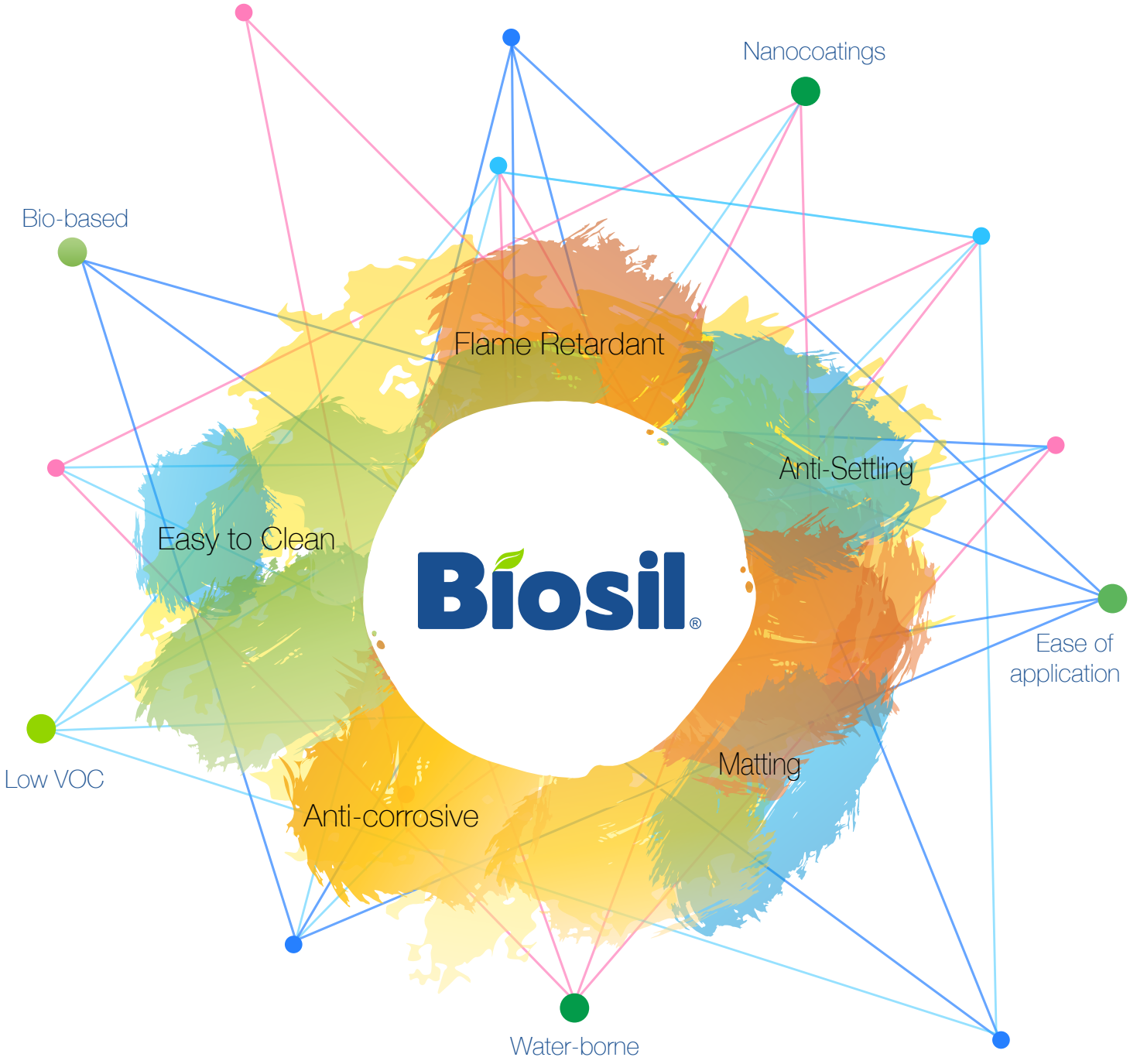
BSB



Bio Nanoporous Silica from Rice Husk

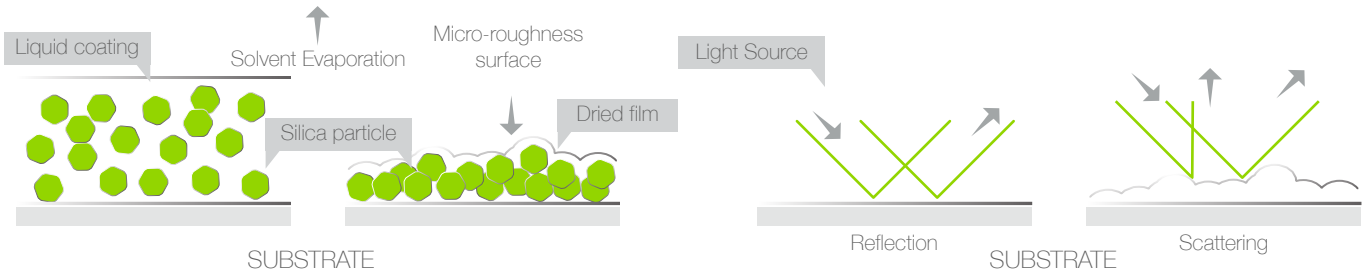
Paints & Coatings Additives

Better products. Better prices. Better life.

Biosil®

MATTING AGENTS

Matting Principles



SPECIFICATIONS

PC00.0101

PROPERTIES	UNIT	SPECIFICATION
State	-	Amorphous white powder
Moisture (2h in 105⁰C)	%	Max 5
SiO_2 Content (ignited basis)	%	Min 99
pH of 5% suspension	-	5 - 6
Bulk density	g/cm³	0.06 - 0.09
Particle size (D50)	µm	5 - 8
Pore Volume	ml/g	1.2 - 1.5
Grindometer value	µm	15 - 40

For reference only. Please check TDS for latest technical specifications.

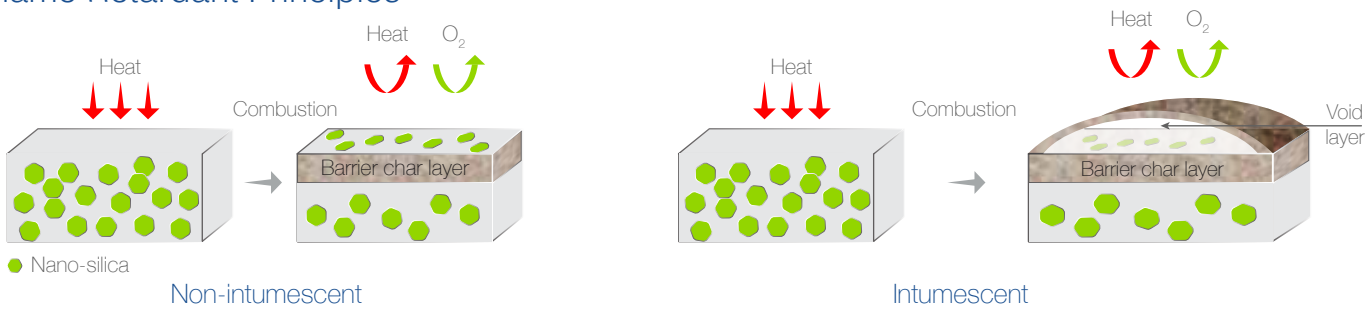
Bio based Matting Agents

- High matting efficiency and gloss control agent
- Excellent surface smoothness
- Improved abrasion and chemical resistance
- High purity from organic source
- Good nanoporous structure
- Tight particle distribution
- Easy to incorporate in various solutions
- Suitable for anti-settling agent formulation

FLAME RETARDANT ADDITIVES

FIRE SAFETY
oxidation resistance
water-based
Euroclass System
non-intumescent
THE GAINS
aerogel
THE PAINT APPLICATIONS
low thermal conductivity
space shuttle
epoxies
wood coatings
insulating layer
protective layers of char
flame spread
FLAME RETARDANT
surface protection
THE PAINS &
high temperatures
THERMAL BARRIER
thick porous layer
ignition
CHALLENGES
particle distribution
reaction-to-fire
nonflammable fragments
TECHNICAL
SPECIFICATIONS
high surface area
smoke and toxic fumes
resistance-to-fire
reduce the heat transfer
nano silica
intumescent systems

Flame Retardant Principles



SPECIFICATIONS

PC00.0102

PROPERTIES	UNIT	SPECIFICATION
State	-	Amorphous white powder
Moisture (2h in 105°C)	%	Max 5
SiO_2 Content (ignited basis)	%	Min 99
pH of 5% suspension	-	5 - 6
Bulk density	g/cm^3	0.06 - 0.09
Particle size (D50)	µm	5 - 8
Primary particle size	nm	30 - 80
Surface area	m^2/g	450 - 650
Grindometer value	µm	15 - 40

For reference only. Please check TDS for latest technical specifications.

