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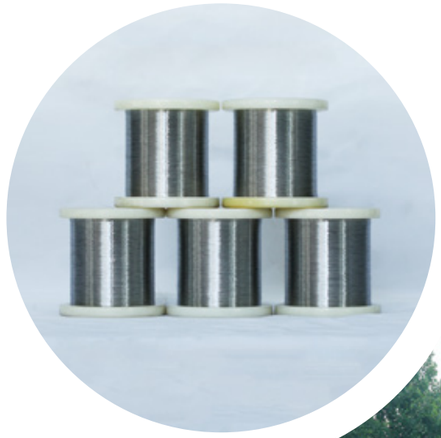
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首钢集团 SHOUGANG GROUP

GITANE

BEIJING SHOUGANG GITANE NEW MATERIALS CORPORATION





GITANE

NTENTS

Employee First

Customer Foremost

Quality Priority

Glory For Country

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COMPANY INTRODUCTION

Beijing Shougang Gitane New Materials Corporation (formerly Beijing Steel Wire Factory) is a high-tech enterprise integrating, R&D and production, located in Beijing Zhongguancun Science and Technology Park (No.9, Fusheng Road, Shahe Town, Changping District), covering an area of 123 acres.

Beijing Shougang Gitane New Materials Corporation is committed to high-end electric heating alloy material research and production. its products are widely used in important industries related to the national economy and people’ s livelihood. The ultra high temperature electric heating alloy developed and produced by the company can be used at 1400℃-1425℃, The company develops and produces high performance Fe-Cr-Al alloy for photovoltaic power wafer materials and chip wafer semiconductor heat treatment equipment, urban clean heating and energy storage materials, low nitrogen combustion high performance fiber material, high-end glass manufacturing heat treatment materials, high-end white household electrical heating alloy wire (belt), precision alloy, special stainless steel welding materials and other functional materials, The company is now Zhongguancun high-tech enterprise, national high.tech enterprise, Beijing, "special fine special new" small and medium-sized enterprises, national special fine special new "little giant" enterprises.







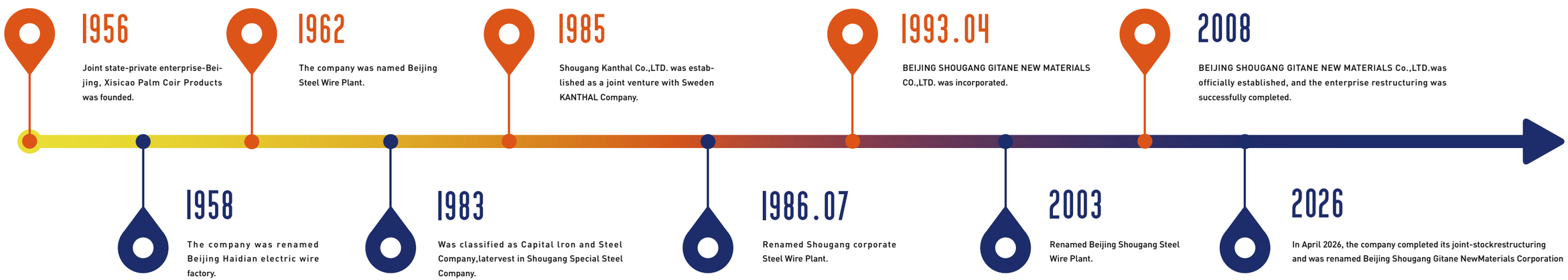


HISTORY EVOLUTION

Beijing Shougang Gitane New Material Corporation previously known as Beijing Wire Mill, was established in 1956 located in Zengguang Road, Haidian District. Our company as a "straw rope factory" at the time of establishment. in the early 1960s, when Sino-Soviet relations were broken, in order to solve the "bottlenecks" problem of electro-thermal alloy,our company make cooperation with Beijing lron and Steel institute, University of Aeronautics and Astronautics Beijing and Tsinghua University has developed a variety of new materials such as electrothermal alloy and precision alloy, which filled the gaps in China and this way made contribution to the "two bombs and one star". Therefore, our company has received many times the congratulatory telegrams from the central government,the State Council and the Central Military Commission. Besides, the chairman Zhu De who named "Zengguang road", where the original site of the Beijing Steel Wire factory was located.In 2000, our company moved to the current location (hahe Town, Changping District, Fusheng Road 9). In2008, our company officially changed its name,just named as Beijing Shougang Gitane New Material Corporation a subsidiary of shougang Group. In 2020, our company concentrated on the main business of electrothermal alloy and put forward the concept of "staff first, customer first, quality first, glory for country". Thus, our company entered the new stage of high-quality development.

