Technical data sheet
OC-BioBinder™ Oak 3303

6 oktober 2022

1. Name of product and the company

Name of product	OC-BioBinder™ Oak 3303
Intended use of product	Improve mechanical properties of fiber-based material. 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's intended use is to improve mechanical properties of fiber-based materials such as dry and wet strength. The product is hydrophilic. Additional features are increased material stiffness.

3. Constituents

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

4. Physical and chemical properties

Form	Opaque water based liquid
Colour	Yellow
Odor	Faint
pH-value	2.2 – 2.6
Viscosity	1000 – 2000 mPa (at 200 rpm, LV4, 23 °C). The viscosity will decrease if stirred and/or heated, see Figure 1.
Charge	Cationic
Solid content	13.0-14.5% (24h, 105^{o}C)

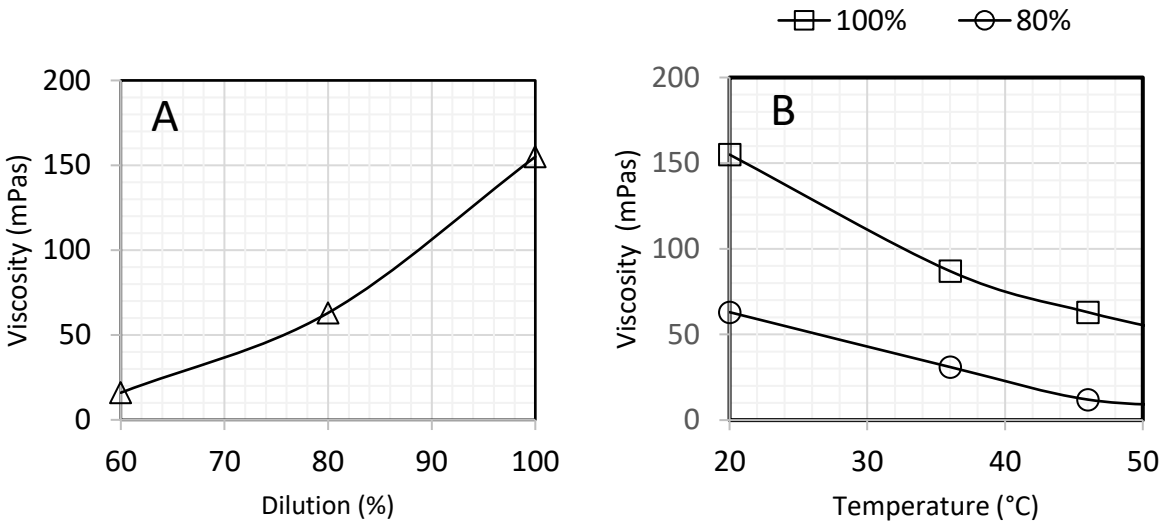

Figure 1. Viscosity for different A) dilutions and B) temperatures for OC-Biobinder™ Oak 3303 (Brookfield LV, 150 rpm, spindle LV4).

5. Handling

Avoid contact with eyes. Can be slippery if spilled on the floor, so avoid walking through spilled binder. Ensure adequate ventilation. Normal precautions taken when handling chemicals should be observed See the Safety Data Sheet for further information.

6. Feasible fibres and material

The OC-BioBinder™ Oak 3303 system can be used on any fiber-based materials. The system is optimized for cellulosic fibres, however, the system is compatible with all types of fibres.

OC-BioBinder™ Oak 3303 can be used on fibers, nonwoven material, paper and other fiber-based materials. OC-BioBinder™ Oak 3303 has a good retention to cellulosic fibers (e.g. cotton, paper pulp), but also works well with blends containing both cellulosic and synthetic fibers.

New fiber-based materials to be treated with the product should be tested in laboratory prior to large-scale production.

7. Usage instructions

OC-BioBinder™ Oak 3303 can be used with advantage as a wet-end additive in paper/nonwoven production. The usage levels in relation to increase in dry and wet strength can be found in Figure 2.

