

Bio Nanoporous Silica from Rice Husk

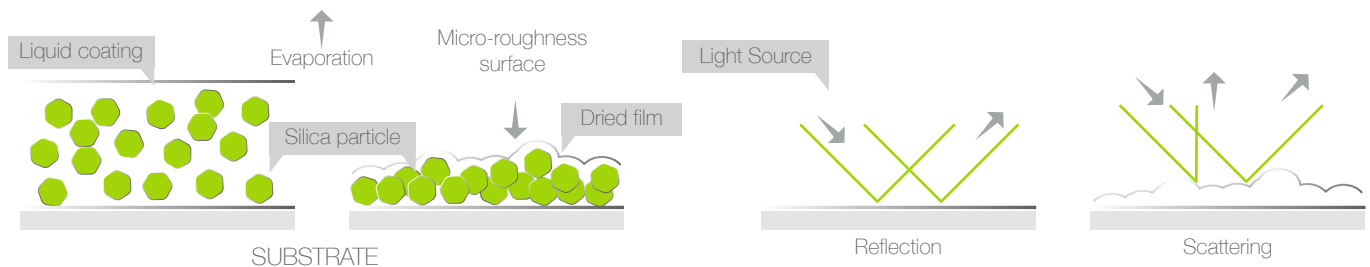
Paints & Coatings Additives

Better products. Better prices. Better life.



high matting efficiency
 thin film THE PAINT REACH renewable resource gloss reduction
 high solid SYSTEMS flexibility THE GAINS organic modified-silica
 water-borne solvent based effect on weathering bio-based additive
 easy low-VOC haptic properties
 dispersibility THE PAINS & CHALLENGES smooth surface scratch and abrasion resistance
 formation of hard sediments VOC-free thickeners particle size distribution pore volume
 anti-settlement properties increase in viscosity porosity dry film thickness matting agent concentrate
 wetting and dispersing milling technologies angle of 60° TECHNICAL SPECIFICATIONS surface treatment

Matting Principles



SPECIFICATIONS

AM0100.PC

PROPERTIES	UNIT	SPECIFICATION
State	-	Amorphous white powder
Ignition loss (2h in 1000°C)	%	Max 7
Moisture (2h in 105°C)	%	Max 5
SiO ₂ Content (ignited basis)	%	Min 99
pH of 5% suspension	-	5 - 6
Conductivity of 5% suspension	µS/cm	Max 1000
Bulk density	g/cm ³	0.06 - 0.09
Particle size (D50)	µm	5 - 8
Pore Volume	ml/g	1.2 - 1.5
Grindometer value	µm	20 - 40

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



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



FIRE SAFETY
water-based Euroclass System

THE PAINT APPLICATIONS
epoxies wood coatings insulating layer

FLAME RETARDANT
flame spread

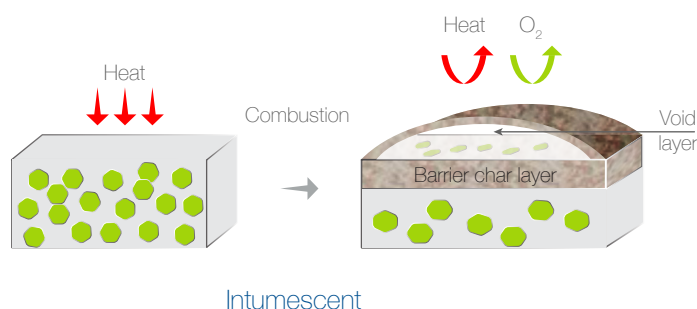
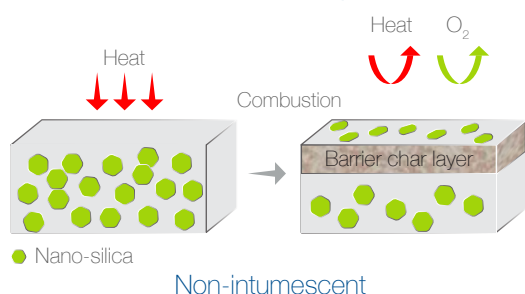
THE PAINS & CHALLENGES
ignition high temperatures reaction-to-fire smoke and toxic fumes reduce the heat transfer

