Nutrition & Care

Science in our minds. Humans in our hearts.

19 March 2019 **Exane Consumer Ingredients Conference**

Dr. Hans-Josef RitzertMember of Management Board Nutrition & Care Segment

Dr. Tammo Boinowitz

Head of Business Line Care Solutions





Agenda

- 1. Segment Overview Nutrition & Care
- 2. Business Line Care Solutions
- 3. Appendix



Our businesses are driven by non-cyclical growth trends

HEALTHY LIVING

Consumer are increasingly interested in personal health and well-being. Elderly people strive for a healthy and active life.





AGEING POPULATION

People become older. The over 60s now make up over 10%, and by 2050 this is likely to rise to over 20%.



GROWING WORLD POPULATION

The world population is expected to reach 9.7 billion by 2050 and with it the demand for food and animal protein in particular will increase.





EMERGING MIDDLE CLASS

The global middle class will increase from 1.8 billion in 2009 to 4.9 billion by 2030. The bulk of this growth will come from Asia, accounting for 59% of middleclass consumption.

INDIVIDUALISATION

Lifestyles and life choices are becoming more flexible and differentiated, and so do products and services.





SUSTAINABILITY

As natural resources become scarcer, we need to decouple economic growth from resource consumption. Additionally, consumers increasingly tend to make choices from an ethical perspective.



Strategic growth focus of Evonik

Addressing three growth engines as drivers for growth & efficiency

Four growth engines





Strategic growth focus of Nutrition & Care

Serving end markets with robust and resilient growth

End markets and growth rates¹





Amino acids: ~6% Aquaculture: >10%



He

Health & Care

Consumer goods and personal care

Skin care: ~5%
Hair care: ~4%
Diapers: ~5%
Fabric care: ~3%

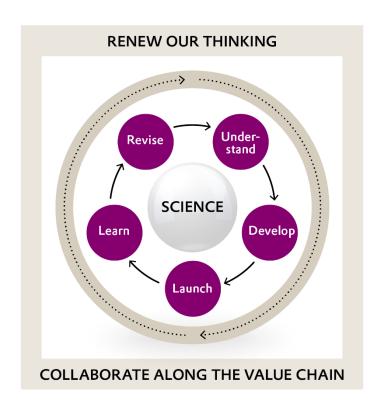
Pharma and health care

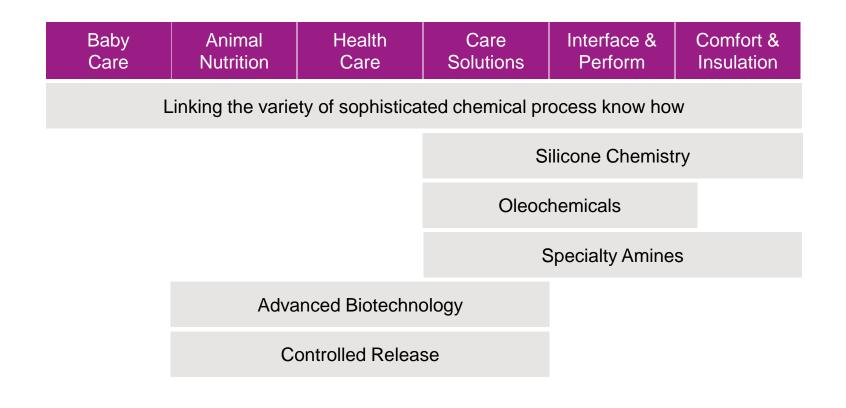
Pharma: ~5%

- 1. Expected end market growth rates p.a. according to industry reports and Evonik estimates
- 2. 2018 numbers



Our shared technology platforms are the backbone for innovation and growth





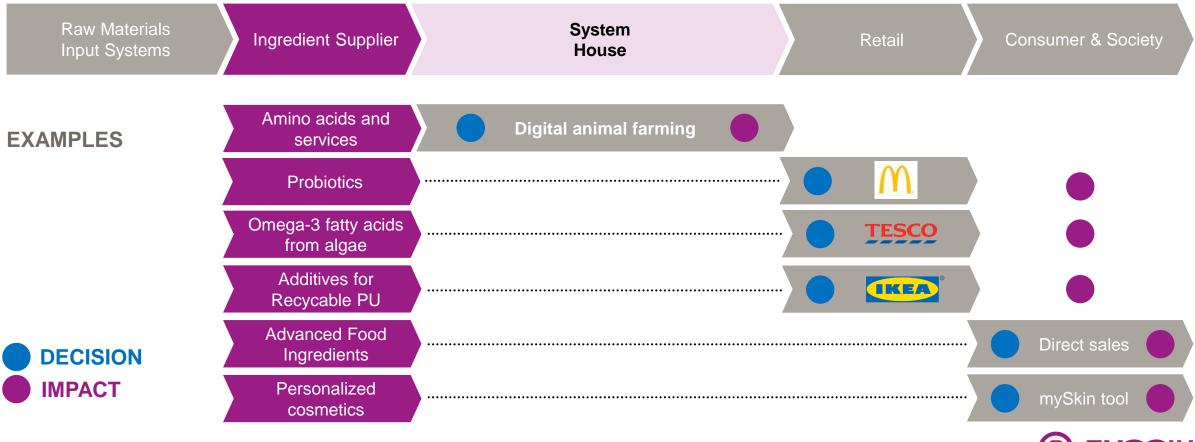
Technology platforms enable for > 90% of Nutrition & Care sales



The success of our strategy depends on our understanding of future stakeholder needs and value chain dynamics

By understanding the individual needs along the value chain we will shape our portfolio

THE VALUE CHAIN





Recent investments and acquisitions serve as strong foundation for our renewal process

2011-2014

2015

2016

2017

2018ff ...

