technologies differ across sites
- Migration of injection moulding business to low labour-cost countries (i.e. China)





Overview

**Performance Rubber** 

**Engineering Plastics** 

**Chemical Intermediates** 

**Performance Chemicals** 

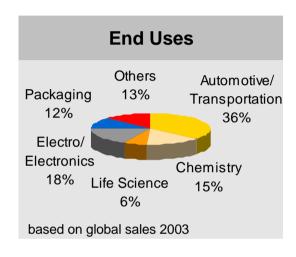
**Styrenic Resins** 

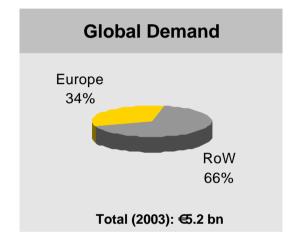
**Semi-Crystalline Products** 

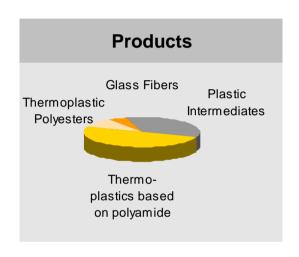
**Fibers** 



# SCP is able to leverage its strong market positions globally







### Competition

- Main competitors in Europe are BASF, DSM, DuPont and Rhodia
- Main global competitors are BASF, DuPont and General Electric
- Market players have different product portfolio structures: size is not necessarily indicator of profitability
- The unit holds promising niche positions in the Americas and in Asia

### **Market Development**

- Expected global market growth by volume ~6% (CAGR 03-06)
- Biggest growth region Asia (China)
- Above market growth in Greater Europe
- High growth potentials above GDP for thermoplastic polyesters and

thermoplastics based on polyamide

### **Cost/ Technology Position**

#### Plastics:

 Cost-based competitive advantage via world-scale polymerisation (PA 6 and PBT) and compounding facilities in Uerdingen

#### Intermediates:

- World-scale caprolactam-train in Antwerpen providing cost-based advantage
- World-scale glass fiber plant on high technological standard (direct chop) leads to process-based advantage

Source: LXS estimates



# **DURETHAN®** and **POCAN®** have numerous applications across a variety of industries

#### **Products**

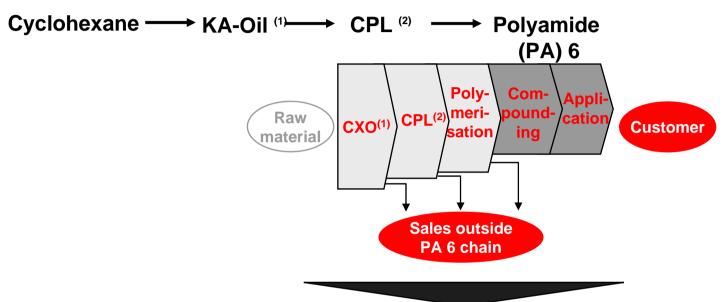
- DURETHAN® A based on polyamide 6.6 POCAN® - based on polybutylene terephthalate (PBT) and polyethylene terephthalate (PET) Available types for both: non-reinforced, glass fiber reinforced, glass-bead and mineral-filled, glass fiber reinforced/ mineral-filled, flameretardant, and polymer and elastomermodified grades
- DURETHAN® B based on polyamide 6
   Available types: non-reinforced, glass fiber
   reinforced, glass-bead and mineral-filled, glass
   fiber reinforced/ mineral-filled, flame-retardant,
   and polymer and elastomer-modified grades.
   Transparent grades are available as specialty
   products
- Glass fibers
- Plastics Intermediates such as Adipic Adid or Caprolactame

### **Main Applications**

- DURETHAN® A: automotive industry, construction & housing and electrical/ electronic sector
- DURETHAN® B: appliances, automotive industry, construction & housing, electrical/ electronic sector, furniture, industrial/ mechanical products, information technology, packaging and sport & leisure
- POCAN®: appliances, automotive industry, electrical/ electronic sector, information technology and medical products
- Glass fibers used for reinforcement of plastics
- Plastics Intermediates as raw materials for plastics

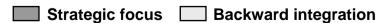


# SCP is increasingly focussed on value-added parts of the manufacturing chain



Supply of customised plastics highly dependent on strong product- and application-development







# Leverage strong product expertise and market positions to address Asian opportunities

#### **Competitive Advantages**

- Expertise and track record in application engineering and development support longterm customer relationships
- Backward integration into polymerisation and monomers
- Favourable long term contracts for intermediate products reduce exposure to cyclicality and overcapacity
- World-scale plants in polyamide and glass fibers
- Focus on differentiated grades allows SCP to maximise the benefits of its development, application and compounding know-how

#### **Challenges**

- Increase in raw material prices, especially cyclohexane (benzene) and ammonia
- Increase in Asian imports to EU due to favourable exchange rates (weak dollar)

#### **Plastics:**

- Development out of niche positions in Asia-Pacific and Americas into market player
- Lack of local compounding unit in Asia-Pacific





Overview

**Performance Rubber** 

**Engineering Plastics** 

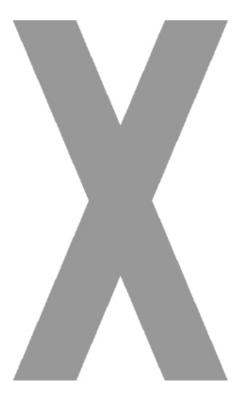
**Chemical Intermediates** 

**Performance Chemicals** 

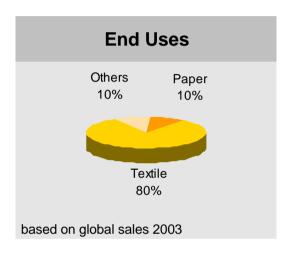
**Styrenic Resins** 

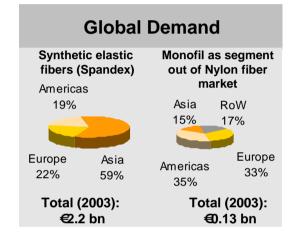
Semi-Crystalline Products

**Fibers** 



# Fibers is active in a structurally challenging market increasingly shifting to Asia





#### **Products**

- Synthetic elastic fibers DORLASTAN®
- Polyamide-based monofilaments
   PERLON®, ATLAS® and BAYCO®

#### Competition

- Invista (recently sold from DuPont to Koch) as No. 1 with production sites in Americas, Europe and Asia
- Hyosung has rapidly moved into second position world-wide as a result of a significant capacity expansion program
- Capacity increases only happening in Asia, with many new companies coming to the market
- LXS holds No. 2 position in Greater Europe and North America behind Invista
- Monofil: significant market position across most segments

based on global sales

Source: LXS estimates

### **Market Development**

- Spandex market has recovered from 2003 (Iraq, world-wide recession) and demand is increasing at historical levels of 6-8%. Current demand growth is driven by enormous increase in China
- Greater Europe will remain an import market.
   Turkey is the fastest growing market in this region and is expected to overtake Italy as the most significant market in Europe
- Americas demand stable with decrease in North America compensated by increasing in South America

#### Monofil:

 Market volume growth forecasted at ~3-5% (CAGR 03-08 for all segments)

### **Cost/Technology Position**

#### **DORLASTAN®:**

- Well established plants in North America and Europe. Cost position improved by ongoing restructuring activities
- Lack of production site in Asia compensated by excellent global logistical, technical and commercial service
- Exit of covering business (GVW Goch) in 2004

#### Monofil:

- Competitive process
- Good quality, especially for high end applications



### Brand names well established in serviced industries

#### **Products**

- Provider of high quality synthetic elastic fibers for all sorts of textile applications and polyamide-based monofilaments for technical applications
- Products include synthetic elastic fiber DORLASTAN® and polyamide-based monofilaments products PERLON®, ATLAS® and BAYCO®





### **Main Applications**

- DORLASTAN®: hosiery (tights, socks, support stockings), underwear (laces, bras, slips), sports and casual wear (shirts, swimwear, sportswear), outerwear (suits, business shirts, slacks, jeans), non-wovens (diapers, medical applications)
- Monofil: paper (paper machine clothing, filtration, screening), fishing (fishing lines, long lines), rope making, agriculture (pre-tensioned ropes, water deposit coverings, fences and oyster cultures), sports (tennis and badminton rackets) as well as textile products (zippers, hook and loop fasteners)



# Fibers is focussed on early steps of the manufacturing process

MDI (Isocyanate) + Diole (Polyester, Polyether)

+ Diamine



Isocyanate Prepoly-merisation

Chain Extension

**Spinning** 

=>Fibers

Warping

=>Yarn

Knitting, Weaving, etc.

