

# Silico Manganese Production.

## Ferroalloys Industry

*The global market for Silicomanganese is expected to grow at a CAGR of roughly 6.0% over the next five years.*

# Introduction

**Silico manganese is an alloy with 60% to 68% manganese, 14% to 21% silicon, and 5% to 2.5% carbon. It is produced by smelting of slag from high-carbon Ferro Manganese or of Manganese ore with coke and a quartz flux in a submerged electric arc furnace. The process requires power consumption of about 3,800 to 4,800 kilowatt-hours per tonne.**



**Silico Manganese is an essential component as an ingredient in the process of manufacturing various grades of steels. Silico Manganese, High Carbon Ferro Manganese, Medium Carbon Ferro Manganese, is covered under routine production planning. In addition the existing EAF has also successfully produced Pig Iron on market demand.**

**Silico Manganese is one of the essential alloy that contains both the elements of manganese and silicon. As well, this range is manufactured by heating a combination of silicon dioxide, manganese oxide and iron oxide along with carbon at the vendor's end. Silico manganese is usually used as deoxidizers and desulfurizers.**



## **Market Outlook**

**The worldwide market for Silico Manganese is expected to grow at a CAGR of roughly 6.0% over the next five years, will reach 19400 million US\$ in 2024, from 14500 million US\$ in 2019.**

**Driving factors responsible for the growth of Silico Manganese Market includes rising urbanization that demands commercial products such as utensils and other domestic products. Other major factors such as demand for steel, dairy equipment, hand railings and other commercial items also contribute to the growth of Silico Manganese Industry. However, varying availability of silico manganese in certain geographical areas raises the transportation and logistics costs wherein this factor slightly hampers the market growth.**

**Global Silico Manganese Market is expected to gain a significant CAGR in the forthcoming period. Silicon and Manganese are crucial components in steel manufacturing units as deoxidants, desulphurizers and alloying elements. The primary deoxidizer is Silicon. Manganese serves as a deoxidizer in small doses than Silicon but it enhances the effectiveness since stable manganese silicates are mixed with aluminates. It also caters to the steel industry as desulphurizer. Manganese serves as an alloying element in all types of steel.**



**The key players in the Silico Manganese Market include Erdos Group, Sheng Yan Group, PJSC Nikopol, Henan Xibao Metallurgy Materials Group, Ningxia Jiyuan Metallurgical Group, Bisheng Mining, Jinneng Group, Guangxi Ferroalloy, Eurasian Resources Group, Fengzhen Fengyu Company, Glencore, TATA, and Zaporozhye.**



# Ferroalloys Market

Owing to the lack of a viable alternative that can meet the diverse applications, the future of the global ferroalloys market is healthy, expanding at an estimated CAGR of 5.9% during the forecast period of 2017 to 2025. The prosperity of the building and construction industry in a number of emerging economies is another key driver of the global ferroalloys market, wherein the development of lightweight and high strength steel grades is expected to open new opportunities.



Silico Manganese

**On the other hand, stringent governmental regulations pertaining to the environment and high operational costs are two glaring restraints over the global ferroalloys market. Ferroalloy Market size was estimated over USD 45 billion in 2017 and the industry will grow by a CAGR of more than 5.5% up to 2025.**