THERMAL BARRIER
nonflammable fragments resistance-to-fire nano silica

TECHNICAL SPECIFICATIONS
oxidation resistance non-intumescent low thermal conductivity protective layers of char surface protection thick porous layer particle distribution high surface area intumescent systems

THE GAINS
aerogel space shuttle

Flame Retardant Principles



SPECIFICATIONS

AF0100.PC

PROPERTIES	UNIT	SPECIFICATION
State	-	Amorphous white powder
Ignition loss (2h in 1000°C)	%	Max 7
Moisture (2h in 105°C)	%	Max 5
SiO ₂ Content (ignited basis)	%	Min 99
pH of 5% suspension	-	5 - 6
Conductivity of 5% suspension	μS/cm	Max 1200
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	20 - 40



Flame Retardant Additives

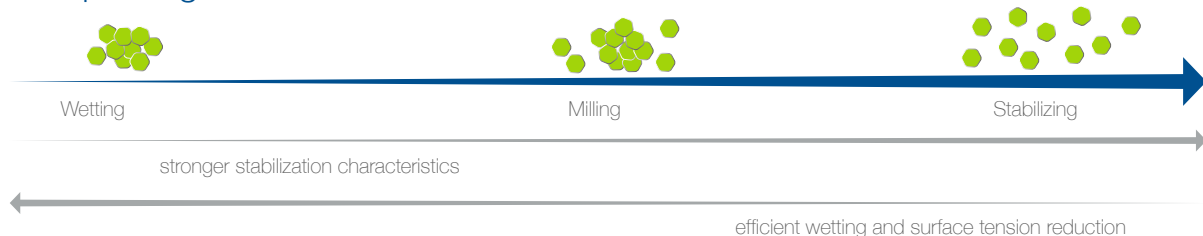
- Advanced nanomaterials & bio-compatibility
- Extremely low thermal conductivity
- Easy to incorporate into various formulations
- High surface area, low density and narrow particle size distribution
- Good nanoporous structure
- Provide operating temperature flexibility
- Moisture resistance, coating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

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



solventborne basecoats high viscosity anti-sag control
 THE PAINT APPLICATIONS pigments stabilization THE GAINS
 waterborne coatings wood
 high-shear rate viscosity ANTI-SETTLING thixotropy efficient thickener
 low viscosity efficient wetting & ANTI-SAGGING long term usability
 THE PAINS & high film thickness ease of applications
 CHALLENGES high-efficiency emulsion-type TECHNICAL shear rate
 rheology control flocculation surface treatment SPECIFICATIONS
 eco-friendliness degree of thixotropy surface area

Paints Dispersing Process



SPECIFICATIONS

AS0100.PC

PROPERTIES	UNIT	SPECIFICATION
State	-	Amorphous white powder
Ignition loss (2h in 1000°C)	%	Max 7
Moisture (2h in 105°C)	%	Max 5
SiO ₂ Content (ignited basis)	%	Min 99
pH of 5% suspension	-	6 - 7
Conductivity of 5% suspension	µS/cm	Max 800
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 - 30



