

Chiral Technology: Market Research Report

https://marketpublishers.com/r/C01E202D3CAEN.html Date: December 2018 Pages: 218 Price: US\$ 5,600.00 (Single User License) ID: C01E202D3CAEN

Abstracts

This report analyzes the worldwide markets for Chiral Technology in US\$ Thousand by the following Products, and End Use markets: Products - Intermediates, Analytical, and Others; End Use markets - Pharmaceuticals, and Agrochemicals. The report provides separate comprehensive analytics for the US, Japan, Europe, and Rest of World.

Annual estimates and forecasts are provided for the period 2015 through 2022. Also, a six-year historic analysis is provided for these markets.

Market data and analytics are derived from primary and secondary research. Company profiles are primarily based on public domain information including company URLs.

The report profiles 31 companies including many key and niche players such as -

Agilent Technologies, Inc.

Albemarle Corporation

BASF SE

Cambrex Corporation

Chiral Quest (Suzhou) Co., Ltd.

Daicel Corporation.



Contents

I. INTRODUCTION, METHODOLOGY & PRODUCT DEFINITIONS

Study Reliability and Reporting Limitation Disclaimers Data Interpretation & Reporting Level Quantitative Techniques & Analytics Product Definitions and Scope of Study Chiral Technology Enabling Products Chiral Intermediates Analytical Products Other Products Chiral Technology End-Use Markets Pharmaceuticals Agrochemicals

II. EXECUTIVE SUMMARY

1. INDUSTRY OVERVIEW

Chiral Technology: An Introductory Prelude Good Tidings for Chiral Technology Global Market Outlook Developed Markets: Traditional Revenue Contributors Developing Countries Turbo Charge Future Market Growth

Table 1. Global Chiral Technology Market - Geographic Regions Ranked by CAGR(Value) for 2015-2022: Rest of World, US, Japan, and Europe (includes correspondingGraph/Chart)

Chiral Intermediates Garner a Larger Pie

Table 2. World Chiral Technology Enabling Products Market by Segment (2017E):Percentage Breakdown by Value Sales for Chiral Intermediates, Chiral AnalyticalProducts, and Others (includes corresponding Graph/Chart)



Pharmaceuticals: The Largest End-Use Application Domain Stable Economic Scenario Lends Momentum for Market Growth

Table 3. World Real GDP Growth Rates in % (2016-2018P): Breakdown byCountry/Region (includes corresponding Graph/Chart)

Competitive Scenario American Enterprises Dominate the Market European Entities Vie to Extend their Share Asian Players Seek Global Audience M&A Activity Select M&A Deals Involving Chiral Technology Vendors Finalized in the Recent Past

2. MARKET TRENDS, DRIVERS & ISSUES

Chiral Technology Plays Pivotal Role in the Pharmaceutical Industry Demand for Chiral-based Therapeutic Drugs Augments Growth New Legislations Push Chiral Technology Demand Single Enantiomer Drugs Gain Prominence Increasing Reliance on Generic Approaches Organizations Extend Approaches Pharma Companies' Association with Universities Uptrend in Healthcare Expenditure Underpins Present & Future Growth

Table 4. Healthcare Spending as % of GDP by Geographic Region (2016) (includescorresponding Graph/Chart)

Table 5. Per Capita Healthcare Spending (in \$) in Select Developed Countries for theYear 2016 (includes corresponding Graph/Chart)

Chiral Separation Registers Impressive Growth Soaring Demand for Chiral Separation Columns Chiral Chromatography Continues to Gain Momentum SFC Holds Tremendous Potential Emerging Regions to Drive Demand for Chiral Chromatography Columns Advancements and Challenges Related to Chiral Separation Chiral Analysis Evoles into a Critical Step for Pharmaceutical Industry



Biocatalysis Witnesses Increasing Significance in Development through Production of Novel Compounds Increasing Significance of Biocatalysis Predominant Use of Polysaccharides Derivatives as CSPs Automation: Introduction of Instruments Supporting Chiral Processes, a Growing Trend Access to Extensive Range of Enzymes Drive Biocatalyst Use for API Synthesis Sustainable Chiral Chemistry Progress in Molecular Engineering Availability to Wide Range of Enzymes Focus on Synthetic Biology Chemo-Catalysis to Retain Significance Cascade Organocatalysis Issues & Challenges Key Concerns Hindering Growth of Chiral Technology Limitations of Chiral Separation Methods

