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Daicel Corporation

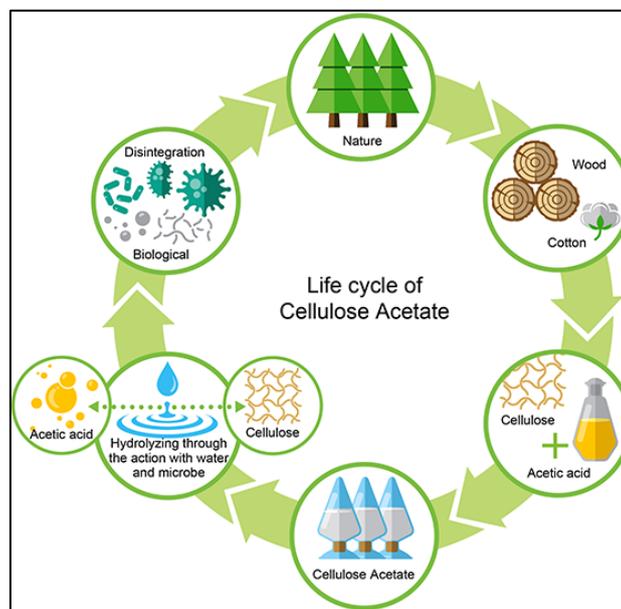
Cellulose Acetate – Naturally Derived and Environmentally Friendly Plastic Marine Biodegradability Dramatically Enhanced to Solve Marine Plastic Waste Problem

Daicel Corporation (Head office: Kita-ku, Osaka, President & CEO: Yoshimi Ogawa) has developed a more environmentally friendly form of Cellulose Acetate, a naturally derived plastic, with twice the marine biodegradability of existing products. Daicel offers the new product as an effective solution to the recent marine plastic waste problem.

■Cellulose Acetate – Natural Thus Environmentally Friendly

Cellulose Acetate is an environmentally friendly and biodegradable material, produced from plant-derived cellulose and naturally existing Acetic Acid. After-use, Cellulose Acetate biodegrades into water and carbon dioxide, not only under soil or compost but also in seawater. The speed of biodegradation ranges from several months to several years, depending on the environment. Daicel’s technology enables control of the biodegradation speed.

[Figure 1: Lifecycle of Cellulose Acetate]



■Cellulose Acetate’s Wide Range of Applications

Cellulose Acetate can be processed in various ways as a plastic material, and is currently utilized for materials in a wide range of products, such as packaging containers, fibers, films like for liquid crystal screen protection, and cosmetics.

[Figure 2: Examples of Cellulose Acetate Applications]



Pellets for Plastic Processing



Films for Liquid Crystal Screen Protection

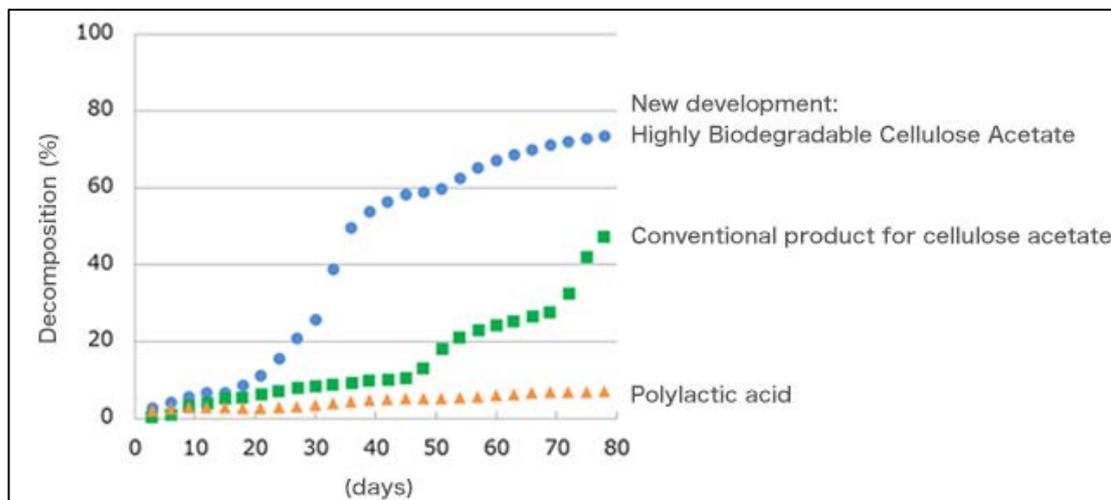


Cosmetics(Foundation Cream)

■New Product with Enhanced Biodegradability

Taking current increasing demands for environment-friendly products into consideration, Daicel has been developing new products making further use of Cellulose Acetate’s features. Daicel has recently discovered a molecular structure with superior biodegradation and has developed a new product with faster biodegradation especially in seawater, while maintaining the quality of conventional products. From our research, the new product is biodegraded at almost double the speed of conventional products.

[Table: Comparison of Biodegradation in Seawater between Cellulose Acetate and Polylactic Acid (Generally Utilized Biodegradable Plastic)]



*Created by the comparison of literature (1) and Daicel’s data by the biodegradation experiment conducted at an external organization(2)

(1) New Aspects of Cellulose Acetate Biodegradation, Dirk HÖLTER, Philippe LAPERSONNE, 2017_ST13

(2) The Chemicals Evaluation and Research Institute, Japan



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Daicel has long been producing Cellulose Acetate and has now started sales of the new product with higher biodegradability. The Company aims to produce thousands of tons in the future.

■Potential Solution for Marine Plastic Waste Problem

The marine plastic waste problem has recently arisen as a subject of discussion. General plastics require from several decades to centuries for complete biodegradation. However, utilizing Cellulose Acetate, which biodegrades within several months to years, as an alternative to conventional plastic offers a solution with great potential to the marine plastic waste problem. Daicel will continue to further develop applications for the new product.

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