Bio based

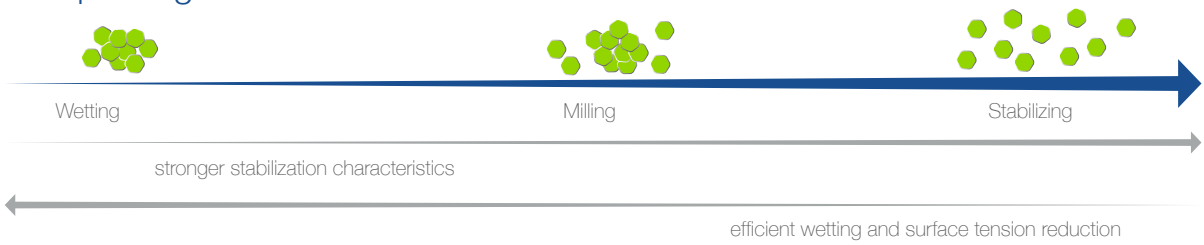
Flame Retardant Additives

- Advanced nanomaterials & bio-compatibility
- Extremely low thermal conductivity
- Easy to incorporate into various formulations
- High surface area, low density and narrow particle size distribution
- Good nanoporous structure
- Provide operating temperature flexibility
- Moisture resistance, coating clarity and long shelf life
- Suitable for both non-intumescent & intumescent thermal barriers formulations

Biosil®

ANTI-SETTLING ADDITIVES

Paints Dispersing Process



SPECIFICATIONS

PC00.0103

PROPERTIES	UNIT	SPECIFICATION
State	-	Amorphous white powder
Moisture (2h in 105^{0}C)	%	Max 5
SiO_2 Content (ignited basis)	%	Min 99
pH of 5% suspension	-	6 - 7
Bulk density	g/cm^3	0.02 - 0.05
Particle size (D50)	µm	4 - 7
DOA absorption	ml/100g	250 - 350
Surface area	m^2/g	250 - 350
Grindometer value	µm	15 - 40

For reference only. Please check TDS for latest technical specifications.

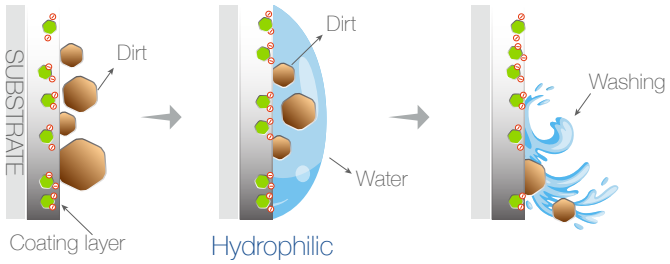
Bio based

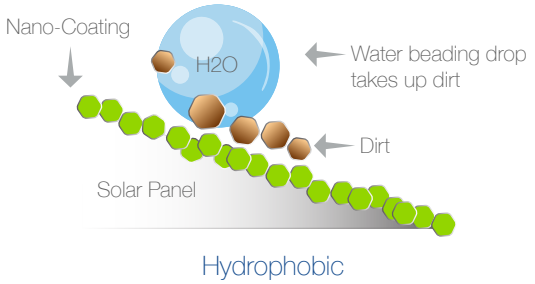
Anti-settling Additives

- Good rheology and thixotropy controls properties
- Used as anti-settling, anti-sagging and thickening agents
- Advanced nano-materials & bio-compatibility
- Improved pigments stabilization, sag resistance, reduced cracking in highly filled systems
- Impart flow and leveling, give very little roller spatter
- Easy to incorporate in various solutions
- Suitable for hydrophobic surface treatment

wood coatings
archirectural
breathable coating
water vapor permeability
THE GAINS
THE PAINT APPLICATIONS
exterier
hydrophobic
weatherability
water beading
interier
water-borne
EASY TO CLEAN
silicate paints
antistatic
super-hydrophilic
hydrophobicity
water vapor
photocatalytic
THE PAINS & CHALLENGES
low dirt-uptake
siloxane
TECHNICAL SPECIFICATIONS
water repellency
silanon
groups
dirt-pickup
surface tension
blistering
cracking
water uptake
surface hydrophobicity
hydroxyl-crosslinking
decomposition
contact angle
water vapor transmission rate

