

# Black Mass Recycling Market - A Global and Regional Analysis: Focus on Application, Battery Source, Technology, Recovered Metal, and Region - Analysis and Forecast, 2022-2031

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## Abstracts

### Global Black Mass Recycling Market Overview

The global black mass recycling market is projected to reach \$52,990.87 million by 2031 from \$9,220.51 million in 2022, growing at a CAGR of 21.45% during the forecast period 2022-2031. The black mass recycling market is a fast-expanding industry that deals with the reprocessing and recovery of essential metals from discharged lithium-ion batteries. The market for these batteries is anticipated to expand rapidly as electric vehicles gain popularity, which will also fuel the expansion of the black mass market for recycling. In addition, there are a few key players who dominate the black mass recycling market, including Umicore, BASF SE, Tenova S.p.A., and many more. Nonetheless, a large number of new competitors are anticipated to enter the market in the upcoming years, increasing competition and spurring additional growth and innovation.

### Market Lifecycle Stage

The global black mass recycling market is in a growing phase. New trends, such as rising investments in recycling technologies, increasing traction of second-life batteries, change in business models of companies due to climate action, increasing demand for lithium-ion batteries and raw materials across the value chain, and development of economic and environmental technologies, are further expected to provide opportunities for the market to grow in the coming years.

## Industrial Impact

Black mass recycling has a large industry influence since it provides numerous environmental and economic benefits. Furthermore, it has a significant effect on end-use sectors since it provides a plethora of benefits that can increase their efficiency, lower their costs, and give them a consistent source of important metals.

With an increased worldwide focus on circular economic principles and the advancements in recycling technologies for the recovery of high-performance metals, there is an increasing shift toward the demand and consumption of lithium-ion batteries in the end-use industries, thereby creating demand for black mass powder. Additionally, the shift is more prominent in the automotive and energy sectors in regions such as China, Asia-Pacific and Japan and Europe.

## Impact of COVID-19

The COVID-19 epidemic has had a contradictory influence on the black mass recycling business. On the one hand, the pandemic has affected the availability of old lithium-ion batteries for recycling by disrupting the global distribution network. Yet, the epidemic has also boosted the use of electric vehicles, increasing the need for essential metals, and opening up new markets for the black mass recycling industry.

## Market Segmentation

### Segmentation 1: by Battery Source

Automotive Batteries

Industrial Batteries

Portable Batteries

Based on battery source, the industrial batteries segment held the majority share in the black mass recycling market in 2021.

### Segmentation 2: by Technology

Hydrometallurgy

Pyrometallurgy

Others

Based on the recycling technology, the hydrometallurgy technology segment held the majority share in the black mass recycling market in 2021. It is one of the most significant recycling technologies, which meets the requirement of major industrial application areas.

### Segmentation 3: by Recovered Metal

Nickel

Cobalt

Lithium

Copper

Manganese

Others

Based on the recovered metals segment, nickel was the dominant metal, in the global black mass recycling market in 2021.

### Segmentation 4: by Application

Automotive

Consumer Electronics

Energy

Aerospace and Defense

Construction

Others

Based on application, the automotive segment dominated the black mass recycling market in 2021 and was the dominant segment owing to the increased sales of electric vehicles across the globe.

#### Segmentation 5: by Region

North America - U.S., Canada

Europe - Germany, France, Italy, Poland, and Rest-of-Europe

U.K.

Asia-Pacific and Japan - Japan, India, South Korea, Australia, and Rest-of-Asia-Pacific and Japan

China

Rest-of-the-World - Middle East and Africa and South America

China currently controls the majority of the global black mass recycling market due to its enormous electric vehicle industry, top suppliers throughout the supply chain, and rapidly expanding economy.

#### Recent Developments in the Black Mass Recycling Market

In February 2023, Manganese-rich battery material technology for electric vehicles is being industrialized by Umicore. This significant achievement expands Umicore's wide spectrum of NMC (nickel, manganese, cobalt) battery materials for exceptional productivity, and long-range EVs and introduces a distinctly competitive technology to existing design-to-cost battery technologies for EVs.

In September 2022, General Motors Co. and Lithion Recycling invested

strategically in Lithion Recycling's Series A fundraising round in support of a new strategic collaboration agreement between the two companies to create a circular battery ecosystem employing Lithion Recycling's cutting-edge battery recycling technology.

## Demand – Drivers and Limitations

Following are the demand drivers for the global black mass recycling market:

Exponential Increase in Electric Vehicles and Consumer Awareness

Rising Metal Prices

Government Initiatives with Technological Advancements

Following are the challenges for the global black mass recycling market:

Broad Array of Battery Chemistries

Variations in the Prices of Battery Raw Materials (Lithium and Cobalt)

How can this report add value to an organization?

**Product/Innovation Strategy:** The product segment helps the reader understand the different sources from where the batteries are coming for recycling and reaching to their best potential globally. Moreover, the study provides the reader with a detailed understanding of the different battery chemistries and their assortments in different batteries employed in various end-use applications in industries such as aerospace, automotive, energy, and others.

**Growth/Marketing Strategy:** Business expansions, partnerships, acquisitions, collaborations, and joint ventures are some key strategies adopted by key players operating in this space. For instance, in April 2022, in Europe, Umicore and Automotive Cells Company (ACC) formed a strategic cooperation for EV battery materials. With the first commercial volumes anticipated in early 2024, the long-term arrangement will begin with an annual offtake commitment of 13 GWh to a significant platform of a European

automaker.

**Competitive Strategy:** Key players in the global black mass recycling market analysed and profiled in the study involve black mass recycling providers. Moreover, a detailed competitive benchmarking of the players operating in the global black mass recycling market has been done to help the reader understand how players stack against each other, presenting a clear market landscape. Additionally, comprehensive competitive strategies such as partnerships, agreements, and collaborations will aid the reader in understanding the untapped revenue pockets in the market.

### Key Market Players and Competition Synopsis

The companies profiled have been selected based on inputs gathered from primary experts and analysing the company's coverage, product portfolio, and market penetration.

### Key Companies Profiled

BASF SE

Umicore

Tenova S.p.A.

Li-Cycle Corp.

Lithion Recycling

AKKUSER

Duesenfeld

ELECTRA

ROYALBEES

RUBAMIN

Aqua Metals Inc.

HYDROVOLT AS

SungEel Hi-Tech. Co., Ltd.

ECOGRAF

Fortum

Redux GmbH

Green Li-ion Pte Ltd.

TATA Chemicals Ltd.

ATTERO

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