WE GO BEYOND TO ENABLE TRANSFORMATION

Presentation at CSC Customer Seminar

EVONIK
Leading Beyond Chemistry

Evonik has integrated sustainability into portfolio and strategic management processes

Excellent Rankings

Environmental Targets

NEXTGEN Technologies

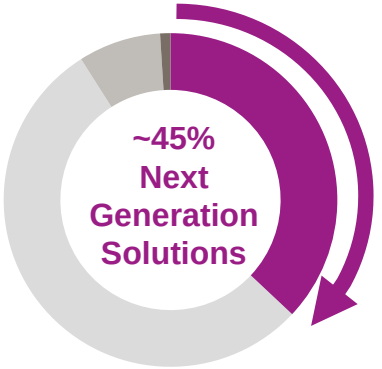
SCIENCE BASED TARGETS
DRIVING AMBITIOUS CORPORATE CLIMATE ACTION

-25%

reduction of scope 1 and scope 2 emission until 2030 (vs. 2021)

Portfolio Management

NEXTGEN Solutions



Sector leading rankings

Evonik leading in most relevant ratings –
“AA” MSCI ESG, “Top 5%” Sustainalytics,
EcoVadis “Platinum”, “B” ISS Oekom and “A-” CDP

Ambitious environmental targets

Evonik’s sustainability strategy
with ambitious targets
Evonik will be climate neutral by 2050

Portfolio aligned to sustainability

Sales share with solutions with a
clearly positive sustainability profile;
target of >50% by 2030

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Footprint: Evonik Carbon Footprint 2024

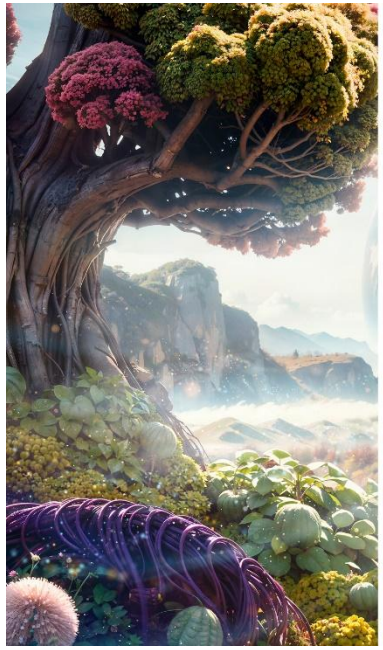
Focus on Scope 1&2, intensifying efforts on Scope 3

Scope 3 upstream[1]	Scope 2	Scope 1	Scope 3 downstream[1]
			
Suppliers	**Purchased energy**	**Production**	**End-of-life**
15.1m tons	**5.1m tons**		**6.6m tons**
▪ Raw materials as biggest contributor ▪ Intensifying collaboration with existing & new suppliers ▪ Increasing availability of low-carbon raw materials and break-through technologies beyond 2030	▪ **Scope 1 & 2 in our focus** due to direct influence ▪ 50% of emissions at 4 biggest sites – Marl, Antwerp, Mobile and Wesseling ▪ ~80% of emissions at 20 top sites		▪ Intensified activities regarding circular economy, e.g. Circular Economy Program

1. Scope 3 figures according to fast close estimate

The new Innovation Growth Areas address the most pressing challenges of our time where Evonik can make a difference

WE GO BEYOND TO ENABLE THE GREEN TRANSFORMATION



Advance Precision Biosolutions

Enable Circular Economy

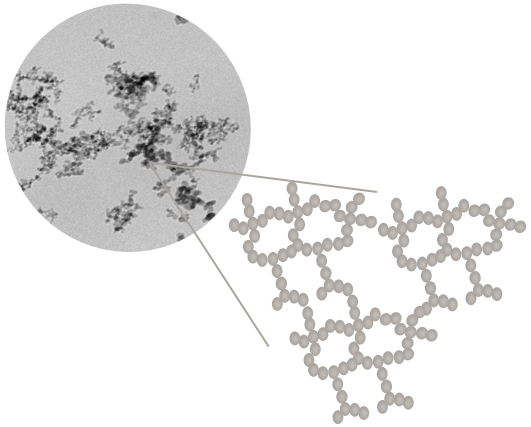
Accelerate Energy Transition

Develop new products and solutions that will distinctively stand out on the market and have a positive influence on society and people's everyday life

