

Self Assembling Hydrophobic Nano-Impregnation for Textiles

DESCRIPTION

Nanoprotex® is a water based, ultra thin, transparent penetrating Nanotechnology repellent for textile and fabric. The product uses molecular bonding with a mineral substrate to form a hydrophobic surface, yet still permeable to water vapour allowing the substrate to 'breathe' naturally.

Chemical engineered nanoparticles self assemble into a monolayer (one particle thick) and form a water repellent nanoscale surface structure.

Nanoprotex® molecules are very small and high penetrating; the relatively low water evaporation rate allows it to enter even the smallest pores.

The use of conventional repellent chemicals like Silicone and Teflon and Fluorocarbons are not necessary.

Nanoprotex® contains no VOC (volatile organic compounds).

Nanoprotex® protects and preserves the substrate without altering the natural texture or colour.

Water runs off easily from the treated surface and dirt particles are washed off by rain or when rinsed with water (easy to clean effect – self-cleaning effect).

Nanoprotex® does not contain a binder, however does show high washout capabilities.

RECOMMEND FOR

Nanoprotex® is suitable for cotton, cotton blends, silk, jute, linen, felt, wool blends etc.

FEATURES & BENEFITS

- Economical
- One component, easy to apply
- Environmentally friendly
- Deeply penetrating
- Permeable to vapour
- Water based
- Solvent free
- VOC free
- Water repellent
- UV-Stable

SPECIFICATIONS

Supply Form	Liquid
Colour	Clear
Density	Approx. 1.0
Solvents	Water
Flashpoint	N/A
Storage Temperature	Not below 4°C / 39°F
Application Temperature	4°C-30°C / 39°F-86°F

SUBSTRATE PREPARATION

Proper surface preparation insures maximum adhesion to the substrate molecules.

Surfaces should be dry and free from dirt, grit, dust, grease etc.

A cleaning step before treatment significantly enhances the adhesion of the nanoscale layer.

It is recommended to carry out preliminary trials to check the compatibility and influence of softeners and other finishing agents. The effect can be checked by a simple spray test.

MIXING & PRIMING

Not required.

METHOD OF APPLICATION

Do not dilute – apply directly from the container.

Nanoprotex® is a colloidal solution. The nanoparticles do not react to gravity & therefore filter systems should are not necessary.

A variety of application techniques can be used, eg. lick roller, padding, spraying, immersion etc.

The treatment can be atomized onto the surface and still show very good repellency. Jet application is also possible.

Apply evenly over the entire surface.

On very absorptive substrates it may be necessary to apply a second coat. Always apply subsequent coats wet on wet.

A bead formation usually forms on the surface between coats.

The substrate should be saturated with the treatment to ensure every fibre is covered.

Nanoprotex® is invisible once dry – take adequate precautions to ensure the entire surface is covered, particularly if application is interrupted.

NOTE: Fabric dyes can vary greatly in type and composition, and manufacture. A general recommendation cannot be given for the use of Nanoprotex® on all substrates. Commercial users

have made successful applications, however many dyes contain release agents, un-reacted monomers, silicon, oils, gasses and other migrating constituents that contaminate adhesion that leads to premature failure. Colourants may also bleed to the surface causing staining.

TOOLS

Use a low-pressure sprayer or atomizing sprayer. Existing manufacturing machinery can be used. A clean production machine is essential for the effective use of Nanoprotex®.

CURING

Nanoprotex® is water resistant as soon as it dries up.

Nanoprotex® cures at room temperature during evaporation of water content. At 20°C (68°F) the self-assembling on dry surfaces is achieved within 12 hours. This will occur even if the dried fabric is rolled up and already storage.

This curing process can be accelerated with heat. The usual drying temperature is 80°C-100°C (178°F-230°F). Nanoprotex® is heat resistant up to 300° (570°).

ESTIMATING DATA

Coverage depends on absorbency and porosity of the substrate.

The required dosage will vary between substrates. A typical range would be 4-6% by weight of active material.

Trials are recommended to optimize this level.

CLEANING

Tools should be cleaned with water immediately after use.

SHELF LIFE

Nanoprotex® can be stored in tightly sealed original containers for 12 months, if kept dry and at moderate temperatures.

It is important to reseal containers after use.

PACKAGING

Nanoprotex® is available in 1 litre, 4 litre jerry cans, 20 litre drums and 1000 litre pallet tanks.

CARE AND MAINTENANCE INSTRUCTIONS

Fabric may be hand or machine-washed using cold or warm water, washing powder or detergent, followed by a clean water rinse.

Cleaner residues must be removed with a clean water cycle.

PRECAUTIONS

READ ALL SAFETY DIRECTIONS AND WARNINGS ON PACKAGING BEFORE USE.

REFER TO MATERIAL SAFETY DATA SHEET FOR HANDLING PROCEDURES.

Nanoprotex® is not classified as dangerous goods, however adequate personal protection should be worn. This may include the wearing impervious gloves and goggles.

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