Major investment projects



Me5. Singapore



Boost, Brazil



Mepron, USA



Lysine, Brazil



Met-Met, Antwerp



SiGNAL II, Shanghai



Me6 Singapore

asset base going forward

Acquisitions

















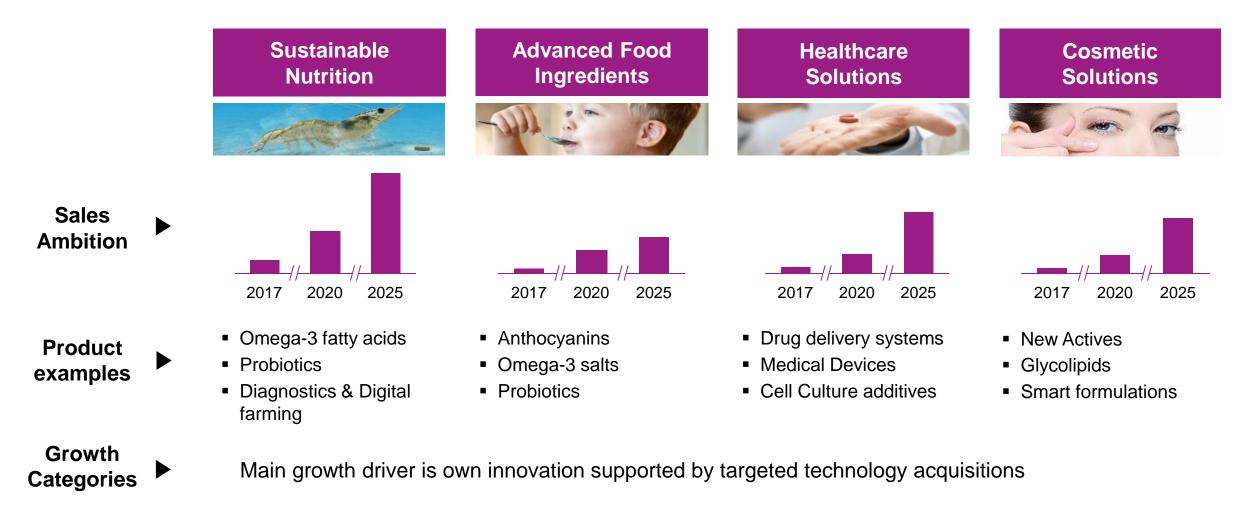








Four powerful innovation growth fields fuel future growth





Growth & Efficiency initiatives to drive renewal process

Growth **Efficiency** Sustainable Healthy Nutrition Animal Project "Adjust 2020" (€50 m savings) **Nutrition** Omega-3 fatty acids (Veramaris) Glycolipids from 100% renewable sources Health & Biopolymers for controlled drug release Project "Oleo 2020" Care Tissue Engineering for wound healing **Specialty** Comfort & Insulation: Adding the APD business Synergy realization from integration **Additives** to build PU-Additives power house Implementing Group SG&A efficiency program Segment Digitalization initiatives (e.g. mySkin, Digital Farming) level Digital optimization of process technology



Nutrition & Care

Renewal agenda based on a solid foundation

Strategic Goals

- 1 More balanced portfolio with higher resilience
- 2 Further **foster growth** and drive competitiveness through differentiation
- 3 **Execute efficiency programs** and harness digitalization chances

Financial Goals

Clear commitment to contribute to Group targets

- → Attractive growth above GDP
- → Target margin of above 20%
- → Reliable cash provider for the Group
- → Normalized CAPEX following a phase of high investments



Science in our minds. Humans in our hearts.



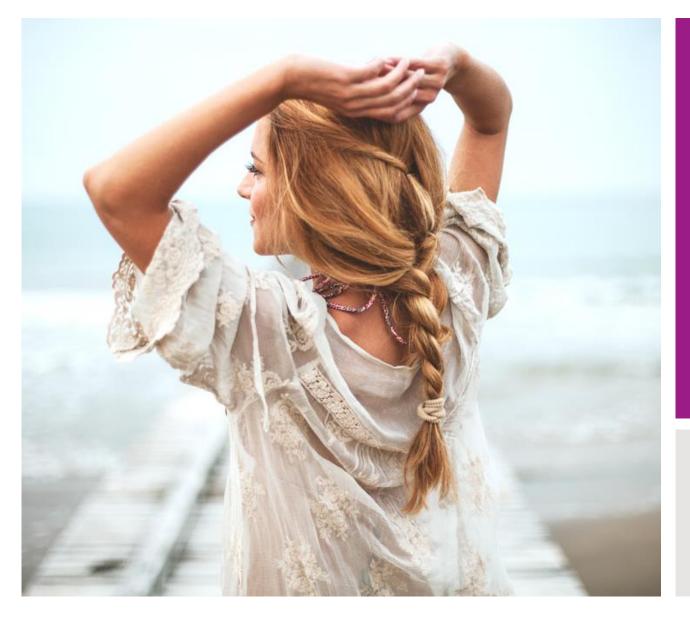
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Evonik Care Solutions

19 March 2019 **Exane Consumer Ingredients Conference**

Dr. Tammo BoinowitzHead of Business Line Care Solutions



Building a "Care Solutions" Powerhouse

Combining Personal Care & Household Care business lines

Business Rationale

- Same customers
- Same competencies, e.g.
 - consumer orientation
 - interfacial chemistry
 - formulation know-how
- Same resources, e.g.
 - Production plants
 - Product & Process Development
 - Customer service center
- Same technologies
- Same raw materials

Care Solutions Household Care

Broad Technology Platform

- Organomodified Silicones
- Betaines
- Esterquats & Alkylquats
- Alkoxylates
- Esters
- Biotechnology
- Ceramides
- Peptides







Evonik Care Solutions

Leading partner for Care applications: Translating technologies into marketable solutions

~800 products in our portfolio

~17%
innovation rate¹

acquisitions since 2016

8% sales growth 2014-17 CAGR

~1,400
direct customers globally

Base Products
e.g. Sec. Surfactants, Quats

Lean Organization / Optimize

Focus on Specialties

Grow and expand portfolio

Exemplary Applications



Bath & Shower



Skin Care



Antiperspirants & Deodorants



Age Defying



Hair Care



Sun Care



Colour Cosmetics



Industrial Institutional Cleaning



Fabric Care



Drilling Fluid, Hydraulic Fracturing, Cementing Chemicals



Liquid Laundry Detergent



A clear structure of empowered Product Lines

Cosmetic Solutions

Innovative and high quality product solutions for the cosmetic industry, enabled by excellent commercial and technical services.

