SGHYZ

PRODUCT PROCHURE



BEIJING SHOUGANG GITANE NEW MATERIALS CO.，LTD

SGHYZ

High Temperature Electric Resistance Alloy

Beijing Shougang GITANE New Materials Co., Ltd. is committed to the long-term research and development of high-end electric resistance alloy products with good oxidation resistance and good temperature resistance. After the first generation of 0Cr21Al6Nb, the second generation of HRE and other series of high temperature electric resistance alloy products have been widely used, the third generation of high temperature new variety SGHYZ products have been developed. Compared with HRE, the purity of SGHYZ products has been further improved and the oxidation resistance has been further optimized. By virtue of the special combination of micro-alloying elements and unique metallurgical manufacturing process, the material has been recognized by customers at home and abroad in the field of high temperature and heat-resistant fiber. SGHYZ has been successfully applied to a series of industrial fields such as ceramic sintering, chip manufacturing, automotive glass kilns, industrial kilns with high power density and high temperature, industrial burners, boiler renovation, photovoltaic crystal treatment, glass annealing, high temperature flue gas treatment, etc. SGHYZ smelting and production technology has been authorized by the national invention patent, patent No. ZL201910173874X, certificate No. 4051862.

At present, our company is developing the fourth generation of ultra-high temperature electric heating new material SGHT, wire material and pipe material have been applied in high-end fields such as semiconductor manufacturing, welcome to discuss related business.

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Main Chemical Composition

SGHYZ	
C	≤0.04%
Si	≤0.4%
Cr	20-23%
Al	5.8%
rare element	add



证书号第4051862号

发明专利证书

发明名称：一种耐高温铁铬铝合金及其制备方法

发明人：陶科;李刚;王彦杰

专利号：ZL 2019 1 0173874.X

专利申请日：2019年03月08日

专利权人：北京首钢吉泰安新材料有限公司

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授权公告日：2020年10月27日　　授权公告号：CN 109680206 B

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2020年10月27日

第1页(共2页)

