

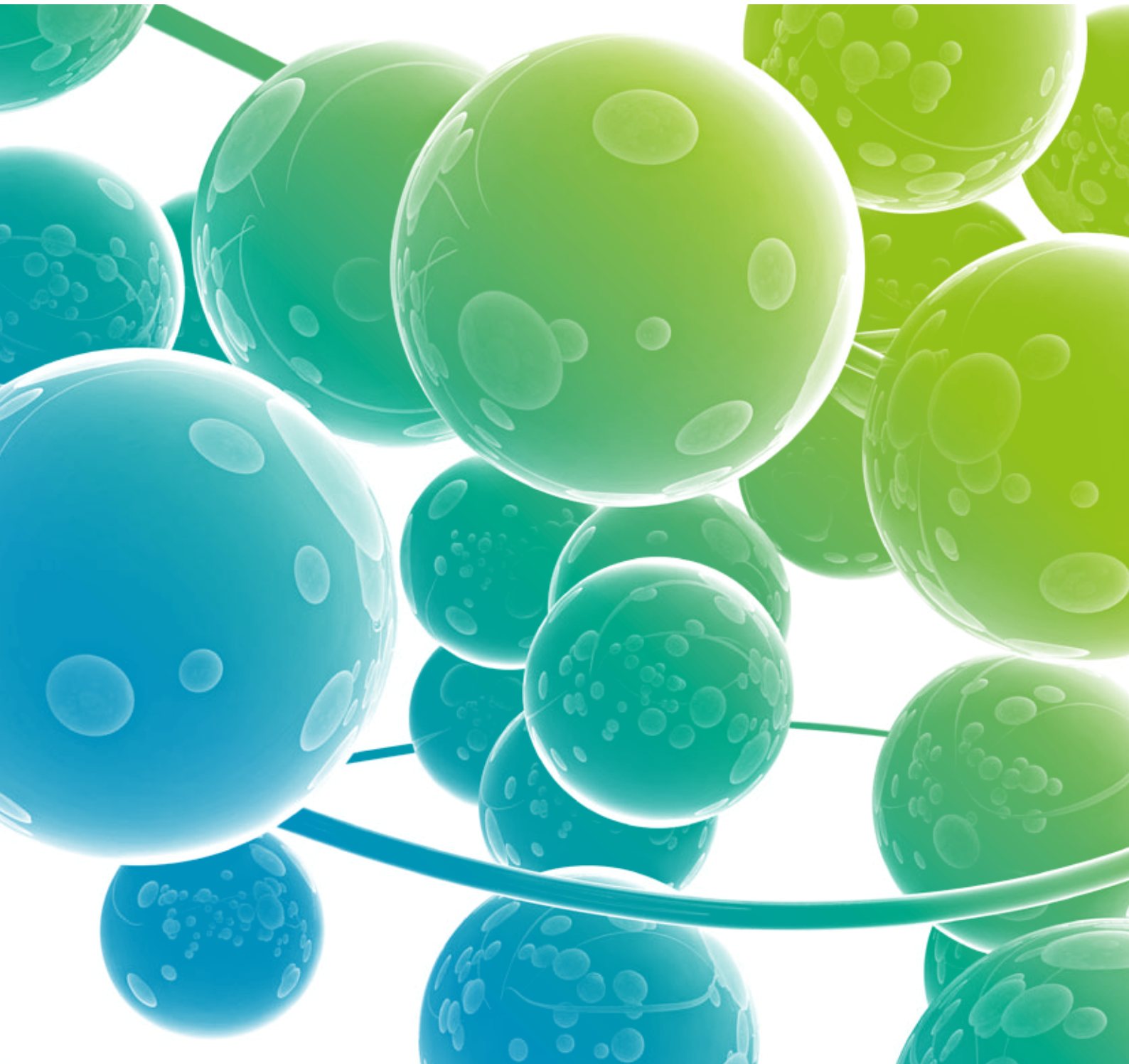
Bindzil CC in the coating industry

Silane modified colloidal silica dispersions – functions and applications



AkzoNobel

Tomorrow's Answers Today



Small particles add big advantages

Performance enhancing silane, modified colloidal silica for polymers, waterborne coatings and cleaners. Bindzil CC works as a co-binder, crosslinker, wetting agent and surface modifier.

