

# Powder Metallurgy (PM): Market Research Report

<https://marketpublishers.com/r/PAC7D7BEDFBEN.html>

Date: January 2019

Pages: 308

Price: US\$ 5,600.00 (Single User License)

ID: PAC7D7BEDFBEN

## Abstracts

This report analyzes the worldwide markets for Powder Metallurgy (PM) in US\$ Million and Metric Tons. Separate comprehensive analytics are provided for PM Parts for the US, Canada, Japan, Europe, Asia-Pacific, and Rest of World. Additionally, the report analyzes the Global market for Metal Powders in value (US\$) for the US and Rest of World. The US market for Metal Powders market is further analyzed in terms of value (US\$) and volume (Tons).

Annual estimates and forecasts are provided for the period 2016 through 2024. Also, a five-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 127 companies including many key and niche players such as -

Allegheny Technologies Incorporated

American Axle & Manufacturing, Inc.

American Chemet Corp.

AMETEK Specialty Metal Products

Burgess-Norton Manufacturing Company

Carpenter Technology Corporation

## Contents

### 1. INTRODUCTION, METHODOLOGY & PRODUCT DEFINITIONS

Study Reliability and Reporting Limitations

Data Interpretation & Reporting Level

Quantitative Techniques & Analytics

Product Definition and Scope of Study

Iron & Steel

Stainless Steel

Tungsten

Aluminum

Precious Metal

Others

### 2. INDUSTRY OVERVIEW

A Prelude

Outlook

Analysis for Metal Powders

Analysis for Powder Metallurgy (P/M) Parts

Automotive Industry – The Largest End-Use Industry for PM Products

**Table 1.** Global PM Components Market by Application (2018E): Percentage Breakdown of Value for Automotive, Industrial, Hard Tools & Recreational/Hobby Tools, Household Appliances, and Others (includes corresponding Graph/Chart)

Asia-Pacific Continues to be a Growth Engine

### 3. MARKET DYNAMICS

Expanding Applications Drive Powder Metals Market

Global GDP Growth Plateauing – A Mixed Bag of Opportunities

**Table 2.** World Real GDP Growth Rates in % for the Years 2016 through 2019 for Select Countries (includes corresponding Graph/Chart)

PMI: A Mixed Bag

**Table 3.** Global Manufacturing Purchasing Managers' Index (PMI) for the Years 2010 through 2018 (includes corresponding Graph/Chart)

Encouraging Prospects for Metal Powders in Additive Manufacturing  
Major Additive Manufacturing Processes, Usage Applications and Powder Requirements

Application Profile of Additive Manufacturing – An Overview

Existing Hurdles to Metal Powders in Additive Manufacturing

MIM PM Components Set to Flourish

Newer Advances and Technological Breakthroughs Drive the Market

Aluminum Sintering Inches towards Reality

VVT Components – A Peek into Opportunities and Hurdles

Marked Trends towards Finer Powders and Advanced PM Parts

Nanopowders: A Major Area of Focus

Increasing Focus on Green Technology

Future Growth for the PM Industry

Diversification

Sustainability

Investments in Technology

#### **4. A REVIEW OF MAJOR END-USE SECTORS**

Automotive Industry Outlook

Stable Automobile Production Fuels Growth Opportunities in the OEM Market

Asia and Other Developing Regions to Drive Growth

**Table 4.** Global Passenger Car Production by Top 20 Countries: 2011-2017 (in Thousand Units) (includes corresponding Graph/Chart)

**Table 5.** Global Commercial Vehicle Production by Top 20 Countries: 2011-2017 (in Thousand Units) (includes corresponding Graph/Chart)

Historical Relationship between P/M and Automotive Industry

Benefits for Automotive Industry

Powder Metallurgy in Passenger Cars

Recent Developments in the Automotive Industry  
Prospective Automotive Applications  
Carrier Housings

## VVT

Geographic Variations Exist in PM Usage in Automobiles  
Aerospace  
PM Material in Aerospace Applications  
Growth in Aerospace Sector Augurs Well for Market

