NanoQuinn Protective Nanocoating for Ceramic Surfaces

Technical Data Sheet

1 Description

NanoQuinn Ceramic Nanocoating uses engineered nanoparticles that are measured in billionths of a metre (80,000 times smaller than a human hair) to bond with and form a protective coating on any ceramic surface. Once applied the SiO2 (Silicon Dioxide) nano particles bond with the surface to create a long lasting, totally invisible protective layer of up to 5 years.

This invisible coating has enormous hydrophobic and oleophobic properties, which effectively repel liquids and particles of contamination such as grease and oil, lime-scale and materials from environmental pollution that would otherwise adhere to ceramic surface. This creates an “easy-to-clean” effect and negates the need for repeated cleaning and the use of chemical cleaning agents.

Inside the home, **NanoQuinn Ceramic** Nanocoating makes cleaning easy and can reduce your cleaning time by up to 90%. It significantly reduces the need for household cleaning products. A quick wipe with a damp cloth or a mild detergent is all that is usually required. **NanoQuinn Ceramic** Nanocoating can be used for nonporous surfaces like ceramic wall and floor tiles (including grout), basins, baths, toilets and kitchen splash backs. Because water won’t sit on the surface, fungus and mould can’t develop, resulting in the surfaces remaining hygienic and visibly pleasing.

Externally ceramics and glass absorb contaminants, which lead to deterioration and discolouration, making it more and more difficult to clean overtime. This is especially the case for ceramics that is located along the coastline, which is prone to etching and staining from salt spray requiring greater time, cost and maintenance. After coating with **NanoQuinn Ceramic** Nanocoating the surface friction is reduced and the surface is hydrophobic, with most contaminants simply picked up by water (rain or manual spraying) and roll off the surface. Stubborn contaminants can be removed with a mild cleaner in most cases.

NanoQuinn Ceramic Nanocoating has particular benefits for the Building, Construction and Facilities Management sectors. Whether used during or post construction, **NanoQuinn Ceramic** Nanocoating can be used to ensure a cleaner all year round appearance and minimise ongoing maintenance costs associated with cleaning both internally and externally.

NanoQuinn Ceramic Nanocoating is ISO 11507 certified and all of our products are industrial grade, suitable for both residential and commercial use. -

2 Features and Benefits

- Strong hydrophobicity (water pearls off)
- Strong non-stick properties (prevents the usual build up off contaminants)
- Excellent easy-clean effect (self-cleaning on external surfaces)
- Cuts cleaning time and keeps ceramics cleaner between cleans (reduced cleaning cycles)
- Superior protection against staining and etching from dirt, salt & chlorine
- Invisible to the human eye (coating thickness: 50 - 60 nm)
- Long lasting and abrasion resistant
- UV-stable, and chemical resistant
- Simple application (do-it-yourself)
- Suitable for new & existing ceramics
- Biologically safe and ecologically beneficial (minimizes the need for harsh chemical cleaners)

3 Application

NanoQuinn Ceramic Nanocoating is incredibly durable, abrasion resistant, 100% UV stable, and chemical resistant, so is just as effective on internal and external surfaces. It can take everything the challenging climate can throw at it, and protects external ceramic tiles as well as internal ceramics.

The coating is ideal protection for ceramics regardless of size.

Examples of use include:

- Ceramic surfaces including washrooms, building lobby
- Public spaces involving ceramic surfaces
- Porcelain
- High rise building ceramics
- Industrial areas

4 Directions for Use

Ensure surface has been prepared properly and is clean and dry. We recommend using a Pre-Cleaner (Ipa) to properly prepare the surface prior to applying the **NanoQuinn Ceramic** Nanocoating. If applying outdoors, make certain the temperature is between 5°C and 35°C with 90% relative humidity or less. Do not apply in wet conditions or where there is a likelihood of rain. Avoid windy conditions, if possible, when applying outside.

Shake the container before use and re-shake every 15-20 minutes to ensure the nano particles are fully suspended. Apply the coating via spray to the ceramic surface. Then, using a lint free clean cloth, wipe into the surface using circular motions or a figure eight pattern to ensure total coverage of the surface. Let dry for 2-5 minutes (depending on temperature) then buff any slight hazing out using a clean lint free micro fibre cloth. If there is any residues remaining it indicates more coating than necessary was applied and this can be removed by a being wiped down or polished (using the pre-cleaner) to remove residue.

The surface should be allowed to dry for up to one hour (longer if in high humidity).

Specific application instructions:

- The wearing of gloves is recommended.
- Prepare surface with a Pre Cleaner (Ipa).
- Shake bottle before applying to a clean & dry surface.
- Avoid application in direct sunlight or to hot surfaces.
- Working in small areas from top to bottom spray the surface and using the application cloth provided rub in thoroughly in circular motions. Repeat until the entire area has been treated.
- Avoid applying too much coating. The recommended usage rate is 10ml/m^2
- Apply a single coat only.
- Allow to dry/cure for 30-60mins.
- Ensure surface stays dry and untouched during this hour.
- After drying, lightly buff the surface with a clean microfibre cloth to remove any residues.
- Protective coating will reach its optimal performance after 24hrs. Keep dry (if possible) during this period.

Cautions

- Do not use if air or surface temperature is below 45°F/7.22°C or above 95°F/35°C.

- Do not apply to external surfaces in rain or when rain is expected within 12-24 hours.
- DO NOT THIN. Shake contents thoroughly prior to use.
- For best results, apply in the shade and out of direct sunlight.
- Do not use with other waterproofing products.
- Apply in a dust-free environment to avoid surface contamination.