=>Wovens

Dying,
Finishing,
Sewing
=>Clothes

Logistics =>Trade

Consumer









# Established business challenged by unfavourable exchange rates and Asian overcapacities

#### **Competitive Advantages**

#### **DORLASTAN®:**

- LANXESS recognised as high quality supplier to global textile industry with premium technical service
- Strong relationship with global key-accounts
- Broad product portfolio
- Global organisation

#### Monofil:

- Technical marketing know-how and market access in all segments
- Established and strong brands
- Image of quality supplier

#### **Challenges**

#### **DORLASTAN®:**

- Unfavourable cost structures in Europe compared to Asian competitors
- Price pressure driven by Asian overcapacities
- Exchange rate €/\$ remaining unfavourable
- WTO 2005 supports Asian exports into Europe and Americas

#### Monofil:

- In some applications dependence on limited number of customers
- Market consolidation and changes in competitive environment
- Continuation of unfavourable €/\$ exchange rate increasing price pressure in NAFTA region





Overview

**Performance Rubber** 

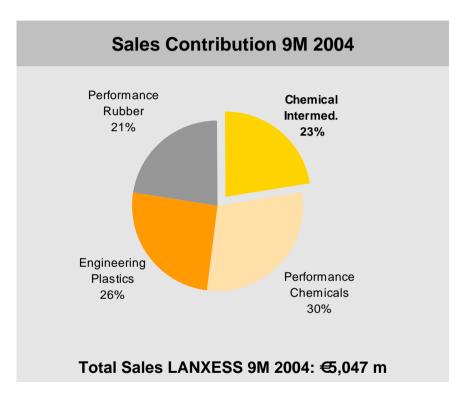
**Engineering Plastics** 

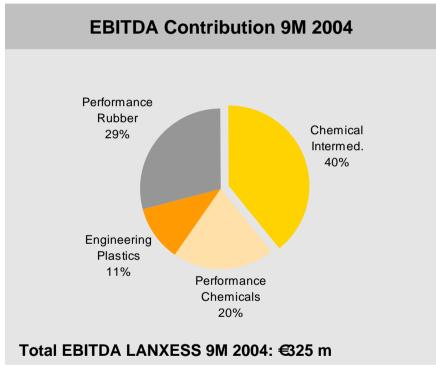
**Chemical Intermediates** 

**Performance Chemicals** 



### **Chemical Intermediates**







## Commodities and fine chemicals for numerous end-user industries

#### **Basic Chemicals**

 Supplier of aromatic compounds such as e.g. chlorobenzenes, chlorotoluenes and nitrotoluenes as well as amines, polyols, monoisocyanates, thio products, inorganic acids



#### **Fine Chemicals**

- Important player in fine chemicals focussed on:
  - Agrochemicals custom manufacturing
  - Pharmaceutical custom manufacturing
  - Specialty Fine Chemicals



### **Inorganic Pigments**

 A leading\* global supplier of inorganic pigments with a broad, innovative product range



\* Source: SRI International CEH - Pigments Nov. 2004

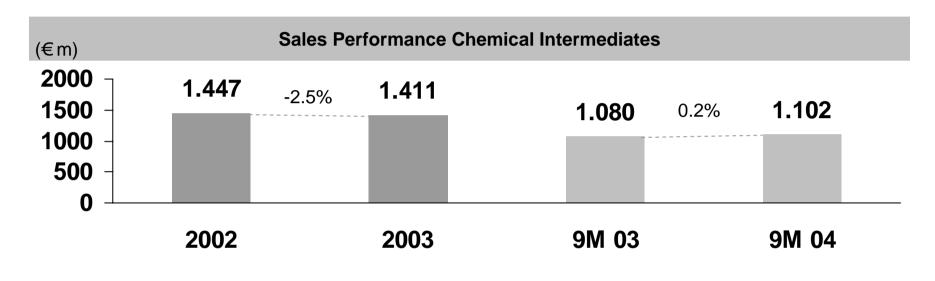


### **Summary of key financials**

<b>Key financials</b> (€ m)	2002	2003	9M 2003	9M 2004
Sales	1,447	1,411	1,080	1,102
EBITDA	154	119	139	132
EBITDA/Sales	10.6%	8.4%	12.9%	12.0%
Depr. & Amort.	-149	-463	-106	-86
EBIT	5	-344	33	46
EBIT/Sales	0.4%	-24.4%	3.1%	4.2%
Capex	141	79	49	53
Number of Employees	4,265	4,059	_	_



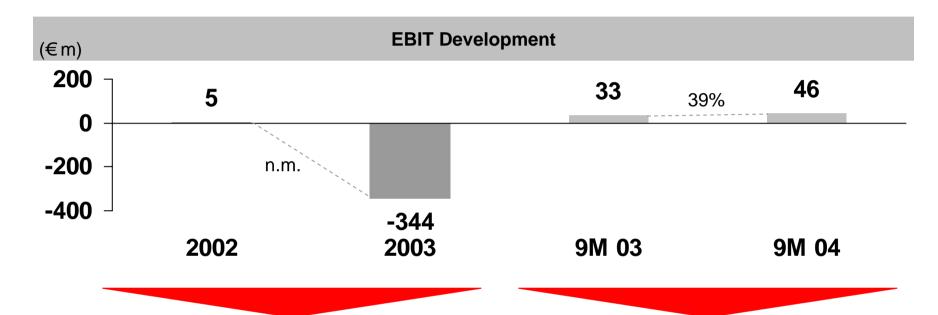
### Stable sales due to rising market demand in Basic Chemicals



- Decrease mainly due to IPG and FCH
- The decline at IPG can be mainly attributed to currency translation effects
- Weaker sales performance for FCH resulted from strong competition in the Asian market (especially for agrochemicals)
- Strong sales in BAC offset decrease in sales in other business units – especially FCH which had to cope with ongoing difficult market conditions



### EBIT improvement driven by higher market demand

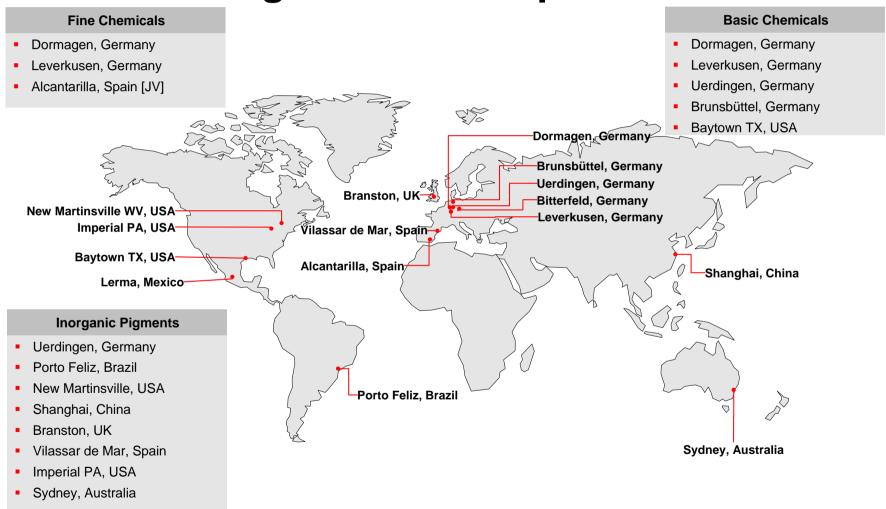


- Significant impairment charges in 2003 led to a negative operating result of €-344 m after a positive result in 2002
- Adjusted for these impairment charges, the EBIT for 2003 was €-12 m

- Impairment charges of €13 m relating to FCH
- Lower depreciation base in the segment following the impairment charges incurred at the end of 2003



# Chemical Intermediates relies on a broad manufacturing base in Europe and NAFTA





# Leverage strong asset base and market position to sustain margins

- Maintain current market position and sustain / improve margins
- Develop non-European markets
- Leverage organic growth opportunities from market consolidation
- Continue product portfolio optimisation
- Shift product-mix towards more valuable applications and products
- Strengthen profitability through continuation of cost and efficiency programs





Overview

**Performance Rubber** 

**Engineering Plastics** 

**Chemical Intermediates** 

**Performance Chemicals** 

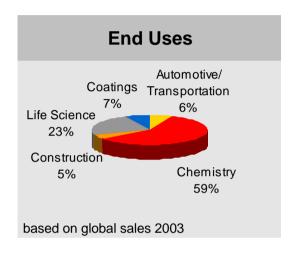
**Basic Chemicals** 

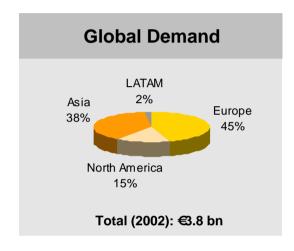
**Fine Chemicals** 

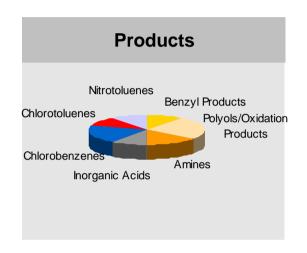
**Inorganic Pigments** 



## Leading positions in industry with Asian competition and consolidation trends







### Competition

- The business unit maintains strong positions in all its product lines
- Main competitors are BASF, Dow Chemical, Jiangsu Yangnong, Kureha, Merisol, and Tessenderlo

based on global sales

### **Market Development**

- Expected demand growth according to GDP (CAGR 02-07).
- Strong growth in Asia, stagnation in Europe due to demand shifting to Asia
- Consolidation expected for Benzyl Products
- Strong competition from Eastern European players regarding Chlorotoluenes/ Cresols products in 2003
- Strong pressure for industry consolidation in the segments Chlorotoluenes, Chlorobenzenes and Nitrotoluenes

### **Cost/Technology Position**

- For most segments world-scale capacities and competitive processes result in costbased advantage
- However, competition from Asia is becoming stronger due to lower personnel and environmental cost

Source: LXS estimates partially based on

- SRI International CEH Neopentyl Polyhydric Alcohols, Dec. 2002,
- SRI International CEH Maleic Anhydride Aug. 2002, SRI International CEH Benzylchloride Sep. 2004
- Srour Report Aromatic Intermediates 1997-2004