**Table 6.** Combined Aircraft Deliveries of Boeing and Airbus (2011-2018) (includes corresponding Graph/Chart)

**Table 7.** World Aviation Industry: Percentage Share Breakdown Air Passenger Traffic (RPKs) by Region (2016) (includes corresponding Graph/Chart)

**Table 8.** World Aviation Industry: Projected Growth Rate for Air Passenger Traffic for the Period 2016-2040 by Region (includes corresponding Graph/Chart)

**Table 9.** World Aviation Industry: Fastest Growing Countries for Passenger Traffic (2016-2040) (includes corresponding Graph/Chart)

**Table 10.** New Aircraft Deliveries Worldwide by Geographic Region (2017-2036): Percentage Breakdown of Number of Deliveries for Asia-Pacific, Europe, North America, Middle East, Latin America, and Africa (includes corresponding Graph/Chart)

Other End-Use Sectors  
Mechanization of Agriculture Spurs Growth  
Growing Demand for Mining & Construction Equipment Boosts Growth in Powder Metallurgy Market  
DIY Tools and Domestic Appliances – Emerging End-Use Industries  
Rising Prospects for PM Material in Health Care Industry

## 5. PRODUCT OVERVIEW AND ANALYSIS

Powder Metallurgy (PM) Technology: A Primer  
A Peek into History of Metal Powders

Definition

Attributes

Particle Size Distribution: A Key Attribute

Metal Powders Classification

Ferrous Powders

Iron Powder

Stainless Steel Powder

Non-Ferrous Powders

History

Scope

Types of Non-Ferrous Powders

Aluminum Powder

History

Benefits

Applications

Types of Atomized Aluminum Powders

Aluminum PM Production

Aluminum Powder Metallurgy Process

Copper (and Copper Alloy) Powder

Key Applications of Copper and Copper Alloy Powders

Nickel Powder

Titanium Powder

Refractory Metals

Tantalum

Tungsten

Powder Metallurgy

Introduction

Powder Metallurgy Vs. Other Techniques (Machining, Die Casting and Forging)

Process Description

Fundamental Steps

Types of Methods

Mixing

Pressing

Forming

Sintering

Sinter Hardening

Post Sintering Operations

Re-Pressing

Hot Re-Press

Forging  
Infiltration  
Impregnation  
Heat Treatment  
Surface-Hardening  
Steam Treatment  
Blueing  
Plating  
Coatings  
Mechanical Treatment  
De-burring  
Rapid Solidification  
Advantages  
Disadvantages  
Sintered Components: An Overview  
Metal Powders Present Rich Scope for Economical, Creative Design Offerings  
Benefits and Features of Sintered Components  
Manufacturing Process for Sintered Components  
Applications of PM and PM Parts  
Metal Powders  
PM Parts  
Powder Metallurgy: Suitable Technique for Parts Production and MMC  
Powder Metallurgy Magnets  
Powder Metallurgy in Tool Steels  
Products Derived from Metal Powders  
Mechanical or Structural Components  
Ferrous Structural Parts  
Non-Ferrous Structural Components  
Exclusive High-Duty Alloys  
Composite Materials  
Hard Metals and Diamond Tools  
Magnetic and Electric Parts  
Porous Materials  
Powder Metal Parts: Production Technologies  
High-Potential Technologies  
Direct Metal Deposition (DMD)  
Dynamic Magnetic Compression (DMC)  
Spray Forming  
Metal Injection Molding (MIM)

Powder Injection Molding (PIM)  
Traditional Methods  
Hot Pressing  
Isostatic Pressing  
Cold Isostatic Pressing  
Hot Isostatic Pressing  
Extrusion  
Hot Extrusion  
Cold Extrusion  
Roll Compaction  
Other Methods  
Powder Forging  
Powder Rolling  
Net Shape Processing  
Powder Metal Processing Techniques  
Atomization Process  
Gas Atomization  
Water Atomization  
Electrolysis  
Mechanical Comminution Methods  
Mechanical Alloying  
Chemical Methods  
Diffusion Bonding  
Solid State Reduction  
Hydrometallurgical Process  
Hunter Process  
Kroll Process  
Powder Metallurgy Equipment  
Associations/Federations  
Metal Powder Industries Federation (MPIF)  
APMI International

