

Capital Markets Day 2013

Resource Efficiency

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Essen, 3 September, 2013



EVONIK
INDUSTRIES

Resource Efficiency overview

Segment structure

Segment

Resource Efficiency

Sales: €3,131 m

Adj. EBITDA / margin: €663 m / 21.2%¹



Business Units

Inorganic Materials

Sales: €1,473 m

Coatings & Additives

Sales: €1,658 m

Business Lines

Silica
(~65%)



Crosslinkers
(~30%)



Functional Silanes
(~15%)



Oil Additives
(~30%)



Advanced Silanes
(~10%)



Coatings & Adhesive Resins
(~30%)



Catalysts
(~10%)







Coating Additives
(~10%)



Data as of Fiscal Year End 2012; in brackets % of sales of Business Unit in 2012
¹Adjusted for IAS 19 restatement

Resource Efficiency overview

Demand driven by environmental megatrends

Megatrend and impact	Scarcity of natural resources	Improvement of production efficiency	Increase in global energy consumption	Environmental sustainability
	Precipitated Silica for Green Tires → Silica	Precious Metal Powder Catalysts for Life Sciences → Catalysts	Isophorone Chemicals for Composites → Crosslinkers	Viscosity modifiers for energy efficient solutions → Oil Additives
End market growth ¹	~4% (global light vehicle tires) ~19% ("Green Tires")	e.g. catalysts: 4-5% (global)	e.g. composites: 9% (global) 6% (China)	e.g. hydraulic fluids: 2% (global) 7% (China)
				

GDP+

¹ 2012-2020E; as per Frost & Sullivan (2013)

Business spotlight: Silica

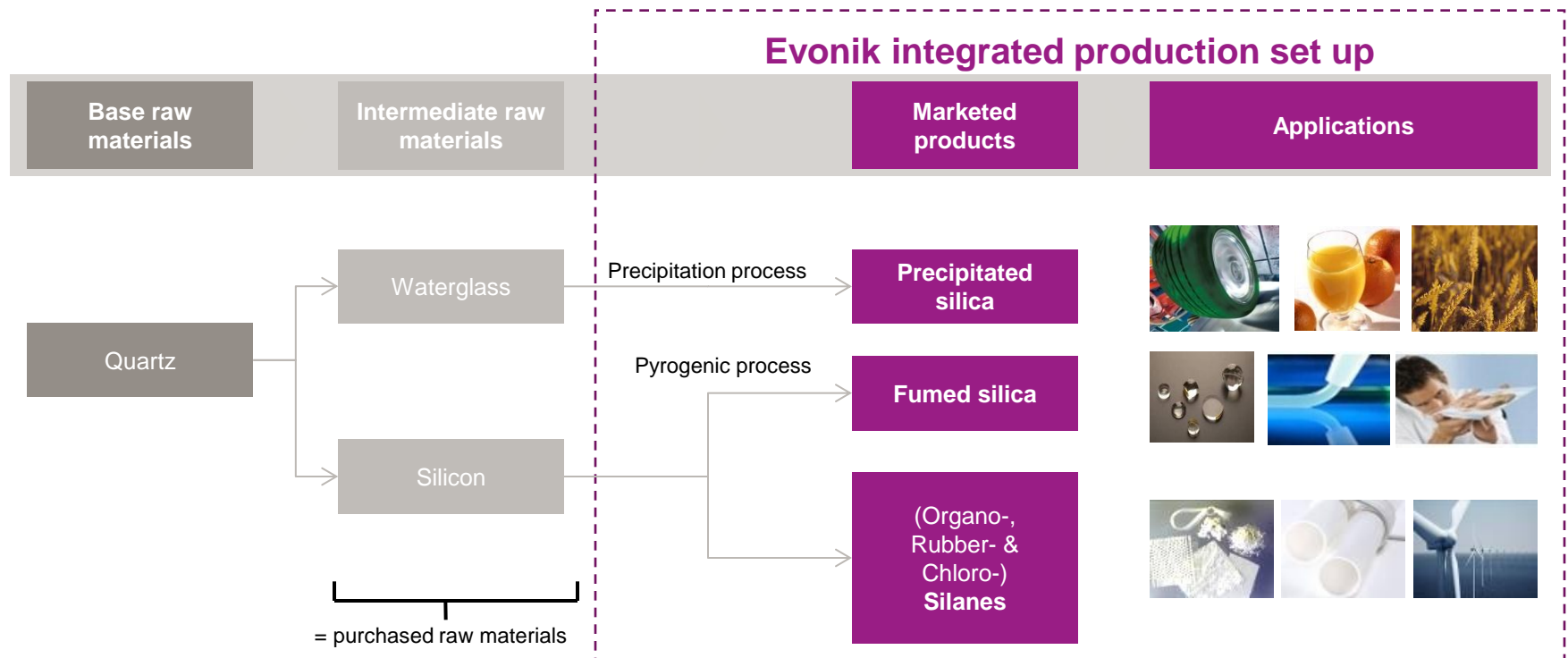
Efficient integrated production platform for silica and silanes