High and consistent quality

Our range of Bindzil and Levasil products are produced in our global net-work of manufacturing units with consistent quality. Our quality assurance program meets our customers' expressed expectations and the conditions upon which we have mutually agreed. Eka Chemicals, Industrial Specialties Group, is certified according to the ISO 9000 and ISO 14000 standards.

The Product Bindzil CC

Facts about Bindzil CC silane modified silica

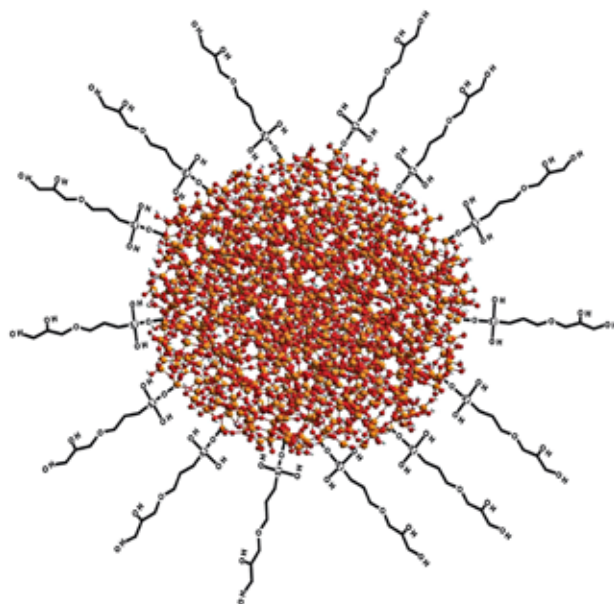
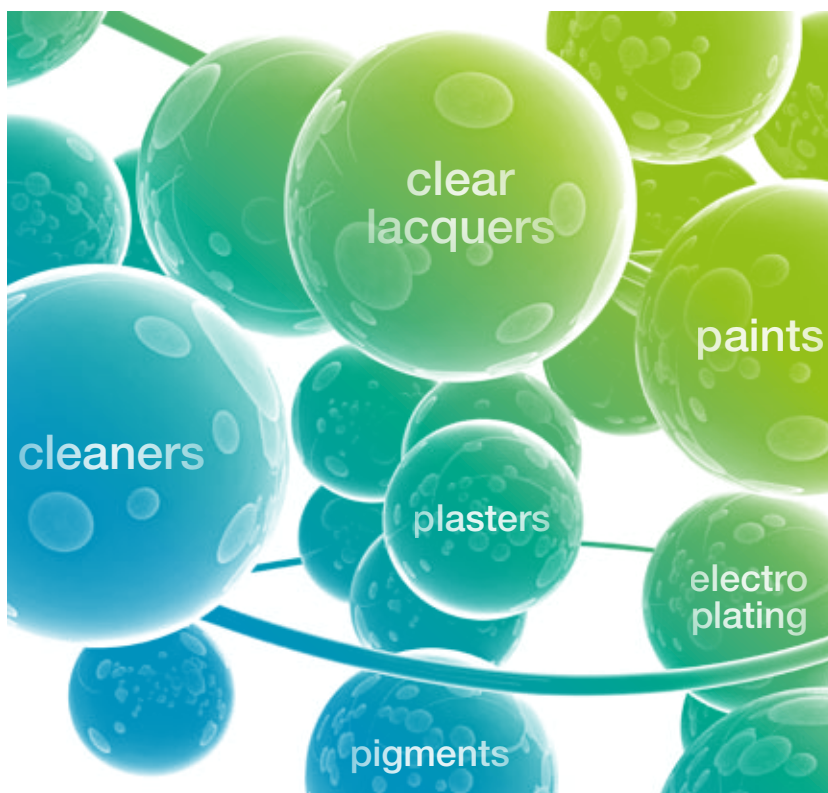
- Aqueous dispersions
- Amorphous silica
- Non-aggregated silica particles
- Several particle sizes available
- Stable in pH-range 2–11
- Non-classified chemicals
- Complies with Eco labeling regulations
- Complies with Food contact regulations

Bindzil CC products are tailor-made and adapted to different areas of application.