## 6. COMPETITIVE LANDSCAPE

A Relatively Concentrated Market

**Table 11.** Global Leading Players in the Powder Metallurgy Market (2018E):  
Percentage Breakdown of Value for GKN-Hoeganaes, Sumitomo, Fine Sinter, and

Others (includes corresponding Graph/Chart)

**Table 12.** Leading Players in the Global Sinter Metals Market (2018E): Percentage Breakdown of Value for GKN, Sumitomo, Hitachi, Fine Sinter, Miba, and Others (includes corresponding Graph/Chart)

### 6.1 Focus on Select Players

Allegheny Technologies Incorporated (USA)  
American Axle & Manufacturing, Inc. (USA)  
American Chemet Corp. (USA)  
AMETEK Specialty Metal Products (USA)  
Burgess-Norton Manufacturing Company (USA)  
Carpenter Technology Corporation (USA)  
Daido Steel Co., Ltd. (Japan)  
Diamet Corporation (Japan)  
Dowa Holdings Co., Ltd. (Japan)  
Erasteel SAS (France)  
F. W. Winter Inc. & Co. (USA)  
Federal-Mogul Corporation (USA)  
Fine Sinter Co., Ltd. (Japan)  
GKN Sinter Metals, Inc. (USA)  
Hoeganaes Corp. (USA)  
H. C. Starck GmbH (Germany)  
Hitachi Chemical Company, Ltd. (Japan)  
Höganäs AB (Sweden)  
JFE Steel Corp. (Japan)  
Kennametal, Inc. (USA)  
Kobe Steel, Ltd. (Japan)  
Kymera International (USA)  
Miba AG (Austria)  
Norilsk Nickel (Russia)  
PMG Holding GmbH (Germany)  
Pometon SpA (Italy)  
Rio Tinto Metal Powders (Canada)  
Sumitomo Electric Industries, Ltd. (Japan)

### 6.2 Recent Industry Activity

Aubert & Duval, and PyroGenesis Partner for Titanium Powder Supply  
Aperam to Acquire VDM Metals  
Tekna and Aperam to Jointly Develop Spherical Metal Powders



Tekna Commences Industrial Powder Production in Europe  
Carpenter Technology Acquires LPW Technology  
PMG Opens New Plant in Romania  
SMC Powder Metallurgy Renamed as Catalus Corporation  
Palladium Equity Takes Over Kymera International  
Tenneco Acquires Federal-Mogul LLC  
GKN Announces Strategic Collaboration with HP Inc. for Additive Manufacturing  
Metalysis to Commence Metal Alloy Powder Production  
Ampal Receives Funding for Development of New Aluminum Alloy Powders  
Allegheny Technologies Acquires Addaero Manufacturing  
LPW Technology Opens New Metal Powder Plant  
Metal Powder Products Acquires NetShape Technologies, to Change Name to MPP  
GKN to Divest Powder Metallurgy Business  
Höganäs Takes Over Alvier AG  
Sandvik to Build New Plant for Titanium and Nickel Powders  
Höganäs Takes Over Ceramic Powders Division of H. C. Starck  
JFE Steel and Baosteel Partner for Metal Powder Production  
Advanced Technology (Bazhou) Special Powder Co., Ltd Established  
GKN Hoeganaes Introduces AncorTi Beta 21S  
Carpenter Technology Commences Production of CARTECH PURIS 5+  
Carpenter Teams Up with Samuel for Additive Manufacturing Solutions  
Höganäs Opens Technology Center in India  
GKN Hoeganaes Starts Production Operations at Powder Innovation Center  
GKN Takes Over Tozmetal  
Miba to Take Over Full Ownership of MMLMS  
Allegheny and GE Aviation for JV for Meltless Titanium Alloy  
Sandvik Expands Capacity for Gas Atomised Powder  
American Axle Acquires Metaldyne Performance Group  
Carpenter Technology Takes Over Puris  
ACuPowder Merges Three Entities, Forms Unified Brand  
GKN Collaborates with EOS for Welding