3. TECHNOLOGICAL ADVANCEMENTS

Researchers Explore Methods to Achieve Large-Scale Synthesis of Single-Structure SWCNTs CHAIN Biotechnology Concludes Ambitious Research Project Researchers Add Chiral Organocatalyst to Activate C-C Single Bond

Researchers Focus on New Technique for Chiral Separation

Chiral Phosphines to Aid Synthesis of Asymmetric Reactions

Role of Molecular Propeller Effect in Chiral Separation/Analysis

Researchers Develop HPLC Technique for Direct Enantioseparation of ?-Blockers

4. CHIRAL TECHNOLOGY – AN OVERVIEW

An Insight into Chiral Technology Techniques Used for Achieving Single-Isomers Importance and Advancements Chiral Technology – A Historical Perspective Definitions Chiral Technology Enabling Products Chiral Intermediates Analytical Products Other Products Chiral Technology End-Use Markets



Pharmaceuticals Agrochemicals **Functioning of Chiral Molecules Chiral Preparation Process Traditional Methods** Processes Market Drivers Inhibitor **Biological Methods** Processes Market Drivers Inhibitor Asymmetric Methods Processes Market Drivers Inhibitor **Chiral Separation** Factors Influencing the Efficacy of Chiral Separation **Recent Approaches in Chiral Separation** Alternatives to Standard Methods Chromatography – The Widely Used Method for Separation How it Works? Chiral Mobile Phase Additive (CMPA) Chiral Stationary Phase (CSP) List of Select Generic Versions of Derivatized Amylose and Cellulose Phases Types of CSPs Macrocyclic Glycoprotein CSPs Cyclodextrin CSPs Cyclofructan CSPs Challenges and Novel Concepts in the Development of Chiral Stationary Phases **Novel Concepts** Bonded and Derivatized 6-carbon or 7-carbon Cyclofructan **Derivatized Spiral Chiral Polymer Development in Biomedical Analysis Chiral Recognition Protein Chiral Stationary Phases** Carbohydrate Columns **Pirkle Columns** Crystallization



Solvent Extraction Kinetic Resolution Capillary Electrophoresis Receptor Based Resolution Miscellaneous Separative Techniques Chiral Synthesis

5. CHIRAL TECHNOLOGY - DEVELOPMENT VIS-A-VIS ACQUISITION

In-House Creation & Development Acquisition of Technology "Economics" of Chiral Technology

6. CHIRAL ANALYSIS

Chiral Analysis: A Primer **Chiral Analysis Products** Chiral Analytical Chromatography Chiral Liquid Chromatography Supercritical Fluid Chromatography – Substitute to LC for Enantiomer Separations Chiral Gas Chromatography Chiral Simulated Moving Bed Chromatography Partition Chromatography Adsorption Chromatography **Computer Assisted Resolution** Chiral Polarimetry Other Chiral Analytical Techniques Calorimetry Differential Scanning Calorimetry (DSC) Enzymatic Assay Immunoassay **Isotope Dilution** Nuclear Magnetic Resonance (NMR) X-Ray Crystallography

7. APPLICATION MARKETS

Pharmaceuticals – The Largest Market Changing Face of the Pharmaceutical Industry: A Review



Analysis of Chiral Drugs

- Select Companies Involved in Chiral Technology Market
- Select Single-Enantiomer Drugs Worldwide
- Drugs Built on Chiral Technology
- Analgesics
- Anesthetics
- Anti-Infective Products
- Cardiovascular System (CVS) Products
- Angiotensin-Converting Enzyme (ACE) Inhibitors
- **Beta-Blockers**
- Calcium Channel Blockers
- Diuretics
- Vasodilators
- Central Nervous System (CNS) Agents
- Anticonvulsants
- Sedatives and Tranquilizers
- Stimulants and Antidepressants
- Oncogenic (Cancer-Treatment) Products
- **Biochemicals**
- Oligonucleotides
- Oxyacids
- Amino Acids
- Alanine Racemase Chiral Analogue: A Breakthrough Chiral Converting Agent
- Commercial Development
- Scope
- Sugars and Other Oligosaccharides
- Vitamins
- Peptides
- Agrochemicals A Thriving Market
- Herbicides
- Insecticides
- Fungicides
- Other Products
- Liquid Crystals
- Flavor and Aroma Chemicals

