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World Collection



# World Battery Materials

December 2015



## Highlights

### World Overview and Forecasts

Demand by Product | Demand by Application | Battery Industry Overview

### Regional Trends and Forecasts

Regional Demand Overview | North America | Western Europe | Asia/Pacific  
Other Regions

### Industry Structure

Industry Composition and Characteristics | Additional Companies Cited

### Resources

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## ABOUT THIS REPORT

### Scope & Method

This report forecasts total world demand in 2019 for battery materials by product, application, and major world region in US dollars at the manufacturers' level. Product segments include:

- metals
- chemicals
- other materials such as polymers and carbon/graphite.

Excluded from the scope of this report are discrete, individually distinct fabricated devices – for example, battery separators – that are incorporated in the final product, although the raw materials used in their construction – such as polymers and silicas – are covered here. Fuels and materials used in the manufacture of ancillary products, such as battery chargers and standalone power conditioning equipment, are also excluded. Dollar figures presented include the value of materials provided by outside (contract) suppliers, as well as the estimated value of materials manufactured in-house by battery companies (captive production). In addition, these figures include the value of both new and recycled materials (for instance, lead and polypropylene recovered from scrapped lead-acid batteries) used by battery manufacturers. The terms “battery” and “cell” are also used interchangeably, each referring to both single-cell (AA batteries, for instance) and multi-cell (such as nine-volt batteries) units.

Reported applications encompass:

- primary batteries
- secondary batteries.

Major world regions include North America, Western Europe, Asia/Pacific, and all other regions. Demand by product segment is also forecast for each major world region.

To illustrate historical trends world, product, application, and regional demand (including product segments) are provided for 2009 and 2014. Further, regional demand is segmented by application for 2014. Finally, world shipments are segmented by major world region and provided for 2009, 2014, and 2019.

This report quantifies trends in terms of compound annual growth rates (CAGRs), which, by definition, employ in their calculation only the first and last datapoints over a period. The CAGR is used to describe forecast growth, defined as the trend beginning in the base year and ending in the forecast year. Forecasts are developed via the identification and analysis of pertinent statistical relationships and other historical trends and events, as well as their expected impact over the forecast period. Readers are encouraged to consider historical volatility when assessing particular annual values

along the forecast trend, including in the forecast year.

Unless otherwise indicated, historical demand and shipment values are expressed in US dollars at the prevailing rate of exchange with local currencies. Forecasts to 2019, however, assume a fixed 2014 exchange rate.

Other various topics, including profiles of pertinent leading suppliers, are covered in this report. A full outline of report items by page is available in the [Table of Contents](#).

## Sources

*World Battery Materials* (FW45027) is based on [a comprehensive industry study](#) published by The Freedonia Group in December 2015. Reported findings represent the synthesis and analysis of data from various primary, secondary, macroeconomic, and demographic sources including:

- firms participating in the industry, and their suppliers and customers
- government/public agencies
- national, regional, and international non-governmental organizations
- trade associations and their publications
- the business and trade press
- indicator forecasts by The Freedonia Group
- the findings of other industry studies by The Freedonia Group.

Specific sources and additional resources are listed in the [Resources](#) section of this publication for reference and to facilitate further research.

## Industry Codes

The topic of this report is related to the following industry codes:

NAICS/SCIAN 2007		SIC	
North American Industry Classification System		Standard Industry Codes	
335911	Storage Battery Manufacturing	3691	Storage Batteries
335912	Primary Battery Manufacturing	3692	Primary Batteries, Dry and Wet

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## RESOURCES

### The Freedonia Group, Inc

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3350 <i>World Battery Materials</i> , December 2015	<a href="#">see study contents</a>
Related Industry Studies	
3331 <i>World Lithium</i> , September 2015	<a href="#">see study contents</a>
3309 <i>World Batteries</i> , July 2015	<a href="#">see study contents</a>
3278 <i>Fluoropolymers</i> , June 2015	<a href="#">see study contents</a>
3256 <i>Electric Power Transmission &amp; Distribution Equipment</i> , February 2015	<a href="#">see study contents</a>
3241 <i>World Power Tools</i> , January 2015	<a href="#">see study contents</a>
3200 <i>World Fluorochemicals</i> , October 2014	<a href="#">see study contents</a>
3164 <i>World Graphite (Natural, Synthetic &amp; Carbon Fiber)</i> , August 2014	<a href="#">see study contents</a>
3155 <i>World Hybrid &amp; Electric Vehicles</i> , June 2014	<a href="#">see study contents</a>
Related Focus Reports	
<i>Fluoropolymers: United States</i>	<a href="#">see report contents</a>
<i>Lead: United States</i>	<a href="#">see report contents</a>
<i>World Batteries</i>	<a href="#">see report contents</a>
<i>World Fluorochemicals</i>	<a href="#">see report contents</a>
<i>World Fuel Cells</i>	<a href="#">see report contents</a>
<i>World Graphite</i>	<a href="#">see report contents</a>
<i>World Hybrid &amp; Electric Vehicles</i>	<a href="#">see report contents</a>
<i>World Lithium</i>	<a href="#">see report contents</a>
Freedonia Custom Research, Inc	<a href="#">see capabilities</a>

### Trade Publications

<i>Batteries and Energy Storage Technology</i> (UK)	<a href="http://www.bestmag.co.uk">www.bestmag.co.uk</a>
<i>Batteries International</i> (UK)	<a href="http://www.batteriesinternational.com">www.batteriesinternational.com</a>
<i>Battery Power</i> (USA)	<a href="http://www.batterypoweronline.com">www.batterypoweronline.com</a>
<i>EDN</i> (USA)	<a href="http://www.edn.com">www.edn.com</a>
<i>Energy Storage Journal</i> (UK)	<a href="http://www.energystoragejournal.com">www.energystoragejournal.com</a>
<i>IHS Chemical Week</i> (USA)	<a href="http://www.chemweek.com">www.chemweek.com</a>

### Agencies & Associations

Battery Council International	<a href="http://batteryCouncil.org">http://batteryCouncil.org</a>
Battery and Electrical Specialists Association	<a href="http://www.besabattery.com">www.besabattery.com</a>
International Monetary Fund	<a href="http://www.imf.org">www.imf.org</a>
NAATBatt International	<a href="http://naatbatt.org">http://naatbatt.org</a>
Organisation for Economic Co-operation and Development	<a href="http://www.oecd.org">www.oecd.org</a>
World Bank	<a href="http://www.worldbank.org">www.worldbank.org</a>

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