
A battery stores energy in the form of chemical energy, which is converted into electricity whenever needed. The battery components include anode, cathode, and electrolyte. The use of cathode materials is increasing in lithium-ion batteries and energy storage systems due to immense popularity and rising demand for electric vehicles. Cathode materials are essential components of any general battery which find various applications in automotive, electronics, aerospace, and marine industries. Moreover, lithium-ion batteries possess greater energy density, high performance, a large flow of discharge, ease of storage, durable, and is environment-friendly as compared to traditional batteries.

The growing use of electric vehicles and portable electronic devices is likely to drive the cathode materials market during the forecast period, owing to use of cathode materials in lithium-ion batteries, energy storage systems, and portable power supply. The enhanced compatibility and durability of lithium-ion batteries have led to the increase in demand, which, in turn, fuels the demand for cathode materials. The automotive industry is likely to drive the demand for cathode materials as automobile manufacturers have started focusing on electric vehicles, as both developed and developing nations have taken initiatives toward a greener environment and reduced CO2 emissions.

The usage of cathode materials is increasing in personal mobility, industry and robotics, aerospace and marine applications due to the latest lithium technology such as gold nanowire batteries which can withstand long lasting recharging. In industry and robotics, lithium batteries allow the greater autonomy for industrial equipment as compared to conventional batteries. Substantial productivity gain from the electric industrial trolley, electric forklift, and robotic systems is likely to drive the demand for cathode materials. For the same volume of battery, the embedded lithium-ion battery can triple autonomy compared to conventional technologies.

In June 2018, Johnson Matthey, a global leader in sustainable technologies plans to commercialize its new enhanced Lithium Nickel Oxide (eLNO) battery material. It emphasizes investment in eLNO testing with customers. The main focus of the company is to specify active role of cathode materials in batteries and its wide range of applications. Moreover, the development of superior lithium-ion batteries with higher capacity and better heat management is expected to provide lucrative opportunities for market growth.
Regional Analysis

Asia-Pacific accounted for the largest market share for global cathode materials in 2017, because of rising industrialization in emerging economies, such as India, China, and Thailand. China is expected to fuel the demand for cathode materials owing to the government support, strong manufacturing base, and growing investment by automotive giants on electric vehicle production. These factors have made the country one of the leading cathode material consumers.

North America is another prominent region for cathode materials owing to the technological advances in aerospace, automotive, and electronics industries for more compatible devices, such as UAVs, and electric-powered aircraft. Additionally, the increasing production of lightweight, electric, and hybrid vehicles in the automotive industry is likely to drive the market growth during the review period.

The European cathode materials market is expected to grow on account of owing to demand from automotive industry for highly energy-efficient and lightweight vehicles. The growing awareness about emission-free automobiles, which is expected to be key driver for the market growth in the region.

The Latin American cathode materials market is expected to grow at a significant rate during the review period due to expanding automotive industry, in Brazil and Mexico, NAFTA between US-Mexico is expected to project electric vehicles sales by 2030. The market in the Middle East & Africa is expected to exhibit considerable growth in the coming years with increasing investments on smart, clean, and sustainable development projects.

Segmentation

The global cathode materials market has been segmented by materials, end user, and region.

On the basis of materials, the market has been segmented into lithium nickel manganese cobalt (Li-NMC), lithium nickel cobalt aluminum (Li-NCA), lithium cobalt oxide (LCO), lithium manganese oxide (LMO), and lithium iron phosphate (LFP).

Based on enduser, the market has been divided into power tools, automotive, energy storage system, and consumer electronics products.

By region, the market has been categorized into North America, Europe, Asia-Pacific, Latin America, and the Middle East & Africa.

Key Players

Some of the key players in the global cathode materials are Umicore (Belgium), 3M (US), Mitsubishi Chemical Holdings (Japan), POSCO (South Korea), Johnson Matthey (UK), Hitachi Chemical Co., Ltd. (Japan), Kureha Corporation (Japan), Sumitomo Corporation (Japan), Todakogyo Corp (Japan), Mitsui Mining & Smelting (Japan), NEI Corporation (US), Targray Technology International Inc. (Canada).
Intended Audience

- Cathode materials manufacturers
- Traders and distributors of elastomeric foam
- Research and development institutes
- Potential investors
- Raw material suppliers
- Nationalized laboratories

Contents:

<table>
<thead>
<tr>
<th>Contents</th>
</tr>
</thead>
<tbody>
<tr>
<td>TABLE OF CONTENTS</td>
</tr>
<tr>
<td>1 Executive Summary</td>
</tr>
<tr>
<td>2 Scope of the Report</td>
</tr>
<tr>
<td>2.1 Market Definition</td>
</tr>
<tr>
<td>2.2 Scope of the Study</td>
</tr>
<tr>
<td>2.2.1 Research Objectives</td>
</tr>
<tr>
<td>2.2.2 Assumptions &amp; Limitations</td>
</tr>
<tr>
<td>2.3 Markets Structure</td>
</tr>
<tr>
<td>3 Market Research Methodology</td>
</tr>
<tr>
<td>3.1 Research Process</td>
</tr>
<tr>
<td>3.2 Secondary Research</td>
</tr>
<tr>
<td>3.3 Primary Research</td>
</tr>
<tr>
<td>3.4 Forecast Model</td>
</tr>
<tr>
<td>4 Market Landscape</td>
</tr>
<tr>
<td>4.1 Supply Chain Analysis</td>
</tr>
<tr>
<td>4.1.1 Raw Material Suppliers</td>
</tr>
<tr>
<td>4.1.2 Manufacturers/Producers</td>
</tr>
<tr>
<td>4.1.3 Distributors/Retailers/Wholesalers/E-Commerce</td>
</tr>
<tr>
<td>4.1.4 End User</td>
</tr>
<tr>
<td>4.2 Porter’s Five Forces Analysis</td>
</tr>
<tr>
<td>4.2.1 Threat of New Entrants</td>
</tr>
<tr>
<td>4.2.2 Bargaining Power of Buyers</td>
</tr>
<tr>
<td>4.2.3 Bargaining Power of Suppliers</td>
</tr>
<tr>
<td>4.2.4 Threat of Substitutes</td>
</tr>
<tr>
<td>4.2.5 Intensity of Competitive Rivality</td>
</tr>
<tr>
<td>5 Market Dynamics of Global Cathode Materials Market</td>
</tr>
<tr>
<td>5.1 Introduction</td>
</tr>
<tr>
<td>5.2 Drivers</td>
</tr>
<tr>
<td>5.3 Restraints</td>
</tr>
<tr>
<td>5.4 Opportunities</td>
</tr>
<tr>
<td>5.5 Challenges</td>
</tr>
<tr>
<td>5.6 Trends/Technology</td>
</tr>
<tr>
<td>6.1 Introduction</td>
</tr>
<tr>
<td>6.2 Lithium Nickel Manganese Cobalt</td>
</tr>
<tr>
<td>6.2.1 Market Estimates &amp; Forecast, 2016–2023</td>
</tr>
<tr>
<td>6.2.2 Market Estimates &amp; Forecast, by Region, 2016–2023</td>
</tr>
<tr>
<td>6.3 Lithium Nickel Cobalt Aluminum</td>
</tr>
<tr>
<td>6.3.1 Market Estimates &amp; Forecast, 2016–2023</td>
</tr>
</tbody>
</table>
6.3.2 Market Estimates & Forecast, by Region, 2016−2023
6.4 Lithium Cobalt Oxide
6.4.1 Market Estimates & Forecast, 2016−2023
6.4.2 Market Estimates & Forecast, by Region, 2016−2023
6.5 Lithium Manganese Oxide
6.5.1 Market Estimates & Forecast, 2016−2023
6.5.2 Market Estimates & Forecast, by Region, 2016−2023
6.6 Lithium Iron Phosphate
6.6.1 Market Estimates & Forecast, 2016−2023
6.6.2 Market Estimates & Forecast, by Region, 2016−2023

7. Global Cathode Materials Market, by End User
7.1 Introduction
7.2 Power Tools
7.2.1 Market Estimates & Forecast, 2016−2023
7.2.2 Market Estimates & Forecast, by Region, 2016−2023
7.3 Automotive
7.3.1 Market Estimates & Forecast, 2016−2023
7.3.2 Market Estimates & Forecast, by Region, 2016−2023
7.4 Energy Storage System
7.4.1 Market Estimates & Forecast, 2016−2023
7.4.2 Market Estimates & Forecast, by Region, 2016−2023
7.5 Consumer Electronics Products
7.5.1 Market Estimates & Forecast, 2016−2023
7.5.2 Market Estimates & Forecast, by Region, 2016−2023