Key advantages

- Superior process technology due to integrated silica-silane production platform
- Global footprint close to key customers
- Strong R&D and application technology driving innovation

Evonik integrated production set up

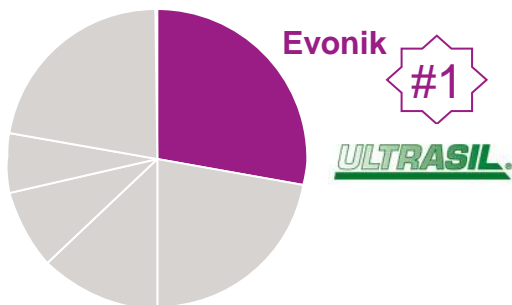


Business spotlight: Silica

Leading market positions with strong established brands in growth markets



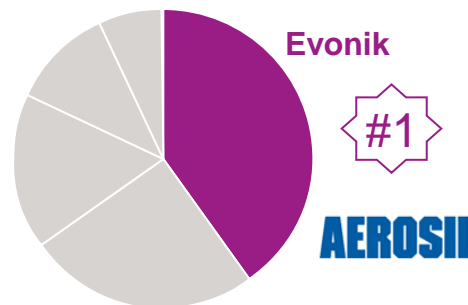
Precipitated Silica



Main competitors

- Solvay
- JM Huber
- PPG
- OSC

Fumed Silica







Main competitors

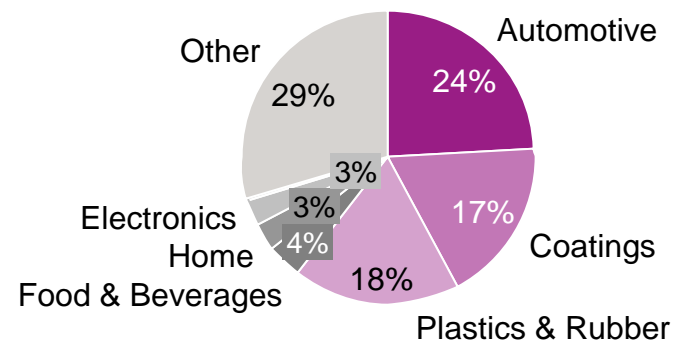
- Cabot
- Wacker
- Tokuyama

Diverse end market split in strongly growing end markets

Expected Market Growth 2012-2020

Global light vehicle tires	~ 4% ¹	
Low rolling resistance tires	~19% ¹	
Lead acid batteries (automotive, e-bike, UPS)	~ 5% ²	
Coating; Paints & Coatings	~ 5% ¹	
Plastics & Rubber	~ 5% ¹	

Sales split by end market (2012)



¹ 2012-2020E; as per Frost & Sullivan (2013)

² 2012-2020E; as per company estimate

Business spotlight: Silica

Precipitated silica – A green tire growth story

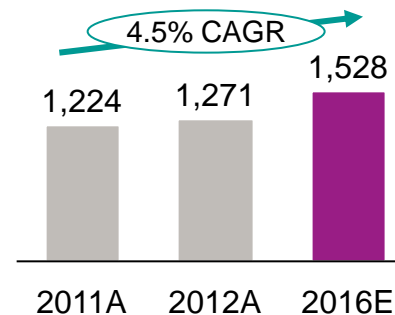
Green tire uses more silica

- Major components of green tires: rubber, carbon black and silica-silane reinforcing system
- Low rolling resistance tires contain more silica than carbon black in the tread compound
- Delivering high value added for tire manufacturers with small total cost share
- Additional demand driver: tire labeling requirements
- Close relationships with major global tire manufacturers:

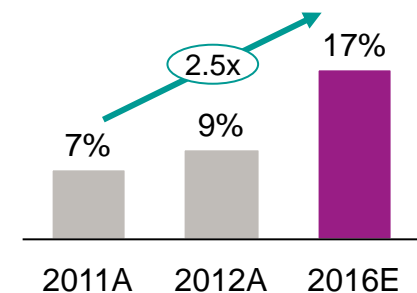


Strong demand trend

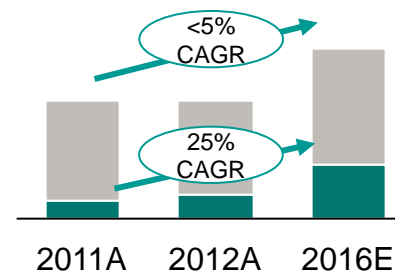
Tire sales
(m units sold)²



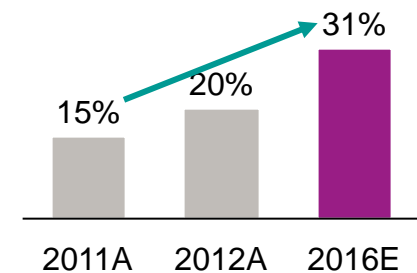
Share of green tire²



Total silica volume used in tire industry³



Share of silica in the tire industry for green tires¹



Other silica volume

Green tire related silica volume

¹ Company estimate

² As per Frost and Sullivan (03/2013) and company estimates

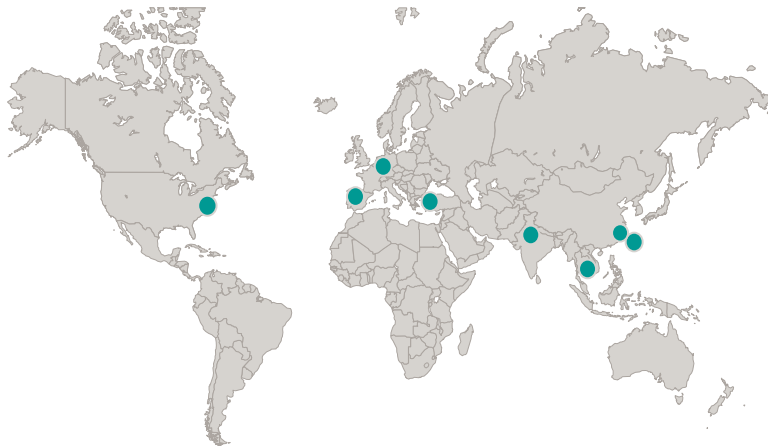
³ Green tire related silica volume as per Frost and Sullivan (2013). Other silica volume as per company estimate.

Business spotlight: Silica

Precipitated silica – Global reach



Global production setup

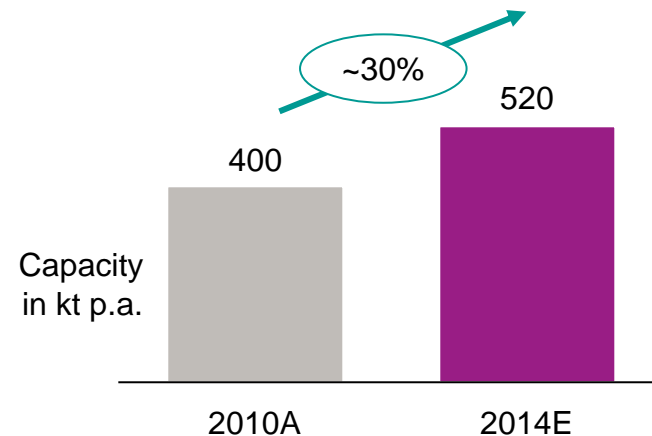


● Evonik precipitated silica plants

- Global production and distribution network supports high customer intimacy
- Long-term partnerships with key customers



Planned capacity expansions



- Intention to increase global capacity by ~30% by 2014 across all major regions and close to growth markets
- Capacity expansions already partly implemented (Germany, China, Spain, Taiwan, Turkey)
- Silica master plan supports #1 position globally

Business spotlight: Silica

Master plan capacity expansions

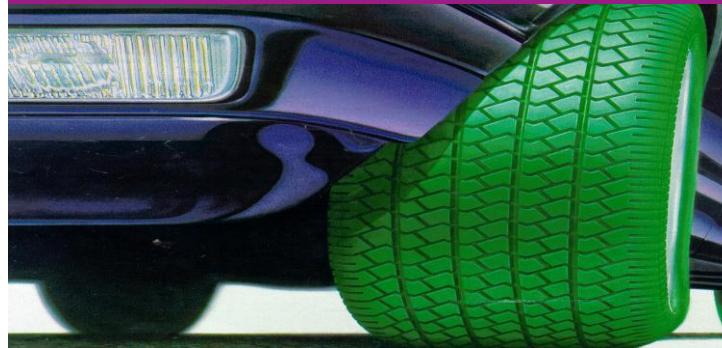
Global expansion of silica production

- Worldwide expansion of capacities for precipitated silica of about 30 percent planned for the period between 2010 and 2014 and already partly implemented
- Total Investment: one hundred million euro range
- Increased growth expected worldwide through the trend in fuel-efficient low-rolling-resistance

Expansion of US production

- Strategic rationale: Further strengthening position of Evonik in the US market
- Investment: Lower double-digit million Euros range in new facility in Chester, Pennsylvania, USA
- Capacity expansion: 20 kt p.a.

