TripleS update

Background:

- TripleS (Sustainable Solution Steering) has been in place at BASF since 2012
- In 2021, BASF generated €24.1 billion sales with Accelerator products already reaching our target of €22 billion Accelerator sales by 2025
- The product portfolio steering methodology has been updated and subsequently a new target will be set
- Full portfolio review according to the new methodology will be done throughout 2023/2024

With the TripleS update we aim at:

- New KPI "Sustainable-Future Solutions" (SFS) emphasizing benefits with a focus on Carbon management
- Products on market standard level contributing to transformation topics being part of KPI
- Reflecting potential impact from updated regulatory such as the EU Chemicals Strategy for Sustainability (CSS) and the Toxic Substances Control Act (TSCA) in the United States whilst ensuring alignment with PSA¹
- Improve automation of assessment and reporting e.g., through interlinking of different data sources
- Linking the evaluation of our R&D projects even more closely to the method

<u>Disclaimer:</u> The information in this document is based on the former, outdated TripleS methodology. Portfolio review according to the new methodology is ongoing.







Sustainable Solution Steering® -**Accelerator Example Collection**

Care Chemicals

- for external use - OCT 2022



Accelerator Cegesoft® Peel

Process information

Application: Wax-based peeling particles for

properties for rinse-off and leave-on

exfoliants in face and body care products

Customer Industry: Personal Care

Market: Global

Sustainability performance

- 95% based on renewable feedstock
- Readily biodegradable peeling particles
- Cold processable
- Unpreserved
- Suitable for rinse-off concepts acc. To EU Ecolabel, Nordic Ecolabel
- → The eco-friendly and gentle exfoliant





Differentiation potential

Customer:

- Renewable based
- Biodegradable alternative for "plastic" or sharp microparticles

Consumer:

- No "microplastic discussion"
- Gentle exfoliation



Accelerator Gluadin[®] Kera P-LM

Process information

Application: Microprotein for deep penetration, protection,

hair strengthening, rejuvenation in hair care

products

Customer Industry: Personal Care

Market: Global

Sustainability performance

- 98% derived from renewable feedstock
- Enzymatic process (non-GMO)
- Due to benzoic acid preservation and non-GMO enzymes, suitable for all natural and organic cosmetic standards and for vegan concepts
- COSMOS and NATRUE approved



Differentiation potential

Customer:

- Climate change & energy
- Alternative to natural keratin

Consumer:

- Health
- Improved hair condition





Accelerator Uvinul[®] A plus Granular

Process information

Application:

Customer Industry: Personal Care

Market: Global



Sustainability performance

- High efficiency at low concentration
- Does not contain preservative
- Consumer Health Protection
- photostable organic UVA-I absorber that covers the long wavelengths of the UVA spectrum.
- Efficient shielding against UVA radiation for prevention of skin damage

Differentiation potential

- Prevention of premature skin aging and skin damage
- Reliable and long lasting protection
- Excellent formulation flexibility
- Excellent protection against free radicals



Accelerator Z-Cote® HP1 and LSA

Process information

Application:

Customer Industry: Personal Care

Market: Global

Sustainability performance

- Does not contain preservative
- Consumer Health Protection
- Reduced water during manufacturing
- Extremely low waste generated during production



Differentiation potential

- Lower transmission over broad range
- Free radical protection
- Best protection against photo skin aging
- Outstanding photo stability
- Synergetic with Organic UV filters



Accelerator Cetiol® Ultimate

Process information

Application: Ultra-fast spreading emollient for Face / Body

/ Sun Care and Color Cosmetics

Customer Industry: Personal Care

Market: Global

Sustainability performance

- 100% renewable-based and volatile emollient
- Replacement of volatile silicones possible
- Easier to use than volatile hydrocarbons
- Readily biodegradable
- Gives more flexibility in the development of natural cosmetic concepts for improved skin feel
- Cosmos and NATRUE approved, suitable for other labels



Differentiation potential

Customer:

- Plant based chemistry for possible cyclomethicone substitution
- New formulation textures and claims possible

Consumer:

New natural cosmetic concepts



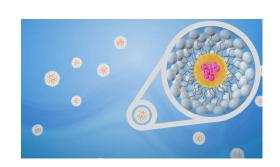
Accelerator Tinosorb® S Lite Aqua

Process information

Application: UV Filter for sun care and skin care

Customer Industry: Personal Care

Market: Global (except USA)