## 7. GLOBAL MARKET PERSPECTIVE

Metal Powders

**Table 13.** World Recent Past, Current & Future Analysis for Metal Powders by Geographic Region - US, and Rest of World Markets Independently Analyzed with

Annual Sales Figures in US\$ Million for Years 2016 through 2024 (includes corresponding Graph/Chart)

**Table 14.** World Historic Review for Metal Powders by Geographic Region - US, and Rest of World Markets Independently Analyzed with Annual Sales Figures in US\$ Million for Years 2011 through 2015 (includes corresponding Graph/Chart)

**Table 15.** World 14-Year Perspective for Metal Powders by Geographic Region - Percentage Breakdown of Dollar Sales for US, and Rest of World Markets for Years 2011, 2018 & 2024 (includes corresponding Graph/Chart)

P/M Parts

**Table 16.** World Recent Past, Current & Future Analysis for P/M Parts by Geographic Region - US, Canada, Japan, Europe, Asia-Pacific (excluding Japan) and Rest of World Markets Independently Analyzed with Annual Sales Figures in US\$ Million for Years 2016 through 2024 (includes corresponding Graph/Chart)

**Table 17.** World Historic Review for P/M Parts by Geographic Region - US, Canada, Japan, Europe, Asia-Pacific (excluding Japan) and Rest of World Markets Independently Analyzed with Annual Sales Figures in US\$ Million for Years 2011 through 2015 (includes corresponding Graph/Chart)

**Table 18.** World 14-Year Perspective for P/M Parts by Geographic Region - Percentage Breakdown of Dollar Sales for US, Canada, Japan, Europe, Asia-Pacific (excluding Japan) and Rest of World Markets for Years 2011, 2018 & 2024 (includes corresponding Graph/Chart)

## **8. REGIONAL MARKET PERSPECTIVE**

### 8.1 The United States

#### A. Market Analysis

Current and Future Analysis

Metal Powder Demand Exhibits Growth

Rising Demand for Metal Powder Causes Issues

Technology Developments: Need of the Hour

An Overview of Powder Metallurgy Industry in North America

Market Dynamics

Role of Metal Powders in Automotive Industry  
Impact of Metal Parts on Automotive Industry  
Consumption Trends  
Developments in Iron Powder Segment  
Competitive Scenario  
B. Market Analytics  
Metal Powders  
Value Analysis

**Table 19.** US Recent Past, Current & Future Analysis for Metal Powders by Product Segment - Iron & Steel, Stainless Steel, Tungsten, Aluminum, Precious Metal and Other Powders Markets Independently Analyzed with Annual Sales Figures in US\$ Million for Years 2016 through 2024 (includes corresponding Graph/Chart)

**Table 20.** US Historic Review for Metal Powders by Product Segment - Iron & Steel, Stainless Steel, Tungsten, Aluminum, Precious Metal and Other Powders Markets Independently Analyzed with Annual Sales Figures in US\$ Million for Years 2011 through 2015 (includes corresponding Graph/Chart)

**Table 21.** US 14-Year Perspective for Metal Powders by Product Segment - Percentage Breakdown of Dollar Sales for Iron & Steel, Stainless Steel, Tungsten, Aluminum, Precious Metal and Other Powders Markets for Years 2011, 2018 & 2024 (includes corresponding Graph/Chart)

Volume Analysis

**Table 22.** US Recent Past, Current & Future Analysis for Metal Powders by Product Segment - Iron & Steel, Stainless Steel, Tungsten, Aluminum and Other Powders Markets Independently Analyzed with Annual Shipments in Metric Tons for Years 2016 through 2024 (includes corresponding Graph/Chart)

**Table 23.** US Historic Review for Metal Powders by Product Segment - Iron & Steel, Stainless Steel, Tungsten, Aluminum and Other Powders Markets Independently Analyzed with Annual Shipments in Metric Tons for Years 2011 through 2015 (includes corresponding Graph/Chart)