Beijing Shougang Gitane New Materials Corporation was formerly

- 1956 Joint state-private enterprise-Beijing, Xisicao Palm Coir Products was founded.
- 1958 The company was renamed Beijing Haidian electric wire factory.
- 1962 The company was named Beijing Steel Wire Plant.
- 1983 Was classified as Capital lron and Steel Company,latervest in Shougang Special Steel Company.
- 1985 Shougang Kanthal Co.,LTD. was established as a joint venture with Sweden KANTHAL Company.
- 1986 Renamed Shougang corporate Steel Wire Plant.
- 1993 BEIJING SHOUGANG GITANE NEW MATERIALS CO.,LTD. was incorporated.
- 2003 Renamed Beijing Shougang Steel Wire Plant.
- 2008 BEIJING SHOUGANG GITANE NEW MATERIALS Co.,LTD.was officially established, and the enterprise restructuring was successfully completed.
- 2026 The company completed its joint-stockrestructuring and was renamed Beijing Shougang Gitane New Materials Corporation



THE HIGH-PERFORMANCE ELECTRIC HEATING ALLOY SERIES PRODUCTS

PRODUCT INTRODUCTION:

The high-performance electric heating alloy series products are independently developed by our company, including three brands: 0Cr21Al6Nb,HRE, and SGHYZ. They can be used at temperatures up to1300℃, 1350℃, and 1400℃, and have characteristics such as high resistivity, excellent oxidation resistance, high usage temperature strong, resistance to high-temperature deformation, and long service life.This series of products fills the gap in electric heating alloy materials above 1350℃ in China and has independent intellectual property rights.

APPLICATION DIRECTION:

Clean energy of solar photovoltaic monocrystalline silicon and polycrystalline silicon heat treatment materials

Electric heating materials for silicon wafer production and heat treatment of chips

Heat treatment materials for high-end glass (automotive or display glass)

Urban clean heating and energy storage materials

Low nitrogen combustion high-performance fiber material (Below ϕ0.02mm, 1050℃, with an oxidation weight gain rate of less than 10% after 200 hours)

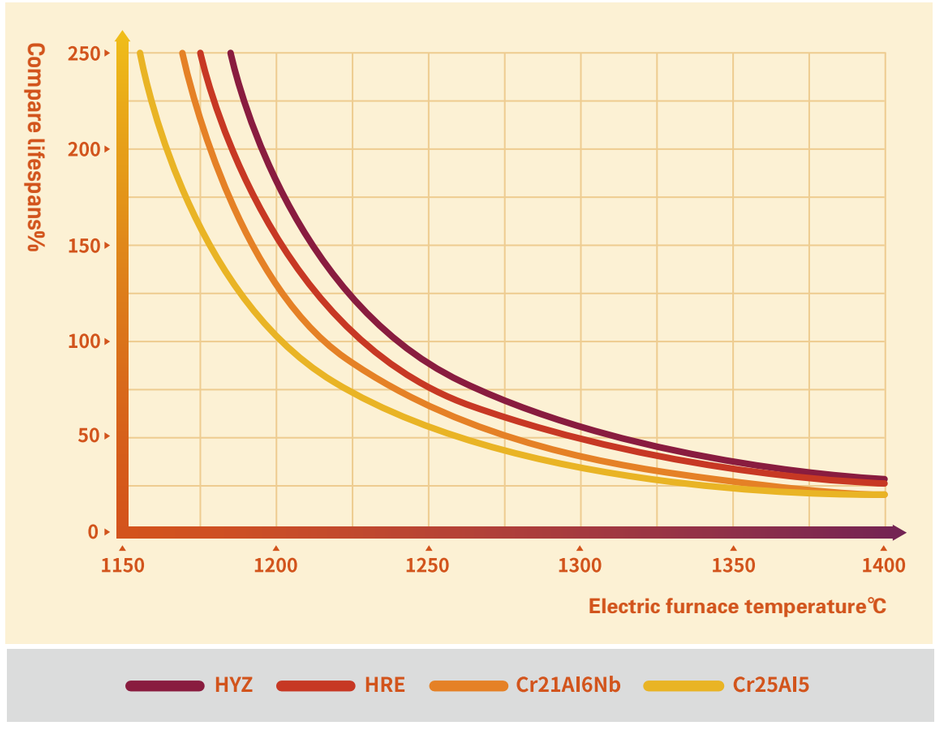
BASIC PARAMETERS OF PHYSICAL AND MECHANICAL PROPERTIES

