NanoSkin™

(Hydrophobic Treatment for Glass and Glazed Ceramics)

DESCRIPTION

NanoSkin™ is a 3-step easy-to-clean hydrophobic coating system for glass and glazed ceramic surfaces based on a patented technology of BFP Advanced Technologies. NanoSkin 1 and NanoSkin 2 prepare the glass surface prior to application of the coating (NanoSkin 3). NanoSkin™ restores old glass surfaces and creates a hydro- and oleophobic barrier, which covalently bonds to the substrate. This barrier enables glass and glass-like surfaces to have less contact with dirt particles. Therefore, contaminants such as environmental pollutants, lime, oil, grease, etc. adhere less to the substrates and can be easily removed from the coating without applying harsh and often toxic cleaners and abrasive means (easy-to-clean). Etching and corrosion of glass substrates are also significantly reduced. The coating is completely invisible and does not alter the original appearance of the surface while maintaining its breathability.

NanoSkin 1 is the 1st step of NanoSkin™ hydrophobic glass treatment system. It is an aqueous emulsion of rare earth and metal oxide powders, which restores the surface to a like-new condition by removing all dirt, grease, oil, salty deposits and chemical contaminants as well as previous coatings. NanoSkin 2 is the 2nd step of NanoSkin™ hydrophobic glass treatment system. It is a solvent mixture, which chemically activates the glass surface by removing well-adhered organic contaminants as well as the residues of the 1st step. In this way numerous bonding sites are exposed and therefore, adherence of the coating is maximized, thus offering the endurance and life-cycle expressed by the warranty. NanoSkin 3 is the 3rd step of NanoSkin™ hydrophobic glass treatment system. It is a solution consisting of hybrid silica oligomers. Upon drying on glass substrates, it forms the hydrophobic protective coating.

NanoSkin™ is also available as a 2-step coating system (NanoSkin™ ULTRA). In this case, NanoSkin 1 combines the advantages of the first two steps into a one-component cleaning and activation step. It is recommended for common applications when surface restoration is not necessary. NanoSkin 2 is the protective coating.

FEATURES

- Restoration and deep polishing of old surfaces suffering from lengthy accumulation of hard water deposits, lime and staining
- Highly water repellent (hydrophobic) coating, which is resistant to leaching of calcium and sodium (hard water etching)
- Easy to apply system
- Strong anti-stick properties. Excellent performance on contamination and limescale
- Breathable coating-Excellent vapor transmission
- Invisible to the naked eye (about 100 nm)
- High temperature resistant coating (up to 470 ^{O}C)
- Protects the environment, due to the reduced use of cleaners and water

KEY BENEFITS

- High endurance (outlasts other water repellent coatings by 20 to 1)
- Abrasion, temperature, UV and chemical resistant coating (up to a pH value of 13)
- Easy to clean-up with a microfiber cloth and water or a mild detergent
- Does not seal the substrate
- The time between cleanings is extended and maintenance costs are significantly reduced

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RECOMMENDED USES

- Glass shower cabinets
- Windows-mirrors
- Glass facades and construction glass (e.g. shops, buildings, skyscrapers, conservatories)
- Glass roofs, lodges, balustrades, glass railings
- Glazed ceramic tiles (e.g. in bathrooms and kitchens)
- Ceramic cooktops
- Porcelain sanitary ware
- Swimming pool glass fencing

DURABILITY AND COVERAGE

- The coating adheres to the substrate through a powerful covalent bond. Most of other water repellent coatings simply "wet" the surface and are bound to the substrate through weak hydrogen bonds. This is the reason for the 20-fold endurance and life cycle of NanoSkin™. The coating can only be removed by abrasion.
- Typical coverage to be expected under most normal environmental conditions is 100 m^2 (1076 ft^2) per liter of coating.

PHYSICAL PROPERTIES

	NanoSkin 1	NanoSkin 2	NanoSkin 3
Appearance and colour	Aqueous white dispersion	Clear colorless solvent mixture	Clear colorless solution
State	Liquid	Liquid	Liquid
Odor Characteristic	Odourless	Strong alcoholic	Strong alcoholic
pH	~ 10.8	N/A	2.6
Specific Gravity (Water=1)	1.24 kg/lt (10.18 lb/gal)	0.79 kg/lt (6.59 lb/gal)	0.80 kg/lt (6.68 lb/gal)
Melting Point	No data available	No data available	-20 ^{O}C
Boiling Point	No data available	No data available	78 ^{O}C
Solubility in Water	Soluble	Partially soluble	Slightly soluble
Flash Point	Not applicable	14.5 ^{O}C	< 21 ^{O}C
Storage/Transport temperature	-5 to 40 ^{O}C	-5 to 40 ^{O}C	-5 to 40 ^{O}C
Safety Information	For additional information, see SDS		