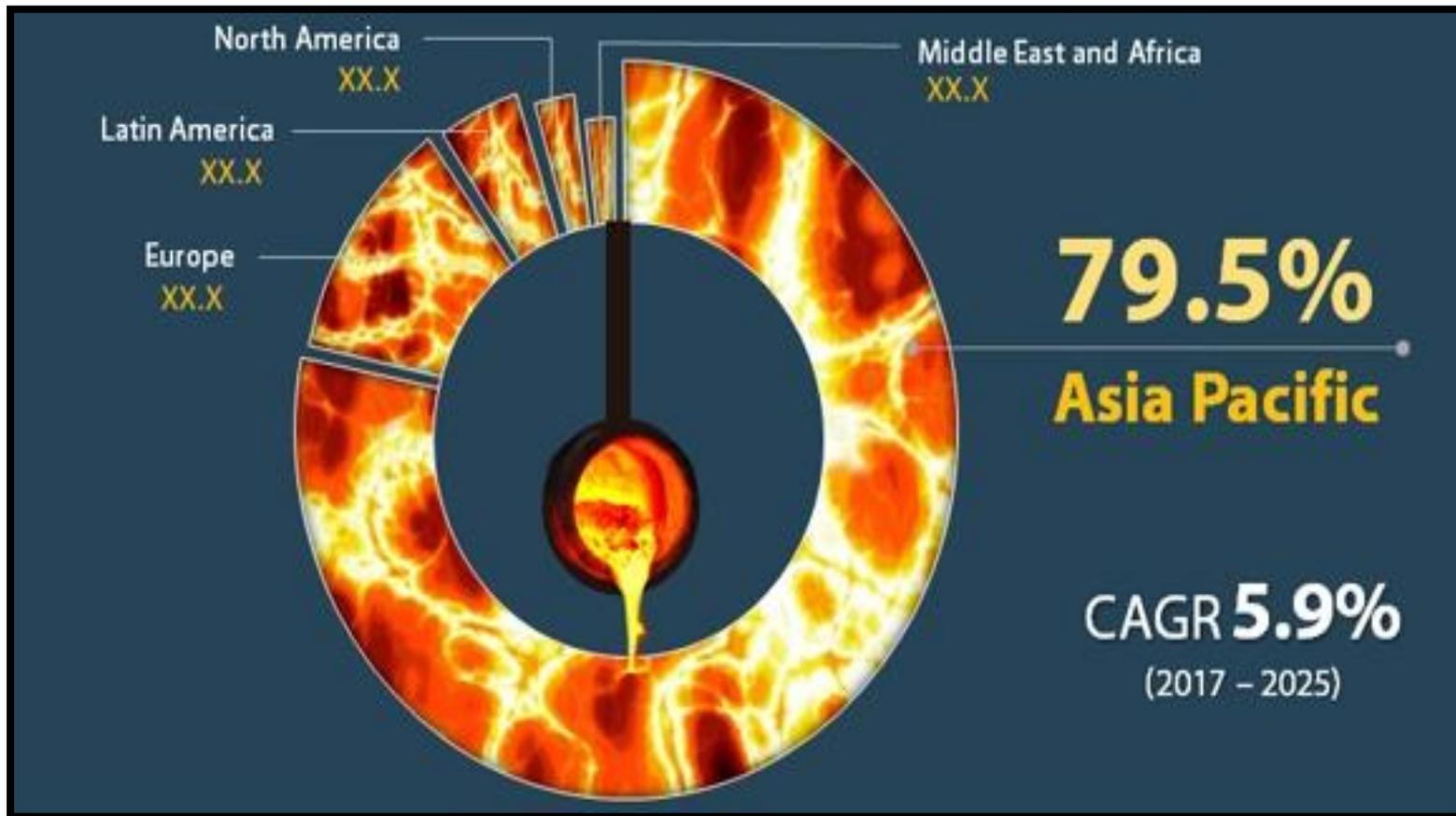
**Rising demand for steels in end user industries such as construction, shipbuilding, automotive and several other sectors is one of the major drivers for ferroalloy market. The product has main applications in manufacturing variety of steels such as stainless steel, alloy steel, carbon steel, etc. Presence of iron ore in abundance across the globe along with intensifying demand for various types of steel grades owing to lack of feasible substitutes will give an up thrust to ferroalloy market in near future.**

**Global crude steel production was about 1.6 billion tons in 2017, and showed a growth rate of around 5.3% in comparison to last year. The emerging nations such as China and India hold significant shares in this as the prime demand centers for steel.**

**Some of the major automobile manufacturers are present in these countries catering to the increasing demand from the local customers. Expanding population along with improving standard of living gives boost to construction sector as well. Recent initiatives taken by governments in Asia Pacific region to boost manufacturing sector will also catapult ferroalloy demand over forecast time period.**