- **Sustainability**: Solutions for a bio-based, energy-efficient, and circular society
- **Resilience**: Strong growth potential, above-average margins
- **Focus**: Majority of R&D resources allocated to Innovation Growth Areas
- **Acceleration**: Supported by Creavis, Evonik Venture Capital, and regional innovation ecosystems

Silica Particle Technology @ Evonik

AEROSIL®

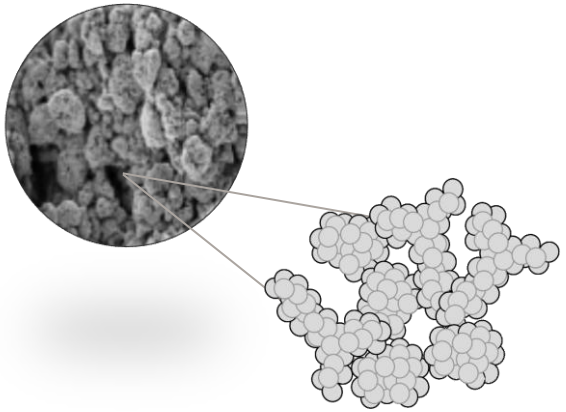


Key Driver: Aggregate Structure

Entirely open structure with a high level of surface functionality

- Functions
  - Thickening
  - Powder Flow

ACEMATT®

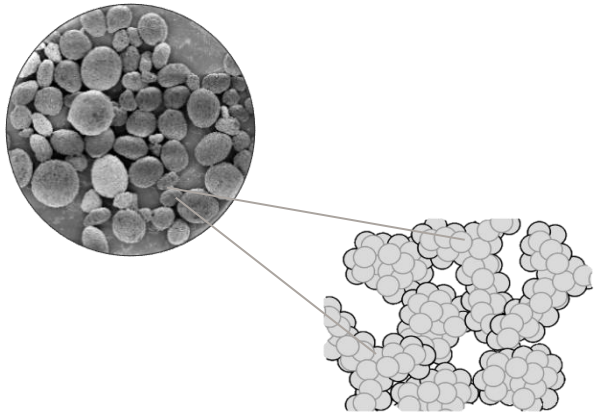


Key Driver: Surface Modification

Porous structure of interconnecting conduits

- Functions
  - Matting
  - Haptics

SPHERILEX®

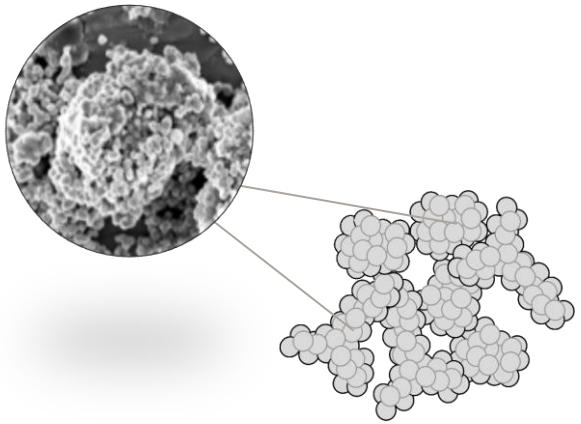


Key Driver: Particle Morphology

Spherical particle shape

- Functions
  - Mechanical Resistance
  - Matting

SIPERNAT®



Key Driver: Particle Morphology

Porous structure

- Functions
  - TiO_2 spacing
  - Powder Flow

EVONIK Leading Beyond Chemistry

Evonik SMART EFFECTS: Leverage our cutting edge technologies

SMART SILICA TECHNOLOGY

PEOPLE

Expert Collaboration:
Harnessing the combined knowledge of our global network of silica and silane experts.

PERFORMANCE

Quality and Sustainability:
Ensuring the highest quality while improving sustainability to deliver high-performance products.

