



Photocatalytically active coating for ceramics for self-cleaning, air purification and algae prevention

TA 2204



Benefits

TECHNICAL BENEFITS

- Reacts on UV-light
- Suitable for rooftiles and ceramics
- Self-cleaning properties
- Hydrophilic surface avoids baking in of acids and soot
- Bonds with substrate
- Low material use per m² 30 – 100 ml/m²
- Full transparent coating
- No change of look-and-feel of host-material
- Fast drying
- Free of solvents
- Contains no biocides
- Long durability of >10 years

OPERATIONAL BENEFITS

- Prevents organic growth like mold, algae or moss
- Filters VOC's, pollen, NOx from the air
- 90m² treated surface = filter capacity of 8 mature oak trees
- Minimizes need for cleaning
- Application by ESS, HVLP or roller
- Easy to touch-up during replacement or repair of surface
- Maintains pristine appearance of treated surfaces
- Non-hazardous, easy to transport

FINANCIAL BENEFITS

- Low cost per m²
- Minimizes cost for cleaning agents and soaps
- Minimizes repair and replacement costs due to pollution
- Reduces cost for ill personnel

Description

nC® Nadicare® TA2204 Metal Surfaces is a very fine, water-based titanium-dioxide dispersion. Its formulation is a photocatalytically active coating and is fully transparent. Upon radiation with light, the coatings will release oxygen radicals from the ambient air and thus decompose organic pollution: The surface becomes self-cleaning. TA2204 is active under UV light.

TA2204 is designed for all unglazed ceramics, rooftiles, flagstones etc. Not suitable for marble, glass, metal, painted surfaces and plastics.

nC® Nadicare® TA2204 is an in- and outdoor application. Surfaces which are coated with TA2204 become self-cleaning and air purifying (reduction of VOC and bad odours).



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Description

Furthermore, the coating protects the surface against algae, mould, germs and bacteria. The design of nC® Nadicare® TA2204 provides self-cleaning properties to the treated surfaces, to protect them against pollution. The active self-cleaning titanium-dioxide particles transform all organic pollution on the surfaces, like soot, bird-droppings, stains of coffee, wine, oils, fingerprints etc. , into harmless compositions and oxygen. As the coating has strong hydrophilic capacities, pollution can never scale or “bake in.”

nC® Nadicare® TA2204 unites the advantages of photo catalysis and hydrophilicity. By doing this, the coating system offers a very robust and wear resistant surface. The lifetime cycle of the coating is around 10 years. The active self-cleaning characteristics of titanium-dioxide will easily remain intact throughout this period.

nC® Nadicare® TA2204 Metal Surfaces unites the advantages of photo catalysis with the unique capacity of nano-technology. Instead of sticking mechanically on the surface (like waxes or foils do), the use of nanotechnology ensures that the nC® Nadicare® TA2204 coating bonds into the surface chemically. The active self-cleaning characteristics of titanium-dioxide will not exhaust.

Application

It is recommended to apply TA2204 with electrostatic spraying technique, alternatively with HVLP or roller. Industrial application processes, especially coil coating, are also possible. In case of industrial application, technical consultation at the nC Group R&D dept. is strongly recommended.

- Do not eat, drink or smoke during application.
- Surface must be clean and free from kit, glue, grease, mold or moss.
- Rinse with clean and fresh water to remove soap residues.
- Surface must be dry.
- Ambient temperature during manual application must be at least 15° C.
- Do not apply when ambient humidity exceeds 80%.
- Do not apply in a dusty environment.
- Wear protective gloves during application. Wear safety goggles during application.
- Shake container well for a minute.
- Use roller, ESS (Electro Static Spraying) indoor/outdoor or HVLP outdoor for application.



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Application

- Recommended application quantities (no bathing):
 - Plain surfaces 30 ml/m²
 - Textured surfaces 60 ml/m²
 - Absorbent surfaces 100 ml/m²
- Surfaces must be preheated up to around 100 °C, max 600 °C.
- Let surface dry for 30 minutes at 100 °C.
- Put left-over nC® Nadicare® TA2204 in container and use-up within 4 weeks after first opening of original.
- nC® Nadicare® TA2204 will deteriorate fast when dirty or greasy items are coated without cleaning.
- Clean tools, spraynozzles with water immediately after every stop.
- Wash hands and face after every stop.

As the technology is about bonding particles into surfaces, matrices of particles need to be built up after application. The treatment reaches full performance AFTER a cure time of approximately 72 hours, which is dependent upon environmental variables, humidity and heat applied (max 600 °C. Tests for performance should be done after full cure. However, the surface can be used and exposed 30 minutes after application.

Limitations

- Do NOT apply on marble.
- Re-apply regularly on paths or walking areas that are in heavy use.
- When installing over poor, greasy or dirty surfaces, the bonding of nC® Nadicare® TA2204 will become erratic, and so will the results be.
- Do NOT freeze product or store in subzero areas.
- Do not allow application during freezing temperatures.
- The selfcleaning effect will not occur in poor visible light, the effective light spectrum is < 475nm for artificial light.

Logistic info

- Store nC® Nadicare® TA2204 at temperatures between +5° C and +30° C.
- Store nC® TA2204 for max. 12 months in unopened containers counting from production date.



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Logistic info

- Storage life for opened containers is 4 weeks, keep containers tightly sealed and store in a dark place.
- **Avoid freezing product.**
- nC® Nadicare® TA2204 is available in 5L, 25L and 200L containers.
- Never use pressure to empty containers.
- Dispose of contents/container in accordance with local/regional/national/international regulations.
- UN number DOT, IMDG, IATA: None
- Shipping name DOT, IMDG, IATA: None
- Transport hazard class DOT, IMDG, IATA: None
- Packaging group DOT, IMDG, IATA: None
- Environmentally hazardous: No
- Marine pollutant: No

Typical properties

- TiO₂ , H₂O
- Appearance: Yellowish transparent
- Active material: 1% by weight
- Effective light spectrum: up to 475 nm
- pH value: approx. 8,0
- Primary particle size: < 8nm
- Specific Density: 1,008 g/ml

