

# **The Global Market for Nanocellulose (Cellulose Nanofibers, Cellulose Nanocrystals, Bacterial Nanocellulose) 2024-2034**

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## **Abstracts**

Despite being the most available natural polymer on earth, it is only over the past few years that cellulose has gained prominence as a nanostructured material, chiefly in the form of micro/nanofibrillar cellulose, nanocrystalline cellulose and bacterial nanocellulose. These materials are natural, abundant, renewable, bio-degradable, high in strength and low in weight, making them attractive for developing bio-based, more sustainable product solutions.

Nanocellulose can be produced from a variety of materials (vegetable matter, bamboo etc.) and after applying various pre-treatments, tailor-made nanofibrils with specific morphology and surface chemistry are produced. As well as being completely renewable, safer to handle, and cheaper to produce, nanocellulose materials also possess exceptional physical and chemical properties.

Cellulose nanofibers (CNF) are bio-based but possess high mechanical strength (stronger than steel), high aspect ratios, high transparency, and high chemical resistance. They are also lightweight. As a result, they are very attractive for application in composites and thermoplastics, although they have yet to greatly impact this market. Renewable bio-based polymers and composites derived from natural resources are of great commercial interest due to the environmental impact of fossil fuel-based plastic products. Many bio-based polymers have been developed, but they have shortcomings that render them unsuitable for many applications. The use of cellulose-based nanomaterials is therefore viewed as a means to improve the performance of bio-based polymers in markets such as packaging and automotive, without compromising their properties and sustainability.

The Global Market for Nanocellulose 2024-2034 provides an in-depth analysis of the global nanocellulose industry, encompassing cellulose nanofibers (CNF), cellulose nanocrystals (CNC), and bacterial nanocellulose (BNC). It offers a granular view of production methods and capacities, pricing, properties, applications, product developers, and demand forecasts across major end-use markets. Detailed regional demand forecasts through 2034 are provided for North America, Europe, Asia Pacific, Latin America, and Middle East & Africa.

The report analyzes CNF, CNC and BNC separately across key application markets such as composites, automotive components, construction materials, paper and packaging, textiles, biomedicine products, hygiene products, paints and coatings, aerogels, oil and gas fluids, filtration membranes, rheology modifiers for personal care and food, flexible and stretchable electronics, 3D printing materials, aerospace components and more.

For each application market, the report provides:

- Technology SWOT analysis

- Assessment of megatrends, drivers and commercialization challenges

- Insights on competing materials and performance benchmarks

- Main global OEMs and partnerships

- Granular 10-year volume and revenue forecasts

Over 160 company profiles analyze major producers and product developers. The competitive landscape examines commercial activities and strategic partnerships to evaluate maturity across manufacturing, intellectual property, marketing, end-product integration, and regional activity. Report contents include:

- Introduction and overview of nanocellulose types - cellulose nanofibers (CNF), cellulose nanocrystals (CNC), and bacterial nanocellulose (BNC)

- CNF production methods, capacities, pricing, properties, SWOT analysis

- CNF applications and demand forecasts in composites, automotive,

construction, packaging, textiles, biomedicine, hygiene, paints/coatings, aerogels, oil/gas, filtration, rheology modifiers

Regional CNF demand forecasts (North America, Europe, Asia Pacific, Latin America, Middle East & Africa)

Profiles of over 160 CNF, CNC and BNC manufacturers and product developers. Companies profile include Asahi Kasei Corporation, Bucha Bio, Inc., Cellucomp Ltd., Chuetsu Pulp & Paper Co., Ltd, Daio Paper Corporation, DKS Co. Ltd., FP Chemical Industry Co., Ltd., Fuji Pigment Co., Ltd, Hansol Paper., Ltd., Hokuetsu Corporation, Kao Corporation, Marusumi Paper Company Limited, Masuko Sangyo Co., Ltd., Modern Synthesis, Nippon Paper Group, Inc., Onkyo Corporation, Oji Holdings Corporation, Osaka Gas Chemicals Co., Ltd., Rengo Co., Ltd., Risho Kogyo Co. Ltd., Sappi Limited, Shinwa Kako KK, Smart Reactors, Tokushu Tokai Paper Co., Ltd., Toray Industries, Inc., and UPM Biomedicals (full list provided in the table of contents).

Analysis of CNC production, properties, pricing, SWOT analysis

CNC applications and global demand forecasts by market

Profiles of key CNC producers

Overview of bacterial nanocellulose (BNC) - production, pricing, SWOT analysis

BNC applications and product developers

10-year volume and revenue forecasts for CNF, CNC and BNC applications, globally and regionally

Benchmarking of nanocellulose technology and products against alternatives

Evaluation of intellectual property and manufacturing readiness of nanocellulose technologies

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