Sustainability performance

- Encapsulation technology for optimal film formation on the skin leading to higher SPF
- Partition of total UV filter amount to oil AND water phase
- Absorption spectrum as broad as Tinosorb® M
- Cold processable
- Perfectly suited for formulations acc. Ecosunpass

→ Received the BSB Innovation Prize 2018

Differentiation potential

Customer:

- Reduction of oil phase for more formulation flexibility
- High efficiency at low active concentration
- High sun protection performance due to UV filter balance in water and oil phase

Consumer:

Health & safety



Accelerator Lipofructyl[®] Argan LS 9779

Process information

Application: Moisturization / Hair care

Customer Industry: Personal Care

Market: Global



Sustainability performance

- Organic and fair trade certified argan oil
- Sourced in partnership with an agricultural women's cooperative in Morocco
- Enabling socio-economic development
- By-product upcycling of different parts of the tree to foster a better local impact

Differentiation potential

Customer:

- UN Millennium Development Goals
- Biodiversity & renewables

Consumer:

Contribution to sustainability





Accelerator Texapon® SFA

Process information

Application: Natural, innovative, very mild anionic surfactant

suitable for tear-free rinse-off formulations

Customer Industry: Personal Care

Market: Global

Sustainability performance

- 99% derived from renewable RSPO certified Mass Balance feedstocks
- Readily biodegradable
- Suitable for solutions not containing EO, no impurities (e.g. 1,4-Dioxane)



Differentiation potential

- Rich & creamy foam sensory, ultra-mild to skin, eyes and mucous membrane
- Long-term stable in broad temperature & pH ranges
- Conditioning booster
- Micellar viscosity build-up without thickeners





Accelerator Dehyton® SFA

Process information

Application: ultra-mild, cold-processable & easy-to-handle

surfactant blend for versatile rinse-off applications

Customer Industry: Personal Care

Market: Global

Sustainability performance

- 77% derived from renewable feedstocks
- RSPO Mass Balance certified
- Readily biodegradable
- Suitable for solutions not containing EO, no impurities (e.g. 1,4-Dioxane)





Differentiation potential

- Cold processable: easy dissolvable in cold water giving clear solutions
- Excellent wet and dry combability results; good combability without polymers
- Rich & creamy foam sensory, ultra-mild to skin, eyes
- Ideal for low pH (4.5-5.5) formulations



Accelerator Eumulgin® VL 75

Process information

Application: Cold Processed Emulsifier for low-viscous emulsions

Customer Industry: Personal Care

Market: Global

Sustainability performance

- 100% derived from renewable feedstocks
- Palm Based raw materials certified sustainable acc. RSPO Mass Balance scheme
- Approved by COSMOS, recommended for natural/ organic formulation Excellent skin compatibility concepts
- Cold processable
- Suitable for EO-Free solutions
- Does not contain preservatives



Differentiation potential

- Nonionic emulsifier for low viscous systems
- Good sensorial behavior, comfort, balanced skin feel.
- Very good make up remover capacity
- High versatility regarding oil phase





Accelerators

Trilon® M types in I&I

Product information

Application Various I&I applications,

f.e. as scale inhibitor or for water hardness

control

Customer industry Industrial & Institutional

Cleaning

Market Global

Differentiation potential

Customer

 Alternative to STPP, NTA, GLDA, TSC...

- Enables solid format (significant contribution to save energy, cost, packaging, space)
- Sustainable positioning

Consumer

 Excellent performance and material protection

Sustainability performance

- High performance as strong chelating agents
- Readily biodegradable
- Meet requirements of EU Ecolabel, Blue Angel and Nordic Swan
- Good eco-tox profile compared to other strong chelating agent
- Ultimate types with glass protection

- Bio-grades available:
 - √ Trilon® M Max BioBased with a measurable bio-content of up to 43%
 - ✓ Trilon® M Max EcoBalanced, 100% biocertified via mass balance and with reduced Product Carbon Footprint



Phosphate free and biodegradable chelating agents that enable solid formats in I&I



