



兆金铁合金

以质为本 信誉至上

QUALITY ORIENTED REPUTATION SUPREME



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**Company Profile**

ANYANG ZHAOJIN FERROALLOYS CO., LTD was established in 2011. The registered capital is 10 million yuan. There are about 50-100 employees. covering an area of more than 100 acres.

Anyang Zhaojin Ferroalloy Co., Ltd. is a professional manufacturer of ferroalloys. The main products are silicon-calcium, silicon-calcium powder, silicon-calcium cored wire, 50/20 silicon-calcium, Si40 Fe40 Ca10 silicon-calcium, ferrosilicon, silicon-magnesium alloy, nodulizer, metal silicon, metal magnesium, metal manganese, metal calcium, ferrosilicon balls, carburizers, etc. At the same time, chemical composition and size can also be optimized according to customer requirements.

The company has also passed the ISO9001 international quality management certification and obtained the certificate.

ANYANG ZHAOJIN FERROALLOYS CO., LTD always adheres to the strategic development concept of "new idea, new development, new thinking" and innovates corporate culture.

Adhering to the management mode of "quality first, service first", we will join hands with friends, new and old customers to create a better tomorrow.



## Ferro silicon



Grade	Chemical Composition (%)							
	Si	Al	Ca	Mn	Cr	P	S	Si
FeSi75	>75	>1.5	<1.0	<0.5	<0.5	<0.04	<0.02	<0.2
FeSi72	>72	>2.0	<1.0	<0.5	<0.5	<0.04	<0.02	<0.2

Item%	Si	P	S	C	Al
		<			
FeSi75	75	0.03	0.02	0.15	1
FeSi75	75	0.03	0.02	0.15	0.5
FeSi75	75	0.03	0.02	0.1	0.1
FeSi75	75	0.03	0.02	0.05	0.05
FeSi75	75	0.03	0.02	0.02	0.02
FeSi72	72	0.03	0.02	0.15	1
FeSi72	72	0.03	0.02	0.15	0.5

### Product description

(1) Used as deoxidizer and alloying agents in the steel industry. In order to obtain qualified chemical composition and guarantee the quality of steel, in the last stage of the steel must be deoxidized. The chemical affinity between silicon and oxygen is very large, Thus ferrosilicon is strong deoxidizer used in sedimentation and diffusion deoxidation of steel-making. Add a certain amount of silicon in the steel, can significantly improve the strength, hardness and elasticity of steel.

(2) Used as a nucleating agent and spheroidizing agent in the iron industry. Cast iron is a kind of important modern industrial metal materials, It is much cheaper than steel, easily to melt refining, with excellent casting performance and seismic capacity is much better than steel. Especially the nodular cast iron, Its mechanical properties at or near the mechanical properties of steel. Add a certain amount of silicon in cast iron can prevent iron in formation, promote the precipitation of graphite and carbide spheroidizing. Thus in nodular iron production, ferrosilicon is a kind of important inoculants ( Help separate out graphite)and spheroidizing agent.

Silicon Briquette is a good substitute for FeSi in steel making, which has advantage in lowering the costs of production and reusing resources. This product is the new product we developed and mainly repressed by silicon metal powder. Now, there are far and wide market in domestic and South Korea. Our products are customer-oriented with different granularity and different chemical composition according to requirement, such as silicon metal powder, FeSi powder, the nodulizer, the ferrosilicon inoculant, and so on.



ITEM	SIZE	CHEMICAL COMPOSITION(%)					
		Si	Fe	Al	P	S	C
Ferrosilicon Briquette	6cm	≥68	≥18	≤3	0.03	0.03	≤1.5
Ferrosilicon block	10-50mm	≥65	≥20				
Ferrosilicon particle	10-30mm						

## Silicon metal



### Product description

Mainly used as basic raw materials of silicone polymer materials, such as: Single silicon, metallurgical casting, smelting

Chemical products, refractory material, aluminum and aluminum alloy production industries, etc.