Available Bindzil CC products

Epoxy-silane surface modified colloidal silica

-
- Bindzil CC301 Dp: 7 nm, TS: 30 %
-
- Bindzil CC302 (high silane) Dp: 7 nm, TS: 30 %
-
- Bindzil CC401 Dp: 12 nm, TS: 40 %
-
- Bindzil CC151 Dp: 5 nm, TS: 15 %
-
- Bindzil CC151 HS (high sodium) Dp: 5 nm, TS: 15 %
-

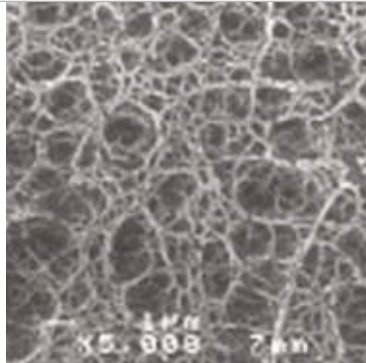


Silane modified silica particle for improved shelf life in all water borne resin formulations

Enhancement of Mechanical Properties – Silica Skeleton

- Increased hardness
- Increased abrasion resistance
- Improved anti-blocking

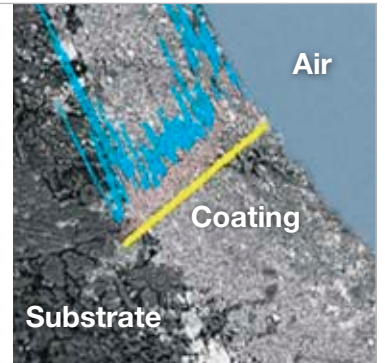
How it works:
Three-dimensional silica skeleton.



Enhancement of Wetting Properties – Interaction with Substrates

- Improved wood penetration
- Improved adhesion
- Improved corrosion resistance
- Pigment dispersant

How it works:
Silica level in blue.
Enrichment at interfaces.



Applications

Hardness



Abrasion resistance

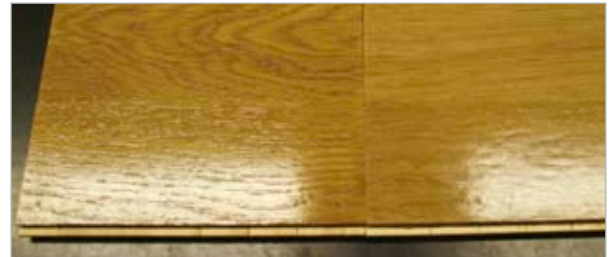


Anti-blocking



Applications

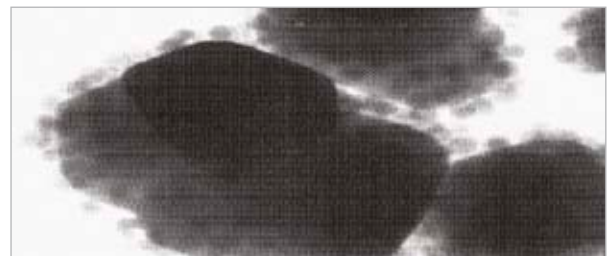
Wood penetration and anfeuerung



Adhesion



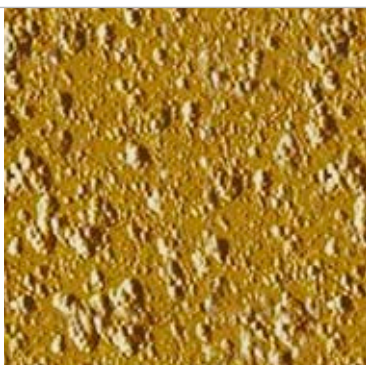
Pigment dispersant



Change of Surface Properties – Hydrophilic/ Hydrophobic Balance

- Reduced dirt pick-up
- Anti-soil/hydrophilisation
- Improved printability

How it works:
Silica on substrate, AMF study.



Cross-Linker in Polymers, Resins and Plastics – Polycondensation and Polyaddition Reactions

- Improved mechanical properties, e.g. improved hardness
- Improved heat resistance

How it works:
Silica in polymer matrix.