8. CHIRAL ISOMERISM

Organic Chemical Isomerism Types



Structural Isomerism Chain Isomerism Position Isomerism Functional Group Isomerism Stereoisomerism Dynamic Isomerism (Tautomerism) Patents

9. REGULATORY & ENVIRONMENTAL ISSUES – A REVIEW

10. PRODUCT INTRODUCTIONS/INNOVATIONS

Phenomenex Releases Zebron GC Columns Phenomenex Unveils Immobilized Lux Chiral LC-SFC Selector Solvias Rolls Out Chiral Brønsted Acid Catalysts Chiral Technologies Unveils Sub-2 µm Immobilized CSP Phenomenex Unveils Lux i-Cellulose-5 Chiral Columns Chiral Technologies Launches CHIRALPAK IG Phenomenex Introduces Amylose-1 Chiral Stationary Phase Regis Technologies Extends Chiral Column Product Line

11. RECENT INDUSTRY ACTIVITY

Cambrex to Expand Charles City Plant Sterling Pharma Collaborates with Newcastle University Phenomenex Inaugurates New Facility in Sacramento Sterling Pharma Commences Operations as Independent CDMO Sterling Pharma to Expand its Dudley Site Phenomenex Commences Direct Operations in Switzerland Chiral Technologies Appoints Biotecnology Latina as Exclusive Distributor Agilent Technologies Inaugurates New Technology Center in Folsom, California Cambrex to Acquire PharmaCore Danaher Acquires Phenomenex Chiral Technologies Inks Distributor Agreement with Scanco International Chiral Technologies and GreenCentre Canada Inks Agreement Chiral Technologies Partners with Strem Chemicals Jingbo Agrochemical Opens High Chiral Ratio Indoxacarb Technical Manufacturing Plant Johnson Matthey Divests Alfa Aesar to Thermo Fisher



Johnson Matthey Takes Over Pharmorphix Merck Snaps Up Sigma-Aldrich

12. FOCUS ON SELECT PLAYERS

Agilent Technologies, Inc. (USA) Albemarle Corporation (USA) BASF SE (Germany) Cambrex Corporation (USA) Chiral Quest (Suzhou) Co., Ltd. (China) Daicel Corporation (Japan) Chiral Technologies, Inc. (USA) Johnson Matthey Fine Chemicals (UK) Phenomenex, Inc. (USA) Regis Technologies, Inc. (USA) Shimadzu Corporation (Japan) Sigma Aldrich Corp. (USA) Solvias AG (Switzerland) Sterling Pharma Solutions Ltd. (UK) Thermo Fisher Scientific, Inc. (USA) YMC America, Inc. (USA)

13. GLOBAL MARKET PERSPECTIVE

Table 6. World Recent Past, Current & Future Analysis for Chiral Technology EnablingProducts by Geographic Region - US, Japan, Europe, and Rest of World MarketsIndependently Analyzed with Annual Sales Figures in US\$ Thousand for Years 2015through 2022 (includes corresponding Graph/Chart)

Table 7. World Historic Review for Chiral Technology Enabling Products by GeographicRegion - US, Japan, Europe, and Rest of World Markets Independently Analyzed withAnnual Sales Figures in US\$ Thousand for Years 2009 through 2014 (includescorresponding Graph/Chart)

Table 8. World 14-Year Perspective for Chiral Technology Enabling Products byGeographic Region - Percentage Breakdown of Value Sales for US, Japan, Europe,and Rest of World Markets for Years 2009, 2017 & 2022 (includes correspondingGraph/Chart)



