Manganese (Mn)

Base Year 2025

World Production

20 million tonnes of contained manganese

+7.0%

Brazil Production

519.1 thousand t of contained manganese

-3.4%

National Highlight

Pará: 55.7% of contained manganese production

Mineral Sector Trade Balance

↓ Deficit of USD 445.2 million

Mineral Sector Exports

USD 204.2 million

+7.1%

Mining Royalties (CFEM)

R$ 15.68 million

+12.2%

% Change 2025 vs 2024

What is Manganese?

Manganese (Mn) is a hard, brittle metallic element with atomic number 25 and a strong affinity for oxygen and sulfur. It is one of the most abundant elements in the Earth's crust and has no satisfactory substitute in steel production.

Occurrence

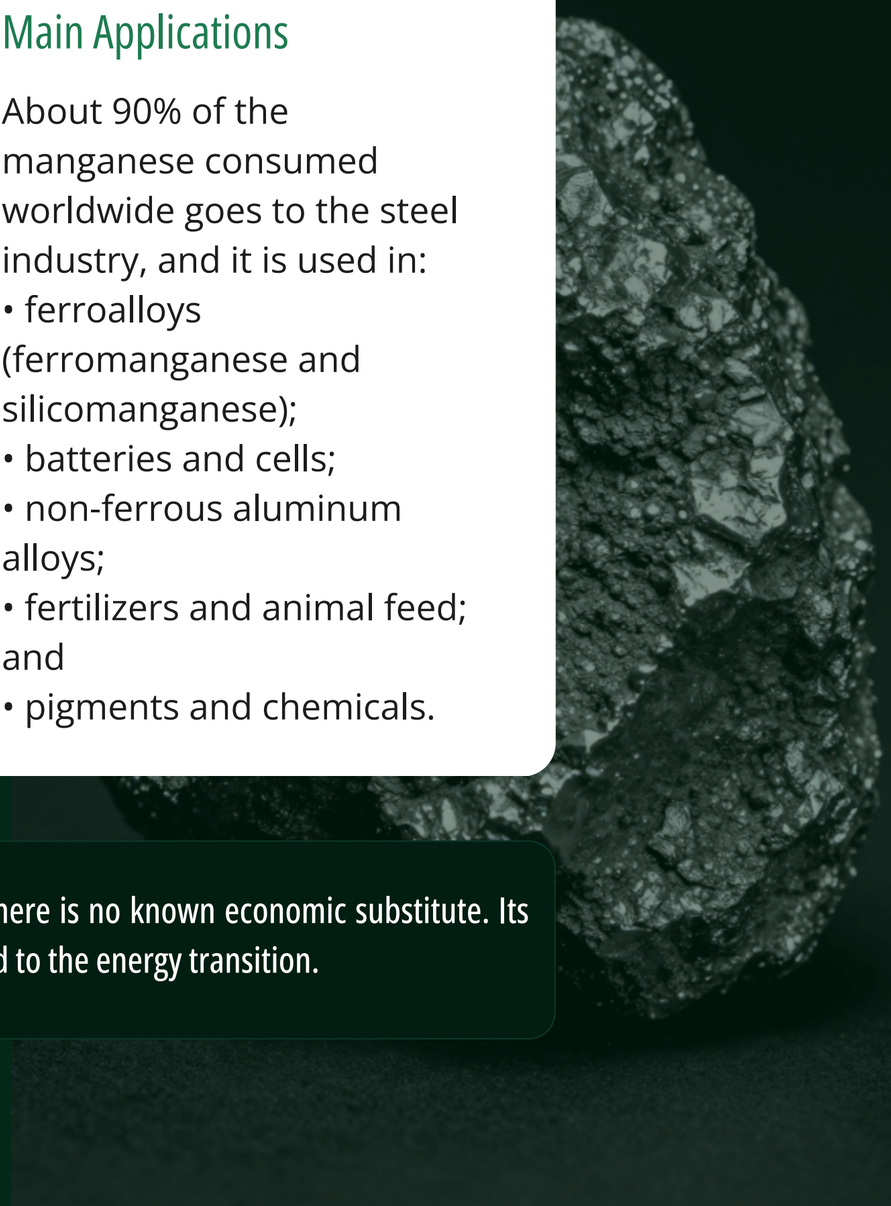
Manganese occurs mainly in association with the following minerals:

- Pyrolusite;
- Psilomelane;
- Cryptomelane; and
- Manganite.

Main Applications

About 90% of the manganese consumed worldwide goes to the steel industry, and it is used in:

- ferroalloys (ferromanganese and silicomanganese);
- batteries and cells;
- non-ferrous aluminum alloys;
- fertilizers and animal feed; and
- pigments and chemicals.