Applications

Anti-soil/hydrophilization



Reduced dirt pick-up



Improved printability



Applications

Hardness



Heat resistance

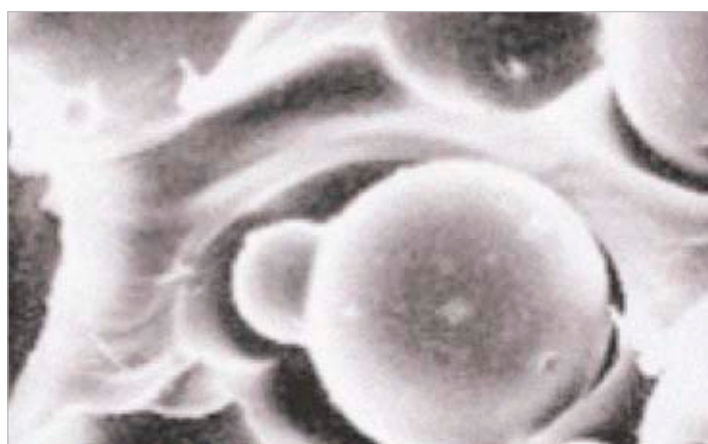


Scratch resistance



Organo-functional groups

Coupling reaction silica with binder resin

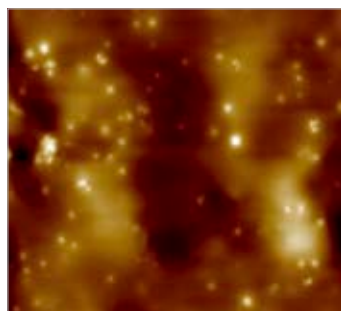


No silane treatment

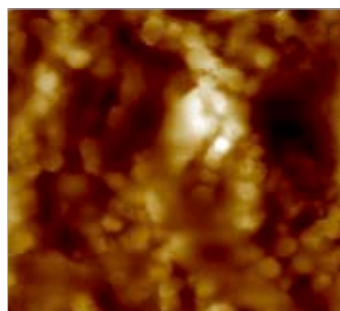
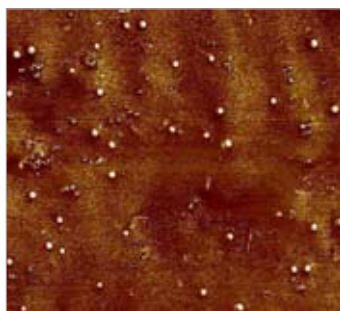


Silane treatment

Silica surface modifier for paints, AFM study



Tinting base



Tinting base with Bindzil CC postadded

Health, safety and environment

Bindzil Colloidal Silica Dispersions contain no classified raw materials. Before handling the material, read the corresponding Material Safety Data Sheet for health, safety and environmental information. All Bindzil products are approved in accordance with EU directives both for direct and indirect food contact.

Further Information

For more detailed product information, please refer to the separate product guide. For samples, technical service and further information, please contact your nearest office, visit our website at www.colloidalsilica.com, or send an e-mail to colloidalsilica@akzonobel.com

Head Office

Eka Chemicals AB
Industrial Specialities
SE-445 80 Bohus
Sweden
Phone: +46 (0) 31 58 70 00
Fax: +46 (0) 31 58 78 59

Europe

AkzoNobel Chemicals GmbH
Industrial Specialities
Kreuzauer Str. 46
DE-52355 Düren, Germany
Phone: +49 (0)2421 595494
Fax: +49 (0)2421 595635

North America

Eka Chemicals Inc
1775 West Oak Commons Court
Marietta, Georgia 30062
USA
Phone: +1 770 578-0858
Fax: +1 770 321-5885

Asia

AkzoNobel Asia Pte. Ltd
Taiwan Branch 6F, B1, No 51
Sec 2., Gonyi Road
Taichung, 408, Taiwan, ROC
Phone: +886 4 2327 0520
Fax: +886 4 2327 0580

Bindzil® and Levasil® are registered trademarks in several countries and our special colloidal silica water dispersions are produced and distributed worldwide. Industrial Specialities is a part of AkzoNobel and operates within the Eka Chemicals business unit. Information herein is accurate to the best of our knowledge. Suggestions are made without warranty or guarantee of results.

Before using, the user should determine the suitability of the product for his intended use and the user assumes the risk and liability in connection therewith. We do not suggest violation of any existing patents or give permission to practice any patented invention without a license.



AkzoNobel
Tomorrow's Answers Today

www.akzonobel.com

AkzoNobel is the largest global paints and coatings company and a major producer of speciality chemicals. We supply industries and consumers worldwide with innovative products and are passionate about developing sustainable answers for our customers. Our portfolio includes well-known brands such as Dulux, Sikkens, International and Eka. Headquartered in Amsterdam, the Netherlands, we are a Global Fortune 500 company and are consistently ranked as one of the leaders on the Dow Jones Sustainability Indexes. With operations in more than 80 countries, our 55,000 people around the world are committed to excellence and delivering Tomorrow's Answers Today™.

© 2011 AkzoNobel N.V. All rights reserved.