Table 9. World Recent Past, Current & Future Analysis for Chiral Intermediates by Geographic Region - US, Japan, Europe, and Rest of World Markets Independently Analyzed with Annual Sales Figures in US\$ Thousand for Years 2015 through 2022 (includes corresponding Graph/Chart)

Table 10. World Historic Review for Chiral Intermediates by Geographic Region - US, Japan, Europe, and Rest of World Markets Independently Analyzed with Annual Sales Figures in US\$ Thousand for Years 2009 through 2014 (includes corresponding Graph/Chart)

Table 11. World 14-Year Perspective for Chiral Intermediates by Geographic Region -Percentage Breakdown of Value Sales for US, Japan, Europe, and Rest of WorldMarkets for Years 2009, 2017 & 2022 (includes corresponding Graph/Chart)

Table 12. World Recent Past, Current & Future Analysis for Chiral Analytical Productsby Geographic Region - US, Japan, Europe, and Rest of World Markets IndependentlyAnalyzed with Annual Sales Figures in US\$ Thousand for Years 2015 through 2022(includes corresponding Graph/Chart)

Table 13. World Historic Review for Chiral Analytical Products by Geographic Region - US, Japan, Europe, and Rest of World Markets Independently Analyzed with Annual Sales Figures in US\$ Thousand for Years 2009 through 2014 (includes corresponding Graph/Chart)

Table 14. World 14-Year Perspective for Chiral Analytical Products by GeographicRegion - Percentage Breakdown of Value Sales for US, Japan, Europe, and Rest ofWorld Markets for Years 2009, 2017 & 2022 (includes corresponding Graph/Chart)

Table 15. World Recent Past, Current & Future Analysis for Other Chiral TechnologyEnabling Products by Geographic Region - US, Japan, Europe, and Rest of WorldMarkets Independently Analyzed with Annual Sales Figures in US\$ Thousand for Years2015 through 2022 (includes corresponding Graph/Chart)

Table 16. World Historic Review for Other Chiral Technology Enabling Products byGeographic Region - US, Japan, Europe, and Rest of World Markets IndependentlyAnalyzed with Annual Sales Figures in US\$ Thousand for Years 2009 through 2014(includes corresponding Graph/Chart)

Table 17. World 14-Year Perspective for Other Chiral Technology Enabling Products by



Geographic Region - Percentage Breakdown of Value Sales for US, Japan, Europe, and Rest of World Markets for Years 2009, 2017 & 2022 (includes corresponding Graph/Chart)

Table 18. World Recent Past, Current & Future Analysis for Chiral Technology inPharmaceuticals by Geographic Region - US, Japan, Europe, and Rest of WorldMarkets Independently Analyzed with Annual Sales Figures in US\$ Thousand for Years2015 through 2022 (includes corresponding Graph/Chart)

Table 19. World Historic Review for Chiral Technology in Pharmaceuticals byGeographic Region - US, Japan, Europe, and Rest of World Markets IndependentlyAnalyzed with Annual Sales Figures in US\$ Thousand for Years 2009 through 2014(includes corresponding Graph/Chart)

Table 20. World 14-Year Perspective for Chiral Technology in Pharmaceuticals by Geographic Region - Percentage Breakdown of Value Sales for US, Japan, Europe, and Rest of World Markets for Years 2009, 2017 & 2022 (includes corresponding Graph/Chart)

Table 21. World Recent Past, Current & Future Analysis for Chiral Technology inAgrochemicals by Geographic Region - US, Japan, Europe, and Rest of World MarketsIndependently Analyzed with Annual Sales Figures in US\$ Thousand for Years 2015through 2022 (includes corresponding Graph/Chart)

Table 22. World Historic Review for Chiral Technology in Agrochemicals by Geographic Region - US, Japan, Europe, and Rest of World Markets Independently Analyzed with Annual Sales Figures in US\$ Thousand for Years 2009 through 2014 (includes corresponding Graph/Chart)

Table 23. World 14-Year Perspective for Chiral Technology in Agrochemicals by Geographic Region - Percentage Breakdown of Value Sales for US, Japan, Europe, and Rest of World Markets for Years 2009, 2017 & 2022 (includes corresponding Graph/Chart)

