IMnI
Statistics 2019
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Introduction
Market Research at the IMnI

IMnI provides the most comprehensive and accurate manganese industry market research available.

Circulated on a monthly basis, IMnI’s reports examine both production and consumption, and the balance between the two, looking at the industry from both sides of the supply demand equation. The primary objective of these reports is to offer an analysis of the immediate past, which can provide the basis for Members to develop a greater understanding of their business.

The IMnI Executive Director Aloys d’Harambure examines manganese ore and alloy consumption as they relate to the steel industry with the application of an industry model. This systematic approach provides increased accuracy and a systematic approach to better understand and anticipate changes in the industry. A detailed analysis of IMnI data is also published on a monthly basis.

IMnI also issues monthly trade matrices for Mn Ore, Alloys, EMM and EMD, a steel production report, and publishes a list of current manganese producers and future manganese projects.

All IMnI data is available via the IMnI website www.manganese.org.

This data is reserved for IMnI Members, but non-members can buy our reports by contacting Aloys d’Harambure, IMnI Executive Director, at adharambure@manganese.org

Objectives of the IMnI Statistics Committee

- Represent IMnI Members in their expectations regarding market research and statistics
- Identify best market research report formats and practices
- Standardize units of measure for reporting metrics
- Support the IMnI Market Research Manager by validating estimates of production and demand for some countries.
In 2018, global production of silico-manganese continued increasing for the third consecutive year, reaching almost 16 million mt (+16% from 2017), although steel production expanded by only 2.3% last year, to 1.73 billion mt. Almost three quarters of this extra production came from China (+1.6 million mt, equivalent to the combined output of Russia, Ukraine and Norway last year), where output increased by 18% last year compared to 2017, due to rising steel production combined to higher SiMn consumption per ton of steel. In India production expanded by 17% or 331,000 mt, and smelters in Malaysia also increased production in 2018 (+53,000 mt).

![SiMn Production 2012 - 2018](chart)

**Silico-manganese (SiMn)**

*Source: Worldsteel, CRU, IIM*
SiMn Production and Demand 2012 - 2018

Top 10 SiMn Producing countries in 2018 (source: IMnI)

China 64%
Indonesia 14%
Rest of the World 6%
India 5%
Ukraine 2%
Russia 2%
Norway 2%
Georgia 2%
South Africa 1%
Brazil 1%
Spain 1%

Top 10 SiMn Importing Countries in 2018

Source: TDM, IMnI
High-carbon Ferromanganese (HC FeMn)

In 2018, high-carbon ferro-manganese production remained basically stable around 4 million mt (0.3% lower than in 2017), with higher output in China, Australia, France, Russia and Iran compensating production cuts in India, South Korea, Ukraine, Norway and Spain.
HC FeMn Production and Demand
2012 - 2018

Source: IMnI

Top 10 HC FeMn Producing countries in 2018
(source: IMnI)

Top 10 HC FeMn Importing Countries in 2018

Source: TDM, IMnI
Refined Ferromanganese (Ref FeMn)

Global refined ferro-manganese supply increased for the second consecutive year in 2018, reaching 1.6 million mt (up by 3% from 2017). Extra supply mostly came from China (+69,000 mt, or +10% YoY), while most other producing-countries reduced output last year, except Spain, Mexico and the USA.

Ref FeMn Production
2012 - 2018

Source: Worldsteel, CRU, IMnI
Ref FeMn Production and Demand 2012 - 2018

Source: IMnI

Top 10 Ref FeMn Producing countries in 2018 (source: IMnI)

- China 47%
- Rest of the World 2%
- South Korea 9%
- Norway 16%
- Japan 8%
- India 5%
- South Africa 4%
- Mexico 3%
- Spain 2%
- Brazil 1%

Top 10 Ref FeMn Importing Countries in 2018

Source: TDM, IMnI
Manganese ore

The world’s output of manganese ore increased in 2018 for the second consecutive year, on rising demand from manganese alloy smelters. It reached 20.3 million dry mt (Mn contained), up by 6% or 1.2 million dry mt from 2017, exceeding 2014 production of 19.3 million mt and marking a new record high. The additional supply mostly came from Africa and Australia, driven by China, where output decreased because of mine depletion and stricter safety regulations.