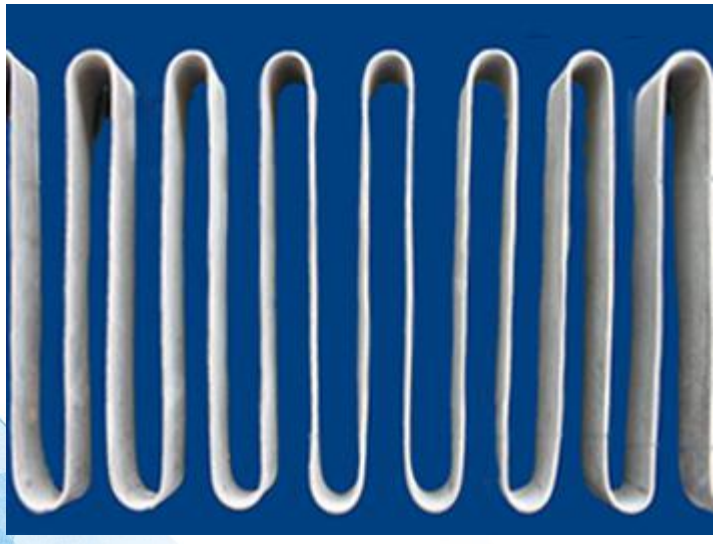
其他事项参见续页

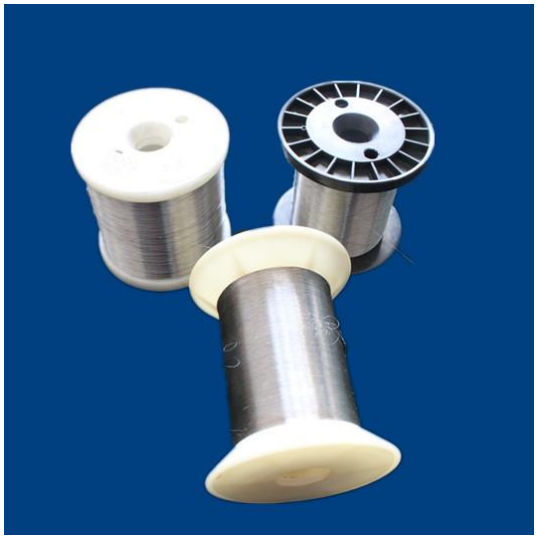
Specification range

1、wires　diameterφ: 0.1-9.0mm

2、ribbons　thickness d: 0.1-0.4mm width L: 0.5-4.5mm

3、strips　thickness d: 0.5-2.5 width L: 5-48mm





Surface



blue oxidation

diameter is more than 5mm



golden continuous annealing

diameter is 1.0-5.0mm



bright annealing

diameter is not more than 1.0mm



strips

polished annealing

We can customize production according to customers request.

Properties and Applications

1、Applications

Max continuous operating temperature	Tensile strength	Tensile strength at 1000℃
