

TECHNICAL PRODUCT DATA

SANPURE® K130

Permanent, biocompatible, highly resistant and invisible coating for active hygiene. Effective protection against bacteria and fungi including multiresistant germs (MRSA, MRGN).

Description:

SANPURE® K130 is an acidic siloxane based sol containing agpure® silver nanoparticles for sol/gel coatings. It allows the invisible and costly equipment of hard surfaces with antimicrobial properties. Due to the high surface to volume ratio of nanoparticles only low levels of metallic silver are necessary for a high and long lasting antimicrobial performance. The biocidal effect of SANPURE® K130 is based on the controlled release of silver ions.

SANPURE® K130 is highly recommended for permanent, invisible and highly active coatings of hard surfaces. Substrates can be made of polymers, metals, glass or ceramics. For other kinds of biocidal products like varnishes or additives alternative agpure® types are available. Please ask our experts.

Typical application areas:

Infection protection in public areas, hospitals, surgeries, sanitary and wellness areas, food industry, etc. Examples for coated objects door handles, switches, control panels, keyboards, instruments, desks and counters. Antimicrobial coatings in further hygienic applications in agriculture, food-processing and -handling, water treatment, air ducts, the textile industry and in the sanitary sector.

Products properly coated with antimicrobial SANPURE® K130 are non-toxic to humans and animals.

Due to the high abrasion stability and slow and controlled release of biocidal silver-ions from SANPURE® K130 coatings the antimicrobial effect is persistent. Products properly coated with SANPURE® K130 are protected against microbial soiling for a lifetime without being toxic to humans or the environment.

SANPURE® K130 coated surfaces are resistant against cleaning chemicals and lots of solvents. The permanence of the antimicrobial effect is not affected by standard cleaning chemicals.

SANPURE® K130 exhibits strong activity against all gram-positive and gram-negative bacteria (JIS Z 2801:2010; R-value > 4). Its activity is unaffected by antibiotic-resistance of strains, yeast and fungi. So SANPURE® K130 is a valuable mean fighting multiresistant germs (MRSA, MRGN) in hospitals, surgeries, agriculture and in food processing. SANPURE® K130 coatings are transparent, UV-resistant and exhibit a high clarity. They can be colored upon request.

Product forms:

Article no.: SANK130
Appearance: yellowish liquid
Available container sizes: 1 L, 5 L, 25 L

Specifications:

Silver concentration: 200 ± 10 mg/kg
solids content: 12 - 14 % wt.
pH-value: 4,5 - 7,0

Typical properties:

Low viscous nanoparticle dispersion
Water content: < 1 %
Solvents: Methanol, 1-Butanol, 2-Propanol
Density: 0,9 - 1,1 kg/dm³
Colour: yellow
Mean silver particle size: 15 nm
d₉₉ (99% silver particles smaller as): 20 nm
Stability, unopened (dark, 4-10 °C): 3 months
Stability, unopened (dark, 25 °C): 3 weeks

Use recommendations:

Precleaning:

The cleaning of to be coated substrates depends strongly on the kind of substrate. All surfaces have to be absolute dry and free from fat and loose particles. Washing with water or 2-Propanol / 1-Butanol is recommended. An ultrasonic bath might be reasonable.

Adjustment to coating process:

Warming up: Allow SANPURE® K130 to come to room temperature in original container. Beginning at 15 °C the formulation should be mixed gently to reach full homogeneity at room temperature. Particles in the µm range have to be filtered off prior to use. A sequential filter system (5-8 µm pre-filter; 1 µm fine filter) is recommended.

Adjustment of pH and viscosity: Addition of acetic acid until 4,0-7,0 % wt. Adjust viscosity with 2-Propanol / 1-Butanol (typically: 3-12 mPa s). Maintain acetic acid content in the range of 4,0-7,0 % wt.

Coating:

Coat at temperatures between 20 and 25 °C and relative humidity between 30 and 50 %. The dry film thickness is in the range of 0,15-1,5 µm. The coating area should be clean, dust-free, well ventilated, temperature and humidity controlled.

Drying / curing:

Evaporate solvents within 10 to 20 minutes at 20 to 30 °C (at 30-50 % r.h.). The coating has to be thermally cured for minimum 30 minutes at 130 ± 3 °C.

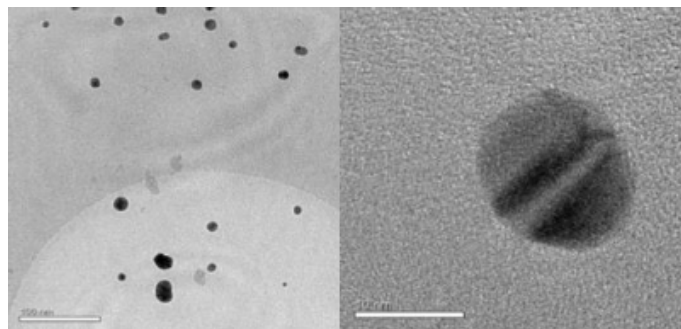


Figure: Electron microscope images of agpure® nanoparticles.
(Scale: left=100 nm, right=10 nm).

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Handling and Safety:

The compatibility of SANPURE® K130 coating solution and substrate is dependent on different factors including solvent resistance, operational stresses, chemical exposure, temperature levels, impact and exposure to ultraviolet light.

While it is up to the end user to determine what application specific testing is appropriate, it is suggested that all applications be tested for at least 30 days for compatibility and crazing with this hard coat use. There is no dependable substitute for careful testing of prototypes of production parts in typical operating environments.

SANPURE® K130 sol for sol/gel coatings are highly sensitive for improper storage conditions and processing conditions. Please take care that SANPURE® K130 is stored below 23 °C and processed at a relative humidity below 50 %.

Handling SANPURE K130 requires skilled professionals that are familiar with handling hazardous goods and chemicals. Work under sufficient ventilation. Do not inhale vapours. Do not inhale aerosols. Avoid formation of explosive vapours. Keep away from heat/sparks/open flames/hot surfaces.

Keep container tightly closed. Avoid release to the environment. For more detailed information please refer to the material safety data sheet and our technical information sheet.

Registration:

agpure® is official OECD (NM-300 K silver) and BAM standard reference material.

CA-substance-no. 7440-22-4 „elementary silver (nanoform)“

Negotiable according to european biocidal products regulation (BPR) Nr.528/2012, listed in article 95, annex II

Applied BPR (N-73054) product types (PT) PT 2: disinfectants and algaecides not intended for direct application to humans or animals, PT 4: food and feed area, and PT 9: fibre, leather, rubber and polymerised materials preservatives.

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Terms and conditions apply of RAS AG (<http://ras-ag.com/en/general-terms-and-conditions/>)

Brand website: <http://sanpure.de>

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