Accelerators

Trilon® M types / Trilon® Ultimate types

Product information

Application Chelating agent mainly

for Automatic

Dishwashing Detergents

Customer industry Home Care

Market Global

Differentiation potential

Customer

- Strong alternative to Citrate, Phosphonate, GLDA
- Material protection claims:
 Prevention of scale formation,
 Ultimate 2 G w/ glass protection
- Sustainable positioning

Consumer

 Combines superior cleaning performance with sustainability

Sustainability performance

- Readily biodegradable strong chelating agents
- Meet requirements of EU Ecolabel, Blue Angel (except Ultimate types) and Nordic Swan
- Good eco-tox profile compared to other strong chelating agents
- Phosphate alternative in automatic dish wash
- Eco-efficiency analysis available

- Bio-grades available:
 - √ Trilon® M Max BioBased with a measurable bio-content of up to 43%
 - ✓ Trilon® M Max EcoBalanced, 100% biocertified via mass balance and with reduced Product Carbon Footprint



The technically best builder system for modern and sustainable dish wash formulations



Accelerator Polyquart® S Granules

Product information

Application Performance Booster for

Automatic Dishwashing

Detergents

Customer industry Home Care

Market Global

Differentiation potential

Customer

- Supports state-of-the-art sustainable All-in-1 products
- Improved build-up performance
- Supports rinse efficiency (reduced filming & spotting)
- Easy-to-use for tablets

Consumer

- Sustainable ADW detergents
- Perfect shine

Sustainability performance

- Excellent eco-tox profile acc. to EU CLP
- Starch based
- Majority bio-based*
- Readily biodegradable
- Meets requirements of EU Ecolabel and Blue Angel



Boosting performance and sustainability profile of modern ADW tablets



Accelerator Polyquart® Ecoclean

Product information

Application Surface Care Ingredient

in Hard Surface

Cleaners

Customer industry Home Care and I&I

Market Global

Differentiation potential

Customer

- Combines sustainability with performance
- Supports modern claims like "easy-to-clean again", "streakfree" or "quick drying"

Consumer

- Enables sustainable cleaners
- Makes cleaning more convenient and saves time

Sustainability performance

- Excellent eco-tox profile acc. to EU CLP
- Aerobic and anaerobic biodegradable
- Amphoteric modified starch
- Majority bio-based*
- Meets requirements of EU Ecolabel and Blue Angel







Accelerators Dehypon® types

Product information

Application Rinse surfactants in

Automatic Dishwashing

Detergents

Customer industry Home Care

Market Global

Products Dehypon® E 126, E 127,

WET and Shine

Differentiation potential

Customer

E 126, E 127, WET, and Shine: Reduced spotting claims

 GRA: Spotting performance booster; PEG alternative / tableting aid

Shine: Reduced use level at equal performance

Consumer

Improved plastic drying and great shine on glass

Energy savings

Sustainability performance

- Meet requirements of EU Ecolabel, Blue Angel and Nordic Swan
- Enable energy savings due to improved rinse performance
- Readily biodegradable



Multi-functional ingredients for sustainable ADW tablets



Accelerators Sokalan® HP 56 types

Product information

Application Dye Transfer Inhibitors

in Laundry detergents

Customer industry

Home Care and I&I

Market

Global

Differentiation potential

Customer

 Color Care claim, "no sort" claim

Consumer

- Convenience: "no sort" as light and dark colored textiles can be washed together
- Prolonging the lifetime of textiles

Sustainability performance

- Prevent discoloration caused by fugitive direct and reactive dyes
- Prolong the lifetime of textiles
- Meet requirements of EU Ecolabel, Blue Angel and Nordic Swan
- Easy to formulate also in super concentrated detergents (liquid mono doses)
- Sokalan® HP 56 A EcoBalanced up to 100% bio-certified via mass balance and with reduced Product Carbon Footprint