Anti-settling Additives

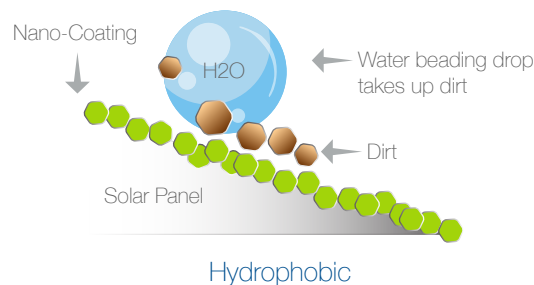
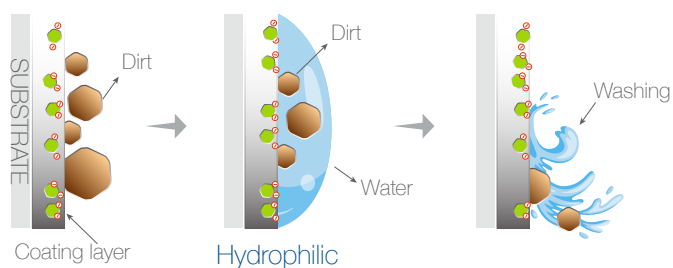
- Good rheology and thixotropy controls properties
- Used as anti-settling, anti-sagging and thickening agents
- Advanced nano-materials & bio-compatibility
- Improved pigments stabilization, sag resistance, reduced cracking in highly filled systems
- Impart flow and leveling, give very little roller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

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



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

Easy to Clean Principles



SPECIFICATIONS

AE0100.PC

PROPERTIES	UNIT	SPECIFICATION
State	-	Amorphous white powder
Ignition loss (2h in 1000°C)	%	Max 7
Moisture (2h in 105°C)	%	Max 5
SiO ₂ Content (ignited basis)	%	Min 99
pH of 5% suspension	-	6 - 7
Conductivity of 5% suspension	μS/cm	Max 800
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
Pore Volume	ml/g	0.9 - 1.1

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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



EU Directive 004/73/CE renewable natural resources

SAFETY COMPLIANCE humidity resistance non-toxic

green coating systems

THE PAINT undercoats corrosion protection low/zero VOC

APPLICATIONS barrier coat heavy-metal-free **THE GAINS**

waterborne coatings zinc-free

coil coating primers green label

ANTI-CORROSIVE low oil absorption

corrosion under insulation zinc phosphate large surface area

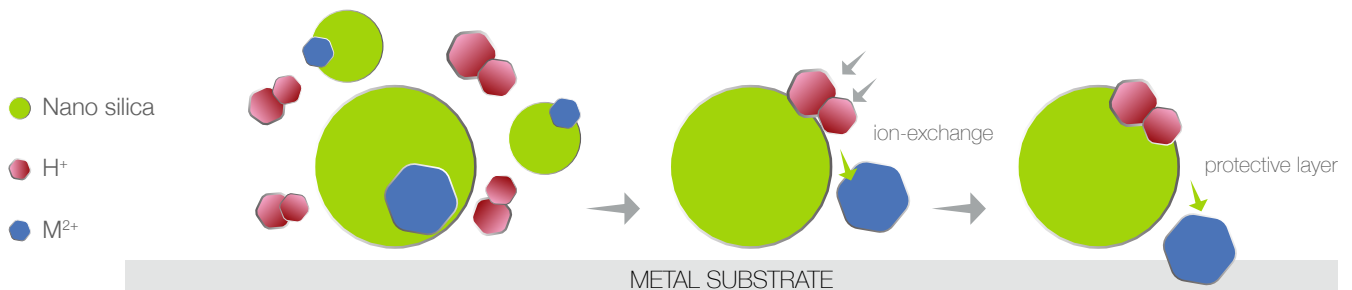
corrosion inhibitors nanomaterials alkalinity

anti-rust **THE PAINT & CHALLENGES** biological growth **TECHNICAL** low density

increase in viscosity surface treatments **SPECIFICATIONS** pore size distribution

oxidation of metals thermal effectiveness adsorption of aggressive ions ion-exchanged

Ion-exchange Principle



SPECIFICATIONS

AC0100.PC

PROPERTIES	UNIT	SPECIFICATION
State	-	Amorphous white powder
Ignition loss (2h in 1000°C)	%	Max 7
Moisture (2h in 105°C)	%	Max 5
SiO ₂ Content (ignited basis)	%	Min 99
pH of 5% suspension	-	6 - 7
Conductivity of 5% suspension	μS/cm	Max 500
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
Pore Volume	ml/g	0.9 - 1.1