GROWTH

Industry Leadership:
Leading innovations in key industries

SMART EFFECTS ON

ECO-SOLUTIONS

Tire & Rubber, Batteries, Carbon Removal, Agriculture

SUSTAINABLE CONSTRUCTION

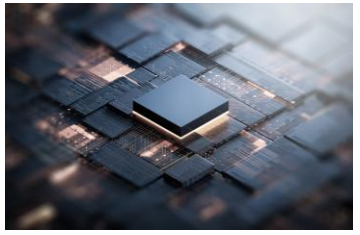
Building Protection, Plastics, Constructions & Technical Powders (PCTP)

HEALTHY LIVING

Oral Care, Food, Feed, Pharma, Personal Care

DIGITAL PLANET

Electronics, Semiconductors



BEST PERFORMANCE

Adhesives. Coatings, Silicones, Defoamer

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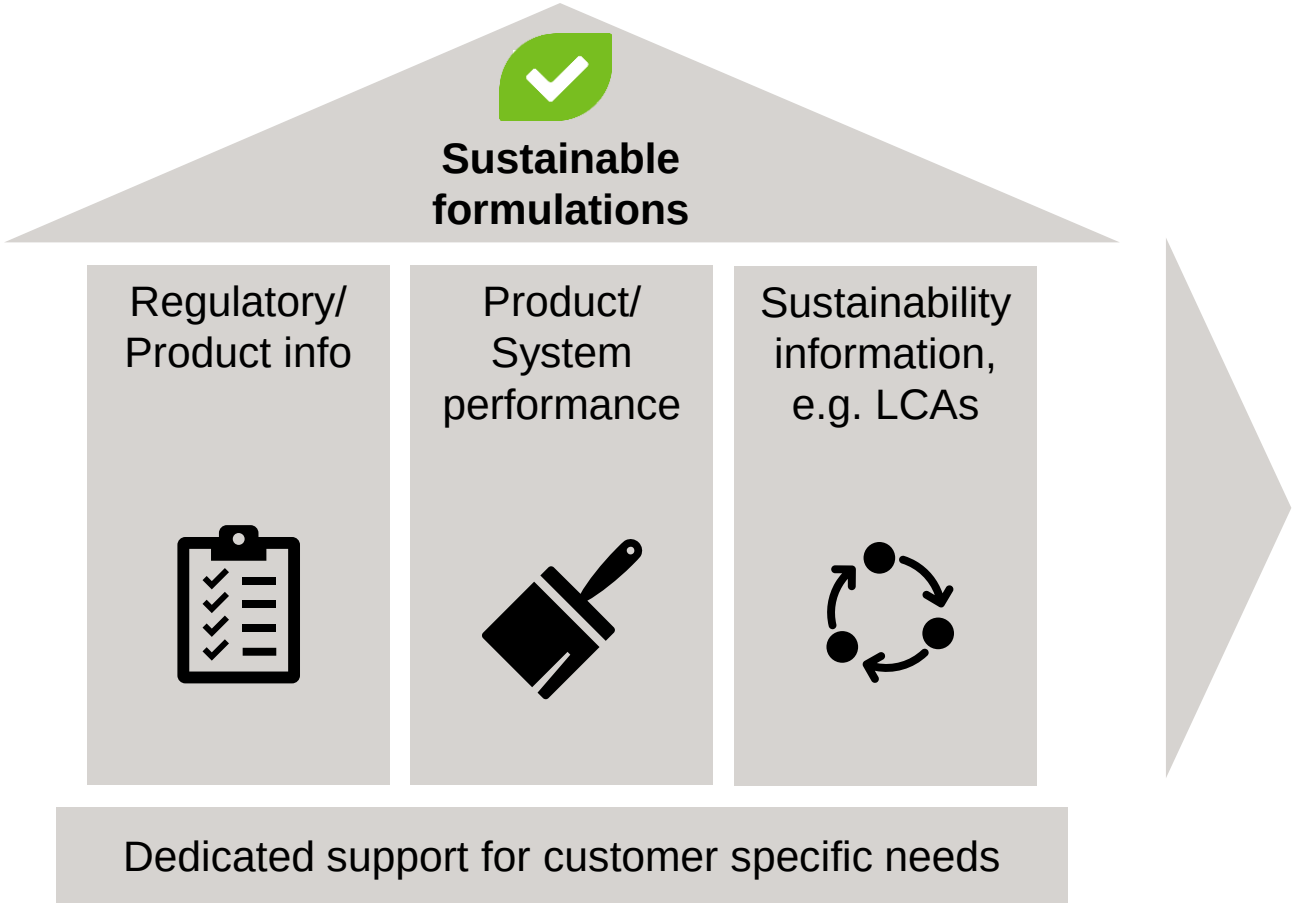
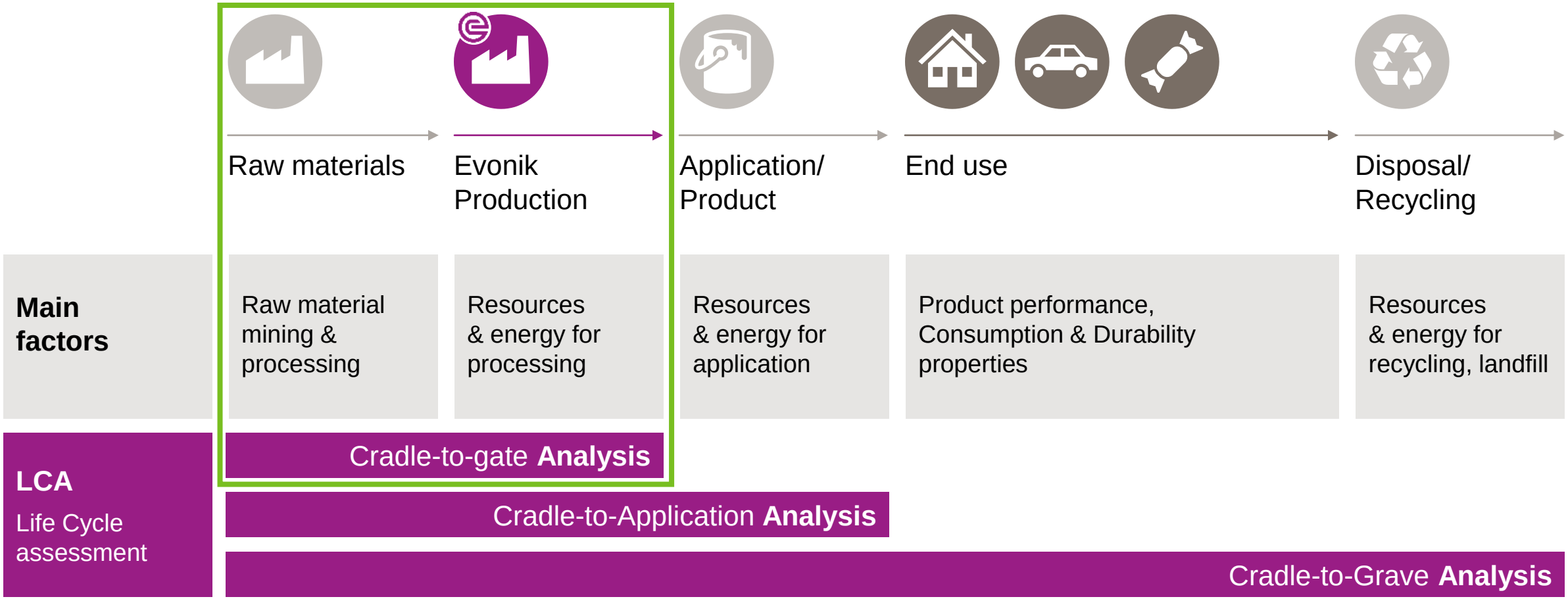
Evonik helps its customers to make their formulations and solutions more sustainable