# Global Ferroalloys Market Share (%), By Region (2017)



**Based on type, the global ferroalloys market has been segmented into two major categories, viz. bulk ferroalloys and noble ferroalloys. Bulk ferroalloys is further sub-segmented into ferrosilicon, ferromanganese, ferrochromium, ferro-silico-manganese, and ferro-silico-chromium. Manganese plays an essential part in the production of most varieties of steels and it is also one of the most important element in the production of cast iron. Most of the noble ferroalloys are made from rare earth minerals and are expensive to produce as compared to bulk ferroalloys. Most of the noble alloys are made from adding chromium, tungsten, nickel, boron, vanadium, niobium, titanium, cobalt, copper, molybdenum, phosphorus, and zirconium.**



**These rare earth metals helps in contributing special properties and character to the various alloy steels and cast irons.**

**India produces 3.5 million tonne (mt) of ferro alloys and consumes around 2.3 mt. The country exported 1.3 mt of ferro alloys, earning a foreign exchange of around Rs 8,900 crore. India's production of around 3.5 mt of ferro alloys consists of one million tonne of ferro chrome (FeCr) and 2.5 mt of manganese alloys.**

**Ferroalloy production in the organized sector started in the mid-sixties of the last century. Initially, ferroalloy units came up in the states of Andhra Pradesh, Karnataka, Odisha and Maharashtra mainly due to Availability and proximity of raw material sources.**

# Major Queries/Questions Answered in the Report?

- 1. What is Silico Manganese Manufacturing industry ?**
- 2. How has the Silico Manganese Manufacturing industry performed so far and how will it perform in the coming years ?**
- 3. What is the Project Feasibility of Silico Manganese Manufacturing Plant ?**
- 4. What are the requirements of Working Capital for setting up Silico Manganese Manufacturing plant ?**

- 5. What is the structure of the Silico Manganese Manufacturing Business and who are the key/major players ?**
- 6. What is the total project cost for setting up Silico Manganese Manufacturing Business?**
- 7. What are the operating costs for setting up Silico Manganese Manufacturing plant ?**
- 8. What are the machinery and equipment requirements for setting up Silico Manganese Manufacturing plant ?**

**9. Who are the Suppliers and Manufacturers of Plant & Machinery for setting up Silico Manganese Manufacturing plant ?**

**10. What are the requirements of raw material for setting up Silico Manganese Manufacturing plant ?**

**11. Who are the Suppliers and Manufacturers of Raw materials for setting up Silico Manganese Manufacturing Business?**

**12. What is the Manufacturing Process of Silico Manganese?**



**13. What is the total size of land required for setting up Silico Manganese Manufacturing plant ?**

**14. What will be the income and expenditures for Silico Manganese Manufacturing Business?**

**15. What are the Projected Balance Sheets of Silico Manganese Manufacturing plant ?**

**16. What are the requirement of utilities and overheads for setting up Silico Manganese Manufacturing plant?**

**17. What is the Built up Area Requirement and cost for setting up Silico Manganese Manufacturing Business?**

**18. What are the Personnel (Manpower) Requirements for setting up Silico Manganese Manufacturing Business?**

**19. What are Statistics of Import & Export for Silico Manganese?**

**20. What is the time required to break-even of Silico Manganese Manufacturing Business?**

**21. What is the Break-Even Analysis of Silico Manganese Manufacturing plant?**

**22. What are the Project financials of Silico Manganese Manufacturing Business?**

- 23. What are the Profitability Ratios of Silico Manganese Manufacturing Project?**
- 24. What is the Sensitivity Analysis-Price/Volume of Silico Manganese Manufacturing plant?**
- 25. What are the Projected Pay-Back Period and IRR of Silico Manganese Manufacturing plant?**
- 26. What is the Process Flow Sheet Diagram of Silico Manganese Manufacturing project?**

- 27. What are the Market Opportunities for setting up Silico Manganese Manufacturing plant?**
- 28. What is the Market Study and Assessment for setting up Silico Manganese Manufacturing Business?**
- 29. What is the Plant Layout for setting up Silico Manganese Manufacturing Business?**

# Table of Contents of the Project Report



# **Our Detailed Project Report contains**

- **Introduction**
- **Properties**
- **Uses & Applications**
- **List of Plant & Machineries**
- **Miscellaneous Items and Accessories**
- **Instruments, Laboratory Equipments and Accessories**
- **Electrification, Electric Load and Water**
- **Maintenance, Suppliers/Manufacturers of Plant and Machineries**