III. MARKET

1. THE UNITED STATES

A. Market Analysis



The Prime Market Chiral Technology Assumes Critical Importance in Pharmaceuticals Manufacturing Agrochemicals Continue to Extend Opportunities Pivotal Role of Agrochemicals in Modern Farming Bodes Well for Market Growth Product Launches Strategic Corporate Developments Select Key Players B. Market Analytics

Table 24. The US Recent Past, Current & Future Analysis for Chiral TechnologyEnabling Products by Segment - Intermediates, Analytical, and Other MarketsIndependently Analyzed with Annual Sales Figures in US\$ Thousand for Years 2015through 2022 (includes corresponding Graph/Chart)

Table 25. The US Historic Review for Chiral Technology Enabling Products by Segment- Intermediates, Analytical, and Other Markets Independently Analyzed with AnnualSales Figures in US\$ Thousand for Years 2009 through 2014 (includes correspondingGraph/Chart)

Table 26. The US 14-Year Perspective for Chiral Technology Enabling Products bySegment - Percentage Breakdown of Value Sales for Intermediates, Analytical, andOther Markets for Years 2009, 2017 & 2022 (includes corresponding Graph/Chart)

Table 27. The US Recent Past, Current & Future Analysis for Chiral Technology by End-Use Application - Pharmaceuticals, and Agrochemicals Markets IndependentlyAnalyzed with Annual Sales Figures in US\$ Thousand for Years 2015 through 2022(includes corresponding Graph/Chart)

Table 28. The US Historic Review for Chiral Technology by End-Use Application -Pharmaceuticals, and Agrochemicals Markets Independently Analyzed with AnnualSales Figures in US\$ Thousand for Years 2009 through 2014 (includes correspondingGraph/Chart)

Table 29. The US 14-Year Perspective for Chiral Technology by End-Use Application -Percentage Breakdown of Value Sales for Pharmaceuticals, and AgrochemicalsMarkets for Years 2009, 2017 & 2022 (includes corresponding Graph/Chart)

2. JAPAN



A. Market AnalysisSelect Key PlayersB. Market Analytics

Table 30. Japanese Recent Past, Current & Future Analysis for Chiral TechnologyEnabling Products by Segment - Intermediates, Analytical, and Other MarketsIndependently Analyzed with Annual Sales Figures in US\$ Thousand for Years 2015through 2022 (includes corresponding Graph/Chart)

Table 31. Japanese Historic Review for Chiral Technology Enabling Products bySegment - Intermediates, Analytical, and Other Markets Independently Analyzed withAnnual Sales Figures in US\$ Thousand for Years 2009 through 2014 (includescorresponding Graph/Chart)

Table 32. Japanese 14-Year Perspective for Chiral Technology Enabling Products bySegment - Percentage Breakdown of Value Sales for Intermediates, Analytical, andOther Markets for Years 2009, 2017 & 2022 (includes corresponding Graph/Chart)

Table 33. Japanese Recent Past, Current & Future Analysis for Chiral Technology byEnd-Use Application - Pharmaceuticals, and Agrochemicals Markets IndependentlyAnalyzed with Annual Sales Figures in US\$ Thousand for Years 2015 through 2022(includes corresponding Graph/Chart)

Table 34. Japanese Historic Review for Chiral Technology by End-Use Application -Pharmaceuticals, and Agrochemicals Markets Independently Analyzed with AnnualSales Figures in US\$ Thousand for Years 2009 through 2014 (includes correspondingGraph/Chart)

Table 35. Japanese 14-Year Perspective for Chiral Technology by End-Use Application- Percentage Breakdown of Value Sales for Pharmaceuticals, and AgrochemicalsMarkets for Years 2009, 2017 & 2022 (includes corresponding Graph/Chart)

3. EUROPE

A. Market AnalysisLargest Consumer of Chiral CompoundsProduct Launch

Chiral Technology: Market Research Report



Strategic Corporate Developments Select Key Players B. Market Analytics

Table 36. European Recent Past, Current & Future Analysis for Chiral TechnologyEnabling Products by Segment - Intermediates, Analytical, and Other MarketsIndependently Analyzed with Annual Sales Figures in US\$ Thousand for Years 2015through 2022 (includes corresponding Graph/Chart)