Function	Rank	Size(mesh)	Si(%)	Fe	Al	Ca
Metallurgical	Super	0-500	99.0	0.4	0.4	0.1
	Level1	0-500	98.5	0.5	0.5	0.3
	Level2	0-500	98	0.5	0.5	0.3
	Level3	0-500	97	0.6	0.6	0.5
	Standard	Standard	0-500	95	0.6	0.7
0-500			90	0.6	--	--
0-500			80	0.6	--	--
Chemicals	Super	0-500	99.5	0.25	0.15	0.05
	Level1	0-500	99	0.4	0.4	0.1
	Level2	0-500	98.5	0.5	0.4	0.2
	Level3	0-500	98	0.5	0.4	0.4
	Standard	Standard	0-500	95	0.5	--

## Calcium Silicon Alloy



### Product description

#### Usage:

As compound deoxidizer (deoxidization, desulphurization and degassing) Used in steelmaking, alloy smelting. As inoculant, also used in casting production.

#### Physical state:

The ca-si section is light grey which appeared with obvious grain shape. Lump, Grain and powder.

#### Package:

our company can offer various specified grain shape in according with user's demands, which is packaged with plastic textile and ton bag.

#### Chemical element:

Grade	Chemical element%					
	Ca	Si	C	Al	P	S
	≥			≤		
Ca30Si60	30	60	1.0	2.0	0.04	0.06
Ca30Si58	30	58	1.0	2.0	0.04	0.06
Ca28Si55	28	55	1.0	2.4	0.04	0.06
Ca25Si50	25	50	1.0	2.4	0.04	0.06

#### Notes:

Transport process and warehouse storage, should be placed in a dry place, afraid of damp.

### 3.1 calcium silicon cored wire



#### Product description

##### Features:

It is beneficial to adjust and control the content of some easily oxidated elements and microscale ones reduce the time of smelt and control the elements accurately.

Cleen the steel liquid,change the function and forms of mixd subjects.

The equipments needed by the feed line are both simple, reliable, and land-occupied.

#### Packaging quality of the line:

No powder leaking, no open seam, no fade or empty package with uniform density of powder core.

Spec:  $\Phi 9\text{mm}$   $\Phi 13\text{mm}$   $\Phi 16\text{mm}$

All the above cored wires are manufactured in accordance with the national standard, which are based on the clients specific requires as well

Brand	Chemical composition(%)					
	Ca	Si	C	Al	P	S
	>				<	
Ca31Si60	31	50-60	0.8	2.4	0.04	0.06
Ca28Si60	28					

### Recarburizer



#### 1. Technical indicators:

Compositions	F.C	S	Volatilmatter	Ashcontent	Moisture
carburant92	$\geq 92$	$\leq 0.3$	$\leq 0.1$	$\leq 2$	$\leq 1$
carburant90	$\geq 90$	$\leq 0.3$	$\leq 0.1$	$\leq 2$	$\leq 1$

Compositions	F.C	S	Volatilmatter	Ashcontent	Moisture
carburant98	$\geq 98$	$\leq 0.3$	$\leq 0.5$	$\leq 0.5$	$\leq 0.7$

Compositions	F.C	S	Volatilmatter	Ashcontent	Moisture
carburant95	$\geq 95$	$\leq 0.05$	$\leq 1$	$\leq 7$	$\leq 1$
carburant92	$\geq 92$	$\leq 0.05$	$\leq 1$	$\leq$	$\leq 1$

#### Product description

##### product characteristics:

High fixed carbon content, low sulfur content stable carbon addition effect and high carbon yield. Scope of application:

Being used for the carburizing of a variety of electric smelting furnace to cast steel and iron.

##### Grain size:

Common grain size: 0-1mm, it can supply goods meet users demands.

##### Using methods:

1. Adjust carbon points, put into the central lower part of furnace with metal materials, the yield can reach 90%-95%;

2. Acust the carbon after the molten steel melt, put it on the surface of molten steel. finally, the rate is about 66% by riten steel's swirt stirring or artificial mixing.

## Calcium metal



Calcium metal or metallic calcium is a silver-white metal. It is mainly used as a deoxidizing, decarburizing, and desulfurizing agent in alloy steel and special steel production. It is also used as a reducing agent in high-purity rare earth metal processes.

### Application:

The main mineral sources in industry are limestone, gypsum and so on.

Calcium can be used as alloy oil dehydrating agent, metallurgical reducing agent, deoxidizer, etc.,

Mainly used in industrial and medical fields.