Working Conditions:

- The wearing of protective gloves/protective clothing/eye protection/face protection is recommended when using this product. Final choice of personal protective equipment will depend upon individual circumstances and/or according to risk assessments undertaken.
- Consult SDS for proper handling, clean-up, disposal, and use of personal protective equipment.
- Please ensure the area being treated is well ventilated.
- Avoid breathing in spray.
- Store in a sealed container and keep away from children.
- Clean equipment immediately after using.
- Protection of adjacent porous areas from overspray and runoff is recommended but not necessary for non-porous surfaces.
- Ensure any overspray be wiped off adjacent with a dry cloth as soon as possible to avoid crystallisation.

5 Surface Preparation

The most important step in the application process is preparing the surface. To ensure the coatings maximum performance the surface must be completely clean, dry and free of all grease, dirt, oils, scale residue and other contaminants prior to application.

We recommend the use of of Bio Intensive Organic Cleaner or a Pre Cleaner (Ipa) to remove grease, dirt and other staining. However, if the surface is particularly stained, a stronger cleaner such as the bio-intensive organic cleaner may be required.

A Pre Cleaner (Ipa) should be used as a final step to rid the surface of any residues and will also evaporate any moisture from the surface to ensure it is completely dry prior to application. Do not use abrasive cloths to clean ceramic surfaces as this may result in damage or scaring to the surface.

To ensure maximum performance, it is important that the surface is completely clean, dry and free from dust and grease prior to application.

6 Coverage

1 litre covers an area of approx. 800 - 900 sq. ft.

Due to the strong bond with the surface, **NanoQuinn Ceramic** Nanocoating have a life span of up to 5 years in ideal conditions and when applied to unweathered windows. If used on older ceramic and/or in an environment that produces a lot of friction against the ceramic i.e. a windy desert or seaside location, its life span will be shortened to 3-4 years. However, to maintain maximum performance we recommend monitoring the surface performance and a reapplication as necessary. To re-apply, simply follow the steps as set out previously in this document.

When used on ceramics, the coatings life span is affected by use and cleaning, however a minimum life expectancy of two years is expected before a requirement for re-coating.

Surfactants in cleaning agents and strong consistent mechanical abrasion will affect the coatings life. If the performance of the coating starts to deteriorate, another application coating should be applied.

7 Cure Time

NanoQuinn Ceramic Nanocoating requires 30 – 60 minutes to cure during which time the surface should remain completely dry and untouched. In more humid conditions, curing time will be longer. After curing, the coated surface should be polished or wiped down with a soft cloth and if necessary use a Pre Cleaner (Ipa) to remove any remaining silanes or residue. The surface will be at its most effective after 24 hours and should be kept dry in this time if possible.

8 Physical Properties

Look:	Transparent liquid
Base:	SiO_2 •
Solvent:	Ethanol
Rel. Density:	at 20°C: 0.822 kg/l •
Flashpoint:	11°C •
Active Agent:	0.5 Gew. %
Thinning:	Ready to use
Handling:	Refer to SDS
Application:	5-15 ml/sqm (dependent on surface/application)

9 Shelf Life and Storage

- Store in its sealed container and keep away from children.
- Unopened original containers can be stored for up to 12 months.
- Used/opened containers can be stored for approximately 6 months.
- Recommended storage and transport temperature: +5 to +25°C.
- Store out of direct sunlight and in a dry environment.

10 Safety Instructions

The instructions on the **NanoQuinn Ceramic** Nanocoating Safety Data Sheet must always be followed.

- The wearing of gloves is recommended.
- Please ensure the area being treated is well ventilated.
- Avoid breathing fume/gas/mist/ vapours/spray.
- Store in a sealed container and keep away from children.
- In the event of eye contact, wash out immediately with cold water. Seek medical advice if necessary.
- Do not swallow.
- Avoid applying in windy conditions.
- Wash hands after application
- Highly flammable, do not store in hot conditions or apply to hot surfaces.
- Keep ignition sources away – Do not smoke
- Keep out of reach of children.

** This product contains ethanol and so appropriate care should be taken when transporting. Please refer to product SDS for further details on handling and transporting.

11 Surface Maintenance / Cleaning

With **NanoQuinn Ceramic** Nanocoating applied, there is no need to use expensive and environmentally unfriendly cleaners and detergents. To maintain the hydrophobic effect, simply wash with fresh water and wipe down using a soft cloth. It is recommended that you occasionally use a Pre Cleaner (Ipa) or a bio-cleaner to wipe down the treated surfaces to keep surfaces looking their best.

In high use areas like showers and bathrooms, we recommend a rinse and wipe down after each use. For best results, use a squeegee to remove water drops from the ceramics after cleaning and to remove soap scum and calcium build up.

The need to use harsh cleaners or toxic chemicals is no longer necessary to maintain the pristine appearance of your treated surface. When cleaning your treated surface, you must not use aggressive (especially highly alkaline chemicals such as bleach) or abrasive cleaners.

For areas with exceptionally hard water, high silica levels or bore water, more regular cleaning with a microfiber cloth and an acidic cleaner / bio-cleaner will be necessary. In these areas, the nano coating may need more frequent maintenance and top up re-applications.

Do not use paper towels or abrasive cloths that are likely to scratch the surface.

12 Disclaimer

The information provided in this Technical Data Sheet (TDS) including the recommendations for use and application of the product are based on our knowledge and experience of the product as at the date of this TDS. Users should satisfy themselves that it is suitable for their needs. The product can have a variety of different applications as well as differing application and working conditions in your environment that are beyond our control. As we cannot control or anticipate the conditions under which this product may be used, each user should review the information in the specific context of the planned use. To the maximum extent permitted by law, **Quinn Innovations** will not be responsible for damages of any nature resulting from the use or reliance upon the information contained in this data sheet. No express or implied warranties are given other than those implied mandatory by law.