### BAC offers broad product range for use in numerous end-user industries

#### **Products**

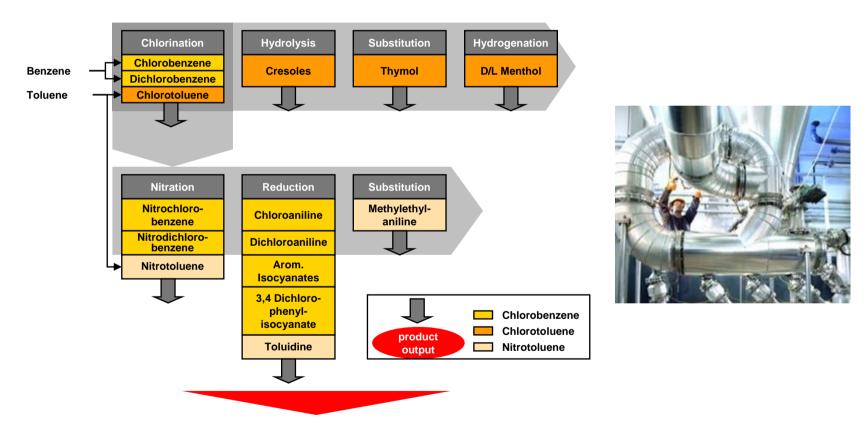
- Chlorobenzenes and derivatives
- Aliphatic and aromatic monoisocyanates
- Chlorotoluenes and cresols, butylhydroxytoluene
- Nitrotoluenes and derivatives
- Polyols (trimethylolpropane, hexanediol)
- Oxidation products (maleic anhydride, phthalic anhydride)
- Cyclohexylamine, dicyclohexylamine
- Benzyl alcohol, benzyl chloride, benzo trichloride, benzoyl chloride
- Benzylamine, Monoisopropanolamine, Diisopropanolamine
- Hydrofluoric acid, anhydrite
- Sulphur products (sulphuric acid/ oleum, sodium bisulfite, thionyl chloride, sulfuryl chloride, sulphuric chloride)

### **Main Applications**

- The unit sells commodity chemicals used in the following industries and sectors:
  - Automotive and transportation industry
  - Chemicals
  - Housing & construction
  - Life science



# Unique, integrated manufacturing process provides clear competitive advantage



Output of individual products can be modified according to market needs in order to optimise overall revenue



### BAC intends to leverage unique "Aromatenverbund" to succeed in Asia

### **Competitive Advantages**

- Competitive technologies, world-scale production facilities and high utilisation rates provide cost advantage
- The unique "Aromatenverbund" system enables BAC to optimise its capacity utilisation, cost of production and product mix ensuring a solid market position
- BAC has been able to successfully leverage its competitive strength to grow its business, increase its market position and improve profitability

### **Challenges**

- Focus shifts to Asia as an important driver of growth
- Migration of downstream industries to Asia (textiles, dyestuffs, fluoro chemicals, pigments, etc.)
- REACH, TA-Luft as well as ongoing ecotoxicological discussions may generate expenditures for European producers
- Substitution of older agro active ingredients and loss of business for some product segments





Overview

**Performance Rubber** 

**Engineering Plastics** 

**Chemical Intermediates** 

**Performance Chemicals** 

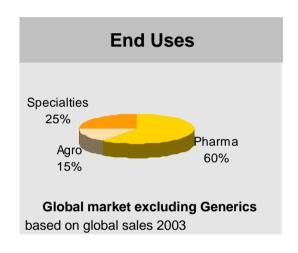
**Basic Chemicals** 

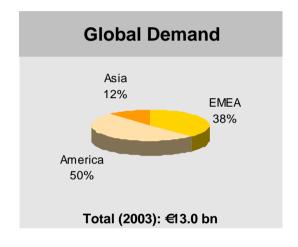
**Fine Chemicals** 

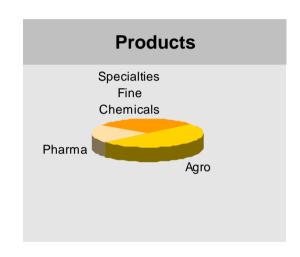
**Inorganic Pigments** 



## The industry is currently characterised by overcapacity and ongoing consolidation







### Competition

- FCH unit holds good market positions in agrochemicals
- No. 1 in agrochemicals custom manufacturing
- Main competitors are Degussa, DSM, Lonza and Rhodia

based on global sales

#### **Market Development**

- Pharmaceutical market suffering from cGMP overcapacity
- Asian manufacturers establishing themselves as reliable suppliers of raw materials and intermediates
- Price erosion observed for established products in all segments
- Continuing consolidation in fine chemicals market
- Fine chemicals "shakeout" process expected to continue over the next 2-5 years

### **Cost/Technology Position**

- Established track record as a technology leader for complex synthesis via nonbiological methods
- FCH intends to improve its cost structure to increase competitiveness, especially in the most price-sensitive market segments

Source: LXS estimates partially based on

- SRI International SCUP Antioxidants Sep. 2003
- SRI International SCUP Active Pharmaceuticals Ingredients July 2001
- J.Ramarkers Fine Chemical Bench Marking 2004



## Intermediates and active ingredients for pharma, agrochemical and other industries

#### **Products**

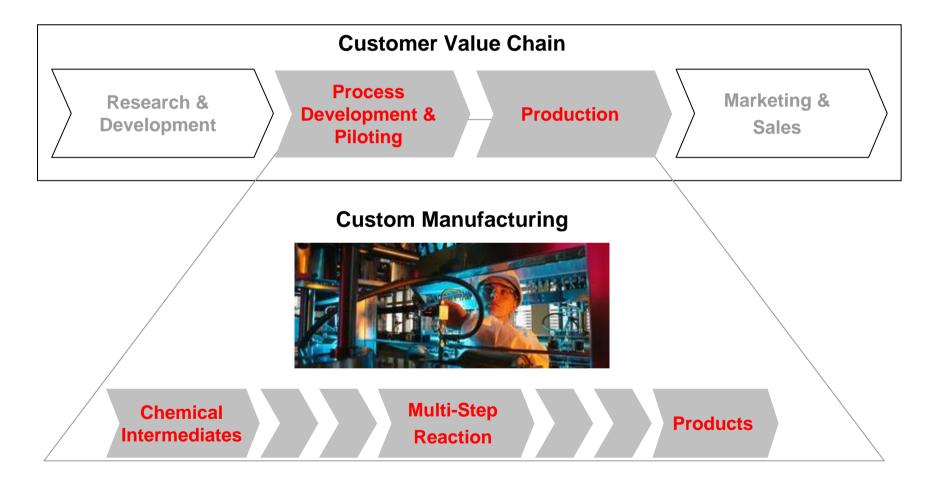
- Unit primarily offers custom manufacturing services
- Provider of intermediates and active ingredients for agrochemical, pharmaceutical and other high-grade fine chemical products
- End-markets include cosmetics, electronic, photo products and polymer additives

### **Main Applications**

- Agrochemicals: intermediates and active components
- Pharmaceuticals: intermediates and active ingredients
- Fine chemicals: chemical components for the cosmetics, photo-chemicals and electronic chemicals devices



### Focussed on the custom manufacturing of fine chemicals





# FCH must leverage technology and customer position to weather challenging environment

### **Competitive Advantages**

- Strong customer relationships based on established track record
- Technology leadership in high-end chemistry
- Expertise in the field of complex chemistry and fast "ramp-up" capabilities, particularly in the agrochemicals segment

### **Challenges**

- Asian competition
- High overcapacities in fine chemical markets
- Weak market position in pharma fine chemicals
- Cost bases to be improved





Overview

**Performance Rubber** 

**Engineering Plastics** 

**Chemical Intermediates** 

**Performance Chemicals** 

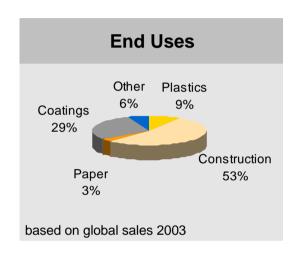
**Basic Chemicals** 

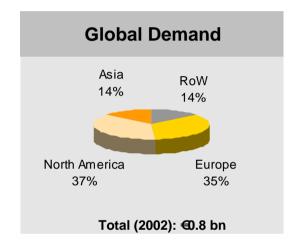
**Fine Chemicals** 

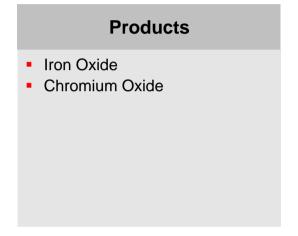
**Inorganic Pigments** 



# IPG has excellent market and technology positions in a mature industry







### Competition

- Market leader in iron oxide (BAYFERROX®) and strong No. 2 in chromium oxide
- Main competitors are Elementis, Rockwood and Chinese companies (e.g. Hunan Three-Rings, Deqing Huayuan)

based on global sales

### **Market Development**

#### Iron Oxides:

- Expected average sales growth rate 1% minimum (CAGR 03-06)
- Shift from powder to dust-free flow delivery forms and from blends to component colours in construction industry
- Change from powder to pastes/ concentrates in paint industry

#### **Chromium Oxides:**

- Low average sales growth rates (about 1%)
- IPG regained market position in late 2003 and maintained it during 1H 2004

### **Cost/Technology Position**

- Technically sophisticated production units in Western Europe, USA, Brazil (synthesis)
- Laux process unique to LANXESS with additional profit from aniline
- LANXESS with world-scale plant and resulting cost-based advantage