The high-performance electric heating alloys are generally supplied in linear, thick or thin strips. The basic parameters of the physical and mechanical properties of the alloy are shown in the table below.

		SGHYZ	HRE	0Cr21Al6Nb
Maximum Continuous Operating Temperature/℃		1400	1350	1350
Nominal composition/%	Cr	21.0	23.0	21.0
	Al	6.0	5.8	6.0
	Fe	Balance	Balance	Balance
Electrical Resistivity at 20°C Ω·mm2/m		1.45±0.07	1.45±0.07	1.45±0.07
Temperature Coefficient of Resistance （Ct Coefficient）	800°C	1.03	1.03	1.03
	1000°C	1.04	1.04	1.04
	1200°C	1.04	1.04	1.04
Density g/cm^3		7.1	7.1	7.1
Specific Heat Capacity kJ/kg		0.46	0.46	0.49
Melting Point ℃		1500	1500	1500
Tensile Strength/MPa		680	680	680
Hardness/Hv		230	230	230
Elongation/%		20	20	20
Tensile Strength at 900℃/MPa		35	35	30
Magnetism		Ferromagnetism		
Emissivity		0.7	0.7	0.7
Thermal Conductivity （20℃） W/(m·k)		13	13	13

ELEMENT SERVICE LIFE

The rapid test life is the lifespan of the alloy sample wire measured under laboratory conditions according to rapid test standards and methods. China follows the former Soviet Union' s method of evaluating based on cumulative time until burnout with a 2-minute power-on and 2-minute power-off cycle, using a sample size of 0.8 mm in diameter. Generally, alloys with a longer rapid test life also have a longer actual service life.