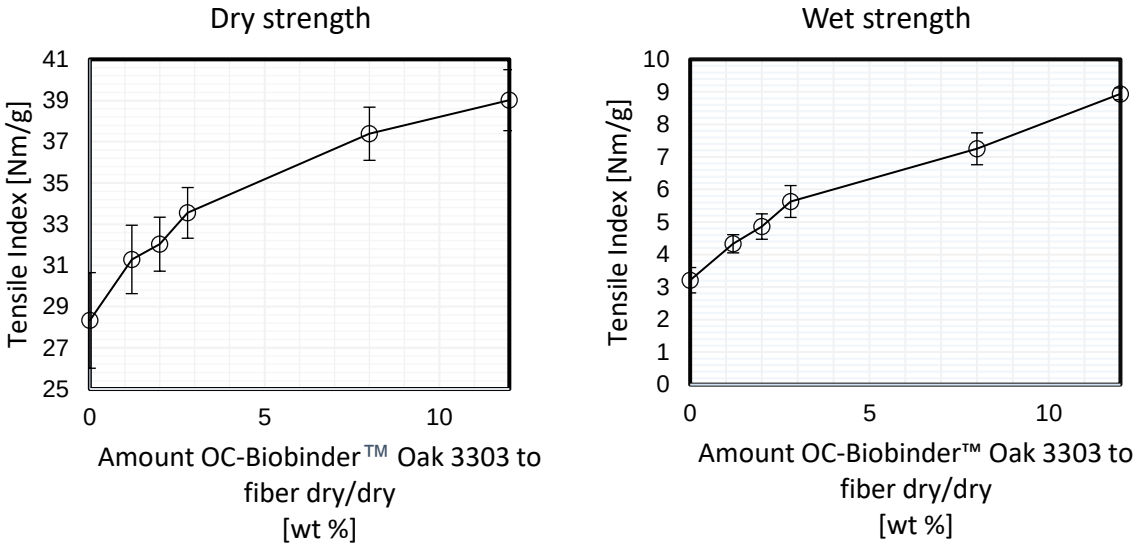

Figure 2. OC-Biobinder™ Oak 3303 added in wet end paper making (recycled fibers, 55 gsm). Amounts are shown as dry/dry addition.

From Figure 2 it can be seen that when 20 kg dry OC-Biobinder™ Oak 3303 is added to 1 ton dry pulp results in approx.. 50 % increase in wet tensile index. Since OC-Biobinder™ Oak 3303 has a solid content of 14 %, this is 143 kg concentrated binder per 1 ton dry pulp.

OC-BioBinder™ Oak 3303 can also be used in spray applications or with different coating methods. The following usage instructions standard of the OC-BioBinder™ Oak 3303 product is performed on cellulosic material.

1. ***Dilute the product with water to a solid concentration less than 7 %.***
   Initial solid concentration is 14.0 %
   Make it a habit to always stir before use. If dilution is needed, it is done with hot or cold water followed by stirring. If the dilution is not stirred enough there will be viscous binder at the bottom of the tank and the dilution concentration will not be homogenous, which will cause fluctuations in the performance and reduce sprayability. During dilution the binder will go from colorless/slightly yellow to white turbid. The dilution should be used within one day.

2. ***Apply the diluted product to the material by impregnation, spraying, coating or foaming aiming at an add-on of 4-12 g /m2 of the dry matter.***
   To find the optimal add-on for a specific material, apply different add-ons within the range above during separate test runs and then evaluate the material's performance. Foaming is gained with standard foaming procedures and foaming chemicals.

3. ***Dry the treated material at 100 - 180 °C until completely dry.***
   Dry strength is achieved at 100 °C and above.

Wet strength is achieved at 140 °C and above.
The treated material may turn yellow/brown if exposed to temperatures above 100 °C for too long time.

8. Cleaning of Equipment

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

After using the product all equipment shall be properly cleaned by scrubbing them with water and dishwashing liquid. Equipment that is not possible to scrub (e.g. pipes and spraying nozzles) shall be flushed thoroughly with water.

If the binder produces foam during dilution the binder has been contaminated and equipment has not been cleaned properly.

9. Storage

Store in tightly closed original container in a well-ventilated area. OC-BioBinder™ Oak 3303 is best stored at room temperature or (preferably) colder (above freezing, >1^{o}C). If stored at higher than room temperature, the binder formulation might become brown. The brown color does not affect the performance of the binder but the color cannot go back to its original state. Colder storage will result in less color change. Make it a habit to always stir the formulation prior to use. The shelf life of the binder is approximately 6 months.