Silica – Green tires



Expansion Asia

- Strategic rationale: Satisfy demand in China and Southeast Asia driven by trend toward fuel-saving tires and life science applications
- Investment: Lower double-digit million euro range
- Completion: 2013 (China) and 2014 (Thailand)

New Silica plant in Brazil

- Investment: Middle double-digit million-euro range
- Status: Ongoing basic engineering
- Completion: Scheduled for the end of 2015 subject to board approval

Business spotlight: Catalysts

Positioning in attractive markets with technological expertise gained from captive use applications



Catalysts

- Catalysts are present in approximately 90% of the world's chemical reactions.
- Evonik products enable and continuously improve production efficiency.



Business model

- Focused proprietary catalyst portfolio
- Comprehensive service portfolio ranging from joint development to custom / toll manufacturing



Comprehensive service portfolio




- Collaboration with customers at various stages from lab-scale to commercialization
- Full precious metal life cycle management handling in all regions
- Technical customer service for sampling, selected catalysts testing, start-up, change out, diagnostics
- High throughput preparation (HTP) and screening (HTS) services

Business spotlight: Catalysts

Positioning in attractive markets with technological expertise from captive use applications



End markets for catalysts

Application examples	Advantages in process	End market growth ¹
<p>Industrial & Petrochemicals</p> 	<ul style="list-style-type: none">– Specialty catalysts for external customers and captive use (e.g. HPPO-process, Aveneer®) with extensive catalyst manufacturing competence	~4-5%
<p>Life Science & Fine Chemicals</p> 	<ul style="list-style-type: none">– Tailored catalysts for selective hydrogenation for fine chemicals, pharmaceutical and agrochemical applications	~4-5%
<p>Polyolefins</p> 	<ul style="list-style-type: none">– Components for high-performance olefin polymerization catalysts	~5%

¹ 2012-2020E; as per Frost & Sullivan (2013)

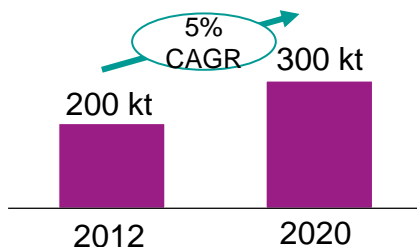
Business spotlight: Crosslinkers

Positioning in attractive growth markets



Crosslinkers – Characteristics and advantages

- Only fully integrated player in Isophorone chemistry
- Extensive application know-how for various industries
- Leading cost position and technology leadership from innovation
- Focus on diamines for epoxy-curing in coatings, flooring and high performance composites
- Isophorone chemistry with solid market growth¹:



Chinese investment project progressed

- First integrated mover into high-growth Chinese market
- World-scale integrated IP/IPD plant
- Start up expected in early 2014
- Only player with global production setup (Europe, Americas, Asia)



Application examples & product characteristics

Lightweight



Composites for light-weight construction

Coatings



Next generation scratch resistant coating technology for premium applications

Construction



Raw materials for high performance industrial floorings for high-tech applications

¹ Company estimates

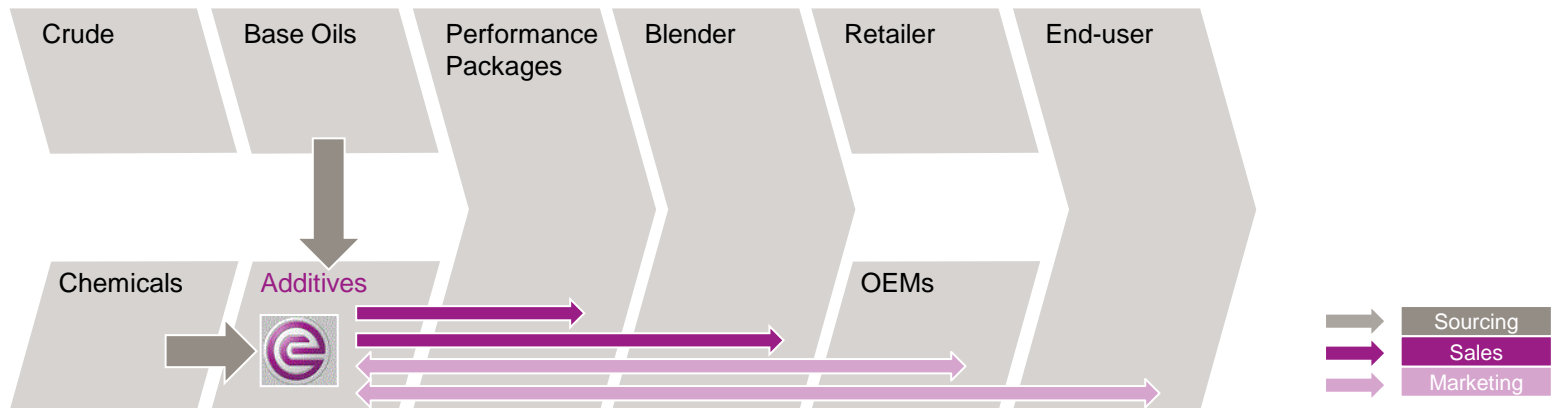
Business spotlight: Oil Additives

Integrated supply chain with high customer intimacy and OEM reputation



Integrated supply chain with downstream relationships

- Customers: Performance Packages and Blenders
- Technical support for customers, own R&D and product development capabilities
- Downstream OEM and end-user relationships and reputation