Calcium is an essential macro element for the human body, and it is also the most abundant inorganic element in the human body.

It is also an activator of more than 200 enzymes in the human body, enabling various organs of the human body to function normally,

Insufficient or excessive calcium content in the human body will affect the growth, development and health of the human body.

Ca	Cl	N	Mg	Cu	NI	Mn	Al
98.5%min	0.2%max	0.1%max	0.8%max	0.02%max	0.005%max	0.03%max	0.5%max
98%min	0.2%max	0.1%max	0.8%max	0.02%max	0.005%max	0.03%max	0.5%max
97%min	0.2%max	0.1%max	0.8%max	0.02%max	0.005%max	0.03%max	0.5%max

## Magnesium metal



### Product description:

Magnesium metal is a new type of lightweight and corrosion-resistant metal material. It is a silver-white metallic luster.

### Function:

1. It has superior properties such as low specific gravity, high unit weight strength and high chemical stability.
2. The application of magnesium is mainly concentrated in the four major fields of magnesium alloy production, aluminum alloy production, steelmaking desulfurization and aviation military industry. It is widely used in automobile manufacturing, light industry, metallurgical industry, chemical industry, electronics industry and instrument manufacturing industry.
3. Corrosion resistance and light weight.
4. It is an additive agent in conventional propellants and the production of nodular graphite in cast iron.

Brand	Chemical Composition						
	Mg(%min)	Fe(%max)	Si(%max)	Ni(%max)	Cu(%max)	Al(%max)	Mn(%max)
Mg99.98	99.98	0.002	0.003	0.002	0.0005	0.004	0.0002
Mg99.95	99.95	0.004	0.005	0.002	0.003	0.006	0.01
Mg99.90	99.90	0.04	0.01	0.002	0.004	0.02	0.03
Mg99.80	99.80	0.05	0.03	0.002	0.02	0.05	0.06

## Manganese metal



### Product description:

Electrolytic metal manganese refers to the elemental metal by using an electrolytic cell to electrolyse manganese salt precipitated by acid leaching of manganese ore. It is firm and brittle flakes with irregular shape. It is bright on one side with silver white color but rough on the other with brown color. The purity of electrolytic manganese is very high, containing 99.7% manganese.

### Application:

1. For the smelting of copper alloys, a large amount of manganese is required. Also, the composition is easy to be accurately controlled.
2. Electrolytic metal manganese is widely used in manganese copper alloys, manganese aluminum alloys and 200 series stainless steels. Manganese can improve the hardness, strength, toughness, wear resistance and corrosion resistance of metal materials.
3. Because of its high purity and low impurities, electrolytic metal manganese has been successfully and widely used in various fields such as iron and steel smelting, non-ferrous metallurgy, electronic technology, chemical industry, environmental protection, food hygiene, welding electrode industry and aerospace industry

Electrolytic manganese metal

Model	Mn(%min)	C(%max)	S(%max)	P(%max)	Fe(%max)	Si(%max)	Se(%max)
Mn99.95	99.95	0.01	0.03	0.001	0.006	0.002	0.0003
Mn99.80	99.80	0.02	0.03	0.005	0.003	0.005	0.06
Mn99.70	99.70	0.04	0.05	0.005	0.003	0.010	0.10
Mn99.50	99.50	0.08	0.10	0.10	0.05	0.015	0.15

Electrolytic Manganese Metal Flakes

Product Grades	Chemical element						
	Mn(%min)	C(%max)	S(%max)	P(%max)	Fe(%max)	Si(%max)	Se(%max)
	≥ (Min)	≤ (Max)					
Mn99.8	99.8	0.02	0.03	0.005	0.03	0.005	0.06
Mn99.70	99.7	0.04	0.05	0.005	0.03	0.005	0.10

## Silicon magnesium alloy



### Product description

According to customer request make the element content, package and size.

It is the Nodularizer products producing by the advanced production technology, Compact structure, Composition stability, Uniform unbiased fold, low MgO content.

Steady ball reaction, High absorptivity of Mg, Long recession-proof.

After spheroidizing, The graphite nodule round, small, small tend.

Size: 0.5-6mm, 1-10mm, 1-20mm, 3-25mm .

Package: Woven bags, inner with plastic bag.