## IPG products are mainly used in the construction and coatings industries

#### **Products**

- Provider of colour pigments to various industries, in particular construction
- Leading producer of synthetic iron oxide pigments offering a broad product range
- Important products include iron oxide pigments BAYFERROX®, BAYOXIDE®, BAYSCAPE®, COLORTHERM® and chromium oxide products



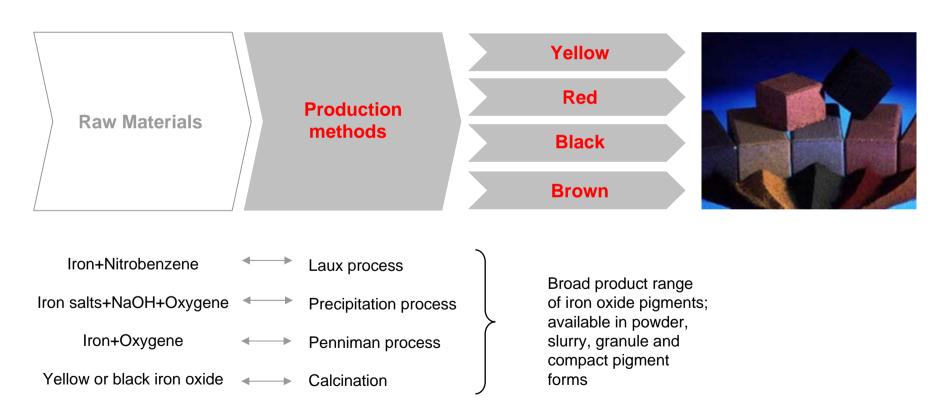
### **Main Applications**

- Colouring of construction materials (concrete for floors, roofs and walls; asphalt)
- Paints and coatings (architectural paints as well as industrial coatings)
- Other applications include products used for colouring of plastics and paper and manufacture of refractory ceramics, brake linings, mulch, glazes and airbags
- IPG also supplies oxides with tailored magnetic, chemical and morphological properties for the production of toners used in photocopiers and laser printers



### Global manufacturer of inorganic pigments

Producing iron oxides at its sites in Western Europe, USA and Brazil, LANXESS can offer a broad and innovative product range using different production methods





## Leveraging superior manufacturing process, cost and market positions

### **Competitive Advantages**

- Cost-based competitive advantage due to economies of scale with iron oxide (FeO) plant significantly larger than peers
- State-of-the-art production capacities and superior product quality
- Strong established brands such as BAYFERROX®

### **Challenges**

- Complexity in product portfolio
- Competitors try to attack IPG's leadership in quality
- Increased exports and price pressure from low-cost Chinese competitors
- Increases in raw material prices driven by supply situation





Overview

**Performance Rubber** 

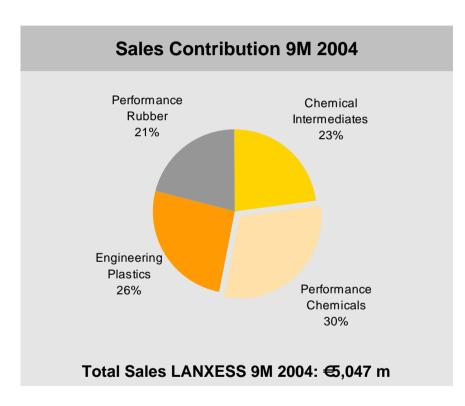
**Engineering Plastics** 

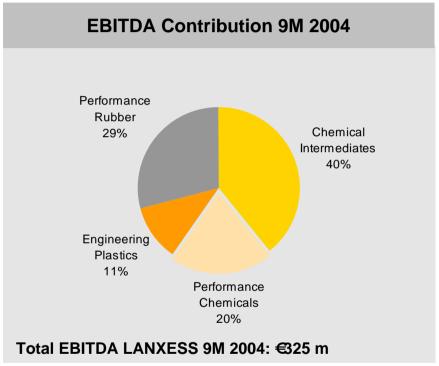
**Chemical Intermediates** 

**Performance Chemicals** 



### **Performance Chemicals**



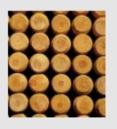




# BUs produce service- and application-driven products for a wide range of industries

#### Material Protection Products

- Comprehensive range of biocidal active ingredients and specialties for:
  - Beverage sterilisation
  - Disinfectants/ personal care products
  - Wood preservatives/ antifouling products
  - Industrial preservation



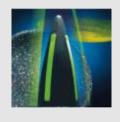
### Functional Chemicals

- Manufactures products such as:
  - Plastic additives
  - Flame retardants
  - Water chemicals
  - Specialty dyes
  - Colorants



#### **RheinChemie**

 Providing technical services and additives for the rubber, polyurethane, plastics and lubricant oil industries; as well as colour pastes for the polyurethane industry



#### Leather

- Broad range of specialty products for the leather industry including:
  - Tanning agents
  - Preservatives
  - Finishing auxiliaries
  - Dye products



- Mainly service- and application-driven
- Serving a wide range of industries
- Covering either the whole value chain of a specific industry or providing a specific functionality



## BUs produce service- and application-driven products for a wide range of industries (continued)

### Ion Exchange Resins

- Ion exchange resin manufacturer for the processing of:
  - Water
  - Foodstuff
  - Chemicals



### Textile Processing Chemicals

- Product solutions for the processes of
  - Pretreatment
  - Dyeing Auxiliaries
  - Finishing
  - Textile printing



### **Paper**

- Papermaking chemicals e.g.:
  - Paper colorants
  - Fluorescent whitening agents
  - Sizing and strength chemicals
  - Other papermaking chemicals



#### **Rubber Chemicals**

- Full portfolio of rubber chemicals for the tire and technical rubber industry including:
  - Antioxidants
  - Accelerators
  - Specialties



- Mainly service- and application-driven
- Serving a wide range of industries
- Covering either the whole value chain of a specific industry or providing a specific functionality

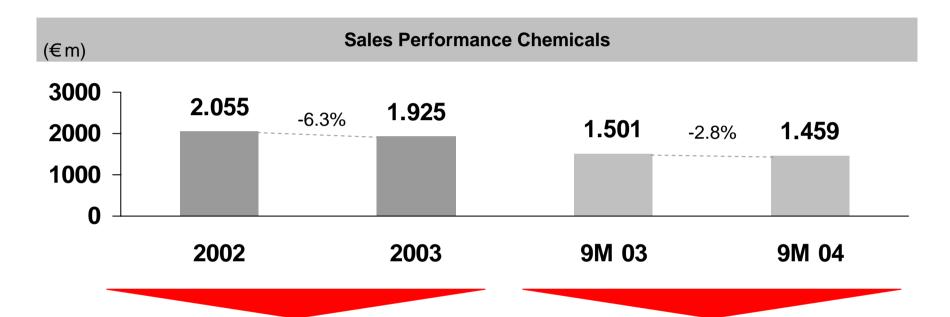


### **Summary of key financials**

Key financials				
(€ m)	2002	2003	9M 2003	9M 2004
Sales	2,055	1,925	1,501	1,459
EBITDA	196	96	131	68
EBITDA/Sales	9.5%	5.0%	8.7%	4.7%
Depr. & Amort.	-129	-272	-80	-76
EBIT	67	-176	51	-8
EBIT/Sales	3.3%	-9.1%	3.4%	-0.5%
Capex	102	63	39	33
Number of Employees	5,129	4,881	<del>_</del>	_



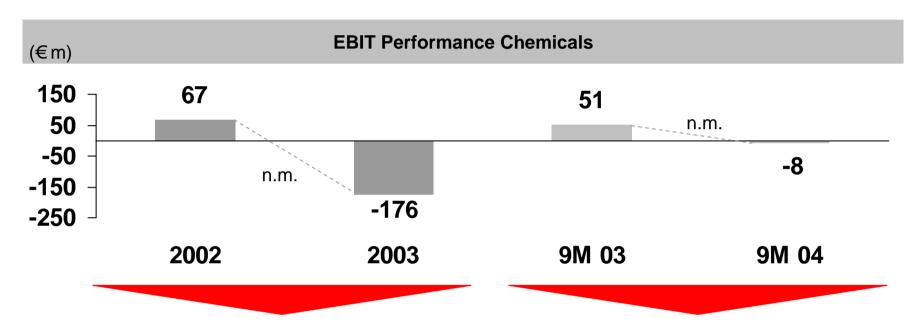
### Sales declined by €42 m to €1,459 m



- Net sales in Functional Chemicals and Material Protection Products increased
- Increases could not offset declining sales in all other business units, in particular Textile Processing Chemicals
- Sales decrease mainly on unfavourable currency effects in all business units