**Table 24.** US 14-Year Perspective for Metal Powders by Product Segment - Percentage

Breakdown of Volume Shipments for Iron & Steel, Stainless Steel, Tungsten, Aluminum and Other Powders Markets for Years 2011, 2018 & 2024 (includes corresponding Graph/Chart)

P/M Parts

**Table 25.** US Recent Past, Current & Future Analysis for P/M Parts Market Analyzed with Annual Sales Figures in US\$ Million for Years 2016 through 2024 (includes corresponding Graph/Chart)

**Table 26.** US Historic Review for P/M Parts Market Analyzed with Annual Sales Figures in US\$ Million for Years 2011 through 2015 (includes corresponding Graph/Chart)

8.2 Canada  
Market Analysis

**Table 27.** Canadian Recent Past, Current & Future Analysis for P/M Parts Market Analyzed with Annual Sales Figures in US\$ Million for Years 2016 through 2024 (includes corresponding Graph/Chart)

**Table 28.** Canadian Historic Review for P/M Parts Market Analyzed with Annual Sales Figures in US\$ Million for Years 2011 through 2015 (includes corresponding Graph/Chart)

8.3 Japan  
A. Market Analysis  
Current and Future Analysis  
Automotive Industry – The Key Market for PM Parts in Japan

**Table 29.** Japanese PM Production by Metal Type (2013, 2015 & 2018): Percentage Breakdown of Volume Production for Copper and Iron (includes corresponding Graph/Chart)

**Table 30.** Japanese PM Production by Application (2018E): Percentage Breakdown of Volume for Transportation, Industrial, and Others (includes corresponding Graph/Chart)

**Table 31.** PM Machine Parts Production in Japan by Application (2018E): Percentage Breakdown of Volume Output for Engine, Drivetrain, Chassis, and Others (includes corresponding Graph/Chart)

**Table 32.** PM Bearings Production in Japan by Application (2018E): Percentage Breakdown of Volume Output for Electrical, Engine, Body, Drivetrain, and Others (includes corresponding Graph/Chart)

The Uniqueness of Japanese Automotive Market  
A Peek into Non-Auto Applications of PM Parts

**Table 33.** Japanese Non-Automotive Applications of PM Parts (2018E): Percentage Breakdown of Volume Output by Application (includes corresponding Graph/Chart)

## B. Market Analytics

**Table 34.** Japanese Recent Past, Current & Future Analysis for P/M Parts Market Analyzed with Annual Sales Figures in US\$ Million for Years 2016 through 2024 (includes corresponding Graph/Chart)

**Table 35.** Japanese Historic Review for P/M Parts Market Analyzed with Annual Sales Figures in US\$ Million for Years 2011 through 2015 (includes corresponding Graph/Chart)

## 8.4 Europe

### A. Market Analysis

#### Current and Future Analysis

#### European Powder Metallurgy Industry

**Table 36.** European PM Parts Industry by Segment (2018E): Percentage Breakdown of Volume Production for Ferrous, Non-Ferrous, Hard Materials, and Others (includes corresponding Graph/Chart)

**Table 37.** European PM Production by Segment (2018E): Percentage Breakdown of Value for Hard Materials, Structural Parts/Bearings, Diamond Tools, Sintered Magnets, and Others (includes corresponding Graph/Chart)

**Table 38.** European PM Parts Market by End-Use Application (2018E): Percentage Breakdown of Volume Sales for Automotive, Machinery Parts, and Others (includes corresponding Graph/Chart)

MIM, AM and HIP Sectors Flourish in Europe  
End-Use Markets  
B. Market Analytics

**Table 39.** European Recent Past, Current & Future Analysis for P/M Parts by Geographic Region - France, Germany, Italy, UK, Spain, Russia, and Rest of Europe Markets Independently Analyzed with Annual Sales Figures in US\$ Million for Years 2016 through 2024 (includes corresponding Graph/Chart)