Easy to Clean Principles





SPECIFICATIONS

PC00.0104

PROPERTIES	UNIT	SPECIFICATION
State	-	Amorphous white powder
Moisture (2h in 105^{0}C)	%	Max 5
SiO_2 Content (ignited basis)	%	Min 99
pH of 5% suspension	-	6 - 7
Bulk density	g/cm^3	0.06 - 0.09
Particle size (D50)	µm	3 - 6
Primary particle size	nm	10 - 30
Surface area	m^2/g	250 - 350
Grindometer value	µm	15 - 40

For reference only. Please check TDS for latest technical specifications.

Bio based

Easy to Clean Additives

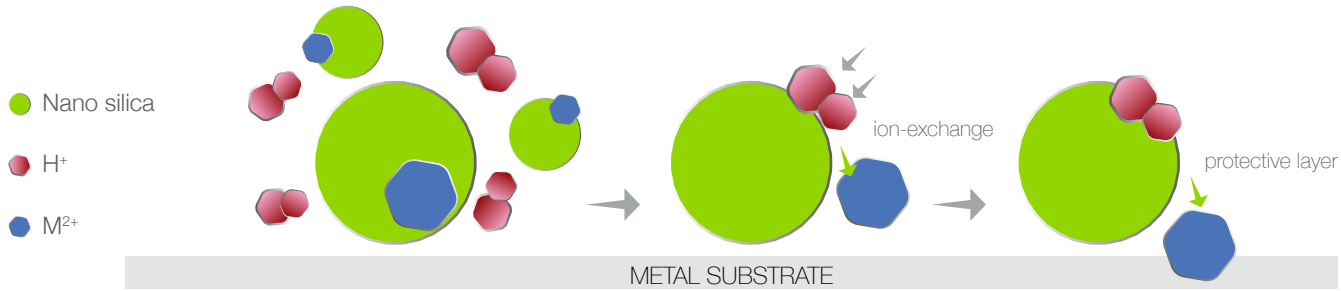
- Advanced nano-materials & bio-compatibility
- Excellent dirt-releasing and cleanability improving
- Easy to incorporate in hydrophilic formulations
- Suitable for use with non-ionic surfactants & hydrophobic coatings
- Good water repellency & water vapor permeability
- Suitable for weather protection coatings & breathable paints formulation
- Improved abrasion and chemical resistance

Biosil®

ANTI-CORROSIVE ADDITIVES

EU Directive 004/73/CE
renewable natural resources
SAFETY COMPLIANCE
humidity resistance
non-toxic
green coating systems
corrosion protection
low/zero VOC
THE PAINT
undercoats
APPLICATIONS
barrier coat
heavy-metal-free
THE GAINS
zinc-free
waterborne coatings
ANTI-CORROSIVE
green label
coil coating primers
zinc phosphate
low oil absorption
corrosion under insulation
nanomaterials
large surface area
corrosion inhibitors
anti-rust
THE PAINT &
TECHNICAL
alkalinity
increase in viscosity
biological growth
low density
CHALLENGES
SPECIFICATIONS
oxidation of metals
surface treatments
pore size distribution
thermal effectiveness
adsorption of aggressive ions
ion-exchanged

Ion-exchange Principle



SPECIFICATIONS

PC00.0105

PROPERTIES	UNIT	SPECIFICATION
State	-	Amorphous white powder
Moisture (2h in 105^{0}C)	%	Max 5
SiO_2 Content (ignited basis)	%	Min 99
pH of 5% suspension	-	6 - 7
Bulk density	g/cm^3	0.02 - 0.05
Particle size (D50)	µm	4 - 7
Primary particle size	nm	30 - 80
Surface area	m^2/g	300 - 400
Grindometer value	µm	15 - 40

For reference only. Please check TDS for latest technical specifications.