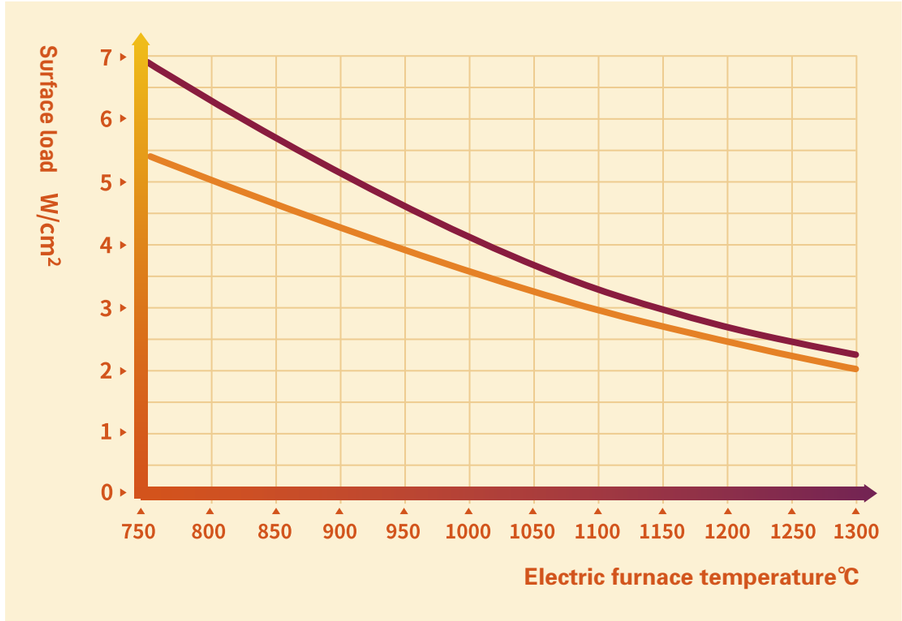


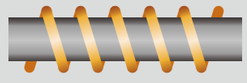


ELEMENT SURFACE LOAD

A higher surface load results in a higher temperature of the element. Conversely, a lower surface load leads to a lower temperature of the element. When the electrical power is determined, selecting a higher surface load will result in a smaller element size, saving on raw materials. However, the surface load of the element is inversely proportional to its service life.The surface load is related to the material, specification, construction, operating temperature, heat dissipation conditions, environmental atmosphere, support material, and frequency of temperature changes of the electrothermal element.

Recommended Maximum Surface Load for Fe-Cr-Al Alloys in Industrial Furnaces





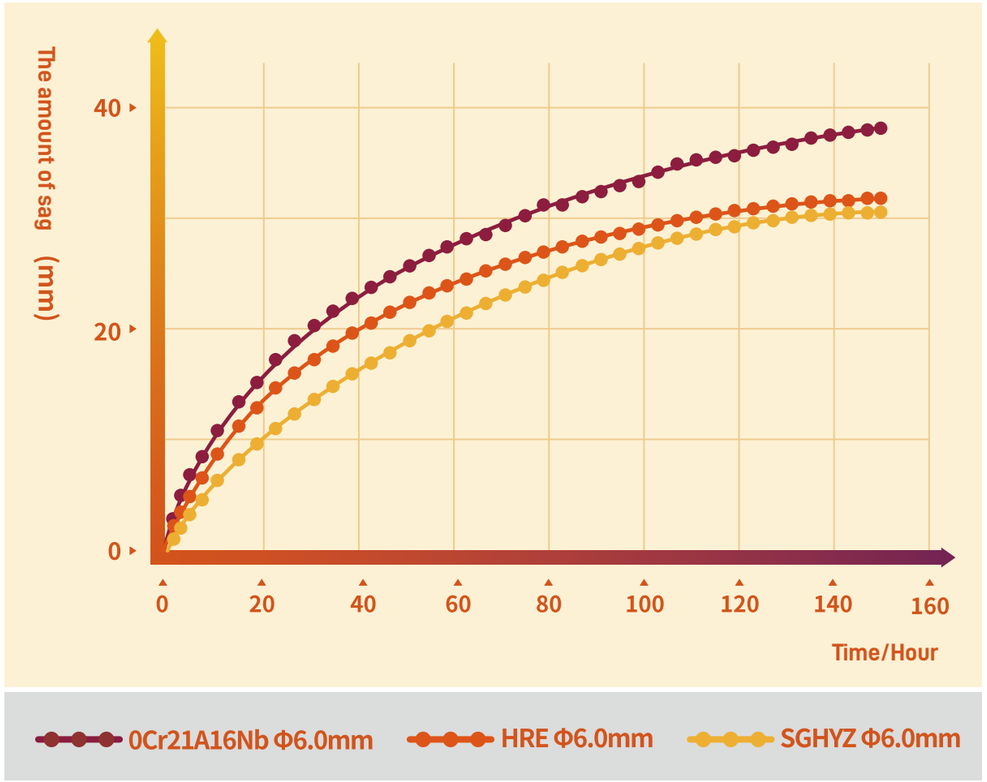
Linear Element of Ceramic Tubing



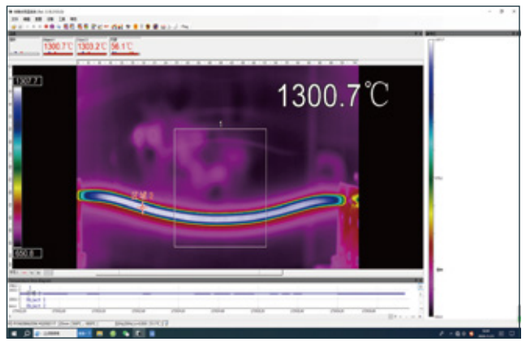
Slot-shaped Linear and Strip Material Components

COLLAPSE RESISTANCE PERFORMANCE

Collapse resistance testing is a method to characterize the high-temperature deformation resistance of large-sized materials.