- **Process of Manufacture**
- **Flow Sheet Diagram**
- **List of Raw Materials**
- **Availability of Raw Materials**
- **Requirement of Staff & Labour**
- **Skilled & Unskilled Labour**
- **Requirement of Land Area**
- **Built up Area**
- **Plant Layout**

# Project Financials

• <b>Project at a Glance</b>	<b>Annexure</b>
• Assumptions for Profitability workings .....	1
• Plant Economics.....	2
• Production Schedule.....	3
• Land & Building.....	4
Factory Land & Building	
Site Development Expenses	

- **Plant & Machinery.....5**
  - Indigenous Machineries**
  - Other Machineries (Miscellaneous, Laboratory etc.)**
  
- **Other Fixed Assets.....6**
  - Furniture & Fixtures**
  - Pre-operative and Preliminary Expenses**
  - Technical Knowhow**
  - Provision of Contingencies**
  
- **Working Capital Requirement Per Month.....7**
  - Raw Material**
  - Packing Material**
  - Lab & ETP Chemical Cost**
  - Consumable Store**

- **Overheads Required Per Month and Per Annum.....8**  
**Utilities & Overheads (Power, Water and Fuel Expenses etc.)**  
**Royalty and Other Charges**  
**Selling and Distribution Expenses**
  
- **Salary and Wages .....9**
  
- **Turnover Per Annum .....10**
  
- **Share Capital.....11**  
**Equity Capital**  
**Preference Share Capital**



- **Annexure 1 :: Cost of Project and Means of Finance**
- **Annexure 2 :: Profitability and Net Cash Accruals**
  - **Revenue/Income/Realisation**
  - **Expenses/Cost of Products/Services/Items**
  - **Gross Profit**
  - **Financial Charges**
  - **Total Cost of Sales**
  - **Net Profit After Taxes**
  - **Net Cash Accruals**

• **Annexure 3 :: Assessment of Working Capital requirements**

- **Current Assets**
- **Gross Working Capital**
- **Current Liabilities**
- **Net Working Capital**
- **Working Note for Calculation of Work-in-process**

• **Annexure 4 :: Sources and Disposition of Funds**

- **Annexure 5 :: Projected Balance Sheets**

- **ROI (Average of Fixed Assets)**
- **RONW (Average of Share Capital)**
- **ROI (Average of Total Assets)**

- **Annexure 6 :: Profitability Ratios**

- **D.S.C.R**
- **Earnings Per Share (EPS)**
- **Debt Equity Ratio**

• **Annexure 7 :: Break-Even Analysis**

- **Variable Cost & Expenses**
- **Semi-Variable/Semi-Fixed Expenses**
- **Profit Volume Ratio (PVR)**
- **Fixed Expenses / Cost**
- **B.E.P**

- **Annexure 8 to 11 :: Sensitivity Analysis-Price/Volume**

- **Resultant N.P.B.T**
- **Resultant D.S.C.R**
- **Resultant PV Ratio**
- **Resultant DER**
- **Resultant ROI**
- **Resultant BEP**

- **Annexure 12 :: Shareholding Pattern and Stake Status**

- **Equity Capital**

- **Preference Share Capital**

- **Annexure 13 :: Quantitative Details-Output/Sales/Stocks**

- **Determined Capacity P.A of Products/Services**

- **Achievable Efficiency/Yield % of Products/Services/Items**

- **Net Usable Load/Capacity of Products/Services/Items**

- **Expected Sales/ Revenue/ Income of Products/ Services/ Items**

- **Annexure 14** :: **Product wise Domestic Sales Realisation**
- **Annexure 15** :: **Total Raw Material Cost**
- **Annexure 16** :: **Raw Material Cost per unit**
- **Annexure 17** :: **Total Lab & ETP Chemical Cost**
- **Annexure 18** :: **Consumables, Store etc.**
- **Annexure 19** :: **Packing Material Cost**
- **Annexure 20** :: **Packing Material Cost Per Unit**