- Leading global supplier of high performance lubricant and fuel additive in automotive and industrial lubricants market
- Integrated global supply chain and production network
- Superior customized product technology

Business spotlight: Oil Additives

First choice technology for efficiency improvement in lubricants, fuel & petro industries



Application examples

Automotive



Gear and transmission oil
Engine oil
Biodiesel

Construction



Hydraulic fluids

Industry & refining



Industrial gear oils
Dewaxing aids
Crude oil flow improver

Customer benefits

High-performance components in lubricants



VISCOPLEX

Flowing over a wide temperature range
without solidifying

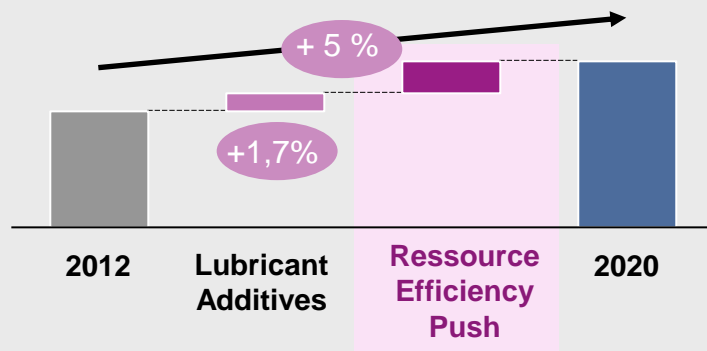
- Fuel saving and efficiency
- Productivity and power
- Component durability
- Reduction of CO2 Emissions

Business spotlight: Oil Additives

Significant capacity expansion in Singapore

Strategy

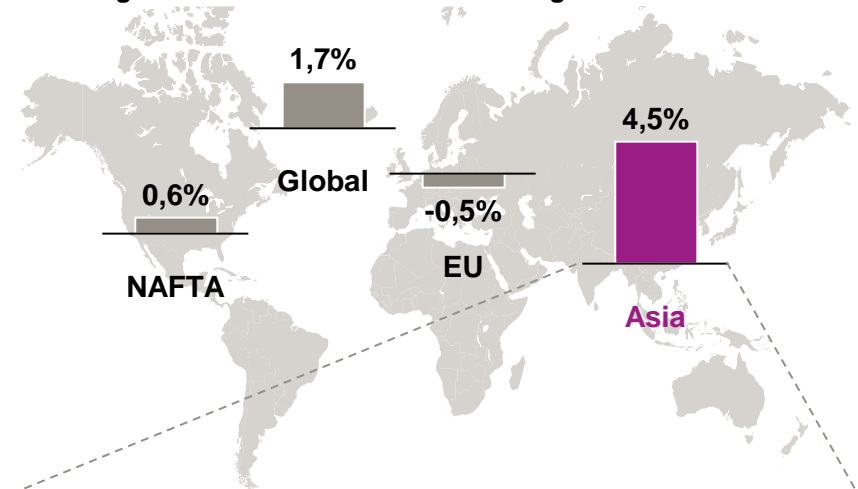
Lubricant Additives Market growth



- Resource Efficiency is growth driver for industrial lubricant applications (Injection molding; Wind turbine gear oils; Drilling)
- Entering new markets e.g. Metal Working Fluids
- Novel polymer architectures (comb polymers) offer significant improved fuel economy in transmission, gear and engine oils

Strategic investment in Singapore under way

Regional Lubricant Additives Market growth 2012 – 2017



Capacity Expansion in Singapore:

- Asian market growth driven by expanding mobility and increasing demand for high-performance lubricants
- Debottlenecking and the planned expansion will nearly double capacity
- Plant expansion to be completed in 2015

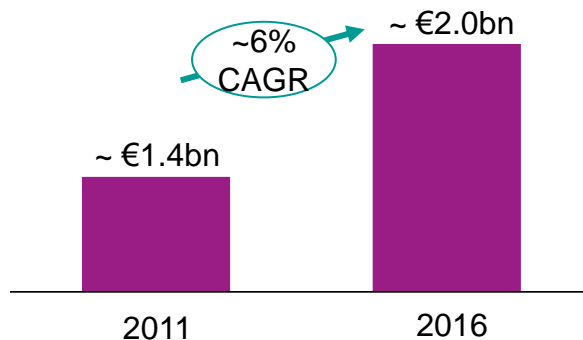
Business spotlight: Coating Additives

Differentiation from technological expertise and innovation



Our business

- Development, production, and marketing of innovative high performance additives and specialty resins for the coatings and printing inks industry
- Supporting customers to develop resource efficient products
- Intensive tech service & sales force support
- Highly attractive low volume business with wide product range
- Market driven development of coating additives