Ingredients that support consumer needs for color care in laundry detergents



Accelerator Lutropur® MSA

Product information

Application Organic acid for Hard

Surface Cleaners and

CIP

Customer industry Home Care and I&I

Market Global

Differentiation potential

Customer

- Easy-to-handle and nonoxidizing
- Sustainable, high performing acid

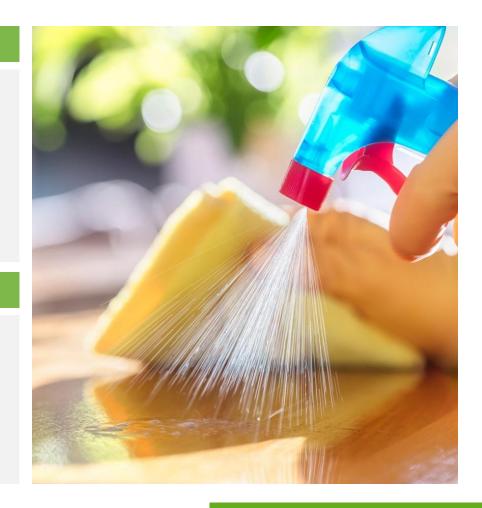
Consumer

- Faster scale removal
- Material protection (low corrosiveness)
- Odorless

Sustainability performance

- Strong and odorless organic acid for CIP, bathroom and toilet cleaners
- Readily biodegradable
- Meets requirements of EU Ecolabel, Blue Angel and Nordic Swan

- Eco-efficiency analysis available
- More efficient and safer production process than competition (e.g., no co-product, air oxidation instead of chlorine oxidation)
- Excellent cleaning and descaling properties



Sustainable choice for strong acidic hard surface cleaners



Accelerators

Glucopon® types

Product information

Application Hard Surface Cleaners,

Hand Dishwashing Detergents, Laundry

Detergents

Customer industry Home Care and I&I

Market Global

Differentiation potential

Customer

- Support formulations based on renewable resources
- Enable good foaming properties
- Material protection (mild and safe for surfaces)

Consumer

- Perfect shine
- Sensitive skin solution for laundry (dermatologically tested)





Sustainability performance

- Up to 100% renewable based
- Readily biodegradable
- Meet requirements of EU Ecolabel and Blue Angel (except 425 N/HH)
- Most types optionally available with RSPO certification
- Cleaning performance boost





Accelerator Sokalan® HP 20

Product information

Application Performance Booster in

Laundry and Hand

Dishwashing Detergents

Customer industry I

Home Care and I&I

Market

Global

Differentiation potential

Customer

- Boosts performance in surfactant optimized formulations
- Enables anti-graying claim
- Improves cleaning and foam stability in HDW formulations
- Compatible w/ liquid formulas

Consumer

- Excellent primary cleaning
- Prolonged lifetime of textiles
- Convenience & energy savings

Sustainability performance

- Meets requirements of EU Ecolabel, Blue Angel and Nordic Swan
- No CLP label
- Enables low temperature washing
- Enhances removal of bleachable and particulate stains and therefore prolongs lifetime of textiles

- Supports sustainable convenience claims, e.g. "compaction", "energy-saving", "easy-to-use"
- High compatibility in liquid detergents that enables compact mono-doses / concentrates
- Sokalan® HP 20 EcoBalanced up to 100% biocertified via mass balance and with reduced Product Carbon Footprint



Unique and universal multi-benefit Performance Booster for liquid detergents



Accelerator Sokalan® HP 96

Product information

Application Performance Booster in

Laundry Detergents

Customer industry Home Care and I&I

Market Global

Differentiation potential

Customer

- Supports anti-graying, stain removal and low temperature washing claims
- Delivers superior performance
- Easy to formulate into liquid concentrates

Consumer

- Good primary cleaning and antigraying prolongs life of textiles
- Energy savings

Sustainability performance

- Meets requirements of EU Ecolabel and Blue Angel
- No CLP label
- High performance at low temperature
- With Sokalan® HP 96 surfactant content can be reduced
- Prevents graying caused by particulate stains
- Boosts stain removal of particulate stains (e.g., clay, mud)



Unique and universal multi-benefit Performance Booster for Laundry Detergents



Accelerator Lavergy® Pro 114 LS

Product information

Application Laundry and Hand

Dishwashing Detergents

Customer industry

Home Care and I&I

Market

Global

Differentiation potential

Customer

- Biological and renewable alternative
- High compatibility in liquid formulations
- Enables formula compaction and optimization

Consumer

- Textiles looking new for longer
- Energy savings (low temp.)