Manganese is a critical and strategic metal and an essential input for the steel industry, for which there is no known economic substitute. Its use has also been growing in the battery sector, increasing the metal's relevance in value chains linked to the energy transition.

1. World Supply

In 2025, according to the United States Geological Survey (USGS), world manganese production reached 20 million tonnes (20,000 kt), an increase of almost 7% over the previous year (18,700 kt). South Africa kept its clear lead, accounting alone for 38% of global supply, followed by Gabon with 25%.



Brazil ranked 6th worldwide in manganese production in 2025.

Table 1 – Main manganese producing countries (Mn content in concentrate) – 2025

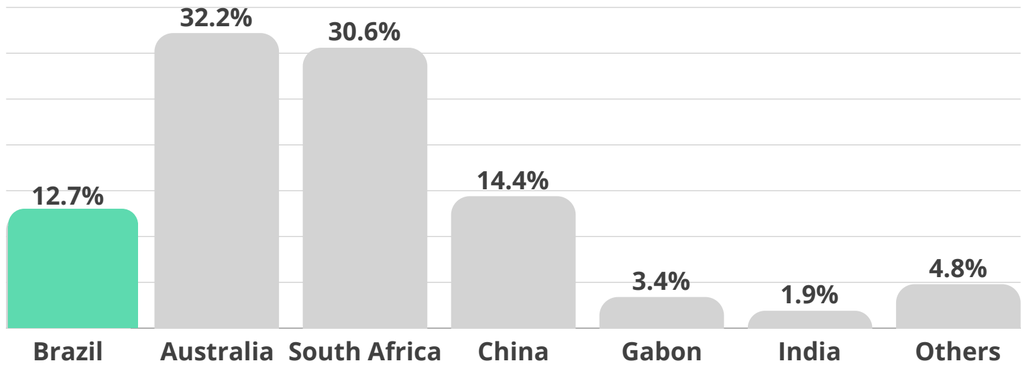
Country	Production (kt)	Share (%)
Brazil	**519**	**2.6**
South Africa	7,600	38.0
Gabon	5,000	25.0
Ghana	2,000	10.0
Australia	1,600	8.0
India	790	3.9
Other Countries	2,491	12,5
Total	**20,000**	**100.0**

Sources: USGS – Mineral Commodity Summaries 2026 and ANM (Brazilian production).

2. Reserves

According to USGS estimates, global contained manganese reserves total approximately 1,800 million tonnes (Mt). Australia holds the clear lead internationally, with 580 Mt, closely followed by South Africa, with 550 Mt, and China, firmly in third place with 260 Mt.

Main World Manganese Reserves – 2025





Brazil consolidates its strategic position in the global mining market. According to the RALs filed in 2025, the country holds **227.6 million tonnes (Mt)** of contained manganese reserves (proven and probable). These consolidated data confirm that **Brazil holds the world's 4th largest manganese reserves.**

Sources: USGS – Mineral Commodity Summaries 2026 and ANM (Brazilian reserves).

3. Domestic Production

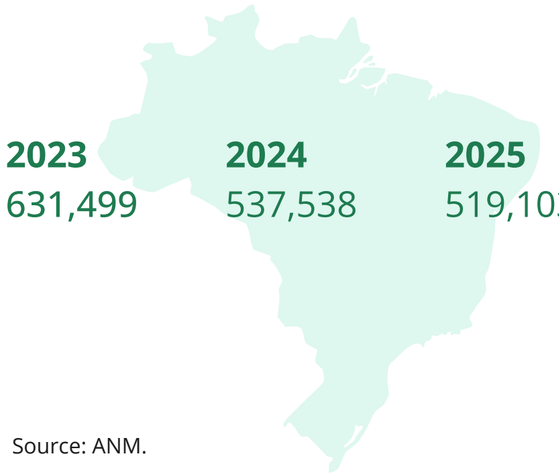
Brazil's contained manganese production in 2025 was 519.1 kt (thousand tonnes), down 3.4% from 2024 (537.5 kt). This volume derived from a total processed production of 1,520.8 kt, reflecting an average grade of 34.13%, of which 1,413.4 kt were sold. Pará leads the sector by a wide margin. Mato Grosso do Sul ranks second, followed by Minas Gerais in third place. The state ranking is completed, in descending order, by Bahia, Tocantins, Mato Grosso and, finally, Goiás.



The **State of Pará** prevails as the main production hub, with 55.7% of national output

Brazilian Production of Processed Manganese (contained, t)

Last 3 years



2023	2024	2025
631,499	537,538	519,103

Source: ANM.