**Table 40.** European Historic Review for P/M Parts by Geographic Region - France, Germany, Italy, UK, Spain, Russia, and Rest of Europe Markets Independently Analyzed with Annual Sales Figures in US\$ Million for Years 2011 through 2015 (includes corresponding Graph/Chart)

**Table 41.** European 14-Year Perspective for P/M Parts by Geographic Region - Percentage Breakdown of Dollar Sales for France, Germany, Italy, UK, Spain, Russia, and Rest of Europe Markets for Years 2011, 2018 & 2024 (includes corresponding Graph/Chart)

## 8.5 Asia-Pacific

### A. Market Analysis

Current and Future Analysis

China Increases Stronghold in PM Production

Overview of Select Regional Markets

China

Overview

Chinese PM Market Surges

**Table 42.** Chinese PM Production by Metal Type (2013, 2015 & 2018): Percentage Breakdown of Volume Production for Copper and Iron (includes corresponding Graph/Chart)

**Table 43.** Chinese PM Production by Application (2018E): Percentage Breakdown of

Volume for Transportation, Electrical, and Others (includes corresponding Graph/Chart)

Foreign Manufacturers Enter Chinese Market

India

Growth in Indian Automobile Industry Bodes Well with PM Market

**Table 44.** Indian PM Production by Metal Type (2013, 2015 & 2018): Percentage Breakdown of Volume Production for Copper and Iron (includes corresponding Graph/Chart)

**Table 45.** PM Parts Market in India (2018E): Percentage Breakdown of Value Sales by End-Use Application (includes corresponding Graph/Chart)

PM Parts Production in India – Present Trends and Outlook

Hurdles to PM Industry in India

South Korea

Key Statistics

**Table 46.** South Korean PM Production by Metal Type (2013, 2015 & 2018): Percentage Breakdown of Volume Production for Copper and Iron (includes corresponding Graph/Chart)

**Table 47.** South Korean PM Production by Application (2018E): Percentage Breakdown of Volume for Transportation, Electrical, and Others (includes corresponding Graph/Chart)

Taiwan

Key Statistics

**Table 48.** Taiwanese PM Production by Metal Type (2013, 2015 & 2018): Percentage Breakdown of Volume Production for Copper and Iron (includes corresponding Graph/Chart)

**Table 49.** Taiwanese PM Production by Application (2018E): Percentage Breakdown of Volume for Transportation, Industrial, Electrical, and Others (includes corresponding Graph/Chart)



## B. Market Analytics

**Table 50.** Asia-Pacific Recent Past, Current & Future Analysis for P/M Parts Market Analyzed with Annual Sales Figures in US\$ Million for Years 2016 through 2024 (includes corresponding Graph/Chart)

**Table 51.** Asia-Pacific Historic Review for P/M Parts Market Analyzed with Annual Sales Figures in US\$ Million for Years 2011 through 2015 (includes corresponding Graph/Chart)

### 8.6 Rest of World Market Analysis

**Table 52.** Rest of World Recent Past, Current & Future Analysis for P/M Parts Market Analyzed with Annual Sales Figures in US\$ Million for Years 2016 through 2024 (includes corresponding Graph/Chart)

**Table 53.** Rest of World Historic Review for P/M Parts Market Analyzed with Annual Sales Figures in US\$ Million for Years 2011 through 2015 (includes corresponding Graph/Chart)

## 9. COMPANY PROFILES

Total Companies Profiled: 127 (including Divisions/Subsidiaries - 139)

The United States (49)

Canada (8)

Japan (15)

Europe (45)

France (4)

Germany (14)

The United Kingdom (7)

Italy (2)

Russia (3)

Rest of Europe (15)

Asia-Pacific (Excluding Japan) (19)

Latin America (3)



## I would like to order

Product name: Powder Metallurgy (PM): Market Research Report

Product link: <https://marketpublishers.com/r/PAC7D7BEDFBEN.html>

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:

[info@marketpublishers.com](mailto:info@marketpublishers.com)

## Payment

To pay by Credit Card (Visa, MasterCard, American Express, PayPal), please, click button on product page <https://marketpublishers.com/r/PAC7D7BEDFBEN.html>