N. W.: 25KG/bag. According to customer request packaging.

Spec	Code name	Chemical composition(%)						
		Mg	Re	Si	Ca	Al	Ti	Fe
FeSiMg5Re2	5-2	4.0-6.0	1.0-3.0	38-44	2.0-3.0	<1.0	<0.5	balance
FeSiMg6Re1	6-1	5.0-7.0	0.5-1.5	38-44	2.0-3.0	<1.0	<0.5	balance
FeSiMg7Re1	7-1	6.0-8.0	0.5-1.5	38-44	1.0-1.5	<1.0	<0.5	balance
FeSiMg7Re3	7-3	6.0-8.0	2.0-4.0	38-44	2.0-3.5	<1.0	<0.5	balance
FeSiMg8Re3	8-3	7.0-9.0	2.0-4.0	38-44	2.0-3.5	<1.0	<0.5	balance
FeSiMg8Re5	8-5	7.0-9.0	4.0-6.0	38-44	2.0-3.5	<1.0	<0.5	balance
FeSiMg8Re7	8-7	7.0-9.0	6.0-8.0	38-44	2.0-3.5	<1.0	<0.5	balance
FeSiMg10Re7	10-7	9.0-11.0	6.0-8.0	38-44	2.0-3.5	<1.0	<0.5	balance
FeSiMg25Si40	H-Mg	25-40	1.5-2.0	40-45	1.5-3.0	<1.0	<0.5	balance

## Ferro chrome



### Product description:

#### 1. High-carbon ferrochrome

High-carbon ferrochrome is usually used as an alloying agent for ball steel (0.5%~1.45%Cr), tool steel, die steel (5%~12%Cr), and high-speed steel (3.8%~4.4%Cr), and can harden steel. Increase the wear resistance and hardness of steel.

#### 2. Medium and low-carbon ferrochrome

Medium and low-carbon ferrochrome is used in the production of medium and low-carbon structural steel, carburizing steel, gears, high-pressure blower blades, valve plates, etc.

#### 3. Micro-carbon ferrochrome

Micro-carbon ferrochrome is mainly used to produce stainless steel, wear-resistant steel, and heat-resistant steel.

### Product Applications

Ferro chromium has three functions in the steelmaking and casting industry.

1. Ferro chromium alloys can remove oxygen from molten steel in the steelmaking process, and other impurities such as sulfur and nitrogen in steel can also be removed with other ferroalloys.
2. Alloy additives. According to the composition requirements of the steel type, ferro chromium alloy elements are added to the steel to improve its performance of the steel.
3. As inoculant, ferro chromium alloy is added to molten iron before casting to improve the crystalline structure of cast iron.

Brand		Chemical composition(%)				
		Cr	C	Si	P	S
Micro carbon	FeCr-1	63--68	0.03-0.15	1.0-2.0	0.03-0.06	0.025-0.03
	FeCr-2	58-68	0.03-0.15	1.0-2.0	0.03-0.06	0.025-0.03
Low carbon	FeCr-3	58-68	0.25-0.5	1.5-3.0	0.03-0.06	0.025-0.05
	FeCr-4	63-68	0.25-0.5	1.5-3.0	0.03-0.06	0.025-0.05
Medium carbon	FeCr-5	58-68	1.0-4.0	1.5-3.0	0.03-0.06	0.025-0.05
	FeCr-6	63-68	1.0-4.0	1.5-3.0	0.03-0.06	0.025-0.05
High carbon	FeCr-7	58-68	4.0-10.0	3.0-5.0	0.03-0.06	0.03-0.06
	FeCr-8	63-68	4.0-10.0	3.0-5.0	0.03-0.06	0.03-0.06

## Si40/Fe40/Ca10



### Product description

#### Usage:

As compound deoxidizer (deoxidization, desulphurization and degassing) Used in steelmaking, alloy smelting. As inoculant, also used in casting production.

#### Physical state:

The ca-si section is light grey which appeared with obvious grain shape. Lump, Grain and powder.

#### Package:

our company can offer various specified grain shape in according with user's demands, which is packaged with plastic textile and ton bag.

#### Chemical element:

Ca	Si	Fe	Al	C	P
10-15%	40-45%	40-45%	2.0%max	0.5%max	0.05%max