4. Foreign Trade

Manganese foreign trade reflects Brazil's position in the international market, with exports concentrated in manganese ores and ferro-silico-manganese. In 2025, the manganese sector posted a trade deficit of USD 445.2 million (FOB*).



Mineral Sector Exports

Total: USD FOB 204.2 million
Change: +7.1%

Main destinations:
- China (26.5%)
- Uruguay (11.1%)
- Argentina (11.1%)

Mineral Sector Imports

Total: USD FOB 649.4 million
Change: +16.5%

Main origins:
- India (43.0%)
- China (29.3%)
- Colombia (16.9%)

Source: Open Data/Ministry of Development, Industry, Trade and Services (MDIC) and COMEXMIN/ANM • Data include the Mineral Extractive Industry (IEM) and the Mineral Transformation Industry (ITM)

***FOB** = The seller fulfills its obligations and responsibilities when the goods, cleared for export, are delivered, stowed on board the vessel at the port of shipment, both indicated by the buyer, on the date or within the agreed period.

Foreign trade: main products of the mineral extractive industry (IEM) in 2025

Main Exported Products

	NCM 26020090 - Other manganese ores and concentrates	NCM 26020010 - Manganese ores and concentrates, agglomerated
USD FOB	110,174,282	2,904,905
EXP Share (%)	97.4	2.6

Main Imported Products

	NCM 26020090 - Other manganese ores and concentrates
USD FOB	1,114,134
IMP Share (%)	100.0

Foreign trade: main products of the mineral transformation industry (ITM) in 2025

Main Exported Products

	NCM 72023000 - Ferro-silico-manganese	NCM 85061020 - Other manganese dioxide cells
USD FOB	59,664,851	14,719,758
EXP Share (%)	65.5	16.1

Main Imported Products

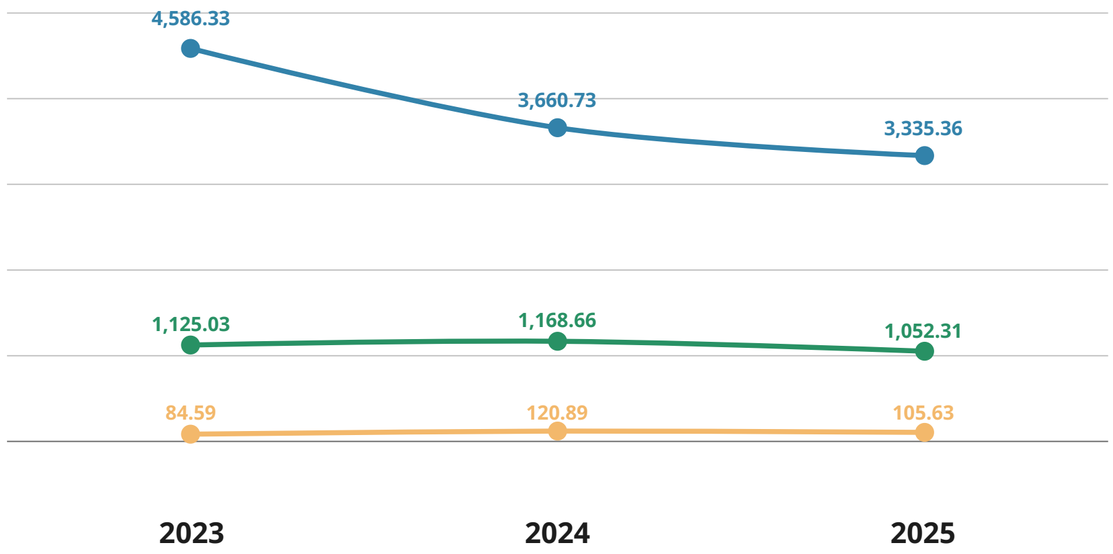
	NCM 38089293 - Fungicide based on mancozeb or maneb	NCM 81110010 - Unwrought manganese
USD FOB	419,602,746	57,633,028
IMP Share (%)	64.7	8.9

Source: Open Data/Ministry of Development, Industry, Trade and Services (MDIC) and COMEXMIN/ANM.

5. Prices

Prices reflect international market dynamics and are influenced by factors such as global demand, production costs and economic fluctuations.