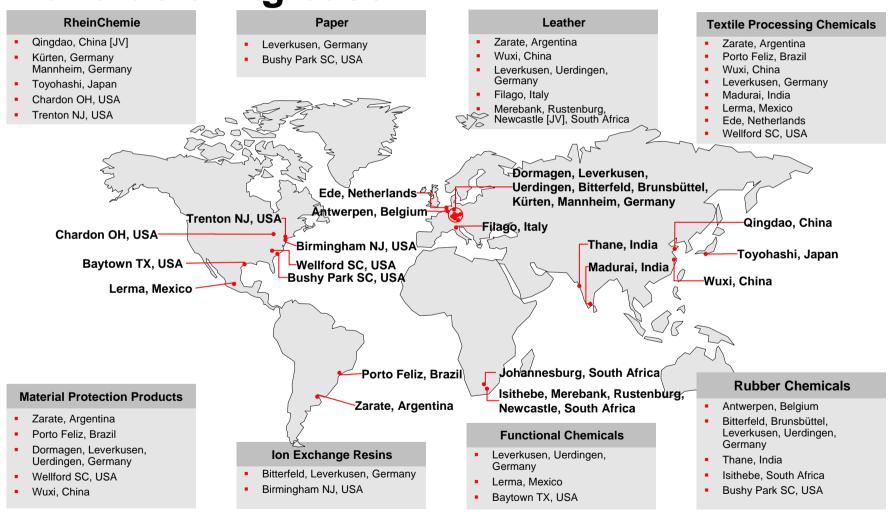


### **EBIT** burdened by one time effects



- Decline primarily due to impairment charges of €168 m
- Charges relate mainly to the Textile Processing Chemicals and Paper business units
- EBIT hit by exceptionals of €68 m:
  - goodwill impairment of €20 m incurred in RCH
  - an increase of provisions of €8 m relating to the settlement of antitrust investigations at RUC
  - a €40 m increase in provisions for environmental matters

## Performance Chemicals has a world-wide manufacturing base





# Build on strengths to grow in profitable niches and expand business regionally

- Strengthen regional activities by expansion of local technical service and increase geographic diversification
- Develop profitable niches through innovation and intensify innovation partnerships with customers
- Broaden product portfolio to increase coverage of customers' value chain
- Widen industrial application focus
- Set up tolling agreements with producers in low-cost countries





Overview

**Performance Rubber** 

**Engineering Plastics** 

**Chemical Intermediates** 

**Performance Chemicals** 

### **Material Protection Products**

**Functional Chemicals** 

Leather

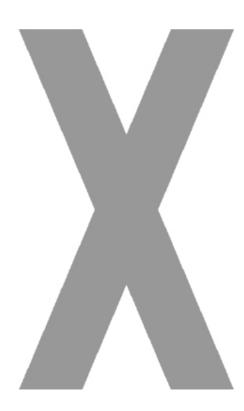
**Textile Processing Chemicals** 

**Paper** 

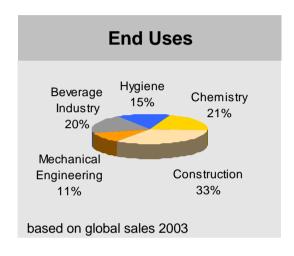
RheinChemie

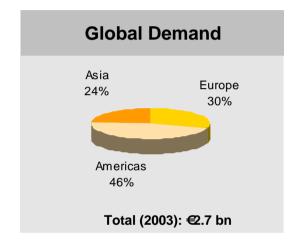
**Rubber Chemicals** 

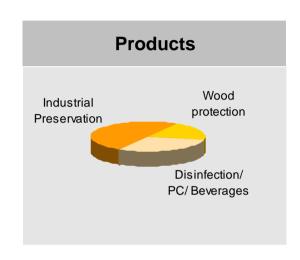
Ion Exchange Resins



## Broad product portfolio and leading market positions in an attractive market







### Competition

 Main competitors are: Arch Chemicals, Dow Chemical, Lonza, Rohm & Haas and Thor

### **Market Development**

- Expected sales growth (CAGR 03– 07): ~4%
  - Disinfection / PC: ~2%
  - Industrial Preservation: ~2%
  - Beverage Industry: ~3%
  - Wood Protection/ Antifouling: ~7%

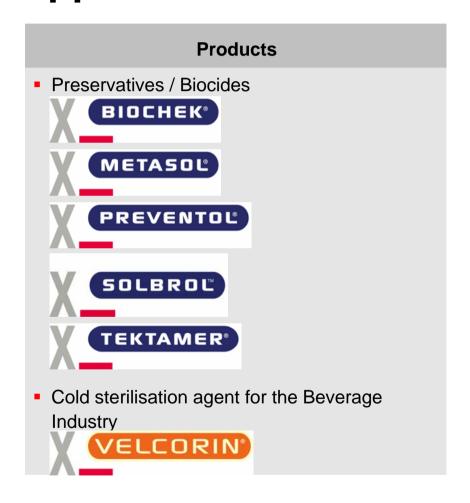
### **Cost/Technology Position**

- Competitive cost positions
- Leading technology positions
- High innovation potential

Source: LXS estimates



## Product solutions for a wide area of applications

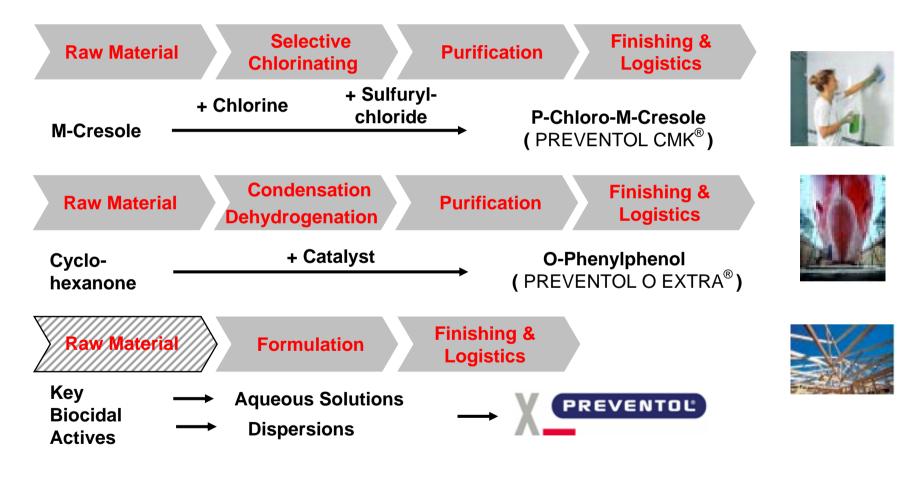


### **Main Applications**

- Wood protection / Antifouling
- Disinfection & home care products
- Health & personal care
- Food & beverages
- Industrial applications



### A leading\* producer of biocides and formulations



<sup>\*</sup>based on LXS estimates



## Global sales and service network with leading positions in Europe

#### **Competitive Advantages**

- Strong R&D position (incl. cooperation with Bayer CropScience)
- Global sales and service network
- Broad portfolio with unique chemical agents in various areas
- Leading competence in regulatory work like Biocides Products Directive or EPA (USA) etc.

### Challenges

- Regulatory changes
- Chinese / Indian competition with rather cheap production costs
- Need for full product portfolio offering





Overview

**Performance Rubber** 

**Engineering Plastics** 

**Chemical Intermediates** 

**Performance Chemicals** 

**Material Protection Products** 

### **Functional Chemicals**

Leather

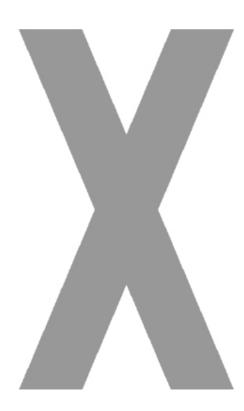
**Textile Processing Chemicals** 

**Paper** 

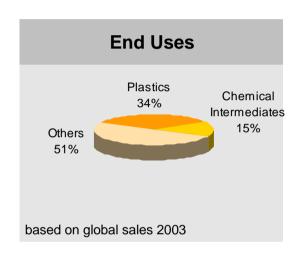
RheinChemie

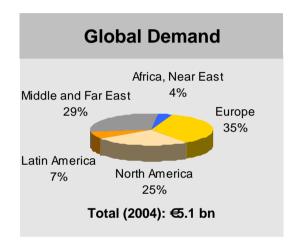
**Rubber Chemicals** 

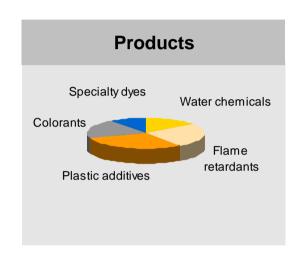
Ion Exchange Resins



## Broad product portfolio and with one of the largest "Verbund" in phosphorus chemicals







### Competition

 Main competitors: Akzo, Albemarle, BASF, Ciba, Clariant, Ferro, FMC, Lonza, Sun Chemicals

### **Market Development**

- Expected sales growth (CAGR 04–06): ~3%
  - Colorants: ~2%
  - Water chemicals: ~2%
  - Plastic additives: ~2-3%
  - Specialty dyes: ~5%
  - Flame retardants: ~5%

### **Cost/Technology Position**

- Operating biggest Verbund system for phosphorus
- Cost advantages due to economies of scale and backward-integration

