

Green Chemicals – A Global Market Overview

https://marketpublishers.com/r/GCD457CCD136EN.html

Date: November 2024

Pages: 396

Price: US\$ 4,500.00 (Single User License)

ID: GCD457CCD136EN

Abstracts

Green Chemicals Market Trends and Outlook

Green Chemicals are environment-friendly and sustainable products made using ecologically beneficial processes because of which their impact on human health and the ecosystem is negligible over their lifecycle. The design of Green Chemicals aims at reducing or eliminating hazardous substance usage, resource conservation and providing better performance & functionality, even while being nonthreatening to the environment during their entire lifecycle.

Green Chemicals are mainly obtained from renewable raw materials, such as agricultural crops, biomass or waste streams by employing enhanced processes of natural synthesis. These biodegradable materials are subjected to meticulous testing before being used. Major benefits of Green Chemicals comprise sustainable alternatives to harmful substances in industrial processes, improved safety of workers, useful as building blocks for bioplastics & biofuels and remediation of contaminated air, soil and water. The worldwide demand for Green Chemicals is projected to reach US\$229.9 billion by 2030 from an estimated US\$122.9 billion in 2024 at a CAGR of 11% over the 2024-2030 analysis period.

global-green-chemicals-market

The greater demand for Green Chemicals as feasible substitutes to traditional chemicals encompasses several factors, the most crucial of which comprise government regulations aimed at environmental protection, paucity of non-renewable chemical resources, consumer demand for environmentally responsible processes & products, technological advancements through R&D efforts and efficient use of resources in producing these chemicals that reduce cost & waste generation.



Green Chemicals Regional Market Analysis

Geographically, Europe is the leading global market for Green Chemicals, followed by North America, and Asia-Pacific. Europe's status as the number one region can be attributed to increasing demand for sustainable products, presence of major players and wider utilization of these materials in the food & beverage, packaging and auto industries. Moreover, Europe has also invested heavily in R&D programs in an endeavor to cultivate and promote green initiatives, the results of which are now being repaid doubly. On the other hand, the demand for Green Chemicals in Asia-Pacific is anticipated to clock the fastest growth over the 2024-2030 analysis period. Leading factors for this include growing awareness about environmental sustainability, administrative legislations aimed at promoting eco-friendly alternatives, greater demand for bio-based and renewable feedstock and a burgeoning middle-class insisting upon getting environment-friendly products and solutions.

global-green-chemicals-market by region

Green Chemicals Type Market Analysis

The principal varieties of Green Chemicals most in use include Bio-Alcohols, Bio-Organic Acids, Bio-Ketones and Biopolymers, among others. Bio-Alcohols constitute the leading type of Green Chemical used across the world, a primary factor for which is the growing use of Bioethanol, a type of Bio-Alcohol, as a fuel substitute in automobiles because of its low cost and eco-friendliness. Sales of automobiles are growing by the minute, even while fossil fuels used to power them are depleting by the second. Consequently, the need for alternative fuels to run not only the engines of automobiles but also engines of the economy has become a major factor. Several industries depend on fossil fuels to power their operations and since these resources are dwindling at an alarming rate, replacements, such as bio-based alternatives have come to their rescue. Other types of Green Chemicals are also expected to make inroads into areas where the use of traditional chemicals can be damaging to the environment, in addition to offering cost-effective options.

Green Chemicals Source Market Analysis

Green Chemicals can be derived from sources that include Plants, Algae and Biowaste, among which Plant-Based Green Chemicals account for the largest share because of their sustainability and renewability. Such materials can be obtained from a number of plants and crops, which renders them highly beneficial in regard to eco-friendliness and



fulfilling the need of consumers for 'green' products. Algae-Based Green Chemicals follow in second place and are much in demand for Green Chemicals owing to their high growth rate, ease of cultivation and potential for carbon sequestration. Moreover, the fact that it is possible to cultivate algae in various environments, including wastewater treatment facilities, make them ideal alternatives for making sustainable chemicals.

global-green-chemicals-market by source

Green Chemicals Application Market Analysis

By application, the use of Green Chemicals encompasses Automotive, Construction, Food & Beverages, Industrial & Chemical, Packaging, Paints & Coatings and Pharmaceuticals, among others (incl. Agriculture, Personal Care Products & Textiles). Industrial & Chemical applications lead the demand for Green Chemicals globally, as they are extensively utilized as raw materials, solvents and catalysts in these areas. Also, production and use of hazardous chemicals have severely hampered the traditional chemical sector, owing to which Green Chemicals are coming to the fore. These chemicals help reduce companies' carbon footprints and allow conforming to stipulated government regulations. The Automotive industry also offers great potential for Green Chemicals demand, since the growing number of vehicles on road are heavily contributing to increasing pollution levels. In this context, green fuels, such as bioethanol can be blended with regular fuels in specific ratios to cut down vehicular emissions, thereby easing the problem of environmental contamination to some extent at least. As far as growth is concerned, the global Packaging sector is likely to be the fastest in terms of using Green Chemicals. This sector has always been plagued with issues regarding the use of non-renewable and unsustainable materials to make packages, especially for products used for human and animal consumption. Green Chemicals offer highly viable alternatives, ranging from biodegradable polymers to sustainable inks and coatings, which can drastically reduce waste and pollution linked to packaging.

Green Chemicals Market Report Scope

This global report on Green Chemicals analyzes the market based on type, source and application. In addition to providing profiles of major companies operating in this space, the latest corporate and industrial developments have been covered to offer a clear panorama of how and where the market is progressing.

