VETRO POWER

Technical Data Sheet (TDS)

VETRO POWER PAPER PROTECT

Water-Based SiO_2 Barrier Coating for Paper, Board and Moulded Fibre

Vetro Power Paper Protect is a water-based, inorganic silicon dioxide (SiO_2) thin-film coating that provides paper, board and moulded fibre products with a barrier against moisture, grease and microorganisms, without the use of polymeric coatings. The barrier layer is only 5-100 nm thin, remains invisible to the naked eye and does not alter the haptics or visual appearance of the paper-based material.

APPLICATION AREA:

Food packaging (e.g. bakery bags, window bags, takeaway trays), pharmaceutical and healthcare packaging, cosmetics and chemicals packaging, flexible paper packaging (pouches, wrapping papers, folding and wrapping materials), technical applications (paper composites, insulation papers, laminates, packaging for electronic components) and moisture barrier for corrugated shipping boxes.

MATERIALS:

Coated and uncoated paper, board and carton, and moulded fibre products.

PHYSICAL CHARACTERISTICS:

Property	Value
Form	Water-based, solvent-free
Coating system	Inorganic SiO_2 sol-gel
Layer thickness	Approx. 5-100 nm
Drying temperature	Below 120 °C
Production speed	Up to 300 m/min

PERFORMANCE DATA:

Property	Standard
Water- and grease-resistant	ISO 535 / TAPPI T 559
Antimicrobial / antiviral	ISO 22196 / ISO 18184
Food contact compliant	BfR Recommendation XXXVI
Recyclability	PTS-RH 021:2012
Compostability	EN 13432
Biocompatible	ISO 10993-10

FEATURES:

- Water-repellent (hydrophobic) and grease-repellent (oleophobic)
- Low water vapour transmission rate (WVTR)
- Plastic-free, PFAS-free and compliant with the EU Single-Use Plastics Directive (SUPD)
- Free from fluoropolymers, solvents and microplastics
- Recyclable within standard paper recycling streams and compostable
- Invisible; does not alter haptics, printability or appearance
- Remains functional under bending and folding stress
- Water-based system, no VOC emissions

APPLICATION METHOD:

Corrugated boxes, on paper rolls (recommended): For corrugated shipping boxes, the most effective method is application to the paper at the paper mill, on rolls, before the corrugated cardboard is manufactured. Flexographic printing techniques are recommended for a precise and uniform distribution.

Coating lines: Suitable for inline and offline processing with slot-die, blade and roller coating systems. In most cases, no modification of existing production lines is required.

Finished boxes: Spray application on already finished boxes is possible, but less effective because of the less uniform distribution of the product on the finished surface.

DRYING:

After drying below 120 °C, a chemically stable, elastic and strongly adherent thin film is formed, which reduces surface tension and imparts hydrophobic and oleophobic properties.

CONSUMPTION:

The consumption depends on the absorbency of the material and the customer requirements. Samples can be provided for testing on the customer's own material.

CONTAINERS:

1000 L IBC.

NOTE:

Biologically inert. For detailed information on safe handling, please refer to the Safety Data Sheet (SDS).

General advice: For all materials, we recommend testing the coating under real production conditions before full-scale use.

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