Conceptual approaches and extensive formulation know-how for a continuous flux of innovation.

Active Ingredients

Innovative, sustainable and high quality cosmetic active ingredients based on topnotch technology with a proven efficacy.

Powered by appealing

marketing concepts.

Cleaning Solutions

Full range of specialty surfactants and other innovative ingredients beyond the basics of cleaning and protection. Product development and formulation expertise for home, commercial and professional applications.

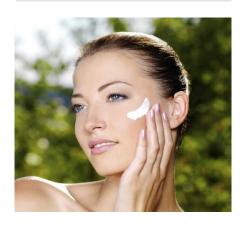
Technical Applications

A broad range of organic and synthetic specialty surfactants and organomodified silicones for oilfield, mining, mineral processing, phase transfer catalysis and industrial chemical processing.

Base Ingredients

Standard products with a lean, cost efficient business model.

Joint expertise for base ingredients of both household and personal care markets.







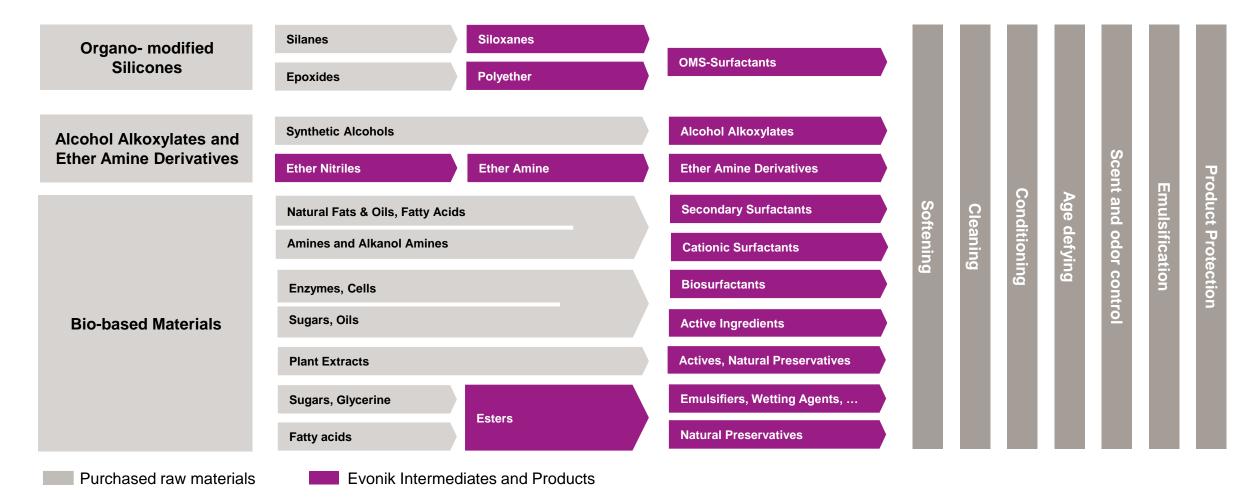






Technology platforms

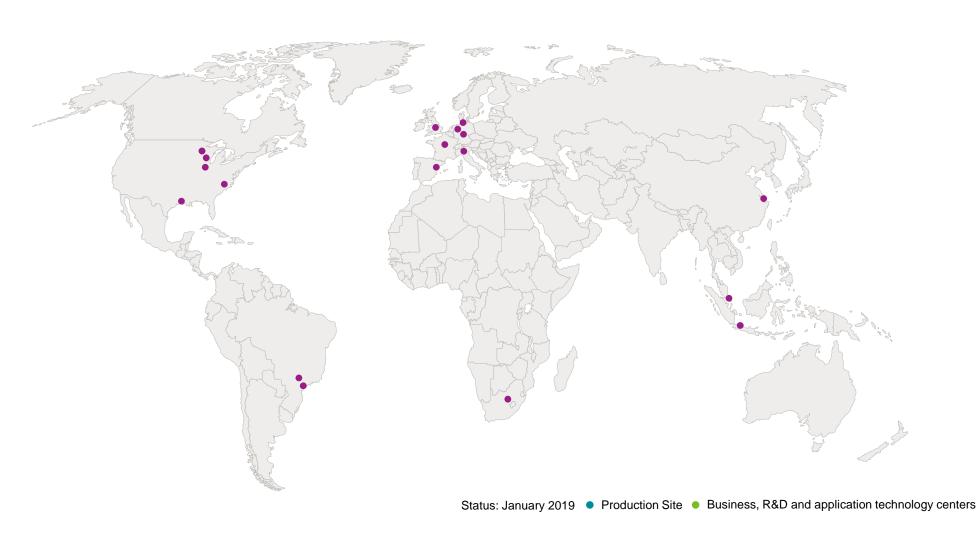
Differentiation by using broad range of chemistry





Care Solution's global locations

Global consistent quality and regional reach



EMEA

- Essen/Duisburg (DE)
- Granollers (E)
- Hanau (D)
- Hamburg (DE)
- Milton Keynes (UK)
- Midrand (ZA)
- Tours (F)
- Steinau (DE)

NORTH AMERICA

- Janesville, WI (US)
- Mapleton, IL (US)
- Milton, WI (US)
- Reserve, LA (US)
- Richmond/Hopewell, VA (US)

SOUTH AMERICA

- Americana (BR)
- Sao Paulo (BR)

ASIA

- Jakarta (ID)
- Shanghai (CN)
 - Singapore



Business Line Care Solutions: "Oleo 2020"

New setup and business model renewal

Merging business lines Household Care and Personal Care into "Care Solutions"

Aligning the product portfolio along the chosen business model: standard products and specialties

Adapting the asset network to meet the future requirements for a higher share of specialties

Network optimization

- Reduce complexity and improve fixed cost position:
 - site consolidation
 - Dedicated plants for specific product groups
- Improvements of on-site operations and support functions

Enhanced target costing

- Improve variable cost position
- Customer segmentation with focus on business potential
- More targeted service offerings