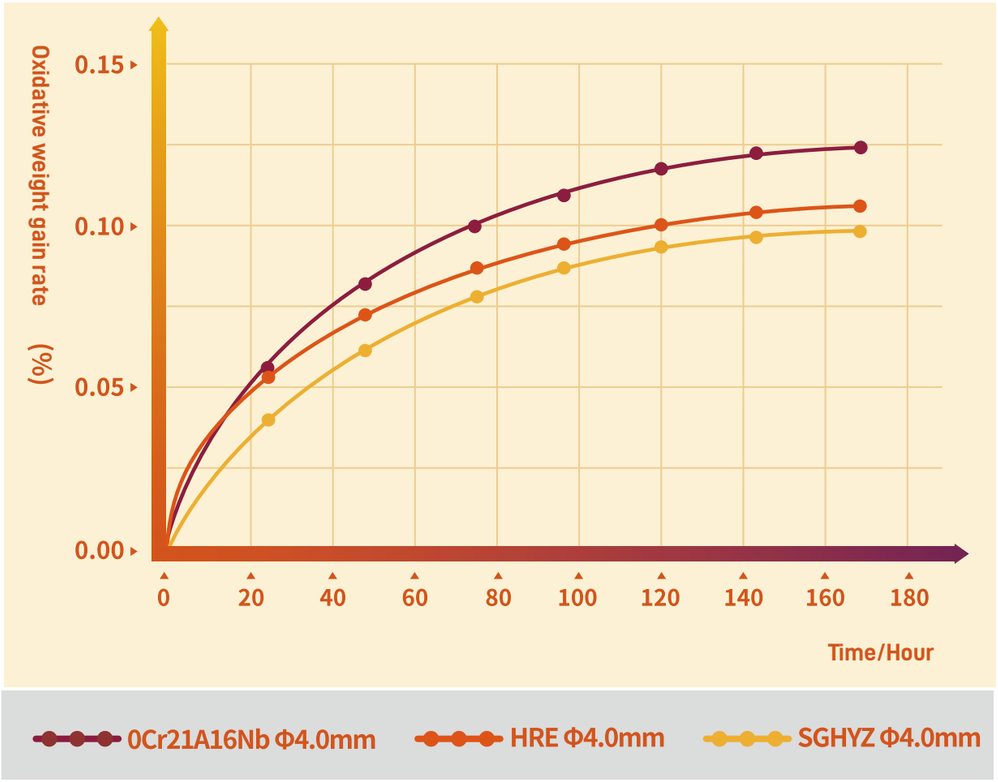






OXIDATION WEIGHT GAIN RATE

The test involves using materials of the same specification and subjecting them to long-term heating at 1050℃ to measure the oxidation weight gain. (The oxidation weight gain rate data may vary with different specifications and temperatures.)







HIGH RESISTANCE FE-CR-AL HEATING ALLOYS

PRODUCT INTRODUCTION:

High resistance Fe-Cr-Al heating alloys are one of the main products of our company, which is widely used in the production of industrial heating equipment and civil heating appliances key components.

The high resistance Fe-Cr-Al heating alloys produced by our company are distinguished uniform composition, high resistivity, accurate dimension, long operating life and good processability. Consumers can select suitable varieties according to different requirements.

INDUSTRIAL APPLICATIONS SUCH AS:

This series of products can be used in electric heating kiln , including well-type heat treatment furnace, trolley heat treatment furnace, protective atmosphere heat treatment furnace, Muffle furnace.etc; Liquefied gas infrared heat resistant network; Fuel vehicle exhaust purifier carrier material; Electric locomotive start brake resistor, etc.