8. Global Cathode Materials Market, by Region
8.1 Introduction
8.2 North America
8.2.1 Market Estimates & Forecast, 2016−2023
8.2.2 Market Estimates & Forecast, by Materials, 2016−2023
8.2.3 Market Estimates & Forecast, by End User, 2016−2023
8.2.4 US
8.2.4.1 Market Estimates & Forecast, 2016−2023
8.2.4.2 Market Estimates & Forecast, by Materials, 2016−2023
8.2.4.3 Market Estimates & Forecast, by End User, 2016−2023
8.2.5 Canada
8.2.5.1 Market Estimates & Forecast, 2016−2023
8.2.5.2 Market Estimates & Forecast, by Materials, 2016−2023
8.2.5.3 Market Estimates & Forecast, by End User, 2016−2023
8.3 Europe
8.3.1 Market Estimates & Forecast, 2016−2023
8.3.2 Market Estimates & Forecast, by Materials, 2016−2023
8.3.3 Market Estimates & Forecast, by End User, 2016−2023
8.3.4 Germany
8.3.4.1 Market Estimates & Forecast, 2016−2023
8.3.4.2 Market Estimates & Forecast, by Materials, 2016−2023
8.3.4.3 Market Estimates & Forecast, by End User, 2016−2023
8.3.5 France
8.3.5.1 Market Estimates & Forecast, 2016−2023
8.3.5.2 Market Estimates & Forecast, by Materials, 2016–2023
8.3.5.3 Market Estimates & Forecast, by End User, 2016–2023
8.3.6 Italy
8.3.6.1 Market Estimates & Forecast, 2016–2023
8.3.6.2 Market Estimates & Forecast, by Materials, 2016–2023
8.3.6.3 Market Estimates & Forecast, by End User, 2016–2023
8.3.7 Spain
8.3.7.1 Market Estimates & Forecast, 2016–2023
8.3.7.2 Market Estimates & Forecast, by Materials, 2016–2023
8.3.7.3 Market Estimates & Forecast, by End User, 2016–2023
8.3.8 UK
8.3.8.1 Market Estimates & Forecast, 2016–2023
8.3.8.2 Market Estimates & Forecast, by Materials, 2016–2023
8.3.8.3 Market Estimates & Forecast, by End User, 2016–2023
8.3.9 Russia
8.3.9.1 Market Estimates & Forecast, 2016–2023
8.3.9.2 Market Estimates & Forecast, by Materials, 2016–2023
8.3.9.3 Market Estimates & Forecast, by End User, 2016–2023
8.3.10 Poland
8.3.10.1 Market Estimates & Forecast, 2016–2023
8.3.10.2 Market Estimates & Forecast, by Materials, 2016–2023
8.3.10.3 Market Estimates & Forecast, by End User, 2016–2023
8.3.11 Rest of Europe
8.3.11.1 Market Estimates & Forecast, 2016–2023
8.3.11.2 Market Estimates & Forecast, by Materials, 2016–2023
8.3.11.3 Market Estimates & Forecast, by End User, 2016–2023
8.4 Asia-Pacific
8.4.1 Market Estimates & Forecast, 2016–2023
8.4.2 Market Estimates & Forecast, by Materials, 2016–2023
8.4.3 Market Estimates & Forecast, by End User, 2016–2023
8.4.4 China
8.4.4.1 Market Estimates & Forecast, 2016–2023
8.4.4.2 Market Estimates & Forecast, by Materials, 2016–2023
8.4.4.3 Market Estimates & Forecast, by End User, 2016–2023
8.4.5 India
8.4.5.1 Market Estimates & Forecast, 2016–2023
8.4.5.2 Market Estimates & Forecast, by Materials, 2016–2023
8.4.5.3 Market Estimates & Forecast, by End User, 2016–2023
8.4.6 Japan
8.4.6.1 Market Estimates & Forecast, 2016–2023
8.4.6.2 Market Estimates & Forecast, by Materials, 2016–2023
8.4.6.3 Market Estimates & Forecast, by End User, 2016–2023
8.4.7 Australia & New Zealand
8.4.7.1 Market Estimates & Forecast, 2016–2023
8.4.7.2 Market Estimates & Forecast, by Materials, 2016–2023
8.4.7.3 Market Estimates & Forecast, by End User, 2016–2023
8.4.8 Rest of Asia-Pacific
8.4.8.1 Market Estimates & Forecast, 2016–2023
8.4.8.2 Market Estimates & Forecast, by Materials, 2016–2023
8.4.8.3 Market Estimates & Forecast, by End User, 2016–2023
8.5 Middle East & Africa
8.5.1 Market Estimates & Forecast, 2016–2023
8.5.2 Market Estimates & Forecast, by Materials, 2016–2023
8.5.3 Market Estimates & Forecast, by End User, 2016–2023
8.5.4 GCC
8.5.4.1 Market Estimates & Forecast, 2016–2023
8.5.4.2 Market Estimates & Forecast, by Materials, 2016–2023
8.5.4.3 Market Estimates & Forecast, by End User, 2016–2023
8.5.5 Israel
8.5.5.1 Market Estimates & Forecast, 2016–2023
8.5.5.2 Market Estimates & Forecast, by Materials, 2016–2023
8.5.5.3 Market Estimates & Forecast, by End User, 2016–2023
8.5.6 North Africa
8.5.6.1 Market Estimates & Forecast, 2016–2023
8.5.6.2 Market Estimates & Forecast, by Materials, 2016–2023
8.5.6.3 Market Estimates & Forecast, by End User, 2016–2023
8.5.7 Turkey
8.5.7.1 Market Estimates & Forecast, 2016–2023
8.5.7.2 Market Estimates & Forecast, by Materials, 2016–2023
8.5.7.3 Market Estimates & Forecast, by End User, 2016–2023
8.5.8 Rest of Middle East & Africa
8.5.8.1 Market Estimates & Forecast, 2016–2023
8.5.8.2 Market Estimates & Forecast, by Materials, 2016–2023
8.5.8.3 Market Estimates & Forecast, by End User, 2016–2023
8.6 Latin America
8.6.1 Market Estimates & Forecast, 2016–2023
8.6.3 Market Estimates & Forecast, by End User, 2016–2023
8.6.4 Brazil
8.6.4.1 Market Estimates & Forecast, 2016–2023
8.6.4.2 Market Estimates & Forecast, by Materials, 2016–2023
8.6.4.3 Market Estimates & Forecast, by End User, 2016–2023
8.6.5 Argentina
8.6.5.1 Market Estimates & Forecast, 2016–2023
8.6.5.2 Market Estimates & Forecast, by Materials, 2016–2023
8.6.5.3 Market Estimates & Forecast, by End User, 2016–2023
8.6.6 Mexico
8.6.6.1 Market Estimates & Forecast, 2016–2023
8.6.6.2 Market Estimates & Forecast, by Materials, 2016–2023
8.6.6.3 Market Estimates & Forecast, by End User, 2016–2023
8.6.7 Rest of Latin America
8.6.7.1 Market Estimates & Forecast, 2016–2023
8.6.7.2 Market Estimates & Forecast, by Materials, 2016–2023
8.6.7.3 Market Estimates & Forecast, by End User, 2016–2023
9. Company Landscape
9.1 Introduction
9.2 Market Strategy