Strategy & portfolio Management

- Optimize product portfolio
- Leaner organizational set up and processes
- Focused automation efforts



Business Line Care Solutions

Strong growth perspectives after reorganisation and having done our homework

Absolute EBITDA development

| 10% p.a. | 2022e | 2022

Historical performance

- Portfolio, organizational and business model adjustments (base & specialties)
- Significant and successful broadening of our Activities by acquisitions (Alkion, Dr. Straetmans, PMD)
- Strategic Partnerships in Household & Personal Care with key global players

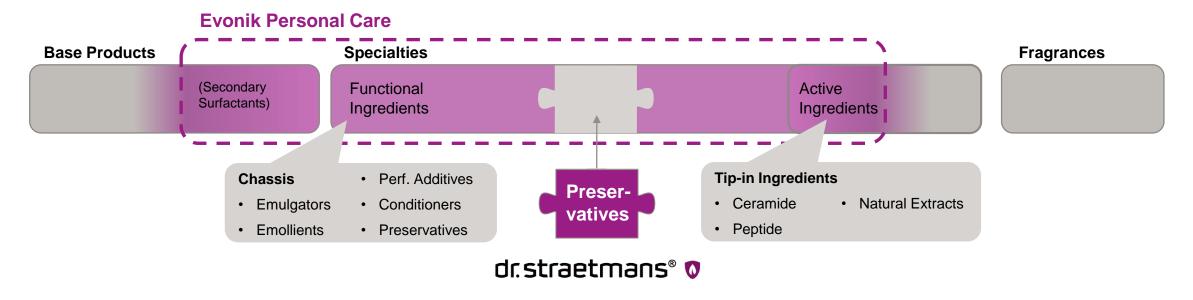
Future growth drivers

- Glycolipids (e.g. Rhamnolipids) following the trend of using biobased materials (e.g. biosurfactants)
- Digitalization (e.g. MySkin, E-Sales & Marketing)
- Scent Management (enabling long-lasting scent on clothes)
- New Active Technologies, e.g. Skin Microbiome



Business Line Care Solutions

Dr. Straetmans – An important portfolio extension



A perfect fit for the existing Evonik setup

- Significant competitive advantage by combining preservative and emulsifier know how
- Strengthening market position with highly reputed Dr. Straetmans business
- Better customer access and bonding through enhanced formulation expertise
- Increased specialties portfolio



We are **inspired** to make a contribution to the **well-being** of people and the **planet** by delivering ingredients with **superior performance** as well as generate accelerated business growth.

Our goal is to be a true market leader and **preferred partner** for the industries we serve, powered by the **soul** and **science** of our products.





Agenda

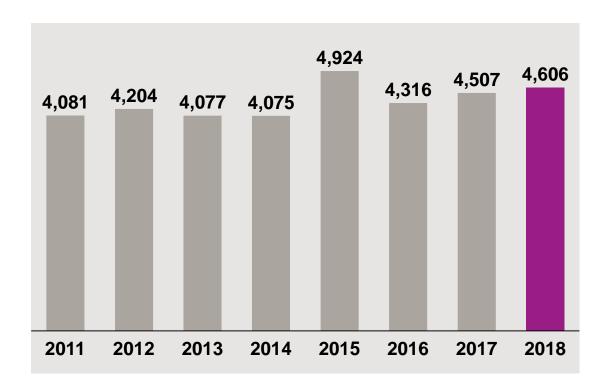
- 1. Segment Overview Nutrition & Care
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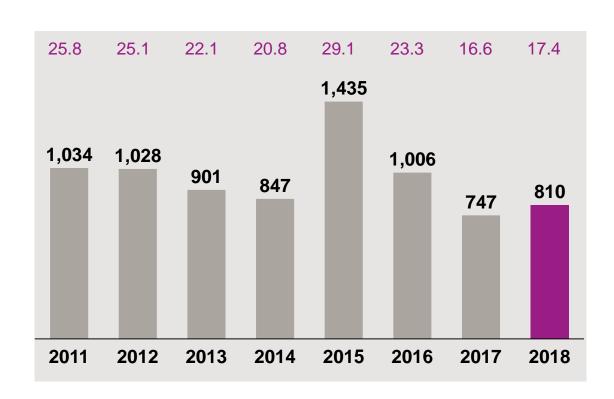
Nutrition & Care (1/2)

Financial overview

External Sales (€ m)



Adj. EBITDA (€ m) and margin (%)





Segment overview

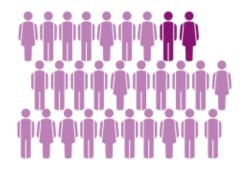
What our businesses have in common

Structural growth trends



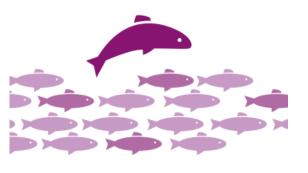
We serve growth markets fueled by megatrends with a direct and immediate link to our business.

Globalization



We fulfill basic human needs in a globalizing world.

Differentiation



Our common strategic goal is to strive for differentiation.

Future success



We are a group of businesses with an equally promising future.



Segment overview

Portfolio of seven Business Lines

Nutrition & Care Business Lines

Growth Core



Animal Nutrition



Health & Care



Specialty Additives

Animal Nutrition



Health Care



Comfort & Insulation



Baby Care



Business Lines Care Solutions



Interface & Performance





Business Line Care Solutions

A reliable partner in the Home & Personal Care market

Customer Intimacy



- Multi-level touch points (R&D, Formulation, Marketing, Management)
- Joint development projects
- Global supply network

Application Technology



- Formulation support
- Application Testing
- Regulatory Support

Production



- State-of-the-art facilities
- Global production network
- High quality products

