PURABYK-R 5501

Rheology additive based on synthetic phyllosilicate for aqueous systems to provide thixotropic stabilization and to form shear-thinning hydrogels from aqueous solutions of hypochlorous acid (HClO).

Product data

Composition

Synthetic (modified) phyllosilicate
(INCI: Sodium Magnesium Fluorosilicate (nano))

Typical properties

The values indicated in this data sheet describe typical properties and do not constitute specification limits.

Bulk density:	1000 kg/m³
pH value (2 % in water):	9.7
Water content:	< 10 %
Total viable count:	< 750 cfu/g
Delivery form:	powder

Storage and transportation

Product shelf life in unopened original packaging: 48 months
Moisture sensitive. Store dry. To be stored and transported between 0 °C and 30 °C in the unopened original container.

Applications

Home care and I&I

Special features and benefits

Thanks to its inorganic structure, PURABYK-R 5501 offers good compatibility and excellent stability towards aqueous solutions of hypochlorous acid. Adding the additive leads to the formation of a gel structure. This enables a significantly longer contact time with the surface compared to water-thin solutions, which in turn improves the effectiveness of the disinfectant. Thanks to the resulting thixotropic flow behavior, the gel is easy to apply and can also be applied by spraying. PURABYK-R 5501 is very well suited for applications in the skin-friendly pH range of 5.5–6.5, in which the hypochlorous acid exhibits optimal antimicrobial activity as well as maximum stability.

Recommended use

Hydrogels (for disinfection)	■

■ especially recommended ▢ recommended

Recommended levels
2-5 % additive (as supplied) based on the total formulation, depending on the properties of the formulation to be achieved.

The above recommended levels can be used for orientation. The optimum dosage should be determined by application-related test series.

Incorporation and processing instructions
PURABYK-R 5501 must be pre-mixed with ultrapure water before the HClO solution is added. The additive is added to the ultrapure water gradually over a period of 10 to 20 seconds (at 20 °C ± 5 °C) while stirring quickly. It should be stirred fast enough that a turbulent vortex current is formed, so that the powder is well dispersed and clumps are avoided. After addition is complete, stirring is continued for 20 minutes. Avoid introducing air by stirring at the correct speed and by ensuring the stirrer is in the optimal position. When completely dispersed, a clear, colorless, and low-viscosity pre-mix is obtained. The hypochlorous acid solution and other components of the formulation can now be added while stirring. The pH adjustment should be done at the end.

The time required to form the gel structure depends on the salt content of the solution and the amount of additive added.

Special note
PURABYK-R 5501 is not compatible with cationic compounds. For pH adjustment, a buffer solution of sodium dihydrogen phosphate or ortho-phosphorous acid is suitable. As the additive is a weak base and can thus lead to an increase in pH, it may be necessary to adjust the initial pH to a value below the target pH value. The addition of ortho-phosphorous acid results in a rapid and very significant increase in viscosity. For easier dosing, a 10 % solution of the acid can alternatively be added.

There is also a gamma-irradiated version of PURABYK-R 5501 available.

Personal care

Special features and benefits
Thanks to its inorganic structure, PURABYK-R 5501 offers good compatibility and excellent stability towards aqueous solutions of hypochlorous acid. Adding the additive leads to the formation of a gel structure. This enables a significantly longer contact time with the skin and improved effectiveness compared to water-thin formulations. Thanks to the resulting thixotropic flow behavior, the gel is easy to apply and can also be applied by spraying. PURABYK-R 5501 is very well suited for applications in the skin-friendly pH range of 5.5–6.5, in which the hypochlorous acid exhibits optimal antimicrobial activity as well as maximum stability.

Recommended use

Hydrogels (with hypochlorous acid)	■

■ especially recommended ▢ recommended

Recommended levels
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BYK-Chemie GmbH
Abelstraße 45
46483 Wesel
Germany
Tel +49 281 670-0
info@byk.com
www.byk.com