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Sanyo Chemical Industries, Ltd.

Development of Durable Hydrophilic Agent "HYDROTHROUGH PS-887" for Nonwoven Fabrics

-Enabling Sustained Water Permeability Even After Repeated Water Permeation-

Sanyo Chemical Industries, Ltd. is pleased to announce the development of a durable hydrophilic agent for nonwoven fabrics, named "HYDROTHROUGH PS-887," which is designed to impart durable hydrophilicity to polyolefin nonwoven fabrics. Nonwoven fabrics treated with "HYDROTHROUGH PS-887" maintain high hydrophilicity even after repeated water permeation. When the treated nonwoven fabrics used in sanitary products such as disposable diapers and sanitary napkins, they enable for comfortable use without frequent replacement, improving usability and satisfaction. It is economical and helps reduce environmental impact by reducing the waste.

In addition, "HYDROTHROUGH PS-887" is of plant-based and does not use animal-derived raw materials, making it suitable for users who prefer alternatives to animal-based ingredients for religious reasons.

[Background of Development]

Nonwoven fabrics are widely used in various applications because they are lightweight, easy to process, and easy to impart various functions. Polyolefin nonwoven fabrics, in particular, are used in sanitary products such as disposable diapers and sanitary napkins because of their excellent air permeability, flexibility, quick drying, and comfort to the touch. These sanitary products consist of a liquid-permeable polyolefin nonwoven fabric (top sheet) and a water-impermeable back sheet, with an absorbent core containing pulp and superabsorbent polymer sandwiched between, and urine or menstrual blood is absorbed through the top sheet into the absorbent core. The rapid absorption of the fluid helps minimize the spread of fluid, thereby preventing discomfort. Polyolefin nonwoven fabrics are hydrophobic, which means they repel water and are difficult to permeate. Therefore, they are usually treated with a hydrophilic agent to improve water permeability.

Because frequent diaper change is time-consuming and labor-intensive, and it is often difficult to change sanitary products at the desired time, in many cases, such as at work, school, or when traveling, there has been a growing demand for extended-use sanitary products that require less frequent changes. However, conventional hydrophilic agents are limited by their inability to withstand repeated wetting, losing water permeability after just a few exposures to liquid. As a result, continued use exacerbates problems such as fluid residue and spread, requiring frequent changes.

[Overview of HYDROTHROUGH PS-887]

Utilizing our expertise in interface control technology, we have found the optimal balance between hydrophilic groups that increase water permeability and hydrophobic groups to improve the durability of polyolefin nonwoven fabrics. Consequently, we have developed a durable hydrophilic agent, "HYDROTHROUGH PS-887" capable of imparting durable hydrophilic properties to polyolefin nonwoven fabrics through a straightforward coating or dip-coating process.

"HYDROTHROUGH PS-887" exhibits excellent water permeability to fibers, allowing for uniform application even with minimal amounts while maintaining the flexibility of polyolefin nonwoven fabrics.

Compared to conventional hydrophilic agents, polyolefin nonwoven fabrics treated with "HYDROTHROUGH PS-887," maintains high hydrophilicity even after repeated water permeation. When applied to top sheets, this enhanced hydrophilicity contributes to an improved wearing feel, even with reduced replacement frequency. This not only eases the burden on people involved in childcare and caregiving, but also reduces the number of sanitary products used, thereby easing the economic burden and reducing waste.

Moreover, "HYDROTHROUGH PS-887" is free of animal-derived raw materials, making it suitable for users who that required to avoid skin-contact sanitary containing such materials for religious reasons.

[Future Plan]

Thanks to these properties, "HYDROTHROUGH PS-887" is anticipated to find applications not only in the hydrophilic treatment of nonwoven fabrics for sanitary products but also in agricultural tarpaulins, nonwoven pots for agriculture, and civil engineering nets. Its versatility extends beyond polyolefins to include other hydrophobic nonwoven fabrics, such as polyester fibers. The introduction of hydrophilicity enhances the absorbency of nonwoven fabrics, and the adhesion of water molecules to the surface contributes to improved antistatic properties.

With these new functions in mind, we plan to explore various applications in the future, contributing to people's comfortable living and reducing environmental impact.

About Sanyo Chemical

Sanyo Chemical established in 1949 in Kyoto, Japan, is a global manufacturer and seller of performance chemicals. Beginning as a manufacture of soap and texture agents we have since diversified our product portfolio to meet the needs of the market, Today, we feature over 3,000 different types of products and have established an international presence. Our portfolio of chemicals spans a variety of industries and types, from automotive components to daily-use electronics, as well as cosmetics and medical equipment, all with the aim of creating ore safe and environmentally friendlier offerings, improving lives and societies across the world. We aim to contribute to realize a sustainable society through our corporate activities.
https://www.sanyo-chemical.co.jp/eng

Contact
Public Relations Department
Corporate Planning Division
Tel : +81-75-541-4312
E-mail:pr-group@sanyo-chemical.group