Sustainability



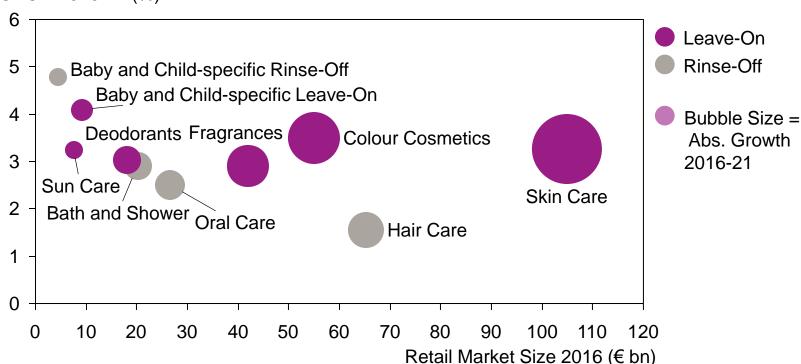
- RSPO member since 2010
- 15 production sites RSPO certified
- CareTain® a comprehensive data tool on sustainability criteria for Evonik cosmetic ingredients



Leave-On is the larger and stronger growing category Evonik participates with key product groups

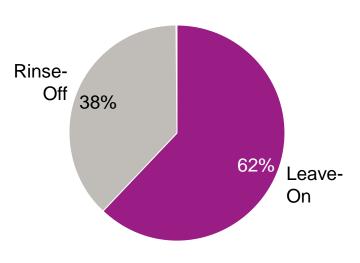
Retail Market Size and Growth by Application - 2016

CAGR 2016-21 (%)



Source: Euromonitor Passport Database, retail market size at constant prices, 2016 fixed exchange rate, Evonik Personal Care relevant applications only

Retail Market Size by Category - 2016



Total w/o Fragrances: €320 bn

^{*} Actives are mostly used in Leave On applications



Cosmetic Solutions offers key Ingredients for all main cosmetic applications

Overview of BL setup

Cosmetic Ingredients Market	Main Applications	Skin Care	Sun Care	Deodorants	Color	Cosmetics	Hair Care	Bath & Shower
	Market Trends & Growth Drivers	 Strong growth in emerging markets backed by increasing disposable income Growth demand for anti-aging products backed by demographic development Trend towards natural and sustainable products Increased regulatory hurdles 						
	Ingredients Market Size 2016 / CAGR '16-'22e	€3.1 bn 4-8%				€2.3 bn 3-5%		
Evonik	Evonik Categories	Leave-On				Rinse-Off		
	Product Groups	 Active Ingredients Emulsifiers Emollients Performance Additives 					 Surfactants Conditioners Performance Additives Emollients Active Ingredients 	
	Sales Growth (CAGR '14-'17e)*	~6%					~5%	



Our recent acquisitions have strengthen our specialty business

	Alkion	PMD Personal Care	Dr. Straetmans		
	ALKION	PRODUCTS 12:	drstraetmans intelligence behind beauty		
Location & no. of employees	Tours, France 7	Schluechtern, Germany 13	Hamburg, Germany 65		
Products & Services	Botanical ExtractsDevelopment service	 Polymeric and Liposome delivery systems 	Alternative preservativesFormulation service		
Competitive Edge	 Cell growth technology is independent from seasonality and sourcing of plants Batch to batch reproducibility 	 Claims substantiated by advanced tests and panel studies Customers include leading international manufacturers 	 Strong customer intimacy, tailor made customer solutions Products and formulations for the "natural" consumer trend 		



What's next: Evonik Growth Field Cosmetic Solutions – a comprehensive initiative to drive Personal Care's growth

Innovation pipeline - BL internal



Growth with existing specialty business



New product pipeline



R&D Cluster:

Sensory, Microfluidics, Carbohydrates, Actives



Rhamnolipids

Close to existing Personal Care business

New competencies -

BL + Evonik + external



Personal Care Business of other Evonik BLs



New competencies for customer interaction



Projects with Corporate Innovation / Creavis



Acquisitions beyond Alkion, Air Products and Dr. Straetmans

Source images: Evonik, Google images



The spirit of innovation at Evonik Personal Care

We live expert technical support to gain...



Direct interaction

Modern R&D structures and the direct interaction with our customers are essential for the rapid conversion of ideas into innovative products.



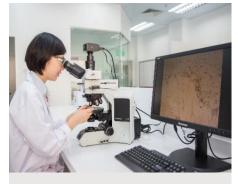
Focus on megatrends

Major impetus in the creation of new products derives from our awareness of global megatrends and the growing desire for sustainable products.



Sense for sensory appeal

Understanding the increasing importance of the sensory performance of cosmetic formulations, we emphasize our focus on developing ingredients for an improved consumer experience.



Chemical competencies & application know-how

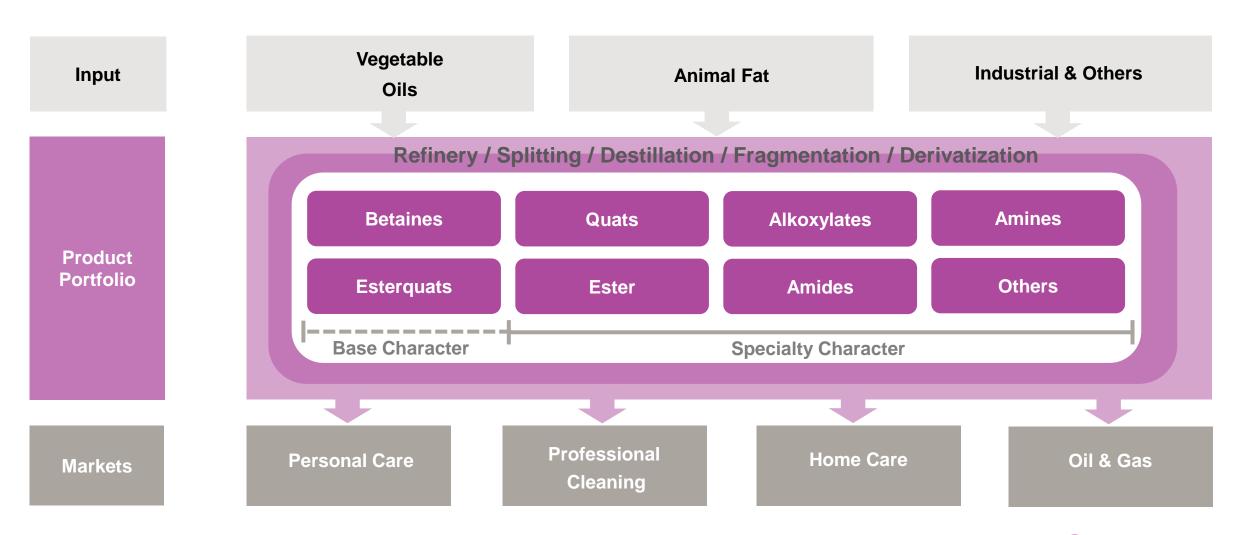
Combining chemical competence with application know-how enables us to achieve the rapid implementation of new products and concepts.

