Technical data sheet
OC-BioBinder® Lotus 5451S

27 mars 2024

1. Name of product and the company

Name of product	OC-BioBinder® Lotus 5451S
Intended use of product	Hydrophobic biobased binder. Improves the mechanical properties of fiber-based materials. For industrial use.
Company	OrganoClick AB Linjalvägen 9 SE-187 66 Täby Sweden
Phone number	+46 (0)8 674 00 80
Email	support@organoclick.com
Internet	www.organoclick.com

2. Product description and uses

The product is intended to enhance the mechanical properties of fiber-based materials, including dry and wet strength. It also imparts hydrophobic properties and increases material stiffness.

3. Constituents

The product is an aqueous emulsion composed of biopolymers and natural plant compounds.

4. Physical and chemical properties

Form	Opaque water-based liquid
Colour	Beige-white
Odor	Faint
pH-value	4.5-5.5
Viscosity	2000-3000 mPas (at 200 rpm, LV4, 23 °C). The viscosity will decrease if stirred and/or heated.
Charge	Cationic
Solid content	24-25 wt% (90 min, 150^{o}C)

5. Handling

Avoid breathing mist, vapors, or spray. Avoid contact with eyes. If spilled on the floor, be cautious as it may cause slipping; therefore, refrain from walking through it. Ensure adequate ventilation and observe normal precautions when handling chemicals. Refer to the Safety Data Sheet for further information.

6. Feasible fibres and material

OC-BioBinder® Lotus exhibits good retention with cellulosic fibers such as paper pulp, viscose, and cotton, and performs well with blends containing both cellulosic and synthetic fibers. For optimal hydrophobicity properties, the binder is best suited for porous or low-density substrates. Prior to large-scale production, new fiber-based materials intended for treatment with the product should undergo laboratory testing.

7. Usage instructions

The following usage instructions are standard when the OC-BioBinder® Lotus is applied on cellulosic nonwoven.

1. ***Dilute the binder with water to a solid concentration of 10-14 %.***
   It is recommended to use pre-heated water (40-50 °C) for dilution, as this will reduce the viscosity of the binder, making it easier to apply and distribute on the web. Stir the binder prior to use, and ensure that the dilution is utilized within one day.

2. ***Apply the diluted binder to the material by impregnation, spraying, coating, or foaming aiming at an add-on of 4-12 g /m2 of the dry matter.***
   To determine the optimal add-on for a specific material, conduct separate test runs with various add-ons within the specified range, then evaluate the material's performance. Standard foaming procedures and foaming chemicals of nonionic or zwitterionic character are used to achieve foam.

3. ***Dry and cure the treated material at 100 - 190 °C until completely dry.***
   Dry strength is attained at temperatures of 100 °C and above. Wet strength, on the other hand, is achieved during the curing process at 140 °C and continues to enhance up to 190 °C. It is important to note that prolonged exposure to temperatures exceeding 100 °C may cause the treated material to exhibit a yellow/brown discoloration.

4. ***Allow the hydrophobicity to develop with time.***
   The development of hydrophobicity typically requires 1-5 days post-treatment to fully manifest. The exact duration may vary depending on factors such as substrate material, add-on, curing conditions, relative humidity in the air, etc. To assess hydrophobicity, conduct a simple test by placing a water droplet on the material's surface. If the droplet is not absorbed but remains on the surface, it indicates that maximum hydrophobicity has been achieved.

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8. Cleaning of Equipment

Before using the product, it is important to thoroughly clean all equipment. Flushing with water and scrubbing are necessary to ensure optimal binder performance. Clogging of equipment may occur if OC-Biobinder® is mixed with other incompatible chemicals.

After using the product, all equipment must be properly cleaned by scrubbing them with water and dishwashing liquid. Equipment that cannot be scrubbed (e.g., pipes and spraying nozzles) should be thoroughly flushed with water.

If the binder produces foam during dilution, it indicates contamination, and the equipment has not been cleaned properly.

9. Storage

Store in a tightly closed original container in a well-ventilated area. The binder is best stored at room temperature or colder (above freezing). The cured binder may not be used in an acidic environment. If stored at a temperature higher than room temperature, the binder formulation might become dark yellow/brown. The darker color does not affect the performance of the binder, but the color cannot revert to its original state. Colder storage will result in less color change. The shelf life of the binder is approximately 6 months.

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