Product examples

- Focus on mission-critical and performance-impacting Coating Additives e.g.:



Growth strategy

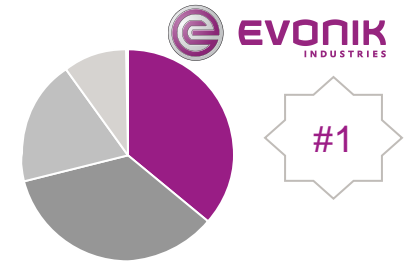
- Develop innovative products for environmentally friendly coatings
- Increase market share in Asia and North America
- New R&D labs in Singapore, Shanghai and Essen operating
- Investments in global silicone production capacity (China/Essen)
- Selected complementary acquisitions

Resource Efficiency Highlights



Leading global positions with high customer intimacy

- Global market leadership in almost all fields of business with strong established brands
- Global supply of solutions with collaboration in R&D enables high customer intimacy



Strong growth profile due to megatrends and innovations

- Megatrend Resource Efficiency drives strong growth of this segment
- Strong innovation pipeline with focus on key technologies



Focused investment program

- Silica master plan
- 5th isophorone production line
- Liquid polybutadiene for adhesives and sealants
- Expansion Oil Additives Singapore





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Business spotlight: Silica

A leader in sustainable, energy efficient and environmentally-friendly solutions



Particle design competence

Superior particle design competence with focus on

Precipitated Silica:

- Close customer relationships, esp. with tire manufacturers
- Broad range of end markets with strong established brands
- Ongoing global expansion program

Fumed Silica:

- Strong process technology
- Growing range of applications
- Strong established brands

Superior Silica properties



















- Reinforcement, e.g. in Tire & Mechanical Rubber Goods
- Free flow and rheology control, e.g. in food & beverages, pharmaceutical and personal care applications
- Matting, e.g. in coating solutions
- Defoaming, e.g. in food & beverages
- Abrasion, e.g. in chemical mechanical planarization of semiconductors(CMP)



Business spotlight: Crosslinkers

Only fully integrated player with clear leadership along value chain



	Isophorone (IP)	Isophorone diamine (IPD)	Isophorone diisocyanate (IPDI)
Applications	 Coating & printing ink solvents  Chemical synthesis	 Flooring  Composites  Marine paints	 TPU  PUD  Automotive interior trim
Market growth 2012-20	 ~ 5%  ~ 4%	 ~ 5%  ~ 9%  ~ 9%	 ~ 4%  ~ 5%
Key players	 Arkema	 BASF	 Bayer Perstorp
Evonik market position ¹	#1	#1	#1

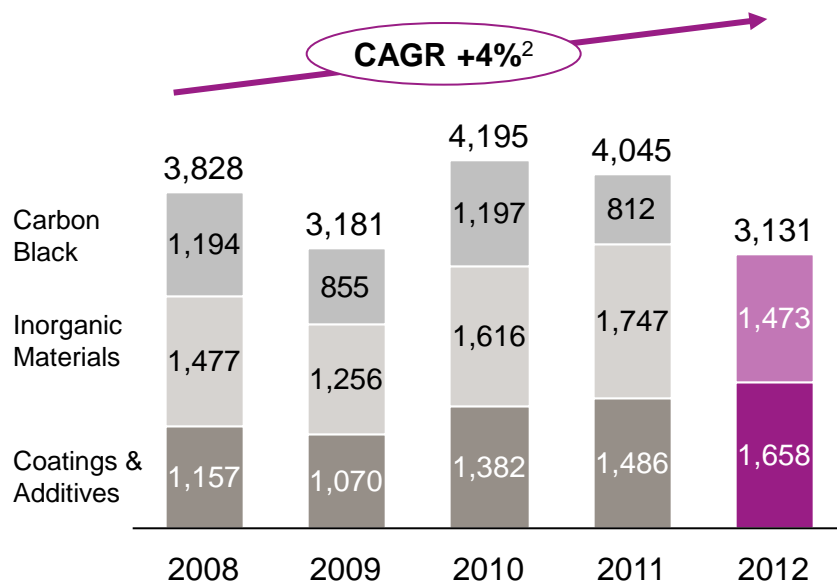
With 50 years of experience, Crosslinkers is an important supplier of raw materials in the area of high-performance specialty polymers and occupies a leading position in raw materials and crosslinkers for coating technology

¹ As per company estimate, based on multiple research reports.