...your tailor-made performance advantage



Business Line Care Solutions

The Oleo Platform produces a broad product base for various markets





Trustworthy brands

TEGO®

High performance surfactants & emulsifiers





Silicone specialties



Rheological modifiers







Versatile emollients



Business Line Care Solutions

Excellent solutions for latest trends in the global personal care market

TEGO® Pep UP

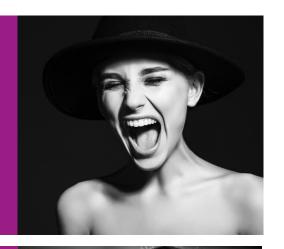
Hairflux®

Mild and pure

For hair and scalp

- Prevention and youthful appearance
- Fast growing market
- Bio-inspired solution

Repair and protection





Skinolance®

- Re-balances the skin microbiota, the natural microbial shield
- Inspired by probiotic science





TEGO® enlight

- Make your skin radiate evenly
- Natural brightening ingredients

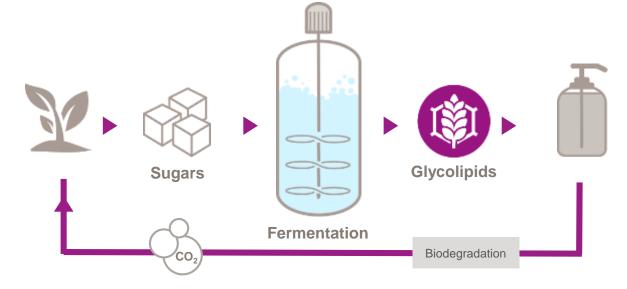


Business Line Care Solutions: RHEANCE® Glycolipids / Biosurfactants

Biotechnology for a sustainable step change in cosmetic ingredients

Consumer demand:

Products from 100% renewable natural resource (Traceable to plantation level)



Consumer products:

Multifunctional solution for gentle cleansing enabling 100% biodegradable skin and hair care products with a strong performance and eco-profile

Unique process – Unique products

- Nature-identical biomolecules
- By fermentation of sugars only
- No tropical oils needed
- Based on strong Evonik biotech platform



Business Line Care Solutions

Digital Skin technology start-up mySkin

Driving digitalization in the cosmetic industry

- Evonik investment into skin technology start-up mySkin
- mySkin's technology offers the possibility of getting a direct insight into how active ingredients perform in cosmetic products at the consumer level
- Supports Evonik Personal Care strategy of supplying cosmetic industry customers with a wide range of specialty technology solutions







mySkin's unique handheld device "OKU"

- measures a variety of skin properties and recommends personal care products
 - World's first mobile-connected skin coach with proprietary imaging technology



Evonik Health Care

An enabling portfolio of products, technologies & services for high-value partnerships

> 1,000 customers served worldwide

90% top 50 global pharma

>60 years of market leadership

labs and sales offices FDA-registered sites

> 50 core competencies

nationalities in diverse teams

customer project pipeline

innovation growth fields

10

6 acquisitions since 2010

Pharmaceuticals



API contract manufacturing



Oral and parenteral drug delivery



Cell culture and tissue engineering

Bioresorbable Implants



Biomaterials



Application technologies

Nutraceuticals



Advanced food ingredients



coatings

Creating Health Care Value

Global security of quality and supply Faster speed to market

Reduced project and regulatory risk

Improved patient care and convenience

Differentiated, user-preferred brands



Business Line Health Care

Today's portfolio of products & services enables higher participation in the value chain

A vertically integrated portfolio of products and services for advanced drug delivery and medical device markets

	Advanced Oral Drug Delivery	Advanced Parenteral Drug Delivery	Medical Devices
Value adding Services	Advanced Oral Formulations	Polymer Microparticles Liposomal Nanoparticles 2011 2016	Medical Device Competence Center
Product examples	EUDRAGIT® AEROSIL®	RESOMER® mPEGs	RESOMER® VESTAKEEP®
2016 Addressable End Market Size	~USD 70 bn ¹	~USD 60 bn¹	~USD 65 bn ³
CAGR	~4.0%²	~5.0%²	~15%³



^{1.} BCC report March 2016: Adv. DD Market 2015; 2. CAGR - IMS data 2012 to 2016; 3. MarketsandMarkets Report March 2015 Biomaterials market. CAGR. 2015 - 2020

Business Line Health Care: RESOMER® Platform

A Broad, Differentiated and Highly Versatile Portfolio of Bioresorbable Polymers



- 100% biodegradable and completely metabolized
- Used in a multitude of commercial products
- A broad, highly versatile portfolio
- Delivering safety and quality for more than 30 years
- Two production sites in the U.S. and EU for global supply security
- Global network of formulation and application labs

Parenteral Controlled Release



- API released as polymer resorbed by body
- Degradation from a few weeks to 1.5 years

Bioresorbable Medical Devices



- Device resorbed by body to match target healing time
- Degradation from six months to four years



Business Line Health Care: RESOMER® Platform

A strong platform for growth within existing and emerging market segments

Parenteral Controlled Release

Large, growing areas for advanced drug delivery



- Oncology
- Chronic diseases
- Genetic and rare diseases

A CDMO leader for advanced drug delivery



- Back integrated in excipients
- Polymer microparticles leader
- Lipid nanoparticles leader

Key growth projects

Evonik

status

€35 million CDMO expansion to mid-2019



- Birmingham expansion
- Aseptic commercial filling line
- Biomaterials innovation

Bioresorbable Implant Devices

Market conversion to bioresorbable implants



- Orthopedic devices
- Cardiovascular devices
- Wound healing devices

An enabling partner for biomaterial solutions



- Leader in PLGA (RESOMER®)
- Application technology labs
- Project House Medical Devices

New biomaterials and process technologies



- MD Competence Center
- 3D printing / electrospinning
- Biomaterials innovation

Tissue Engineering

A new, fast-growing market segment



- Repair damaged tissue
- Skin model
- Repair / replace organs etc.