More sustainable formulations

- Smart use and combination of all available tools and methods
- Transparency throughout the value chain, e.g. LCA data, regulatory information…
- Analysis of the whole life cycle of a formulation incl. end use applications

Life cycle assessments (LCA's) are powerful tools to quantify the environmental impact of products along their life cycle



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Examples for different life cycle assessments at Evonik

Cradle-to-Gate LCA

Life Cycle Assessment (LCA) of ACEMATT® OK 412

Product Information:

Description: Mixture of silica and polyethylene

Production Site: Bonn, Germany

CAS: not applicable

Product Carbon Footprint (PCF)

Impact Categories	Value	Unit per FU
Global Warming Potential excl. bio. C incl. LUC		kg CO_2 eq.
Global Warming Potential incl. bio. C incl. LUC		kg CO_2 eq.
Separated Emission Values		
Aircraft emissions		kg CO_2 eq.
Biogenic GHG emissions		kg CO_2 eq.
Biogenic GHG removal		kg CO_2 eq.
Emissions from land use change (dLUC)		kg CO_2 eq.
Fossil GHG emissions		kg CO_2 eq.

dLUC : Direct Land Use Change, bio. C – biogenic carbon

LCA Information:

System Boundary: Cradle-to-Gate

Functional Unit (FU): 1 kg ACEMATT® OK 412

Validity of the LCA: 2023 – 2028

Year of LCA Calculation: 2023

Other Environmental Impacts:

Impact Categories	Value	Unit per FU
Acidification		Mole of H^+ eq.
Eutrophication, freshwater		kg P eq.
Land Use		Pt
Resource Use, fossils		MJ
Photochemical Ozone formation, human health		kg NMVOC eq.
Total Carbon Content, TCC		kg C

Life Cycle Assessment (LCA) of ACEMATT® OK 412

General Information:

Standards: All our LCA calculations and reporting follow the ISO 14040/44, ISO 14067 and TfS guidelines.