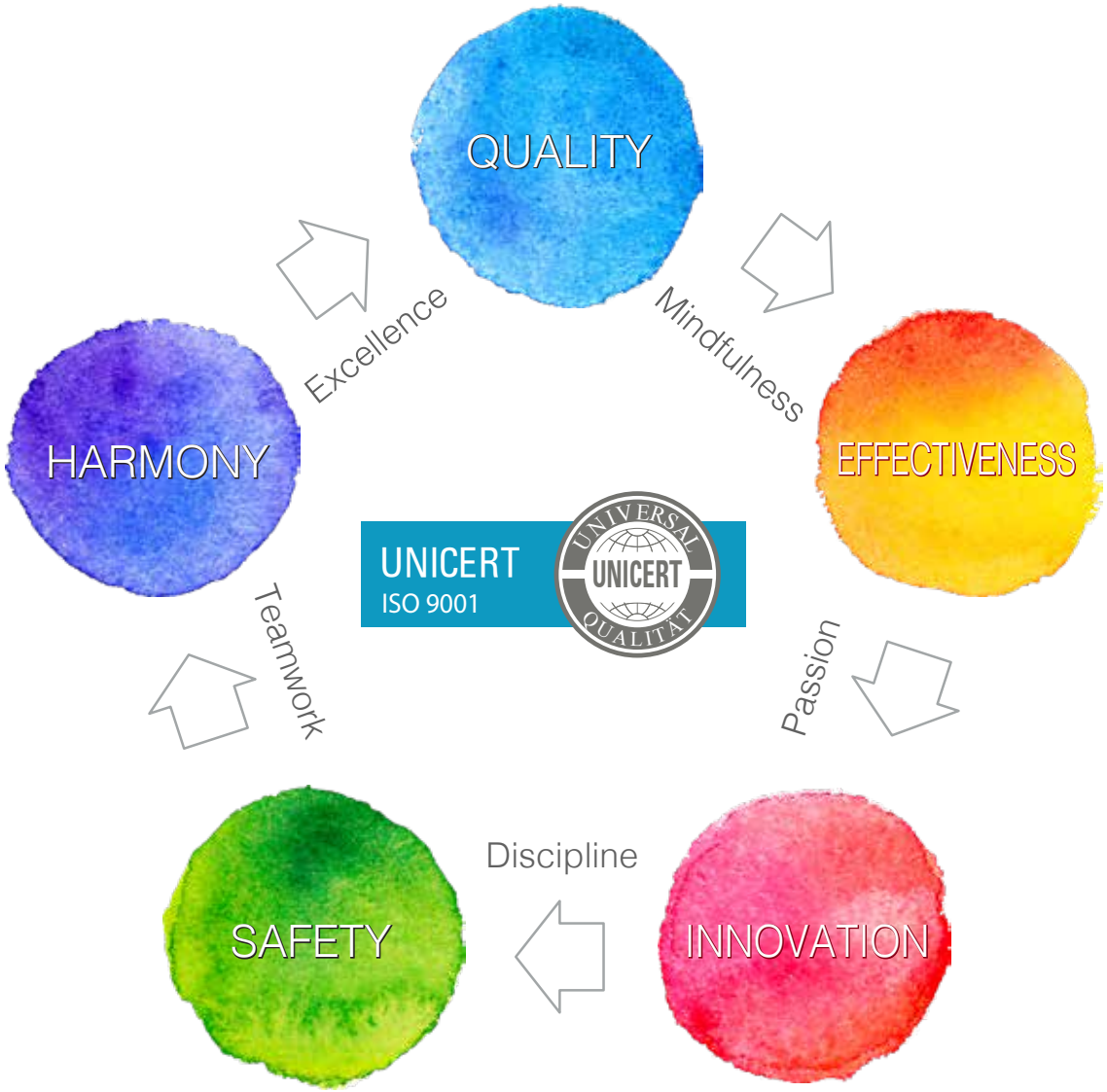
Bio based

Anti-corrosive Additives

- Advanced nano-materials & bio-compatibility
- Heavy metal-free for green coatings
- Ultrafine particles with large surface area
- Suitable for further surface treatment for anti-corrosive ion-exchange application
- Low thermal conductivity and good insulation performance
- Extend product life in high-temperature environments
- Improved tensile strength, tear & abrasion resistance

Biosil®

QUALITY MANAGEMENT



BETTER PRODUCTS. BETTER PRICES. BETTER LIFE.

QUALITY MANAGEMENT

- ISO 9001:2015 Quality Management System certificate granted by Universal GmbH
- Scope: Production of Silica | Nano Silica from Rice Husks
- Certificate No: QMS 0520 006865
- Original Certification Date: 15.05.2020
- Certification Period: 3 years

BSB

MAKE THE WORLD A BETTER PLACE FOR YOU AND ME AND THE ENTIRE HUMAN RACE

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