1425℃	**650-800 N/mm^2**	**20 MPa**
Elongation at rupture	**20℃**Electrical resistivity	Density
> 14%	**1.45±0.07 μ·Ω·m**	**7.1 g/cm^3**
Radiation Coefficient after complete oxidation	**1350℃**Fast life **(GB/T13300-91)**	
0.7	**> 80 h**	
Applications		
High temperature ceramic furnace/high temperature heat treatment furnace/high temperature diffusion furnace in electronics industry		

2、Average coefficient of linear expansion

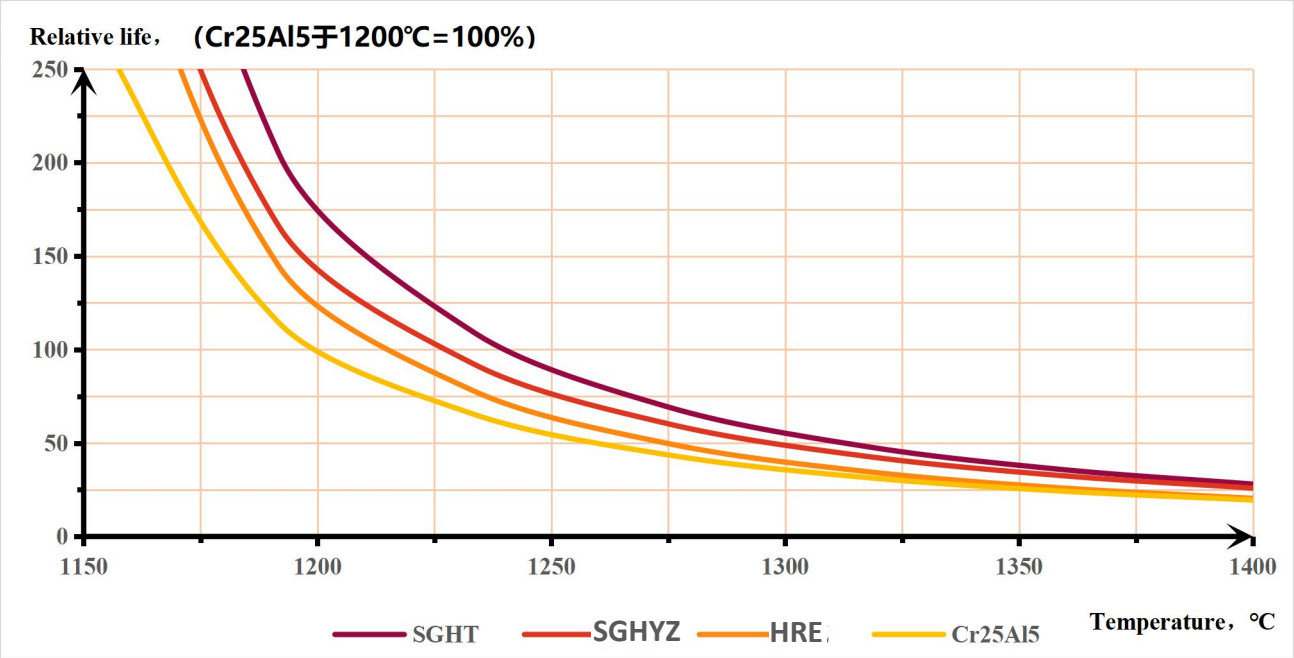
Temperature	Average coefficient of linear expansion
20-250℃	**11×10^{-6}/k**
20-500℃	**12×10^{-6}/k**
20-750℃	**14×10^{-6}/k**
20-1000℃	**15×10^{-6}/k**