Resource Efficiency overview

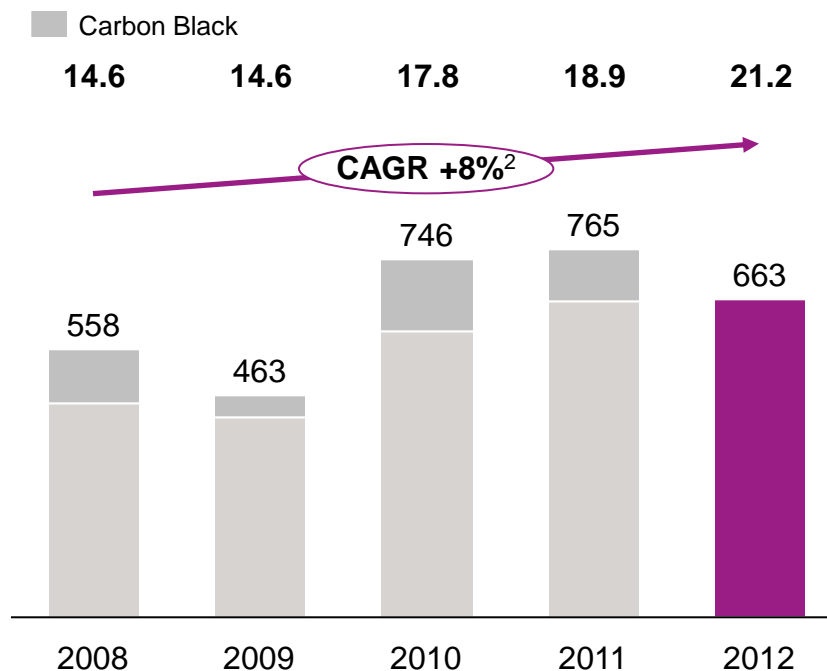
Profitability continuously improved

Sales (€ m)



- Historical figures significantly impacted by divestment of Carbon Black activities
- Expected future growth GDP+

Adj. EBITDA and margin (%)¹



- Independence from raw material price volatility
- Low price sensitivity of customers due to mission critical inputs with low share in total cost

¹ Adjusted EBITDA 2012 restated for IAS 19 effects

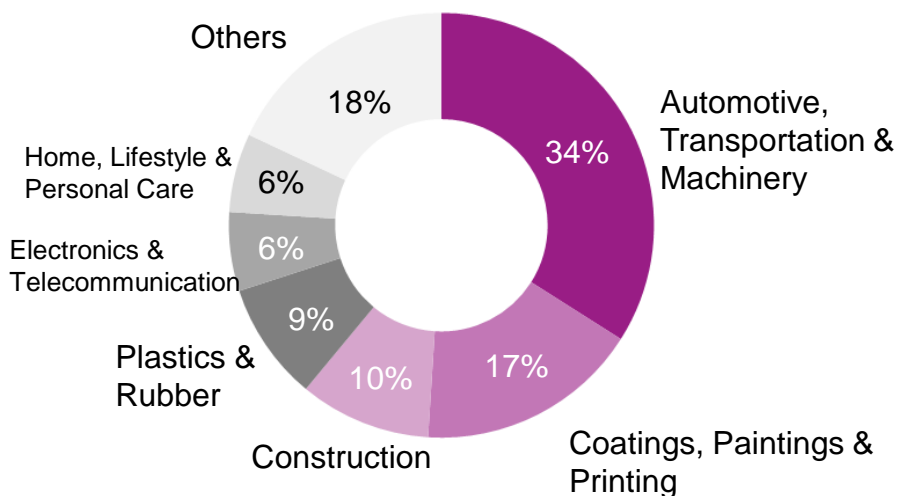
² Excl. Carbon Black

Resource Efficiency overview

Well balanced portfolio serving wide range of markets

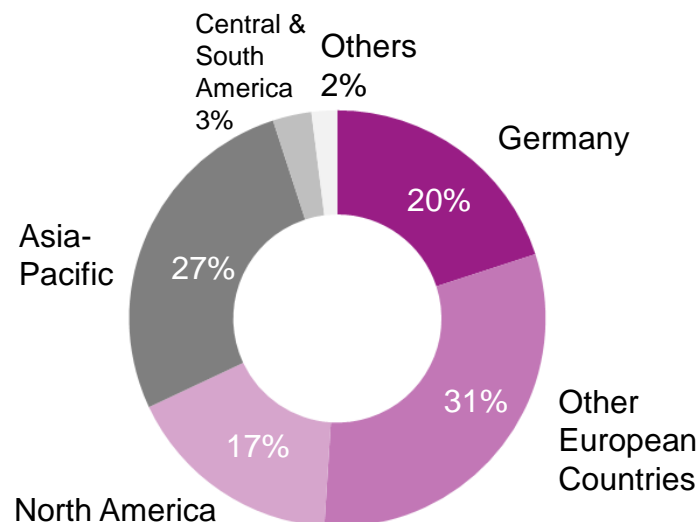


Sales split by Evonik's end markets (2012)¹



- Broad range of end markets with solid growth
- Strong focus on resource efficiency applications
- Mission critical components