Source: LXS estimates



### Numerous applications provided to a variety of industries

#### **Products**

■ Organic colorants: SOLFORT<sup>TM</sup>, LEVANYL<sup>TM</sup>





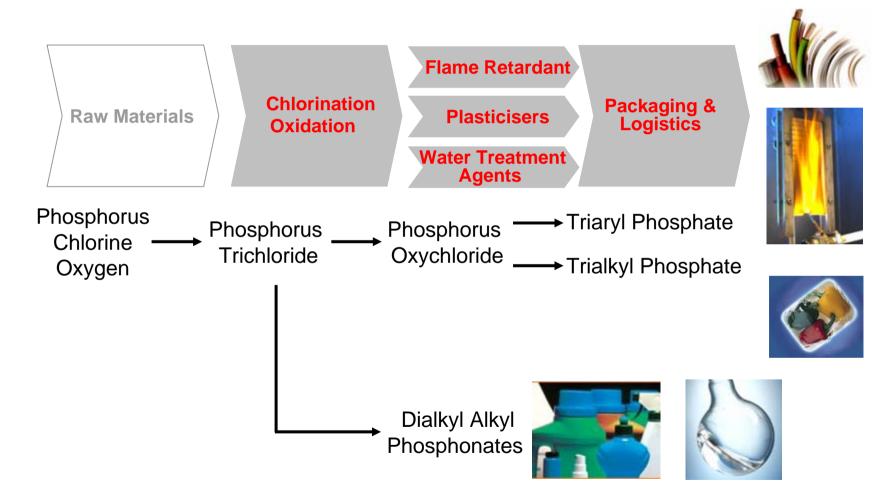
- Water chemicals: BAYPURE®
- Flame retardants: DISFLAMOLL<sup>®</sup>, BAYFOMOX<sup>®</sup>, LEVAGARD<sup>™</sup>
- Synthesis chemicals: Bayer Hydrazine, LEVOXIN™, Phosphites
- Corrosion inhibitors: BAYHIBIT®
- Plasticisers: MESAMOLL®, ADIMOLL®, ULTRAMOLL®, UNIMOLL®, Triacetin

### **Main Applications**

- Thermoplastics PVC, polyurethane and rubber
- Engineering plastics
- Paints and coatings
- Water treatment
- Laundry & Cleaning
- Printing inks
- Laminate printing
- Detergents
- Paper treatment
- Cosmetics



### One of the largest production networks ("Verbund") for phosphorus chemicals





# Strong market and technology position in niches with strong customer relationships

### **Competitive Advantages**

- Economies of scale including one of the largest "Verbund" systems globally for phosphorus chemicals
- Long-term patent protection for product technologies
- High expertise and know-how in flame retardants
- Strong existing customer relationships in niche markets
- Leading market positions\* in niche markets with MACROLEX®, PY150, bonding agents, specialty plasticisers, phosphor flame retardants
- Low exposure to raw material volatilities and cycle effects

#### **Challenges**

- Sustainability of niche positions
- Change in the competitive environment due to further consolidation
- Increasing price pressure in commodity segments



<sup>\*</sup>based on LXS estimates



Overview

**Performance Rubber** 

**Engineering Plastics** 

**Chemical Intermediates** 

**Performance Chemicals** 

Material Protection Products

**Functional Chemicals** 

### Leather

**Textile Processing Chemicals** 

**Paper** 

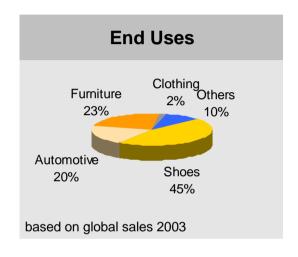
RheinChemie

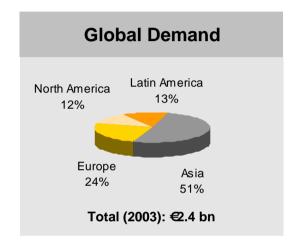
**Rubber Chemicals** 

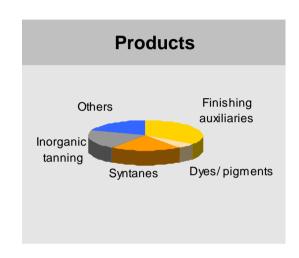
Ion Exchange Resins



### Leather has a broad product portfolio and leading market positions







### Competition

 Main competitors are: BASF, Clariant, Stahl and TFL

### **Market Development**

- Expected sales growth (CAGR 03– 07): ~1%
  - Finishing: ~1%
  - Dyes/ pigments: ~1%
  - Syntanes: ~1%

### **Cost/Technology Position**

- Backward-integration into ore mines, resulting in strong position in chrome
- Syntan plants with favourable economies of scale leading to cost-based advantages
- Decentralised custom manufacturing plants in main markets

Source: LXS estimates



### Provider of full product portfolio for leather industry

#### **Products**

- BAYMOL®, BAYKANOL®, CISMOLLAN™, PREVENTOL®, XERODERM®
- BAYCHROM®, CHROMOSAL®, BLANCOROL™
- SETA<sup>™</sup>\*
- BAYKANOL®, LEUKOTAN®\*\*, LEVOTAN®, LUBRITAN™\*\*, RETINGAN®, TANIGAN®
- ACIDERM®, BAYCOLOR™, BAYGENAL®, BAYDERM®, EUDERM®, EUKANOL™, LEVADERM®
- AQUADERM™, BAYDERM®, EUDERM®, HYDRHOLAC™, PRIMAL®\*\*
- ACRYSOL<sup>™</sup>\*\*, AQUADERM<sup>™</sup>, BAYSIN<sup>™</sup>, EUDERM<sup>®</sup>, EUKANOL<sup>™</sup>, EUSIN<sup>®</sup>, ISODERM<sup>®</sup>, PERSIDERM<sup>™</sup>, PRIMAL<sup>®</sup>\*\*, XERODERM<sup>®</sup>
- BAYDERM®, EUSIN®, ISODERM®
- BAYGEN<sup>TM</sup>, LEVACAST<sup>TM</sup>

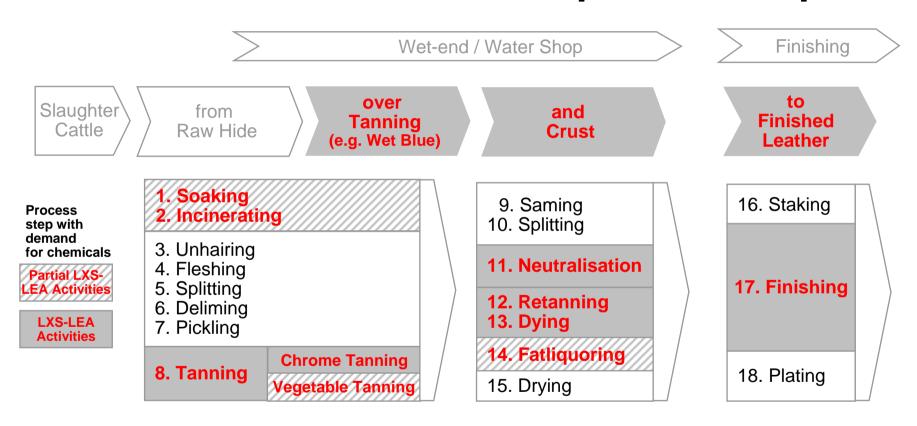
### **Main Applications**

- Wet-end auxiliaries
- Mineral tanning and retanning materials
- Vegetable tanning and retanning materials
- Synthetic organic tanning materials and dyeing auxiliaries
- Colorants
- Finishing resins, polymer dispersions
- Finishing auxiliaries
- Solvent-containing top coats
- Special processes (for patent leather and upgrading splits)



<sup>\*</sup>trademark of SETA S/A
\*\*trademark of Rohm & Haas

### A backward integrated leading producer of leather chemicals in all three process steps



LANXESS operates a chrome mine and processes the ore to chromic acid, sodium dichromate and chrome tanning salts for tanning purposes



# Good customer relationships due to strong application know-how and technical service

#### **Competitive Advantages**

- Strong network of technical service personnel supporting customer needs
- Local production and compounding facilities providing cost and service advantages
- Application know-how providing flexibility to respond to changing market demands
- Partnership in the field of Acrylics with Rohm
   & Haas
- Partnership in the field of vegetable tanning materials with Seta S/A
- Backward-integration into chrome mining
- Strong and established customer relationships
- Broad product portfolio offering complete solutions to the customer

### **Challenges**

- Increasing competitive pressure
- Strategic re-orientation of competitors
- Country risk due to production in politically volatile countries
- Dependence on globally operating customers
- Continuous need for innovation and product development in automotive segment





Overview

**Performance Rubber** 

**Engineering Plastics** 

**Chemical Intermediates** 

**Performance Chemicals** 

**Material Protection Products** 

**Functional Chemicals** 

Leather

**Textile Processing Chemicals** 

**Paper** 

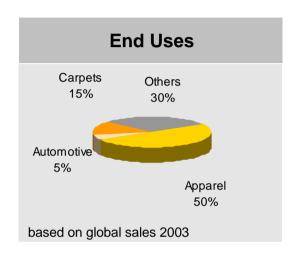
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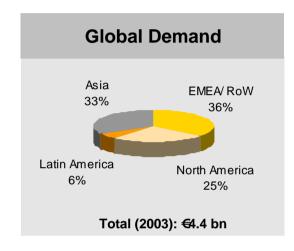
**Rubber Chemicals** 

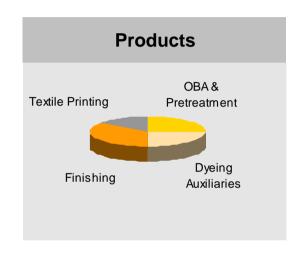
Ion Exchange Resins



# Textile Processing Chemicals offers a broad product portfolio for the textile industry







### Competition

 Main competitors are: BASF, CHT, CIBA, Clariant, Cognis

### **Market Development**

- Expected sales growth (CAGR 03– 09): ~1%
  - Pretreatment: ~ -1%
  - Dyebath additives: ~ -1%
  - Textile printing: ~1%
  - Finishing: ~2%

### **Cost/Technology Position**

- High relevance of raw material costs
- Leading in production technology
- High sophisticated synthesis plant provides tailor-made products for customer - adapted formulations in the regions -Composite Production Flow (CPF)

Source: LXS estimates partially based on SRI International - SCUP - Textile Chemicals, December 2001