Leveraging existing core competencies



- Portfolio of biomaterials
- Cell nutrition
- Industrialization

Reliable, effective, scalable capabilities



- Project House Tissue Eng.
- Cell culture innovation
- 3D printing scaffolds





Business Line Health Care: AvailOm®

The highest-load Omega-3 powder for cardiovascular and cognitive health

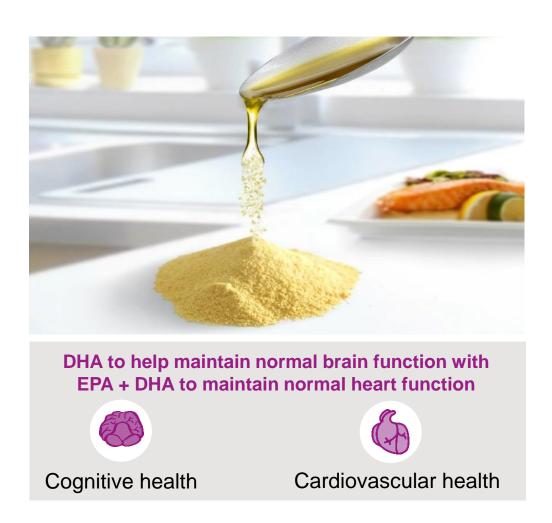
- High-concentration lysine powder complex
 - Minimum of 45 percent EPA and DHA by weight
 - 3-5 times more bioavailable than standard Omega-3 softgels
- Directly compressible to easily combine with other ingredients
- Unmatched protection against oxidation: stable for at least 3 yrs.
- Clearance for use in the U.S., Europe and other markets
- New formulation opportunities for new consumer products

A small, single tablet has the same uptake of EPA and DHA as two fish oil capsules











Comfort & Insulation at a glance

Prime partner for Polyurethane (PU) foam additives

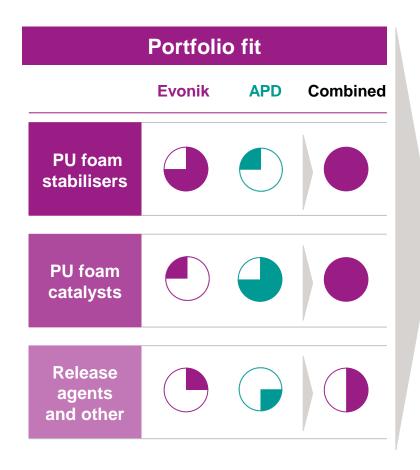
Business Model

- Global strategic partner of key customers with production in all major regions
- Differentiation by quality, product development, application technology and superior logistics



BL Comfort & Insulation: Integration of Air Products PU foam catalysts

A perfect operational fit forms an innovative platform to better fulfil customer needs



Market trends

Super

Highest

consumer

safety

High

comfort

mattress

insulation

Finer foam cells

Product need

Emission-free foams

Evonik Solution

Novel combination of catalysis & interfacial chemistry, e.g.: New PIR insulation panel catalysts

New additive packages to prevent VOC¹ formation, e.g. new DABCO non-emissive catalysts for Automotive

> Better breathability via additives allowing for more cell opening

Improved heat management

The combination enables Evonik to better fulfill customer needs through enhanced innovation



Comfort & Insulation end markets

Sustainability trends drive growth in major applications

Market trend	End Market Our optimized additive packa	
Food preservation	Appliance (Cold Chain Development)	improve the insulation performance and support the energy and CO2 saving in appliances
Automotive Lightweight	Automotive (Lightweight)	improve comfort, protection, durability, energy conservation and reduce emissions by meeting latest VOC requirements
Sustainable Buildings	Construction (Building Insulation)	improve energy efficiency management through maximum insulation efficiency with excellent mechanical properties
Improvement of living standards	Furniture & Bedding	Extremely broad processing latitude, phthalate free products, good cell regulation properties