Key Metrics



Historical Period: 2021-2023 Base Year: 2023 Forecast Period: 2024-2030 Units: Value market in US\$ Companies Mentioned: 80+ Green Chemicals Market by Type Bio-Alcohols (Include Bioethanol, Biobutanol & Biomethanol, among others) **Bio-Ketones** Bio-Organic Acids (Include Bio-Acetic Acid, Bio-Acrylic Acid, Bio-Adipic Acid, Bio-Citric Acid, Bio-Lactic Acid & Bio-Succinic Acid, among others) Biopolymers (Include Bio-Polyethylene & Polylactic Acid, among others) Green Chemicals Market by Source Algae-Based Sources **Biowaste-Based Sources** Plant-Based Sources Green Chemicals Market by Application Agriculture Automotive Construction

Green Chemicals - A Global Market Overview

Food & Beverages



Industrial & Chemical		

Packaging

Paints & Coatings

Personal Care

Pharmaceuticals

Textiles



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Biowaste-Based Sources

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Automotive

Construction

Food & Beverages

Industrial & Chemical

Packaging

Paints & Coatings

Personal Care

Pharmaceuticals

Textiles

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Abengoa Aura Biotechnologies

Aemetis, Inc.

AkzoNobel NV

Albemarle Corp

Ambient Photonics, Inc.

Amyris, Inc.

Andersen Corp

Archer Daniels Midland Co

Arkema S.A

Ashland, Inc.



Avantium NV

Balfour Beatty Plc

BASF SE

Bayer Material Science AG

BioAmber, Inc.

Bio-Kleen Products, Inc.

BiologiQ, Inc.

Biosciences

Bonded Logic, Inc.

Borouge

Borregaard

Braskem SA

Butamax Advanced Biofuels LLC

Calera Corp

Cardia Bioplastics

Cargill, Inc.

Checkerspot

Clariant AG

Conagen, Inc.

Corbion NV

Covestro

Croda International PLC

Dongguan Xinhai Environmental-Friendly Material Co Ltd

Dryvity Systems, Inc.

Dude Chem

DuPont de Nemours, Inc.

Eastman Chemical Co

Ecochem

Ecolab

Ecovia Renewables, Inc.

Elevance Renewable Sciences, Inc.

Evonik Industries AG

Fulcrum BioEnergy, Inc.

Genomatica, Inc.

George Weston Foods Ltd.

Gevo, Inc.

GFBiochemicals Ltd.

Givaudan

Global Green Chemicals Public Company Limited (PTTGC Group)



Greenchemicals S.r.l.

Gujarat Alkalies & Chemicals Ltd

Huber Engineered Woods LLC

Huntsman Corp

Indorama Ventures

INEOS Group Holdings SA

Inkemia Green Chemicals

James Hardie Building Products, Inc.

Jasol Australia

JSW Cement Ltd.

Kemetyl AB

Kingspan Group

Koninklijke DSM NV

Kuraray

Lanxess AG

LanzaTech, Inc.

Lubrizol

Mahaphant Fibre Cement Public Co Ltd (SHERA)

Mitsubishi Chemical Holdings Corp

Myriant Corp

NatureWorks LLC

Novamont SpA

Novomer, Inc.

Novozymes A/S

PCC SE

Palmer Industries, Inc.

Plantic Technologies Ltd.

Plycem USA, Inc.

Rosboro

SABIC

SECOS Group Ltd.

Sila Nanotechnologies, Inc.

Silver Line Building Products LLC

Solvay SA

Solugen

Stepan Co

Thermafiber, Inc.

Tolko Industries Ltd.

Toray Industries, Inc.



Total Corbion PLA

Verdezyne, Inc.

Vertec BioSolvents Inc.

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Bio-Alcohols

Bio-Ketones

Bio-Organic Acids

Biopolymers

Global Green Chemicals Market Overview by Source

Green Chemicals Source Market Overview by Global Region

Algae-Based Sources

Biowaste-Based Sources

Plant-Based Sources

Global Green Chemicals Market Overview by Application

Green Chemicals Application Market Overview by Global Region

Agriculture

Automotive

Construction

Food & Beverages

Industrial & Chemical

Packaging

Paints & Coatings

Personal Care

Pharmaceuticals

Textiles

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North American Green Chemicals Market Overview by Source

North American Green Chemicals Market Overview by Application

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United States Green Chemicals Market Overview by Source
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Canada

Canadian Green Chemicals Market Overview by Type
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Mexico

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German Green Chemicals Market Overview by Type German Green Chemicals Market Overview by Source German Green Chemicals Market Overview by Application Italy

Italian Green Chemicals Market Overview by Type
Italian Green Chemicals Market Overview by Source
Italian Green Chemicals Market Overview by Application
Russia

Russian Green Chemicals Market Overview by Type Russian Green Chemicals Market Overview by Source Russian Green Chemicals Market Overview by Application Spain

Spanish Green Chemicals Market Overview by Type Spanish Green Chemicals Market Overview by Source Spanish Green Chemicals Market Overview by Application The United Kingdom



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United Kingdom Green Chemicals Market Overview by Source
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Indian Green Chemicals Market Overview by Type
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Indian Green Chemicals Market Overview by Application
Japan

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Brazilian Green Chemicals Market Overview by Type

Brazilian Green Chemicals Market Overview by Source

Brazilian Green Chemicals Market Overview by Application

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Rest of South American Green Chemicals Market Overview by Type

Rest of South American Green Chemicals Market Overview by Source

Rest of South American Green Chemicals Market Overview by Application

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