Verification Approach: Internal LCA Expert.

Data Sources and Methods:

Primary data: From Evonik production process during 2022 (and data from suppliers is utilized for external processes and raw materials).

Secondary data: From Sphera MLC database 2023.1 and EcoInvent 3.9.1 database, literature.

Methodology:

- Global Warming Potential: In line with the GWP 100 factors reported in IPCC AR6 and ISO 14067.
- Other environmental footprints: PEF (Product Environmental Footprint, version 3.1) guidelines.
- A state-of-the-art LCA software was used for the LCA modeling.

Allocation method used for

- **PCF:** not applicable
- **Waste Incineration with Energy recovery:** Cut off

Cut-off rules for the inventory: In general, 1% for single inputs and below 5% for the sum. No environmentally relevant flows were neglected. Utilities of the production processes were modeled based on our known processes. Transports were considered but distances were mainly estimated.

Certifications:

For **further information**, please visit Evonik's LCA webpage ; Evonik's LCA Impact Categories webpage

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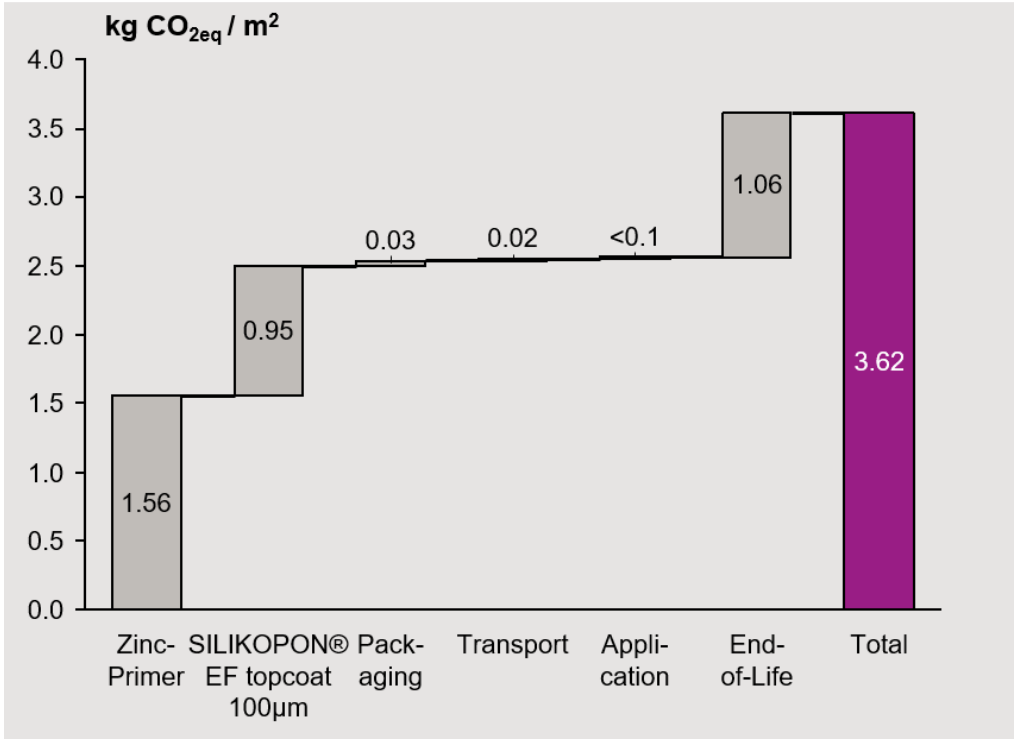
Cradle-to-Grave LCA

Global Warming Potential of the thin SILIKOPON® EF System



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Evonik Industries is carrying out actions to reduce the footprint of its silica-based products

Raw materials (Scope 3)

- Choice of raw materials/suppliers with low PCF (short term)
- Exploration of biobased sources for silica raw materials (long term)
- Sourcing of green hydrogen from electrolysis (mid term)

Evonik Production (Scope 1 & 2)