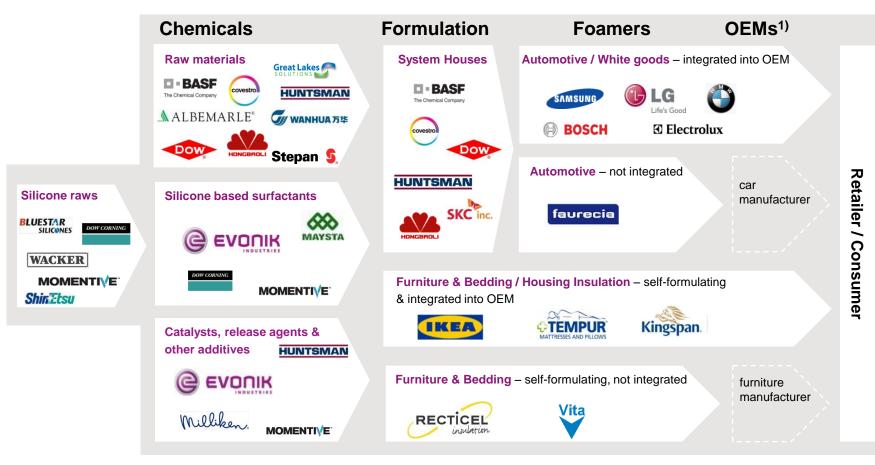






Comfort & Insulation is well positioned within a complex value chain

Supply chain for Polyurethane Foams



¹ Direct sales to customers



Business Line Animal Nutrition

Sustainable Healthy Nutrition – Four powerful programs to fuel future growth

Precision Livestock Farming









Aquaculture





Ruminants



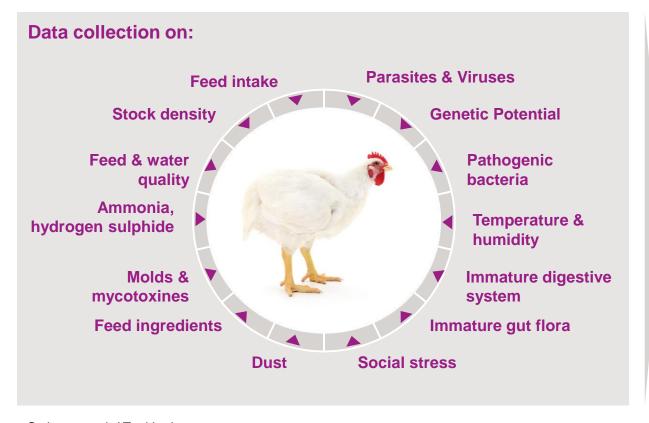


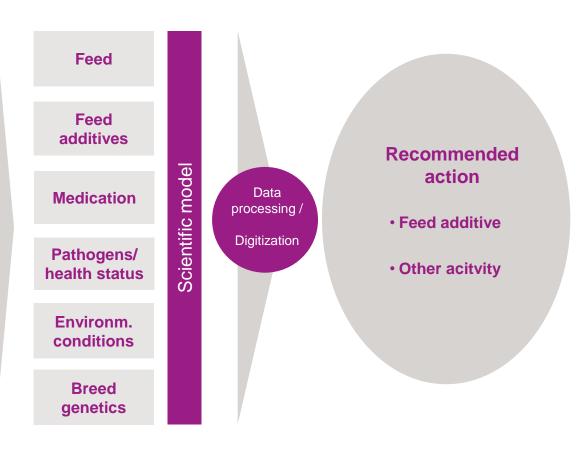


Business Line Animal Nutrition: Digital Farming

We support the chicken farm of the future with tailored recommendations

Precision Lifestock Farming

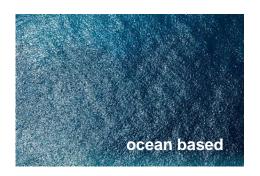


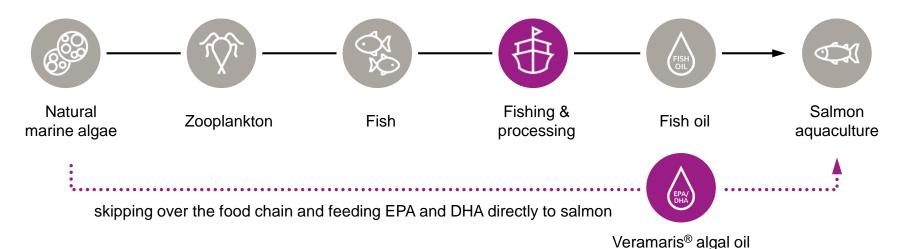


© shutterstock / Tsekhmister

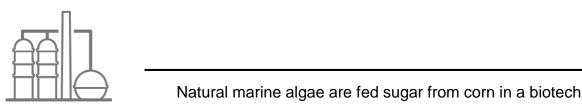


Business Line Animal Nutrition: Omega-3 fatty acids (Veramaris) (1/2)
Natural marine algae to produce the omega-3 fatty acids, skipping over the food chain in the ocean









Evonik Blair site leveraging existing fermentation infrastructure

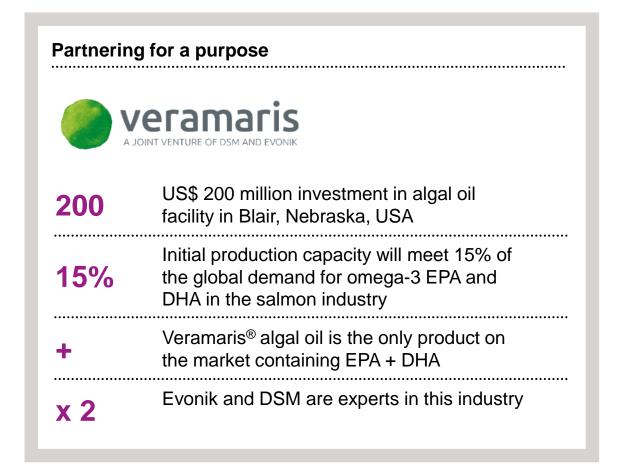
Veramaris® plant

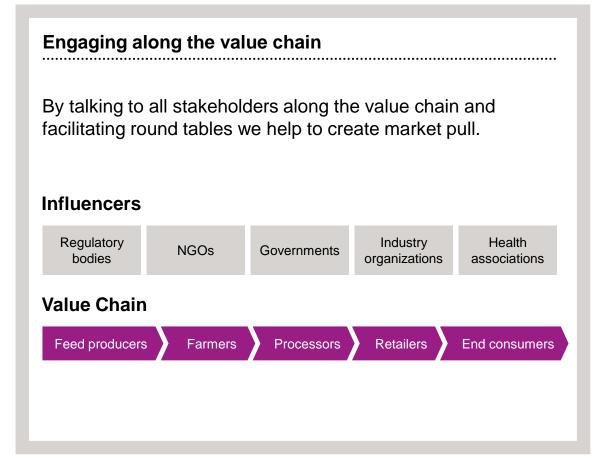
Natural marine algae are fed sugar from corn in a biotechnology process to produce the high-purity algal oil containing more than 50% omega-3 EPA and DHA



Business Line Animal Nutrition: Omega-3 fatty acids (Veramaris) (2/2)

The trustful alliance with DSM and partnerships with stakeholders along the value chain are key to success







Business Line Animal Nutrition: "adjust2020"

Significantly adapt the go-to-market model and adjust the cost basis

Strategic review process conducted in Animal Nutrition

Manage production setup

- Contract manufacturing for bio-amino acids
- Closure of uneconomic sites (e.g. Threonine in Hungary)
- Synergy realization for lysine and omega-3 production in Blair, NE

Optimize cost base

- Process innovations to improve Methionine production cost base
- Streamlining supply chain
- Evolution of sales & marketing: strict cost-to-serve approach

€50 m p.a. efficiency improvements

- → First savings already in 2018; full savings by 2020
- → Reduction of ~270 FTE across all functions



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