Global Mn Ore Production
2012 - 2018

Source: [Mn]
Mn Ore Production and Demand
2012 - 2018

Source: [IMnI]

Top 10 Mn Ore Producing countries in 2018
(source: [IMnI])

South Africa 32%
Australia 17%
Gabon 12%
Brazil 6%
China 6%
India 5%
Ukraine 4%
Malaysia 3%
Ivory Coast 2%
Rest of the World 6%

Top 10 Mn Ore Importing Countries in 2018

Source: [TDM, IMnI]
Manganese Metal

Manganese metal production contracted significantly in 2018, after rising in 2016 and 2017. It dropped by 13% last year, to 1.52 million mt, due to production cuts in China (-13% to 1.47 million mt), while expanding in the rest of the world (South Africa, Ukraine, Gabon and Indonesia, where Tsingshan Stainless Steel opened a new standard EMM 99.7%Mn plant for internal consumption). China still represents 97% of global Mn metal output, although Ningxia Tianyuan Manganese reduced production last year, due to oversupply.

Manganese Metal Production
2012 - 2018

* Manganese metal produced at Privat's plant Zaporozhye in Ukraine silicothermic manganese metal, not electrolytic
Top 10 EMM Importing Countries in 2018

- Rest of the World
- France
- Brazil
- Austria
- United States
- Germany
- India
- Russia
- Japan
- Netherlands
- South Korea

Source: TDM, IMnI
Manganese Dioxide

Global production of electrolytic manganese dioxide (EMD) increased in 2018 to almost 416,000 mt according to data collected by the International Manganese Institute from CITIC Dameng, Tosoh and other producers. This 5% YoY increase was only due to China (+12% YoY), while EMD production in the rest of the world contracted by 10% compared to 2017. Looking at the different grades, global production of Lithium Manganese Oxide (LMO) grade EMD increased by 47% from 2017, while Carbon-zinc (C-Zn) grade EMD production saw a more moderated growth (+6%). Finally, Alkaline & other (Li-primary) grade EMD production contracted by 3% in 2018 compared to 2017.

<table>
<thead>
<tr>
<th>EMD Production in 2018 (in mt)</th>
<th>Lithium Manganese Oxide (LMO) grade production</th>
<th>Alkaline &amp; other (Li-primary) grade production</th>
<th>Carbon-zinc (C-Zn) grade production</th>
<th>Total Production</th>
<th>Total Capacity</th>
<th>Capacity Utilisation ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>China</td>
<td>59,756</td>
<td>148,905</td>
<td>91,760</td>
<td>300,421</td>
<td>350,300</td>
<td>86%</td>
</tr>
<tr>
<td>Rest of the World</td>
<td>2,000</td>
<td>112,000</td>
<td>1,500</td>
<td>115,500</td>
<td>199,000</td>
<td>58%</td>
</tr>
<tr>
<td>Total</td>
<td>61,756</td>
<td>260,905</td>
<td>93,260</td>
<td>415,921</td>
<td>549,300</td>
<td>76%</td>
</tr>
</tbody>
</table>

Source: Citic Dameng, Tosoh, IMnI
Global EMD Production by Grade in 2018
(source: Citic Dameng, Tosoh, IMnI)

- Carbon-zinc (C-Zn) grade production: 22%
- Lithium Manganese Oxide (LMO) grade production: 15%
- Alkaline & other (Li-primary) grade production: 63%

Top 10 EMD Importing Countries in 2018

- Rest of the World
- Poland
- United States
- Malaysia
- India
- Thailand
- Germany
- Singapore
- Australia
- Indonesia
- Belgium

Source: TDM, IMnI