Sustainability performance

- Readily biodegradable liquid protease enzyme
- Enables energy savings with lower wash temperatures
- Enhances washing efficiency and water savings
- Enables concentrated formulations, therefore reduces CO₂

- Efficient non-boron stabilizing technology
- Meets requirements of EU Ecolabel, Blue Angel and Nordic Swan
- No preservation added
- Supports soaking process and direct application for removal of persistent stains in manual dish washing



Renewable non-boron stabilized ingredient for the removal of tough stains in sustainable laundry and hand dish formulations



Accelerator Lavergy® C Bright 100 L

Product information

Application Laundry Detergents

Customer industry Home Care and I&I

Market Global

Differentiation potential

Customer

- High compatibility in liquid formulations
- Enables anti-graying claims
- Biological and renewable alternative

Consumer

- Anti-graying keeps textiles looking new for longer
- Energy savings (low temp.)

Sustainability performance

- Readily biodegradable liquid cellulase with high compatibility in liquid detergents
- Delivers strong anti-graying performance at low temperatures on cotton
- Enables energy savings with lower wash temperatures

- Enhances washing efficiency and water savings
- Majority bio-based*
- Meets EU Ecolabel criteria
- Textiles look new for longer



Anti-graying Cellulase that enables cleaner results at lower temperatures





Accelerator Disponil® APG 425

Process information

Application: Emulsion polymerization

Customer Industry: Paints and coatings, adhesives and sealants

Market: Europe



Sustainability performance

- Alkylpolyglycoside (fatty alcohol and sugar), Readily biodegradable
- EO free emulsifier, avoids formation of toxic formaldehyde in emulsion polymerization process
- Supports meeting eco-label requirements

Differentiation potential

- Biodiversity and renewables
- Emission reduction
- Health and Safety



Accelerator Disponil® APG 215

Process information

Application: Thermo-mechanical pulp (TMP)

Customer Industry: Pulp and Paper

Market: Europe





Sustainability performance

- Alkylpolyglycoside (fatty alcohol and sugar), fully based on renewable resources
- Readily biodegradable
- Energy usage reduction

Differentiation potential

- Biodiversity and renewables
- Emission reduction
- Cost savings downstream
- Resource efficiency





Accelerator Lupasol[®] G 20 range, Lupasol[®] G 100, Lupasol[®] FG, Lupasol[®] PR 8515

Process information

Application: Adhesion promoter

Customer industry: Paints and coatings, adhesives and sealants

Market: Europe



Sustainability performance

- High charge density makes these products ductile adhesion promoters, suitable for a broad range of different materials
- Low application rate 50 150 mg/m2
- Wet-Adhesion enhancer for emulsion paints, making unnecessary the usage of special monomers (Lupasol® G 20 (waterfree))
- Compatible with cationic and non-ionic systems

Differentiation potential

- Cost savings downstream
- Resource efficiency





Accelerator Lutropur® MSA range

Process information

Application: Various, e.g. Metal Surface Treatment,

Cleaning, Chemical Processing, Biofuels,

Mining, Drilling

Customer Industry: Chemicals industry

Market: Europe, N. America, Asia/Pacific

Sustainability performance

- Strong and odorless organic acid with superior efficiency
- Part of the natural sulfur cycle, readily biodegradable
- Unique, more efficient and safer production process than competition (e.g. no coproduct, air oxidation instead of chlorine oxidation)
- Replacement of acids with low environmental and health profile (HCI, HF, PSA, HBF4, HNO3, etc.)
- Highly efficient catalyst with low side product formation
- Enabler for second generation biofuel technologies (biofuel from waste streams)



Differentiation potential

- Cost savings downstream
- Biodegradability
- Pollution (air, soil, noise)
- Resource efficiency
- Water scarcity and pollution
- Health and safety





Accelerator Nuclesil® 10, Nuclesil® 70 and Nuclesil® 80

Process information

Application: Binder

Customer Industry: Steel industry, Foundry industry

Market: Europe



Sustainability performance

- Aqueous sodium silicate solutions as base for emission-free (non-VOC) foundry binders
- Alternative to organic binders to fulfill statutory provision
- Alternative for Phenol-, Furan-, Isocyanate-, Amine-based binders

Differentiation potential

- Pollution (air, soil)
- Health and safety





Accelerator Pluriol[®] C 1651

Process information

Application: Plasticizer

Customer industry: Rubber industry, Plastics industry

Market: Europe



- Highly compatible plasticizer to improve the low-temperature flexibility of polar elastomers
- Label-free according to CLP
- Used as a cold temperature softener



Differentiation potential

Customer:

Health and safety

CLP: classification on labelling and packaging of substances and mixtures





Accelerator Agnique® AMD 810, Agnique® AMD 10 and Agnique® AMD 12

Process information

Application: Solvent

Customer Industry: Agriculture

Market: Global



Sustainability performance

- Based on renewable resources
- Readily biodegradable
- Strong solvency power
- Versatile alternative to conventional, hazardous solvents
- Improves active ingredient uptake through the plant leaf

Differentiation potential

- Health and safety
- Resource efficiency
- Biological efficacy





Accelerator Agnique® AMD 3 L

Process information

Application: Solvent

Customer Industry: Agriculture

Market: Global

Sustainability performance

- Label-free according to CLP
- Based on renewable resources
- Readily biodegradable
- Strong solvency power
- Versatile alternative to conventional, hazardous solvents (e.g. NMP)
- Very selective on plants



Differentiation potential

- Health and safety
- Resource efficiency
- Biological efficacy

CLP: classification on labelling and packaging of substances and mixtures





Accelerator Agnique® AE 3-2EH

Process information

Application: Solvent

Customer Industry: Agriculture

Market: Global



Sustainability performance

- Based on renewable resources
- Readily biodegradable
- Low hazardous solvent
- Low odor
- Enhances uptake of active ingredients

Differentiation potential

- Health and safety
- Resource efficiency
- Biological efficacy





Accelerator Agnique[®] ME 18 SD-F and Agnique[®] ME 18 RD-F

Process information

Application: Base oil

Customer Industry: Agriculture

Market: Global



Sustainability performance

- Label-free according to CLP
- Based on renewable resources
- Readily biodegradable
- Enhances penetration of active ingredients into the leaf
- Improves biological efficacy

Differentiation potential

- Health and safety
- Resource efficiency
- Based on renewable resources
- Biological efficacy

CLP: classification on labelling and packaging of substances and mixtures





Accelerator Agnique[®] ME 1218

Process information

Application: Solvent, adjuvant

Customer Industry: Agriculture

Market: Global



- Label-free according to CLP
- Based on renewable resources
- Readily biodegradable
- Acts as solvent and adjuvant
- Improves biological efficacy due to uptake increase



Differentiation potential

- Health and safety
- Resource efficiency
- Based on renewable resources
- Biological efficacy

CLP: classification on labelling and packaging of substances and mixtures





Accelerator Agnique® PG 8105-G and Agnique® PG-8107-G

Process information

Application: Adjuvant and Compatibilizer

Customer Industry: Agriculture

Market: Global



Sustainability performance

- Based on renewable resources
- Readily biodegradable
- Excellent ecotoxicity profile
- Can replace TAM EO in Glyphosate formulations
- Highly salt tolerant adjuvant

Differentiation potential

- Reduces water scarcity and pollution
- Environment, health and safety
- Resource efficiency



Accelerator Agnique® PG 8107 BL

Process information

Application: Low Foam Adjuvant

Customer Industry: Agriculture

Market: Global



- Readily biodegradable
- Based on renewable resources
- Low ecotoxicity
- Formulated for low foam → easier handling in process and application
- Can replace TAM EO in Glyphosate formulations
- Highly salt tolerant adjuvant
 - → Alternative to tallow amine ethoxylates



Differentiation potential

- Reduces water scarcity and pollution
- Environment, health and safety
- Resource efficiency



Accelerator Agnique® SBO 10

Process information

Application: Adjuvant

Customer Industry: Agriculture

Market: Global

Sustainability performance

- Label-free according to CLP
- Based on renewable raw materials
- Readily biodegradable
- Boosts systemic active ingredient performance



Differentiation potential

- Reduces water scarcity and pollution
- Environment, health and safety
- Biological efficacy

CLP: classification on labelling and packaging of substances and mixtures



Accelerator Agnique® BL 3095

Process information

Application: Tank Mix Adjuvant

Customer Industry: Agriculture

Market: Global

Sustainability performance

- Label-free according to CLP
- Based on renewable raw materials
- Fully formulated tank mix
- Tank mix adjuvant to boost systemic actives
- Can replace mineral oil based tank mix adjuvants



Differentiation potential

- Reduces water scarcity and pollution
- Environment, health and safety

CLP: classification on labelling and packaging of substances and mixtures







We create chemistry