CIVIL APPLICATIONS SUCH AS:

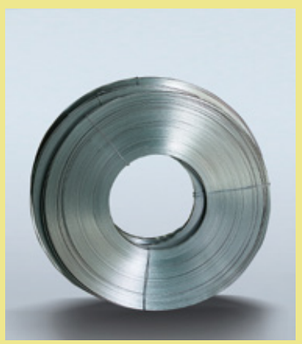
Air conditioner, hair dryer, electric water heater, electric blanket, electric iron, rice cooker and other white goods.

BASIC PARAMETERS OF PHYSICAL AND MECHANICAL PROPERTIES:

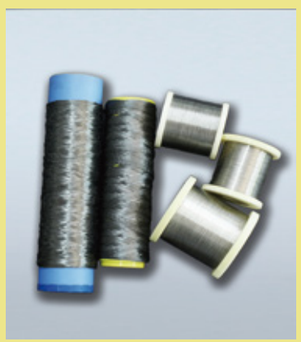
		0Cr25A15	0Cr23A15	0Cr20A16	0Cr19A15	0Cr19A13	1Cr13A14
Maximum Continuous Operating Temperature/℃		1300	1250	1300	1200	1100	950
Nominal composition /%	Cr	25	22	20	19	19	13.5
	Al	5.3	5.0	5.5	5.0	3.7	5.0
	Fe	HEADROOM	HEADROOM	HEADROOM	HEADROOM	HEADROOM	HEADROOM
Electrical Resistivity at 20℃ Ω · mm^2/m		1.40	1.35	1.45	1.33	1.23	1.25
Temperature Coefficient of Resistance (Ct Coefficient)	800℃	1.05	1.06	1.03	1.05	1.17	1.13
	1000℃	1.06	1.07	1.04	1.06	1.19	1.14
	1200℃	1.06	1.08	1.04	1.06	/	/
Density g/cm^3		7.25	7.25	7.10	7.20	7.35	7.40
Specific Heat Capacity kJ/kg		0.46	0.46	0.46	0.46	0.46	0.46
Melting Point ℃		1500	1500	1500	1500	1500	1500
Tensile Strength/MPa		750	750	750	750	750	750
Hardness/Hv		230	230	230	230	230	230
Elongation/%		16	16	17	16	16	16
Magnetism		Ferromagnetism					
Emissivity		0.7	0.7	0.7	0.7	0.7	0.7
Thermal Conductivity (20℃) W/(m · k)		13	13	13	13	13	13

PRODUCT TYPE

Forms	Oxidized Wire	Blue Oxidized Wire	Golden Continuous Annealed Wire
Product Photos			
Specifi-cations	ϕ2.0-10.0mm	ϕ5.0-10.0mm	ϕ1.2-5.0mm

Forms	Oxidized Cold-Rolled Strip	Bright Cold-Rolled Strip	Shaped wire
Product Photos			
Specifi-cations	Thickness 0.50-3.50mm Width 5.0-40.0mm	Thickness 0.50-3.50mm Width 5.0-40.0mm	

Forms	Bright Wire	Bright Wire On Spool	Flat Wire
Product Photos			
Specifi-cations	ϕ1.2-5.0mm	ϕ0.01-1.50mm	Thickness 0.05-0.35mm Width 0.50-4.50mm

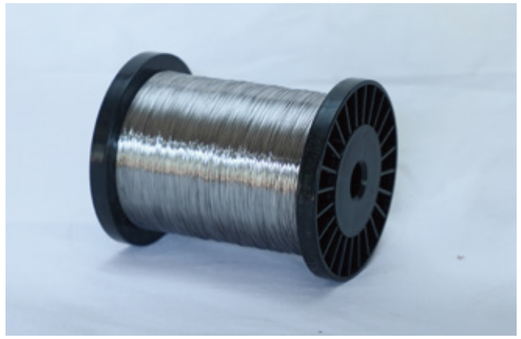
Forms	Bright Bar	Fiber Wire	Coiled Wire in Pail Pack
Product Photos			
Specifi-cations	ϕ10.0-20.0mm	ϕ0.01-0.10mm	ϕ0.5-1.5mm