3、Temperature Correction Coefficient of resistance

Temperature	700℃	900℃	1100℃	1200℃	1300℃
Ct	**1.02**	**1.03**	**1.04**	**1.04**	**1.04**

4、Relative lifetime

Fast life is the life of alloy sample wire measured according to the standard and method of rapid test under laboratory conditions. China adopts the former Soviet Union to evaluate the total time of power supply for 2min, power failure for 2min until burnout. The sample size is 0.8mm. Generally, the alloy with long service life in rapid test.

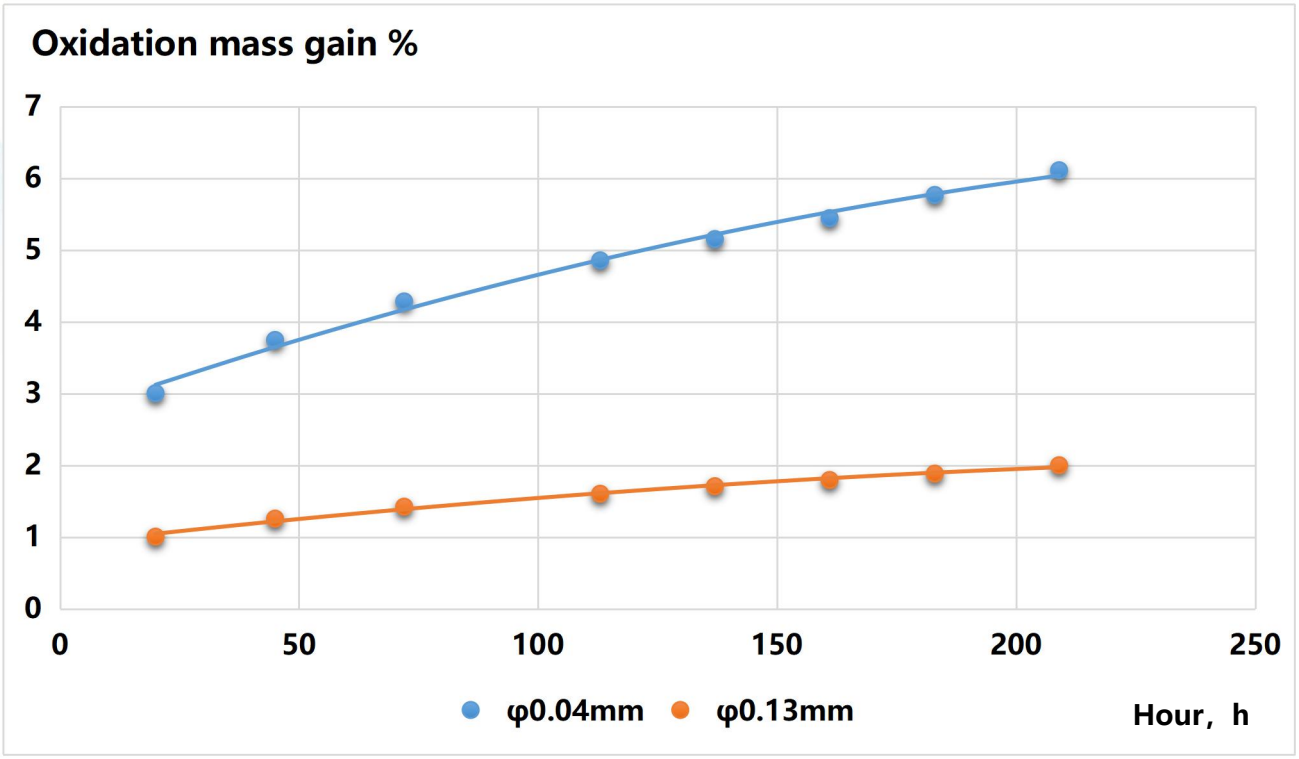


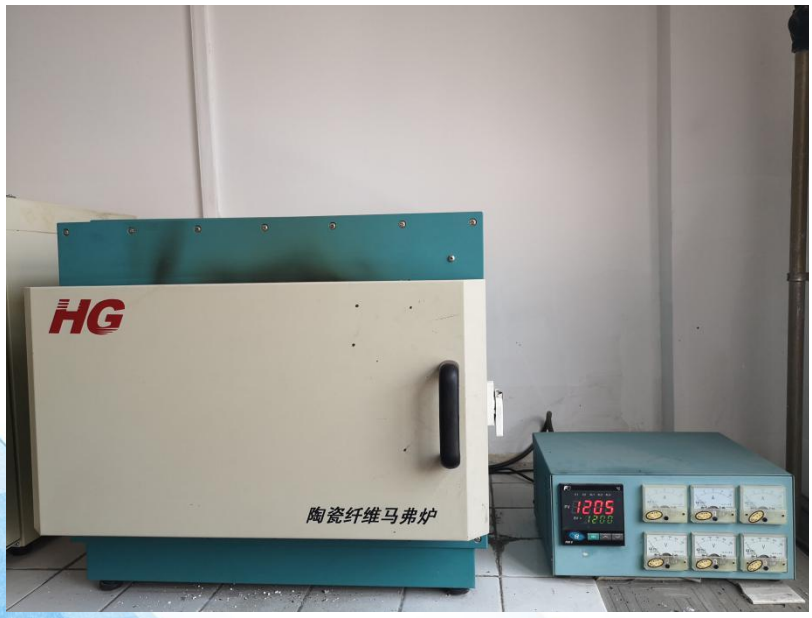




5、Oxidation mass gain of fiber wires at 1050℃

(The oxidation weight gain rate data of different specifications and different temperatures will be different)



