

Silicon Metal Product Profile

Silicon Metal Overview

Silicon Metal, also known as Industrial Silicon, is a silver-gray crystalline material produced by the reduction of high-purity quartz (SiO_2) with carbon in electric arc furnaces. It features high purity, excellent heat resistance, strong oxidation resistance, and outstanding electrical conductivity, making it a critical raw material across metallurgy, chemical, electronic, and aluminum alloy industries. With its stable physical and chemical properties, silicon metal serves as a fundamental additive and alloying element for numerous downstream applications, enhancing the performance, durability, and processing characteristics of various metal and chemical products.

Main Grades of Silicon Metal

Silicon Metal 1101: One of the highest-purity grades, characterized by extremely low impurity levels of iron, aluminum, and calcium. Primarily used in high-end aluminum alloys, electronic materials, and chemical-grade silicon production.

Silicon Metal 2202: Offers balanced purity and cost efficiency, suitable for general aluminum alloy production, special steels, and chemical applications. Ensures consistent alloying results and reliable metallurgical performance.

Silicon Metal 3303: A standard metallurgical grade widely used for steelmaking deoxidation, foundry additives, and aluminum alloy manufacturing. Ideal for large-volume industrial use where strength and deoxidizing properties are required.

Chemical Composition of Silicon Metal Grades

Grade	Si (Min %)	Fe (Max %)	Al (Max %)	Ca (Max %)
1101	99.79	0.10	0.10	0.01
2202	99.58	0.20	0.20	0.02
3303	99.37	0.30	0.30	0.03

Applications and Industries

Silicon metal plays a vital role in modern industrial production and advanced materials manufacturing. Its versatility allows it to serve as a core raw material in multiple sectors:

- **Metallurgical Industry:** Used as a deoxidizer and alloying agent in steelmaking and casting to improve strength, hardness, and corrosion resistance.
- **Aluminum Alloy Industry:** Enhances aluminum fluidity, wear resistance, and mechanical strength—ideal for automotive, aerospace, and construction components.

- **Chemical Industry:** Produces silicone compounds, resins, sealants, and lubricants, as well as high-purity polysilicon for solar energy and semiconductors.
- **Electronics and Photovoltaic Fields:** High-purity silicon grades are processed into solar-grade or semiconductor-grade silicon for integrated circuits and photovoltaic cells.
- **Refractory and Ceramics:** Improves high-temperature stability and strength in refractories and ceramic materials.

About Zhenan Ferroalloy

Zhenan Ferroalloy, located in Anyang City, Henan Province, China, is a leading manufacturer and exporter specializing in silicon metal and ferroalloy materials. With over 30 years of production experience, the company provides high-purity, high-performance silicon metal products tailored to global customer needs. The factory is equipped with modern smelting furnaces, precision screening systems, and intelligent packaging lines, ensuring consistent quality from raw material to final shipment. Independent import and export rights allow direct and efficient overseas service.

Production Capacity and Technical Strength

- **Annual Output:** Up to 60,000 tons of silicon metal per year, ensuring stable supply and timely delivery.
- **Technical Expertise:** A dedicated team of metallurgical experts oversees production and quality inspection.
- **Customization:** Chemical composition, particle size, and packaging can be tailored to customer requirements (grades 1101, 2202, 3303).
- **Quality Control:** In-house laboratory testing for Si, Fe, Al, Ca, and trace elements. Supports third-party inspections (SGS, BV, CIQ).

Commitment to Global Customers

Zhenan Ferroalloy adheres to the philosophy of 'Quality First, Integrity Always.' By combining consistent quality, competitive pricing, and professional service, we have established long-term partnerships with customers in Europe, Asia, the Middle East, and South America. Our goal is to be your most reliable supplier of silicon metal, helping you achieve efficiency and success in your production and trade.

Supply Capacity and Packaging

Zhenan Ferroalloy maintains a strong and stable production capacity, ensuring reliable supply for global customers. The company's monthly output reaches up to 3,000 metric tons of silicon metal. The minimum order quantity (MOQ) is 20 metric tons. Products are typically packed in 1MT jumbo bags or customized packaging to ensure safe handling and

convenient transportation. With well-established export channels and professional logistics coordination, we guarantee on-time delivery, consistent quality, and smooth shipment worldwide.





PROVIDE SAMPLE



PROVIDE SAMPLE



PROVIDE SAMPLE



PROVIDE SAMPLE