

Silicon Metal



1. Summary

Silicon is the second-most abundant element in the earth's crust after oxygen, and in natural form it is almost exclusively combined with oxygen as silicon dioxide and silicates. Metallurgical silicon is produced from quartz reacted with reduction materials such as coal, coke, charcoal and wood chips at very high temperatures with furnace electrodes. Metallurgical silicon is also called silicon metal, pure silicon, or crystal silicon etc, we mentioned it as silicon metal in the following text.

2. Application

Silicon metal is widely used in many fields, such as electronics, steel smelting, optics, machinery, automobile manufacture, chemical industry, metallurgy, medicine, and national defense etc. The mainly application of silicon is list as following:

(1) In aluminum alloy smelting industry. The consumption of silicon metal in this industry takes 50% of the total amount. Aluminum alloy has advantage of heat-resisting, wear-resisting, and small thermal-expansion coefficient, and it is widely used in automobile manufacture industry, aviation industry, electrical industry, and ship manufacture industry etc.

(2) Used as non-iron-base alloy chemical additive, and also as silicon steel alloying constituent. It is the essential deoxidizer for steel smelting and non-iron-base alloy smelting. In the steel-smelting industry, it consumes 5kg metallic silicon to produces one ton steel.

(3) Used as the basic raw material for polycrystalline and monocrystalline silicon industry. The silicon metal can be made into polycrystalline silicon according to corresponding procedures, and then processing and growing into monocrystalline silicon. Of which's wafer is used in integrated circuit, the electronic component, the solar cell industry and so on. It is the essential foundation material of the modern industry and science and technology.

(4) In chemical industry, it is used as additives for organic compound like silicone oil, the

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silica gel, the building antiseptic, the fumed silica, paint film for packing, upscale furniture coating, decorative coating, and general industrial coating etc.

(5) The silicon metal also serves as reducing agent for some metals, such as new ceramic alloy processing, high-quality fire-proof material processing and so on.

At present, the application fields of silicon metal is still on expanding, like the manufacture of solar energy, the manufacture of silicon nitride, nanometer silicon material which is used for the optical fiber, the micro electron and so on.

3. Specifications

Generally, we produced national standard silicon metal listed as following:

Item and Grade	Chemical Components (%)			
	Si (min)	Impurity (max)		
		Fe	Al	Ca
1101	99.50	0.10	0.10	0.01
2202	99.40	0.20	0.20	0.02
3303	99.30	0.30	0.30	0.03
421	99.00	0.40	0.20	0.10
441	99.00	0.40	0.40	0.10
553	98.50	0.50	0.50	0.30

4. Packing and Transportation

All the aboved products will be packed in 1 mt big bags, suitable for shipping by sea or railway.

5. Quality Control and Inspection

Detecting instrument is ICP detectors produced by BRUKER, Germany. This ensures that our laboratory meets both domestic and international standards.

6. Company Information:

SINOSI GROUP is one of the world's leading suppliers of silicon metals and materials, which are essential in the manufacturing of a wide range of products needed by today's society. SINOSI actively develops world-class industrial technology. We have a network of sales offices covering the most important markets in Europe, Americas and Asia. They are located in Germany, United Kingdom, France, Italy, Denmark, Sweden, US, Canada, India,

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Japan, Korea etc.

7. Contact Information:

For more detailed information about we SINOSI GROUP, please visit our website at [Http://www.sinosi.com](http://www.sinosi.com) and you are always welcome to contact us at any time according to the follow information once you like to have any purchase or enquiry for above silicon metal or any of our Sinosi products in the world wide.

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