Chart – Average FOB prices - USD/t - Last 3 years



- NCM 26020090 - Other manganese ores (exports)
- NCM 72023000 - Ferro-silico-manganese (exports)
- NCM 38089293 - Fungicide based on mancozeb or maneb (imports)

Source: Open Data/Ministry of Development, Industry, Trade and Services (MDIC) and COMEXMIN/ANM.
***USD FOB/t** = The seller fulfills its obligations and responsibilities when the goods, cleared for export, are delivered, stowed on board the vessel at the port of shipment, both indicated by the buyer, on the date or within the agreed period.

6. Financial Compensation for the Exploitation of Mineral Resources (CFEM)

The collection of the Financial Compensation for the Exploitation of Mineral Resources (CFEM), Brazil's mining royalty, reflects the economic contribution of mining to the country, showing how revenues are distributed among producing states and the share of the sector's main companies in total collection.

CFEM - Manganese (2025)

- Total collection: R$ 15.68 million
- Change: +12.2% compared to 2024 (R$ 13.98 million)

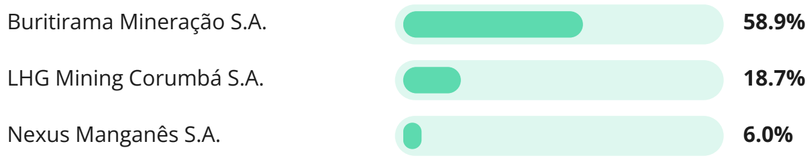
Main Collecting States

Pará (60.0%)

Mato Grosso do Sul (17.4%)

Minas Gerais (14.5%)

Main Collecting Companies



Source: ANM

Collection grew 12.2% compared to 2024, driven by gains in Pará.

Pará accounts for 60% of collection, followed by Mato Grosso do Sul and Minas Gerais.

7. Investments and Mining Rights

Investment in manganese mining is evenly distributed among Mato Grosso do Sul, Minas Gerais and Pará, which together accounted for three quarters of the amount invested in 2025.

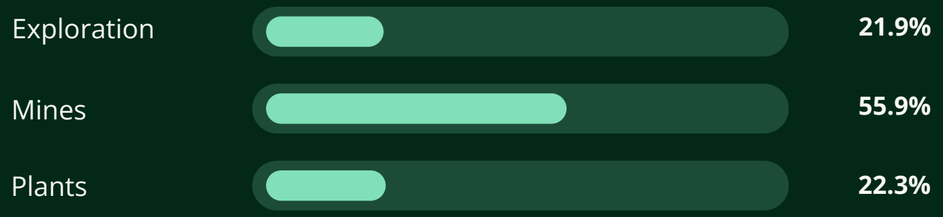
Investments in Mining

In 2025, according to DIPEM (Mineral Exploration Investment Statement) and RAL (Annual Mining Report) data, mining investments totaled R$ 70.2 million – 21.9% in mineral exploration and 78.1% in the mining phase – down 56.4% from the previous year.

Main States

- MS (27.0%)
- MG (25.1%)
- PA (23.1%)

Investment Breakdown



Mining Rights Granted in 2025

Exploration

- 229 exploration permits
- -14.2% compared to 2024
- 18 approved final exploration reports published

Main States

- BA (70 permits)
- MG (35 permits)
- GO (29 permits)

Mining Applications

- 17 mining applications filed

Mining Concession/ PLG

- 9 mining concession ordinances published

Source: ANM (DIPEM, RAL and mining rights records)

8. Relevant Factors

Supply constraints in Australia and impact on prices: Over 2025, the global manganese market operated under the persistent effect of supply constraints originating in Australia, resulting from prolonged operational impacts at South32's Groote Eylandt complex (GEMCO). Lower availability of high-grade ore in the seaborne market sustained price volatility, forcing the global steel chain to aggressively diversify its supply sources to mitigate the structural deficit. (Source: Fastmarkets - Manganese Market Overview)

Advance of LMFP batteries and high-purity manganese: A structural shift in consumption took place in 2025, driven by the energy transition and the growing commercial adoption of lithium manganese iron phosphate (LMFP) batteries by the electric vehicle industry. This movement accelerated the race for investment in high-purity manganese sulfate (HPMSM) refining in jurisdictions outside Asia, aiming to meet Western automakers' demand for vertically integrated and secure supply chains. (Source: Benchmark Mineral Intelligence - Manganese Data)

Port inventory dynamics and prices in China: Throughout 2025, manganese ore inventory levels at major Chinese ports, especially Tianjin and Qinzhou, set the pace of negotiations in the spot market. Fluctuations in these stocks served as a barometer of local macroeconomic conditions, reflecting the delicate balance between fluctuating demand from China's infrastructure and steel sectors and the logistical bottlenecks of maritime trade. (Source: Shanghai Metals Market - China Manganese Spot Prices)