- Switch to renewable electricity (short term)
- Process optimizations and changes in drying of precipitated silica (R&D)
- Switch from gas fired drying units to heat pumps (mid/long term)

Monitoring and analysis of material and energy flows

Cradle-to-gate life cycle assessments for external communication of product carbon footprints

Silica based additives from Evonik support formulators and applicators to become more sustainable

Formulation & Application

End use

Production efficiency

- Easy-to-dispers silica rheology modifiers reduce time, energy and costs in the formulation
- Silicas improve free flow behavior of powders and prevent caking or static charge

Durability

- SPHERILEX® particles improve wet scrub and burnish resistance in architectural paints
- Silicas improve corrosion, scratch and abrasion resistance

Cradle-to-grave life cycle assessments of selected products to quantify sustainability performance

EVONIK Leading Beyond Chemistry

Easy-to-Dispers Silica: high performance rheology modifiers with easy dispersibility

Product description

Hydrophobic post-treated fumed silicas for rheology modification of coatings and inks

Key effects:

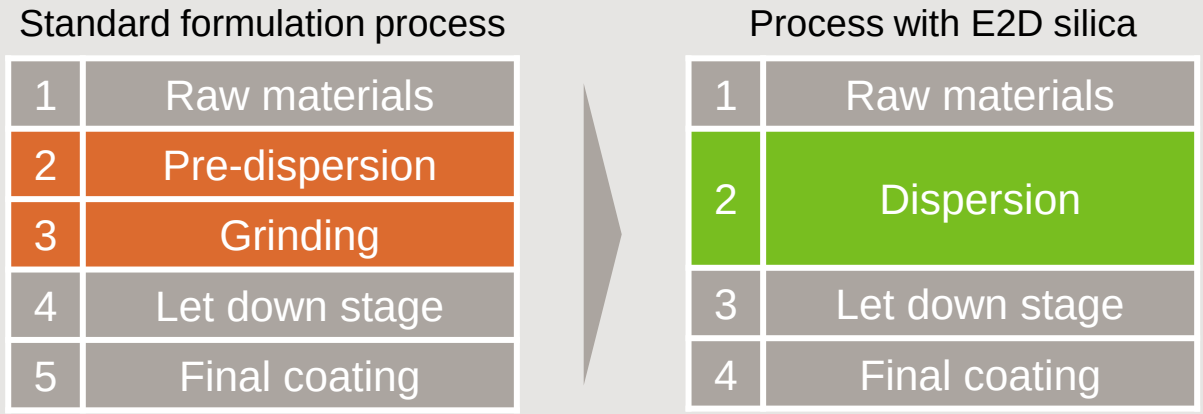
- Anti-settling
- Anti-sagging
- Corrosion resistance