Sales split by region (2012)

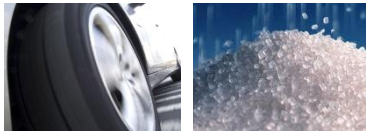





- True global footprint
- Strong presence in Asia-Pacific and NAFTA
- Ongoing and planned expansion of production base with focus on Asia and emerging markets

¹ Company estimates on the basis of information on Evonik's customers and the further use of Evonik's products by its customers

Resource Efficiency overview

Leading market positions across the portfolio








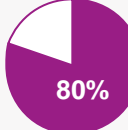
Key Business Lines	Silica	Catalysts	Crosslinkers	Oil Additives
				
Example products and applications	Precipitated silica for "Green Tires"	Catalysts for fine chemicals and polyolefins	Crosslinker for composites, elastomers and non-solvent coatings	Lubricant additives (viscosity modifiers) for hydraulic systems
Evonik product position ¹	#1 in precipitated silica #1 in fumed silica	# 1 for precious metal powder catalysts #2 for activated base metal catalysts	#1 in isophorone chemicals	#1 in oil additives
% of sales from leading market positions ²	100%	80%	85%	100%

¹ Company estimates, based on multiple research reports

² Defined as top 1-3 positions; as per company estimates, based on multiple research reports

Resource Efficiency overview

Inorganic Materials





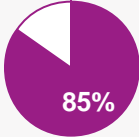


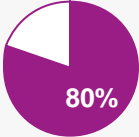
	Silica	Advanced Silanes	Functional Silanes	Catalysts
				
Applications	<ul style="list-style-type: none"> • Silicone rubber • Green tires & rubber • Paints & coatings • Adhesives & sealants 	<ul style="list-style-type: none"> • Optical fibres • Semi conductors / electronics • Fumed silica 	<ul style="list-style-type: none"> • Adhesive & sealents • Green tires • Wire & cable • Building protection 	<ul style="list-style-type: none"> • Catalysts for fine chemicals and polyolefins • Enabler for process innovation
Key products	<ul style="list-style-type: none"> • Matting agents • Precipitated silica • Fumed silica 	<ul style="list-style-type: none"> • Chlorosilanes • Monosilanes 	<ul style="list-style-type: none"> • Organofunctional silanes • Rubber silanes 	<ul style="list-style-type: none"> • Precious metal catalysts
Sales split 2012	~65%	~10%	~15%	~10%
Market position¹	# 1 in precipitated silica	# 1 in chlorosilanes	# 1 in organosilanes	#1 for precious metal powder catalysts #2 for activated base metal catalysts
% of sales from leading positions²				
Main competitors	<ul style="list-style-type: none"> • Cabot • JM Huber • Solvay • WR Grace 	<ul style="list-style-type: none"> • OCI • REC 	<ul style="list-style-type: none"> • Dow Corning • Momentive • Shin Etsu 	<ul style="list-style-type: none"> • BASF • Clariant • Johnson Matthey • WR Grace

¹ Company estimates for relevant markets based on multiple research reports

² Defined as Top 1-3 positions; as per Company estimates, based on multiple research reports

Resource Efficiency overview

Coatings & Additives

	Crosslinkers	Oil Additives	Coating Additives	Coating & Adhesive Resins
				
Applications	<ul style="list-style-type: none"> Composites Coatings & paints Flooring Automotive interior 	<ul style="list-style-type: none"> Auto & industrials Hydraulic systems Refinery processing Biofuels 	<ul style="list-style-type: none"> Eco-friendly coatings (low VOC, water based) High solid industrial coatings 	<ul style="list-style-type: none"> Hot melt Pre coated metal Protective coatings Road marking
Key products	<ul style="list-style-type: none"> Crosslinkers for composites, elastomers and non-solvent coatings 	<ul style="list-style-type: none"> Lubricant additives (viscosity modifiers) Fuel additives 	<ul style="list-style-type: none"> Additives for eco-friendly and highly solid industrial coatings 	<ul style="list-style-type: none"> Functional resins Adhesive hot melts Heat sealents Polybutadiene
Sales split 2012	~30%	~30%	~10%	~30%
Market position¹	# 1 in isophorone chemicals	# 1 oil additives	# 1 in organically modified silicones	# 1 in polyester resins
% of sales from leading positions²				
Main competitors	<ul style="list-style-type: none"> Arkema BASF Bayer 	<ul style="list-style-type: none"> Infineum Lubrizol NewMarket Oronite 	<ul style="list-style-type: none"> Air Products Altana Dow Corning 	<ul style="list-style-type: none"> Dow DSM Mitsubishi Chemical

¹ Company estimates for relevant markets based on multiple research reports

² Defined as Top 1-3 positions; as per Company estimates, based on multiple research reports