# BAYGARD® and BAYPROTECT® offer a variety of applications in the textile industry

#### **Products**

- Pretreatment:
   BAYLASE®, BAYSOLEX®, DIADAVIN®,
   ERKANTOL®, LEVAPON®, PLEXENE™,
- Dyeing Auxiliaries:
   ASTRAGAL®, AVOLAN®, LEVEGAL®,
   LEVOGEN®, LUBIT®, TANASPERSE™,
   TANAPAL®, TANADEL™, TANEDE™

TANATERGE®, TANNEX®

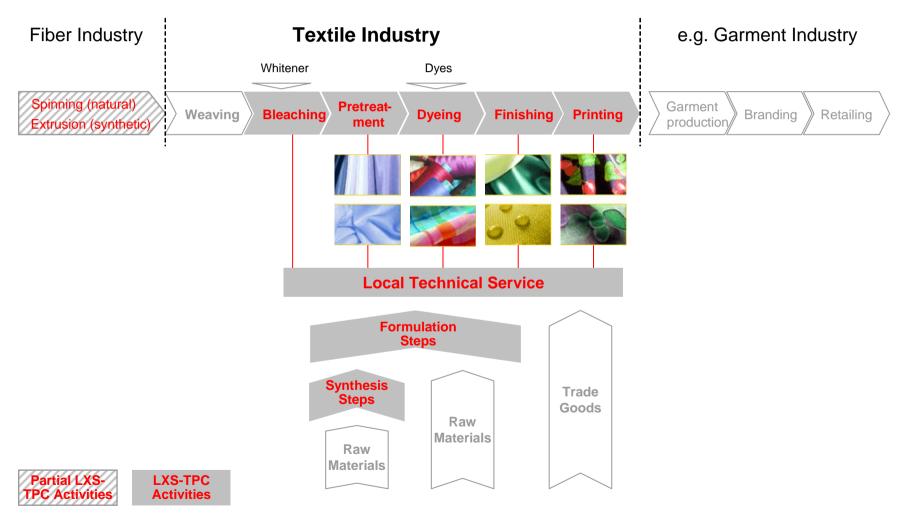
- Finishing:
   BAYGARD®, BAYPRET®, CELLOLUBE™,
   PERSOFTAL®, SYNTHAPPRET®, EULAN™
- Textile Printing: ACRACONZ™/ACRACONC™, ACRAFIX®, ACRAMIN®, NOFOME™, TANAPRINT®

### **Main Applications**

- Apparel
- Carpet / Home textiles
- Automotive
- Technical textiles
- Fibers



### Global producer of textile auxiliaries





# Strong technology and manufacturing expertise for high product quality

### **Competitive Advantages**

- High product quality and reliability of delivery
- A market leader\* in chromojet applications
- High degree of expertise in manufacturing/ technology leadership
- Strong product stewardship
- New environmentally required products for pretreatment and dyebath additives

### **Challenges**

- Customers further moving into low-cost countries
- Acceleration of fashion lifecycles requiring need for innovation/ active portfolio management
- Increasing price pressure



<sup>\*</sup>based on LXS estimates



Overview

**Performance Rubber** 

**Engineering Plastics** 

**Chemical Intermediates** 

**Performance Chemicals** 

**Material Protection Products** 

**Functional Chemicals** 

Leather

**Textile Processing Chemicals** 

**Paper** 

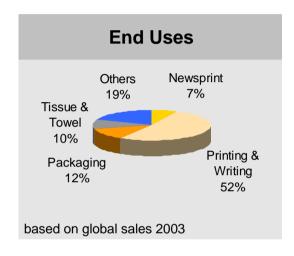
RheinChemie

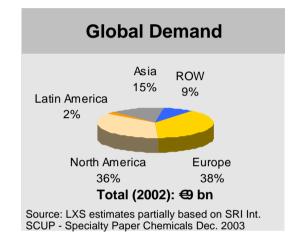
**Rubber Chemicals** 

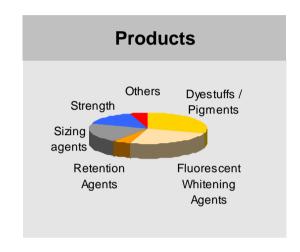
**Ion Exchange Resins** 



### Broad product portfolio with leading technology position







### Competition

 Main competitors are: BASF, Ciba, Clariant, EKA, Hercules, Kemira, Nalco

### **Market Development**

Expected sales growth (CAGR 01–07): ~3%

Dyes/ Pigments: ~2%

Strength: ~4%

Sizing: ~4%

### **Cost/Technology Position**

Leading technology position

Source: LXS estimates



### Provider of full product portfolio for the paper industry

#### **Products**

- Fluorescent Whitening Agents: BLANKOPHOR®
- Dyestuffs: LEVACELL<sup>®</sup>, PONTAMINE<sup>®</sup> ASTRA<sup>™</sup>, VERONA<sup>™</sup> Basic
- Pigments: PONOLITH®, HALOPONT™
- Internal Sizing: BAYSIZE® I
- Surface Sizing: BAYSIZE® S
- Strength Additives: BAYSTRENGTH™, NADAVIN™, PAREZ®
- Retention: RETAMINOL®

### **Main Applications**

- Newsprint
- Packaging & Board
- Printing & Writing
- Specialties
- Tissue & Towel



### Global producer of paper chemicals largely in two process steps

### **Material Preparation**

- 1. Pulping
- 2. De-Inking 3. Refining
- 4. Cleaning

### 5. Addition of **Paper Chemicals**

#### **Retention Aids**

**Promoters** 

Deinking, Defoamer

**Biocides, Sizing Agents** 

**Dry Strength** 

Wet Strength, Dyes

FWA, Bleaching

Chemicals

White Pigments, Starch

Fixatives, Softeners

#### **Paper Production**

- 6. Drainage
- 7. Pressing
- 8. Drying

#### 9. Surface **Treatment**

10. Calandering

Starch

**Surface Strength** Additives

**Sizing Agents** 

Defoamer

**Dyes** 

**FWA** 

### **Finishing**

11. Coating

**Final Mechanical Treatment** 

- 12. Rewinding
- 13. Finishing
- 14. Packing

Latex

**Dyes** 

**FWA** 

Defoamer

**Pigments** 

**Micro Capsules** 

**Coating Additives** 

**Process** step with demand for chemicals

Partial LXS-**PAP Activities** 

> LXS-PAP Activities



### Paper has leading technology and process expertise in major paper chemicals

#### **Competitive Advantages**

- World-scale FWA facility providing cost advantages
- Process expertise results in competitive cost positions
- Technology leadership leading to product innovation
- Broad product portfolio
- Strong position in Dyes and FWAs and in ASA-sizing in North America
- Regional service centres in proximity to customers
- Established global organisation

#### **Challenges**

- Continuing price pressure
- Intensifying competition in technical service
- Overcapacities
- Third-party suppliers bypassing role as distributor
- Market consolidation
- Dependence on limited number of suppliers





Overview

**Performance Rubber** 

**Engineering Plastics** 

**Chemical Intermediates** 

**Performance Chemicals** 

Material Protection Products

**Functional Chemicals** 

Leather

**Textile Processing Chemicals** 

**Paper** 

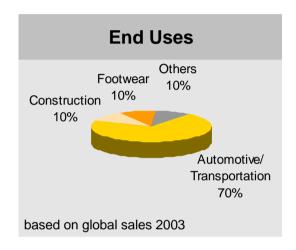
**RheinChemie** 

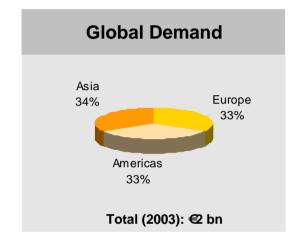
**Rubber Chemicals** 

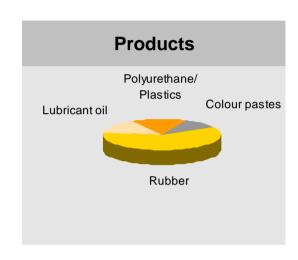
**Ion Exchange Resins** 



# RheinChemie has strong service and application expertise







### Competition

 One of the leading global suppliers of technical services and additives, especially of polymer dispersion chemicals for rubber industries and antihydrolysis agents for plastics and polyurethane

### **Market Development**

Expected sales growth (CAGR 02–05): ~2%

LOA: ~1%

Rubber: ~2%

PU: ~4%

■ iSL: ~5%

### **Cost/Technology Position**

- Regional production in rubber has competitive advantage
- Innovation leader regarding products and services in served market segments