Delivery form: free flowing powder

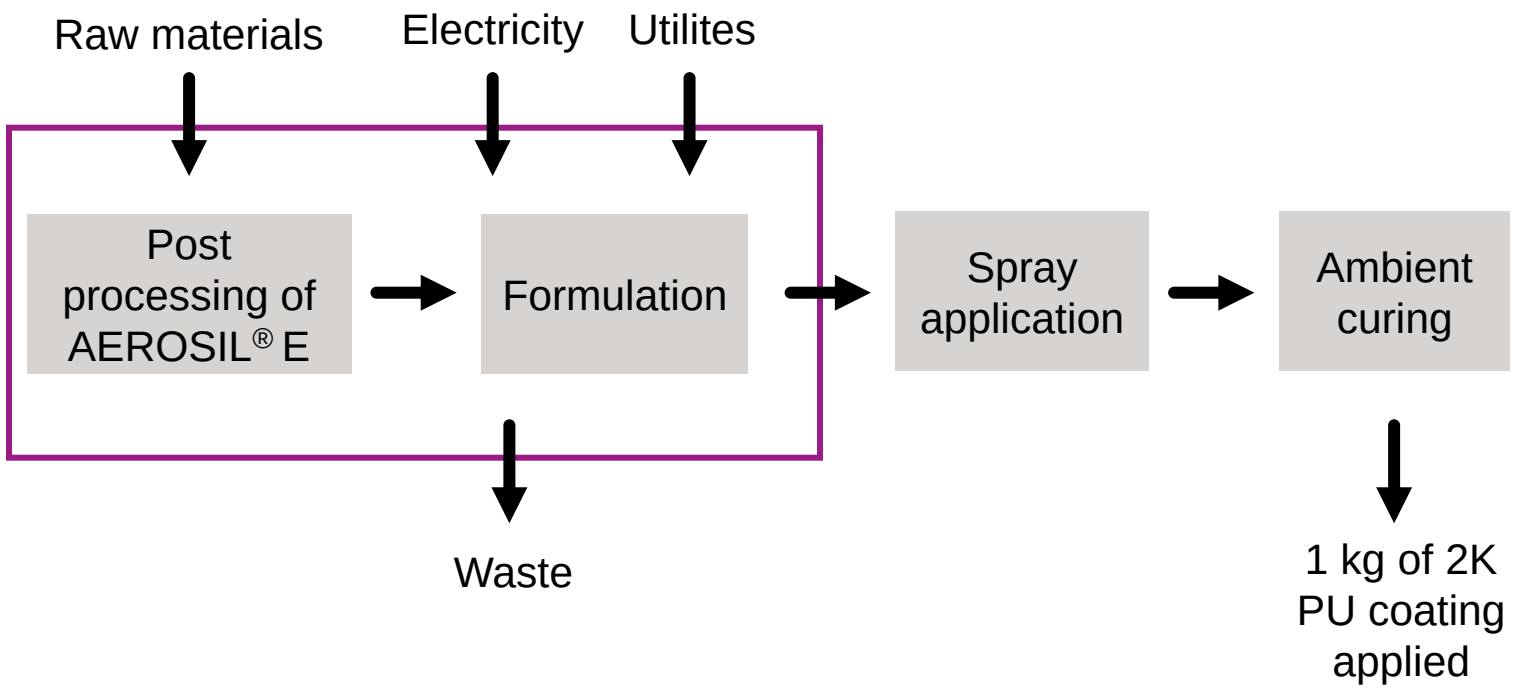
Addition level: 1.0 – 2.0 % on total formulation

Advantages of easy-to-dispers silica

- Treatment traditional silica grades with a special process technology @ Evonik to significantly improve dispersibility
- Treated AEROSIL® E grades allow the formulator skip the grinding stage with a bead mill



System boundaries – gate-to-gate comparison AEROSIL® post processing and formulation



Base Scenario

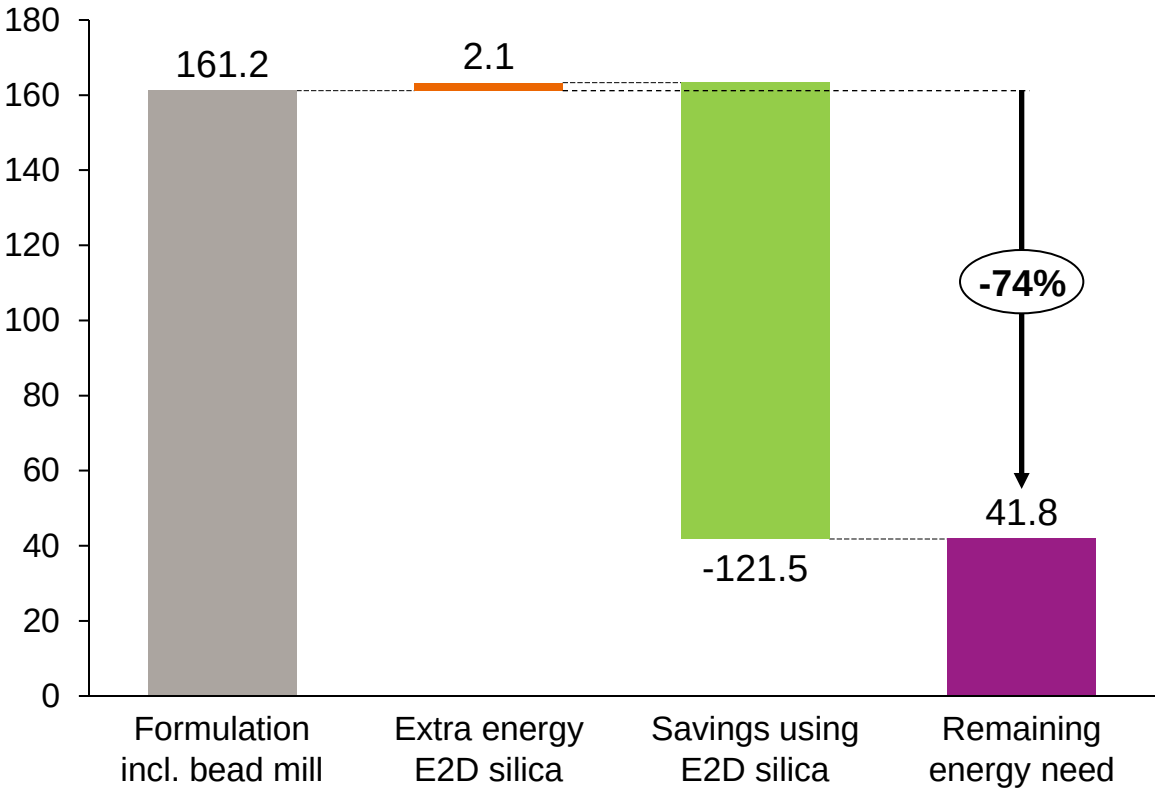
- Formulation and application of 1 kg of coating,
- Use of full production equipment incl. dissolver and bead mill
- Exclusion of all raw materials