9.3 Key Development Analysis (Expansion/Merger & Acquisitions/Joint Venture/New Product Development/Agreement/Investment)

10. Company Profiles
10.1 Umicore
10.1.1 Company Overview
10.1.2 Financial Updates
10.1.3 Product/Business Segment Overview
10.1.4 Strategy
10.1.5 Key Developments
10.1.6 SWOT Analysis
10.2 3M
10.2.1 Company Overview
10.2.2 Financial Updates
10.2.3 Product/Business Segment Overview
10.2.4 Strategy
10.2.5 Key Developments
10.2.6 SWOT Analysis
10.3 Mitsubishi Chemical Holdings
10.3.1 Company Overview
10.3.2 Financial Updates
10.3.3 Product/Business Segment Overview
10.3.4 Strategy
10.3.5 Key Developments
10.3.6 SWOT Analysis
10.4 POSCO
10.4.1 Company Overview
10.4.2 Financial Updates
10.4.3 Product/Business Segment Overview
10.4.4 Strategy
10.4.5 Key Developments
10.4.6 SWOT Analysis
10.5 Johnson Matthey
10.5.1 Company Overview
10.5.2 Financial Updates
10.5.3 Product/Business Segment Overview
10.5.4 Strategy
10.5.5 Key Developments
10.5.6 SWOT Analysis
10.6 Hitachi Chemical Co., Ltd.
10.6.1 Company Overview
10.6.2 Financial Updates
10.6.3 Product/Business Segment Overview
10.6.4 Strategy
10.6.5 Key Developments
10.6.6 SWOT Analysis
10.7 Kureha Corporation
10.7.1 Company Overview
10.7.2 Financial Updates