- **Annexure 21** :: **Employees Expenses**
- **Annexure 22** :: **Fuel Expenses**
- **Annexure 23** :: **Power/Electricity Expenses**
- **Annexure 24** :: **Royalty & Other Charges**
- **Annexure 25** :: **Repairs & Maintenance Expenses**
- **Annexure 26** :: **Other Manufacturing Expenses**
- **Annexure 27** :: **Administration Expenses**
- **Annexure 28** :: **Selling Expenses**

- **Annexure 29 :: Depreciation Charges – as per Books (Total)**
- **Annexure 30 :: Depreciation Charges – as per Books (P & M)**
- **Annexure 31 :: Depreciation Charges - as per IT Act WDV (Total)**
- **Annexure 32 :: Depreciation Charges - as per IT Act WDV (P & M)**
- **Annexure 33 :: Interest and Repayment - Term Loans**
- **Annexure 34 :: Tax on Profits**
- **Annexure 35 :: Projected Pay-Back Period and IRR**

# Tags

#Silico\_Manganese, #Silicomanganese, #Silico\_Manganese\_Manufacture, Manufacture of Silico Manganese in India, Silico-Manganese (Si-Mn), Ferro Alloys, Silicomanganese Production, #Silicomanganese\_Production\_Process, Ferro Alloy Manufacture, Silico Manganese Manufacturing Process, Production of Silico-Manganese, #How\_to\_Start\_Production\_of\_Ferroalloys, Process for Production of Silicomanganese, #Ferro\_Alloys\_Production\_Process Pdf, #Silicomanganese\_Manufacturing\_Project, Ferroalloy Manufacture, Ferroalloy Production, Manufacturing of Silico Manganese, Silico Manganese Manufacturing Plant, #Opportunities\_in\_Ferroalloy\_Sector, Indian Ferro Alloy Industry, Ferro Alloys Industry, #Ferro\_Alloy\_Industry\_in\_India, Detailed Project Report on Ferro Alloys Production, Silico Manganese Manufacturing Process pdf, #Project\_Report\_on\_Silicomanganese\_Production, Plans to Set up a Ferro Alloy Unit, Pre-Investment Feasibility Study on Ferroalloy Production, Techno-Economic feasibility study on Silicomanganese Production, Feasibility report on Ferroalloy Production, Free Project Profile on Ferro Alloys Production, Project profile on Ferroalloy Production, Download free project profile on Silicomanganese Production

**Niir Project Consultancy Services (NPCS)  
can provide Detailed Project Report on  
**Silico Manganese Production.**  
**Ferroalloys Industry****

*The global market for Silicomanganese is expected to grow at a CAGR of roughly 6.0% over the next five years.*

**See more**

<https://bit.ly/2FRkjM1>

<https://bit.ly/324FK5v>

<https://bit.ly/2xrZzWm>



# Contact us

## NIIR PROJECT CONSULTANCY SERVICES

106-E, Kamla Nagar, Opp. Spark Mall,  
New Delhi-110007, India.

Email: [npcs.ei@gmail.com](mailto:npcs.ei@gmail.com) , [info@entrepreneurindia.co](mailto:info@entrepreneurindia.co)

Tel: +91-11-23843955, 23845654, 23845886, 8800733955

Mobile: +91-9811043595

Fax: +91-11-23845886

Website : [www.entrepreneurindia.co](http://www.entrepreneurindia.co) , [www.niir.org](http://www.niir.org)

Take a look at NIIR PROJECT CONSULTANCY SERVICES on #StreetView

<https://goo.gl/VstWkd>



# Follow us



➤ <https://www.linkedin.com/company/niir-project-consultancy-services>



➤ <https://www.facebook.com/NIIR.ORG>



➤ <https://www.youtube.com/user/NIIRproject>



➤ <https://plus.google.com/+EntrepreneurIndiaNewDelhi>



➤ [https://twitter.com/npcs\\_in](https://twitter.com/npcs_in)



➤ <https://www.pinterest.com/npcsindia/>





**Thank  
You**

**For more information, visit us at:**

[www.niir.org](http://www.niir.org)

[www.entrepreneurindia.co](http://www.entrepreneurindia.co)



[www.entrepreneurindia.co](http://www.entrepreneurindia.co)