Easy-to-dispers Scenario

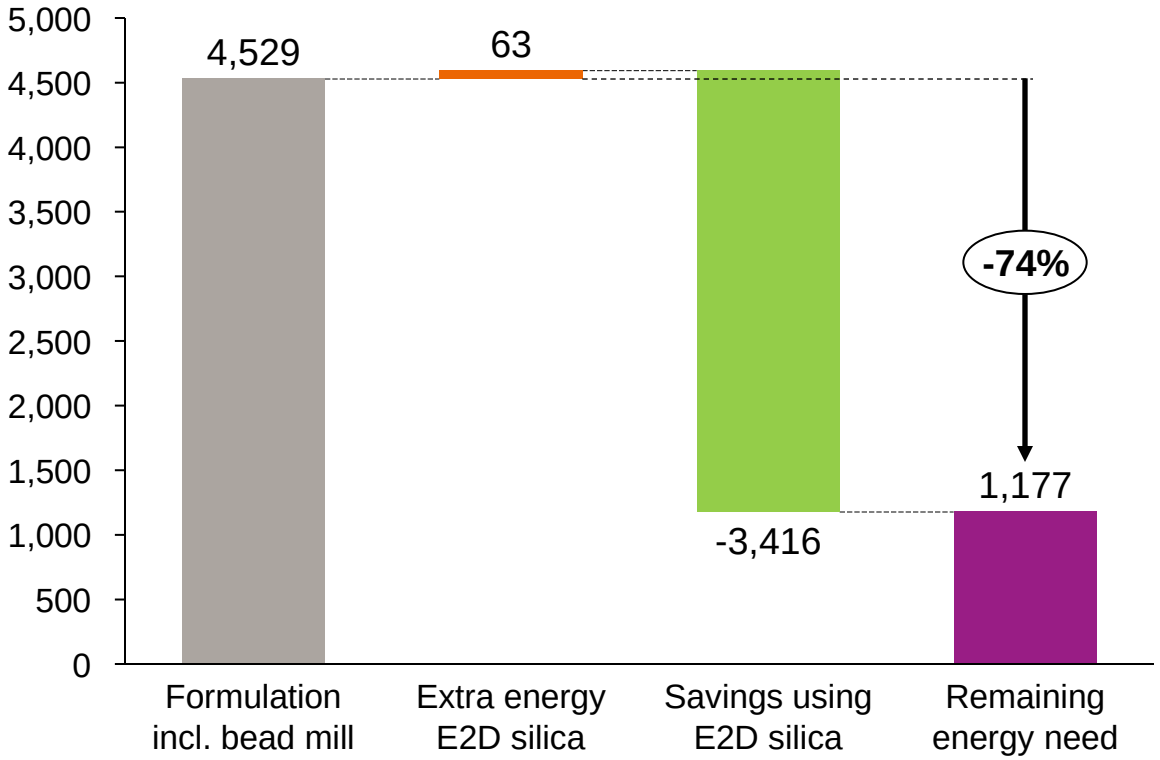
- Formulation and application of 1 kg of coating,
- Use of full production equipment incl. dissolver, but excluding bead mill
- Exclusion of all other raw materials
- Inclusion of additional energy needed for E2D silica

By using AEROSIL® E972, it is possible to reduce the greenhouse gas emissions and primary energy demand significantly

Global warming potential [kg CO_2 eq./1000kg coating]



Primary energy demand (PED) [MJ/1000 kg coating]



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