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APPLICATION METHOD

NanoSkin™ can be applied by hand (do-it-yourself application) on existing glass or by mechanized methods in factory prior to glass installation (by polish-coat or inline spray-coat systems) or by professional applicators on new glass. For exterior uses, the application should be preferably made in the shade or in the afternoon. If applying NanoSkin™ to tinted windows ensure the coating is not applied to the tinted film (tinted film is often applied to the inside). Application takes place in 3 steps:

STEP 1:

1. Shake well before use.
2. Apply the liquid onto a damp and soft sponge or a buffing polishing wheel pad. Rub the surface with circular motions by applying firm pressure.
3. Rinse with water and wipe off with a damp and well-wrung cloth or a window washing wiper (squeegee) until the surface is completely clean and dry.

STEP 2:

Spray directly on the surface and, immediately after each spray, apply with a DRY microfiber-cloth.

STEP 3:

1. Spray directly onto the surface and immediately apply through circular motions with a DRY polishing felt pad or with a DRY microfiber-cloth.
2. Allow the surface to dry for at least 10 minutes (not more than 45 minutes).
3. Wipe the surface with a damp and well-wrung cloth or lint free towel.

In the case of NanoSkin™ ULTRA **only steps 2 and 3 are necessary. The surface though has to be perfectly clean prior to application.**

CURING

The coating dries within a few minutes and becomes storage and water stable. Hardening (curing) completes after 24 hours under standard conditions of 25 ^{O}C (77 ^{O}F) and 60% humidity, however longer curing times can be expected if the temperature and humidity are lower. During this period avoid the use of cleaners. After complete curing the coating is chemical and abrasion stable.

Note: "Easy-to-Clean" does not mean the surface is self-cleaning. While cleaning is made easier and less frequent, the need to clean is not eliminated.

PRODUCT SAFETY AND HANDLING

Before using this product, please read the Material Safety Data Sheet and the precautionary information and directions for use on product packaging. Please follow carefully all applicable precautions and directions for use.

PACKAGING

Available in paper packaging and 20 liter (5.28 gal) canisters.

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STORAGE

FLAMMABLE. Store in accordance with dangerous goods requirements and local regulations. Store out of direct sunlight in a cool, dry place (temperatures between 10-25 ^{O}C/50-77 ^{O}F). Ensure area is well ventilated. Please ensure caps or pumps of containers are tightly secured after use to maintain optimum properties of your product for its next use. The storage life of NanoSkin™ is at least 12 months in originally sealed containers.

TRANSPORT HAZARD CLASS

UN No: 1993
Packaging group: II
HDPE Packaging
Flash point: Less than 21 ^{O}C
Precautions: Highly flammable

MAINTENANCE

When cleaning your treated glass be careful not to use any harsh cleaners or abrasive means as you may damage the coating and void the warranty. Use only a damp microfiber cloth and water or mild detergent solution. For areas with hard water, a solution of vinegar and water (at a volume ratio of 1 to 3) can be regularly used to avoid the buildup of lime and salty deposits.

WARRANTY

BFP Advanced Technologies warrants that when its product is applied in accordance with the current specification and application instructions it will perform as so stated in the product literature. BFP Advanced Technologies also warrants that new glass treated with NanoSkin™ will remain water repellent for a period of 10 years from the date of application provided that no abrasion occurs and no chemicals are used. NanoSkin™ must be applied and maintained as per instructions to validate and maintain the warranty. If, within the warranty period, it is determined that an area that has been treated has not remained water resistant, BFP Advanced Technologies, upon notification from the original applicator, will provide replacement of NanoSkin™ product in an amount determined to be adequate to re-coat the area that the original applicator deems to be unprotected. Liability of BFP Advanced Technologies shall be limited only to such replacement of materials proved defective and will in no way extend to indirect, incidental or consequential damages incurred in relationship to this product. Furthermore, BFP Advanced Technologies reserves the right to inspect the glass in order to determine that the product has been applied and maintained in a manner consistent with the manufacturer's instructions. The company shall be the only judge as to whether manufacturer application instructions have been accurately followed.

The stated values and properties are the result of extensive development work and practical experience. Information, technical advice and our recommendations for application - whether given verbally, in writing or by way of trials – are given in good faith but without warranty and this also applies, where proprietary rights of third parties are involved. These advice and recommendations are intended to provide assistance in the selection of our products and do not establish a contractual relationship. In particular, they do not release those purchasing and applying our products from the duty of establishing for themselves, with due care, the suitability of our products for the intended application. The application, use and processing of our products are beyond our control and, therefore, entirely your own responsibility. We retain the right to make modifications to improve the products or their application. This edition supersedes all earlier editions.

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