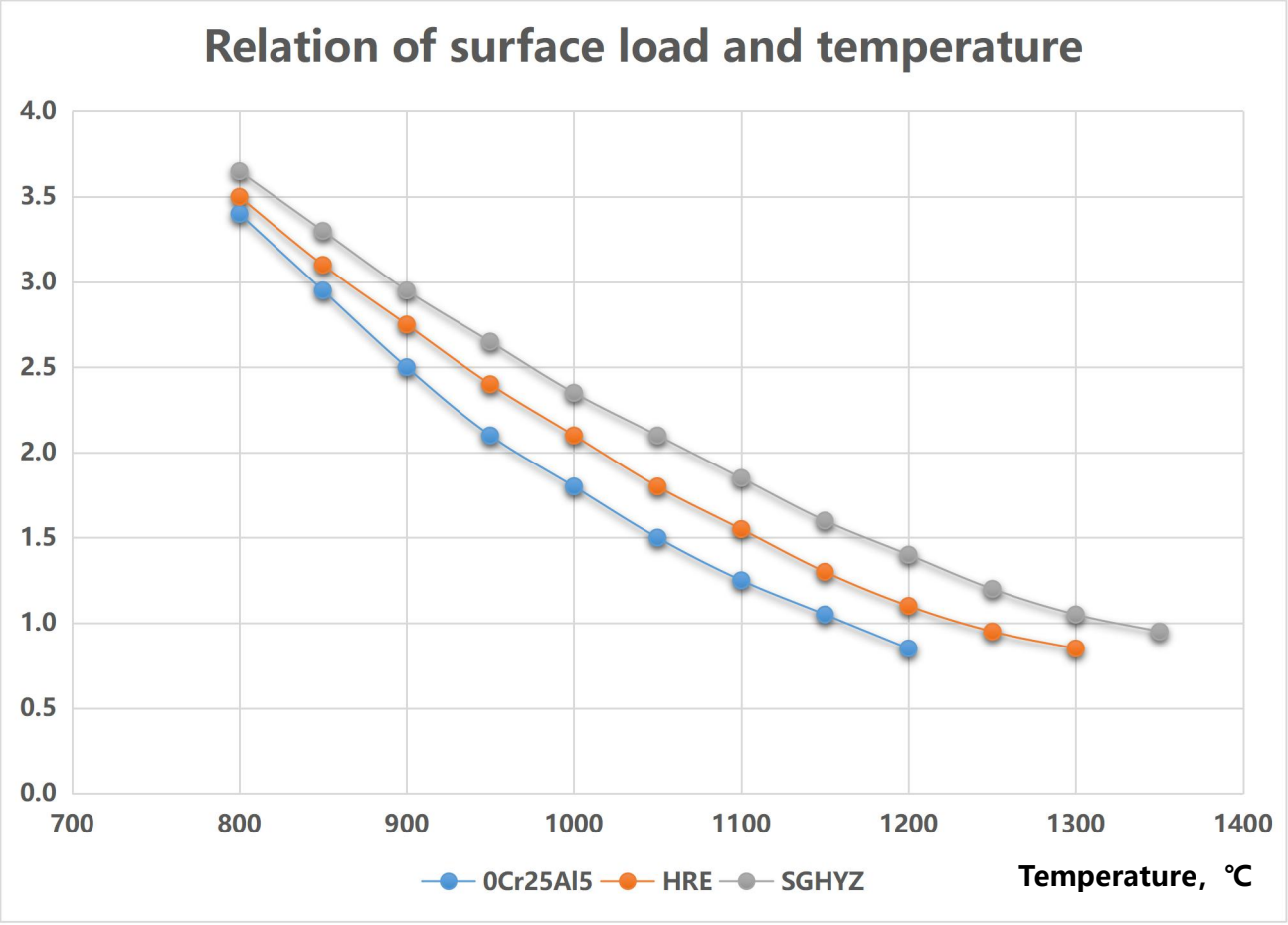




6、Furnace's temperature and surface load

High surface load selection, high temperature components.On the contrary, the surface load selected low component temperature is also low.When the electric power is determined, the surface load is selected higher, the component size will be smaller, saving raw materials.However, the surface load of a component is inversely proportional to its service life.

The surface load is related to the material, specification, construction, use temperature, heat dissipation, environmental atmosphere, support material, tem.



(This is the practical experience, design according to the actual situation to make adjustments)

7、SGHYZ meter resistance/weight reference table

(For reference only, the resistance fluctuates within ±5% and the weight varies with the dimensional accuracy range)

Wire

Specificaitions mm	Resistance Ω/m	Weight g/m	Specificaitions mm	Resistance Ω/m	Weight g/m
1	1.85	5.58	3.7	0.135	76.3
1.1	1.53	6.75	3.8	0.128	80.5
1.2	1.28	8.03	3.9	0.121	84.8
1.3	1.09	9.42	4	0.115	89.2
1.4	0.942	10.9	4.1	0.110	93.7
1.5	0.821	12.5	4.2	0.105	98.4
1.6	0.721	14.3	4.3	0.100	103.1
1.7	0.639	16.1	4.4	0.095	108.0
1.8	0.570	18.1	4.5	0.0912	113
1.9	0.511	20.1	4.6	0.0873	118
2	0.462	22.3	4.7	0.0836	123
2.1	0.419	24.6	4.8	0.0801	128
2.2	0.381	27.0	4.9	0.0769	134
2.3	0.349	29.5	5	0.0739	139
2.4	0.321	32.1	5.1	0.0710	145
2.5	0.295	34.9	5.2	0.0683	151
2.6	0.273	37.7	5.3	0.0657	157
2.7	0.253	40.7	5.4	0.0633	163
2.8	0.235	43.7	5.5	0.0610	169
2.9	0.220	46.9	5.6	0.0589	175
3	0.205	50.2	5.7	0.0568	181
3.1	0.192	53.6	5.8	0.0549	188
3.2	0.180	57.1	5.9	0.0530	194
3.3	0.170	60.7	6	0.0513	201
3.4	0.160	64.5	7	0.0377	273
3.5	0.151	68.3	8	0.0288	357
3.6	0.142	72.3			