Source: LXS estimates



# Strong supplier of diverse product portfolio to the automotive industry

#### **Products**

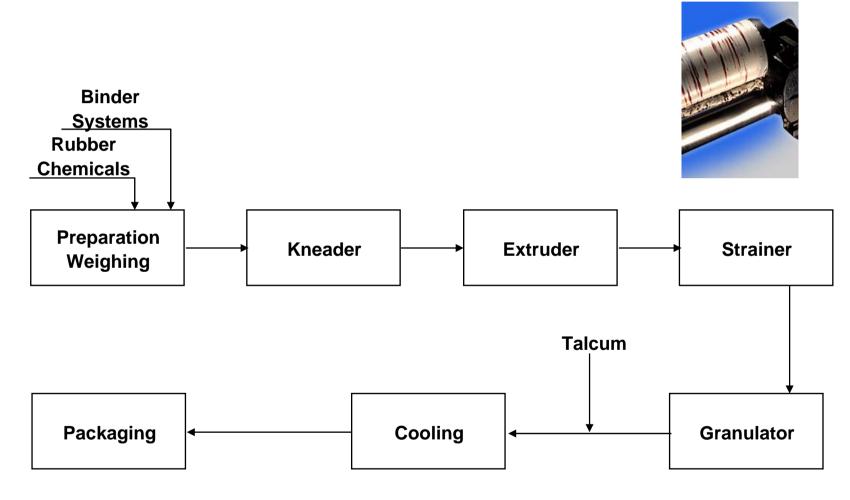
- Polymer-bound chemicals: RHENOGRAN®, Polydispersion
- Processing promoters: AKTIPLAST®, AFLUX®
- Specialty polymers and additives: STABAXOL®, UREPAN™, RHENOBLEND®
- Corrosion inhibitors: ADDITIN™
- Antiozonants: ANTILUX®
- Vulcanisation activators: RHENOFIT®
- Colour pastes & lacquers: ISOPUR™/BAYFLEX™, MOLTOPREN™, ISOTHAN™
- Sulphur carrier and anti-wear agents:
   ADDITIN™

### **Main Applications**

- Technical rubber goods (e.g. profile, hoses)
- Tyres
- Metalworking fluids
- Hydraulic oils
- Industrial gear oils
- Anti-corrosion inhibitors
- Greases
- Technical plastic additives
- Polyurethane industry
- Polyurethane colour pastes



### Polymer-bound chemicals for tailor-made products





### Strong technical and R&D know-how with global service network

#### **Competitive Advantages**

- Close proximity to customers
- Broad product portfolio in product group Rubber
- Strong global sales and service network
- Positive company image with strong brand
- Strong technical know-how and customer specific product solutions
- Leading capabilities in new product development

### **Challenges**

 Product substitution (replacement of rubber by thermoplastic elastomers)





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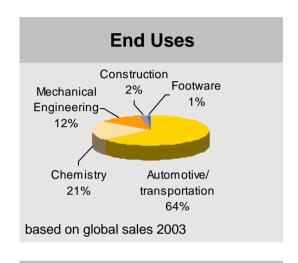
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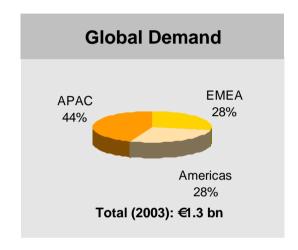
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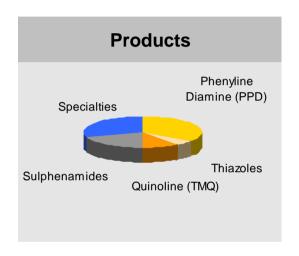
Ion Exchange Resins



### Rubber chemicals has leading market and technology positions in a challenging market







### Competition

- 1. Flexsys
- 2. LANXESS
- 3. Crompton

based on global sales

Source: Freedonia Group, World Rubber Processing Chemicals, September 2002

Source: LXS estimates

### **Market Development**

- Overcapacities have led to strong price pressure and caused a significant loss of sales in the industry
- Total or partial exit of competitors already started
- Expected volume growth (CAGR 03–06):
  - ~1% in Europe and North America, ~4% in Asia

### **Cost/Technology Position**

- World-scale plant for accelerators
- Leading technology position



### Broad product portfolio to enhance rubber properties

#### **Products**

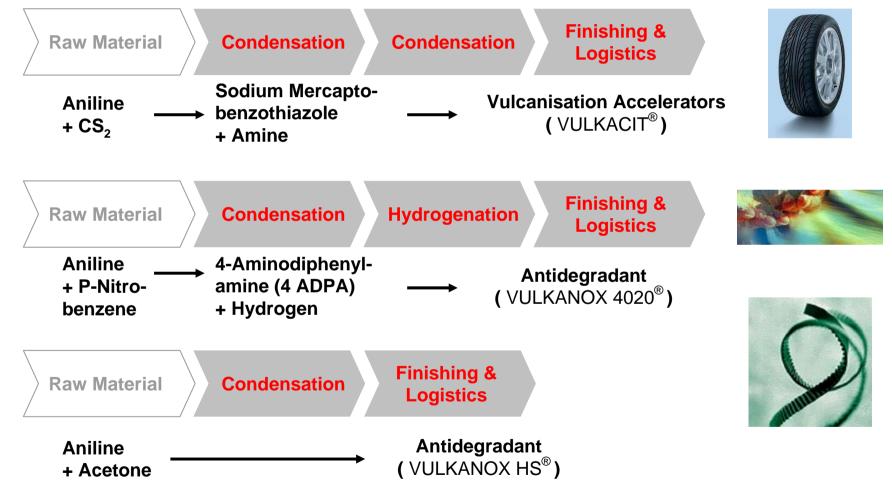
- Accelerators: VULKACIT®, Zinc Oxide Transparent, ZINKOXYD AKTIV™
- Antidegradants: VULKANOX®
- Antioxidants: VULKANOX®
- Bonding agents: COHEDUR®
- Cross Linkers: VULCUREN®, ZINKOXYD AKTIV™
- Curing Agent: Colloidal Sulphur 95
- Emulsifiers: EMULVIN®W
- Fillers: VULKASIL®, ZINKOXYD AKTIV™, Zinc Oxide Transparent
- Latex Chemicals: Coagulant WS, EMULVIN®W
- NaMBT
- Non-Staining Antiozonants: VULKAZON®
- Peptising Agents: RENACIT®
- Retarders: VULKALENT®
- Stabilisers: EMULVIN®W
- Synthetic Plasticisers: VULKANOL™

### **Main Applications**

- Enhance the mixing and/ or processability of elastomers, blends or their rubber compounds
- Achieve certain properties in the elastomer or the finished rubber article/ latex product, e.g. by means of cross-linking (vulcanisation)
- Protect an end product against effects on its properties or from degradation (e.g. oxidation) under in-service conditions



# A leading\* producer of rubber chemicals for tyre industry and technical rubber products





# Established market positions for broad product portfolio in all relevant global markets

#### **Competitive Advantages**

- World-scale plant for accelerators and competitive process lead to cost-based advantage
- Broad product portfolio
- Coverage of all relevant global markets
- Well established market position
- Reputation as provider of high quality products
- Modern production for antidegradants in Europe

### **Challenges**

- Increasing competition from low-cost countries
- Market further moving to Asia





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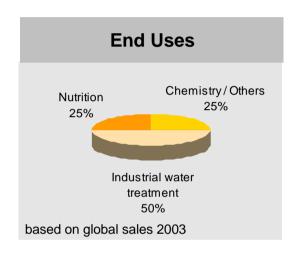
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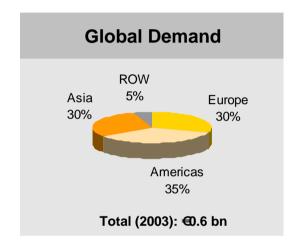
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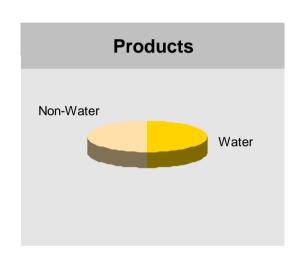
**Ion Exchange Resins** 



### Ion Exchange Resins has strong market positions







### Competition

 Main competitors are: Dow Chemical, Purolite, Mitsubishi Chemical and Rohm & Haas

### **Market Development**

Expected sales growth (CAGR 03–06): ~2-3%

■ Water: ~1-2%

Non-Water: ~4%

### **Cost/Technology Position**

- Competitive cost positions
- Good technological positions in all product groups
- Good international market coverage and customer presence

Source: LXS estimates



# Product portfolio serving water, foodstuff and catalysis and chemical processing industry

#### **Products**

- LEWATIT® as ion exchange resin
- IONAC® as ion exchange resin



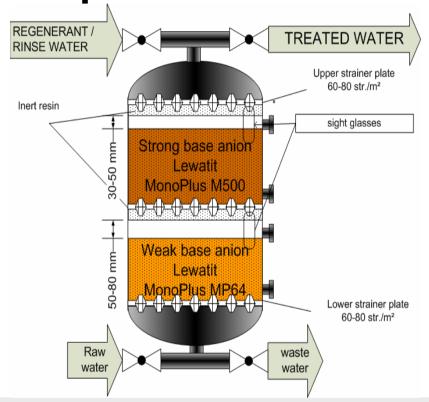


### **Main Applications**

- Water:
  - industrial water treatment, potable water, ultrapure water
- Foodstuffs:
  - treatment of solutions for the food production
- Catalysis and chemicals processing:
  - treatment of waste water and process streams in the chemical industry



Setting milestones in industrial water treatment processes











The highly efficient fluidized bed system (as one example) originates from a LANXESS development and is nowadays considered as the standard in modern industrial water demineralisation. The introduction of monodisperse resins of the LEWATIT® MonoPlus kind has allowed to increase the efficiency of such processes even further.



# Strong technical and process expertise underpins reputation as a premium quality supplier

#### **Competitive Advantages**

- Established market presence and perceived as premium quality supplier
- Process know-how i.e. technology leadership in monodisperse ion exchange resins results in process-based competitive advantage
- Global market presence
- High technical marketing know-how and service expertise

#### **Challenges**

- Continuing price pressure for standard products
- Substitution by reverse osmosis (R/O) in water treatment applications
- Shift in competitive landscape due to further consolidation
- Environmental legislation