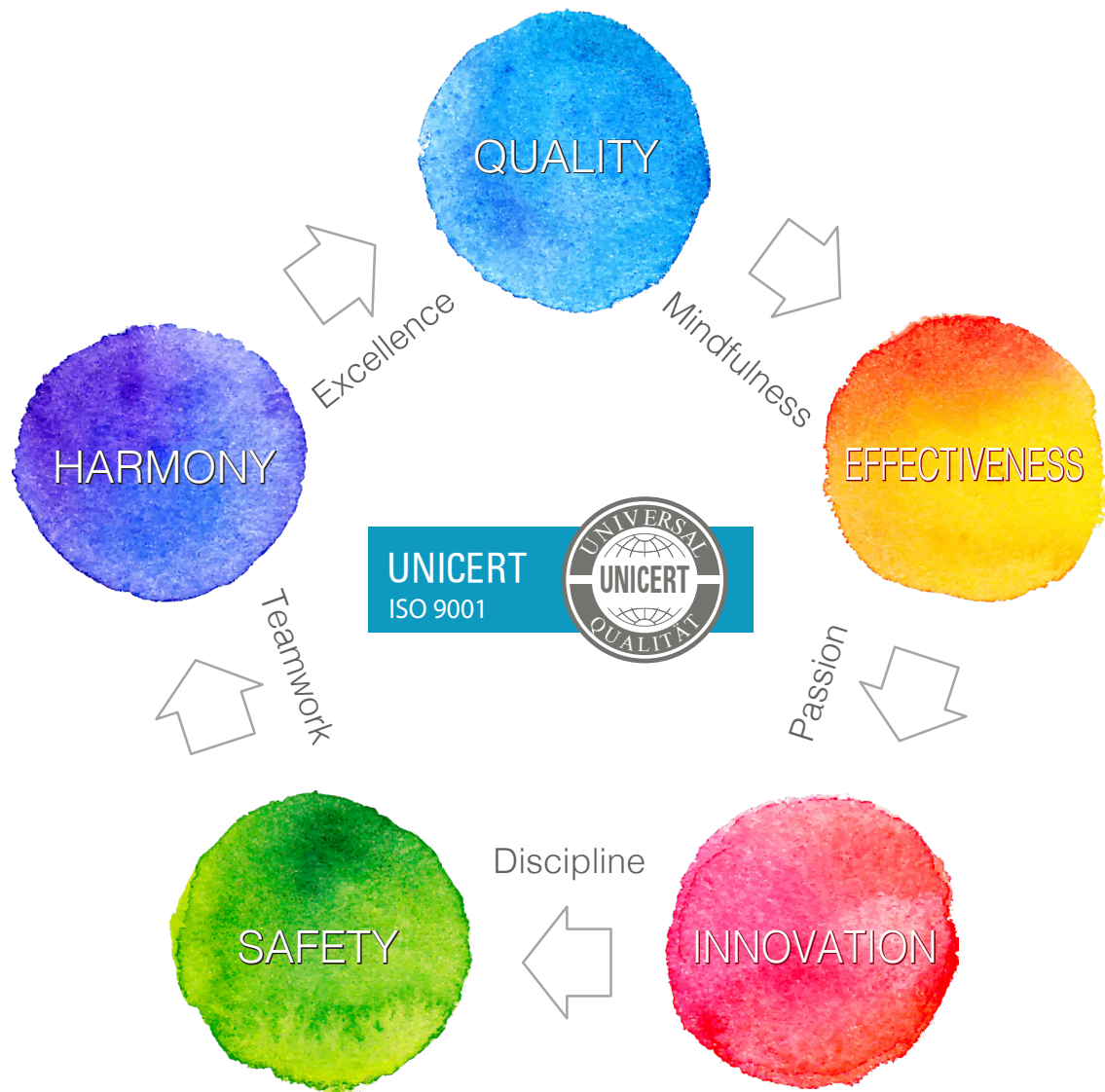


Anti-corrosive Additives

- 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

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





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





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THE
MAKE **WORLD**
A BETTER PLACE

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THE ENTIRE
HUMAN RACE

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