Strip

Width mm	Thickness mm	Resistance Ω/m	Weight g/m	Width mm	Thickness mm	Resistance Ω/m	Weight g/m
8	1	0.191	56.8	8	1.5	0.127	85.2
9	1	0.170	63.9	9	1.5	0.113	95.85
10	1	0.153	71	10	1.5	0.0986	106.5
11	1	0.139	78.1	11	1.5	0.0897	117.15
12	1	0.127	85.2	12	1.5	0.0822	127.8
13	1	0.117	92.3	13	1.5	0.0759	138.45
14	1	0.109	99.4	14	1.5	0.0705	149.1
15	1	0.102	106.5	15	1.5	0.0658	159.75
16	1	0.095	113.6	16	1.5	0.0616	170.4
17	1	0.090	120.7	17	1.5	0.0580	181.05
18	1	0.085	127.8	18	1.5	0.0548	191.7
19	1	0.080	134.9	19	1.5	0.0519	202.35
20	1	0.076	142	20	1.5	0.0493	213
8	1.2	0.159	68.16	8	2	0.0925	113.6
9	1.2	0.141	76.68	9	2	0.0822	127.8
10	1.2	0.127	85.2	10	2	0.0740	142
11	1.2	0.116	93.72	11	2	0.0673	156.2
12	1.2	0.106	102.24	12	2	0.0616	170.4
13	1.2	0.098	110.76	13	2	0.0569	184.6
14	1.2	0.091	119.28	14	2	0.0528	198.8
15	1.2	0.085	127.8	15	2	0.0493	213
16	1.2	0.079	136.32	16	2	0.0462	227.2
17	1.2	0.075	144.84	17	2	0.0435	241.4
18	1.2	0.071	153.36	18	2	0.0411	255.6
19	1.2	0.067	161.88	19	2	0.0389	269.8
20	1.2	0.064	170.4				

Company profile

Beijing Shougang Gitane New Material Co., Ltd. (formerly Beijing Steel Wire Factory), in 2008 after the company restructuring, officially changed its name to Beijing Shougang Gitane New Material Co., Ltd., the registered capital of 26 million yuan.The company covers an area of 88,000 square meters, with a construction area of 39,268 square meters.

The predecessor of the company, Beijing Steel Wire Factory, was founded in 1956. It cooperated with Beijing Institute of Iron and Steel to develop electrothermal alloy products, which filled the gap in China and made important contributions to the industrial development of New China. Nation leader Zhu De named the road in Haidian District, where the Beijing Steel Wire Factory once stood, "Zengguang Road" because of the special contribution made by electrothermal and precision alloy materials to China's "Two Bomb and One Star" project. In 2000, the company moved to Zhongguancun Science and Technology Park, Beijing (No. 9, Fusheng Road, Shahe Town, Changping District) for production expansion and upgrading.

Beijing Shougang Gitane new materials co., LTD. Is a professional production of industrial and domestic load thermal bonding wire, tape, precision alloy silk, super free cutting stainless steel wire, automobile exhaust purifier carrier materials, high speed locomotives and rail locomotive braking resistor strips of amorphous strip and the magnetic core, electric energy storage materials, special and special stainless steel wire, stainless steel welding material of high and new technology enterprise.







GITANE

员工第一 客户至上 质量优先

Employee First Customer Foremost Quality Priority

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