Table 37. European Historic Review for Chiral Technology Enabling Products bySegment - Intermediates, Analytical, and Other Markets Independently Analyzed withAnnual Sales Figures in US\$ Thousand for Years 2009 through 2014 (includescorresponding Graph/Chart)

Table 38. European 14-Year Perspective for Chiral Technology Enabling Products bySegment - Percentage Breakdown of Value Sales for Intermediates, Analytical, andOther Markets for Years 2009, 2017 & 2022 (includes corresponding Graph/Chart)

Table 39. European Recent Past, Current & Future Analysis for Chiral Technology byEnd-Use Application - Pharmaceuticals, and Agrochemicals Markets IndependentlyAnalyzed with Annual Sales Figures in US\$ Thousand for Years 2015 through 2022(includes corresponding Graph/Chart)

Table 40. European Historic Review for Chiral Technology by End-Use Application -Pharmaceuticals, and Agrochemicals Markets Independently Analyzed with AnnualSales Figures in US\$ Thousand for Years 2009 through 2014 (includes correspondingGraph/Chart)

Table 41. European 14-Year Perspective for Chiral Technology by End-Use Application- Percentage Breakdown of Value Sales for Pharmaceuticals, and AgrochemicalsMarkets for Years 2009, 2017 & 2022 (includes corresponding Graph/Chart)

4. REST OF WORLD

A. Market Analysis
China – A Hub for Pharmaceutical Manufacturing
Strategic Corporate Developments
Select Key Player

Chiral Technology: Market Research Report



B. Market Analytics

Table 42. Rest of World Recent Past, Current & Future Analysis for Chiral TechnologyEnabling Products by Segment - Intermediates, Analytical, and Other MarketsIndependently Analyzed with Annual Sales Figures in US\$ Thousand for Years 2015through 2022 (includes corresponding Graph/Chart)

Table 43. Rest of World Historic Review for Chiral Technology Enabling Products bySegment - Intermediates, Analytical, and Other Markets Independently Analyzed withAnnual Sales Figures in US\$ Thousand for Years 2009 through 2014 (includescorresponding Graph/Chart)

Table 44. Rest of World 14-Year Perspective for Chiral Technology Enabling Productsby Segment - Percentage Breakdown of Value Sales for Intermediates, Analytical, andOther Markets for Years 2009, 2017 & 2022 (includes corresponding Graph/Chart)

Table 45. Rest of World Recent Past, Current & Future Analysis for Chiral Technologyby End-Use Application - Pharmaceuticals, and Agrochemicals Markets IndependentlyAnalyzed with Annual Sales Figures in US\$ Thousand for Years 2015 through 2022(includes corresponding Graph/Chart)

Table 46. Rest of World Historic Review for Chiral Technology by End-Use Application -Pharmaceuticals, and Agrochemicals Markets Independently Analyzed with AnnualSales Figures in US\$ Thousand for Years 2009 through 2014 (includes correspondingGraph/Chart)

Table 47. Rest of World 14-Year Perspective for Chiral Technology by End-UseApplication - Percentage Breakdown of Value Sales for Pharmaceuticals, andAgrochemicals Markets for Years 2009, 2017 & 2022 (includes correspondingGraph/Chart)

IV. COMPETITIVE LANDSCAPE

Total Companies Profiled: 31 (including Divisions/Subsidiaries - 34) The United States (18) Japan (3) Europe (8) France (1)



Germany (2) The United Kingdom (2) Rest of Europe (3) Asia-Pacific (Excluding Japan) (5)



I would like to order

Product name: Chiral Technology: Market Research Report

Product link: <u>https://marketpublishers.com/r/C01E202D3CAEN.html</u>

Price: US\$ 5,600.00 (Single User License / Electronic Delivery) If you want to order Corporate License or Hard Copy, please, contact our Customer Service: <u>info@marketpublishers.com</u>

Payment

To pay by Credit Card (Visa, MasterCard, American Express, PayPal), please, click button on product page <u>https://marketpublishers.com/r/C01E202D3CAEN.html</u>