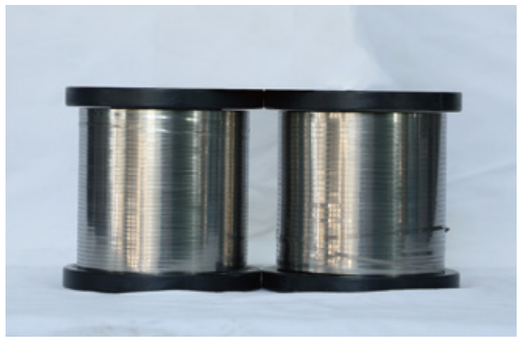
NICKEL-CHROMIUM HEATING ALLOY WIRE (RIBBON)

PRODUCT INTRODUCTION:

Nickel-chromium heating alloy wire (ribbon) is an austenitic alloy operated up to 1050-1250℃. This alloy has high resistivity, excellent oxidation resistance, morphological stability, weldability and good malleability after use. This alloy is widely used in making electric heating element of domestic appliance and industrial furnace.







BASIC PARAMETERS OF PHYSICAL AND MECHANICAL PROPERTIES:

Nickel-chromium heating wires are generally supplied in the form of wire, thick strip, or thin strip. The physical and mechanical properties of the alloy are shown in the table below.

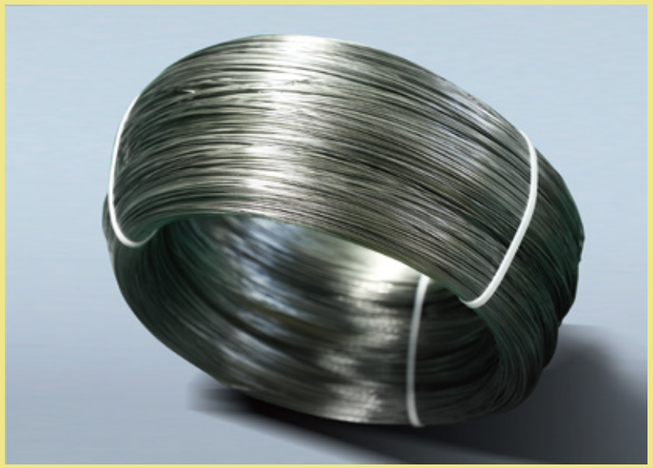
		Cr30Ni70	Cr20Ni80	Cr20Ni80S	Cr15Ni60	Cr20Ni40	SG240	SG140
Maximum Continuous Operating Temperature/℃		1250	1200	1200	1150	1100	1150	1100
Nominal composition /%	Cr	30	20	20	15	20	20	20
	Fe	5	/	/	Balance	Balance	Balance	Balance
	Ni	Balance	Balance	Balance	60	38	42	34
Resistivity 20℃, Ω · mm^2/m		1.18	1.09	1.09	1.11	1.04	1.06	1.09
Temperature Coefficient of Resistance (Ct Coefficient)	800℃	1.05	1.04	1.04	1.08	1.16	1.16	1.256
	1000℃	1.05	1.05	1.04	1.10	1.19	1.19	1.266
	1100℃	1.06	1.06	1.05	1.11	1.20	1.20	1.269
Density g/cm^3		8.1	8.4	8.4	8.2	7.9	7.9	7.9
Melting Point ℃		1380	1400	1400	1390	1390	1390	1390
Tensile Strength/MPa		870	810	810	750	700	700	700
Elongation/%		25	25	25	25	25	25	25
Tensile Strength at 900℃/MPa		135	131	131	100	120	125	120
Magnetism		No	No	No	Slight	No	No	No
Emissivity		0.88	0.88	0.88	0.88	0.88	0.88	0.88
20–1000℃ Thermal Expansion Coefficient $10^{-6}/K$		17.1	17.4	17.4	17.0	19.0	19.0	19.0

MAXIMUM OPERATING TEMPERATURE, SERVICE LIFE, AND TYPICAL APPLICATION DIRECTIONS:

Grade	Maximum Operating Temperature /℃	Fast Test Life	Typical Application
Cr20Ni80	1200	⩾80h (1200℃)	Household appliances and industrial furnaces, such as: flat irons, ironing machines, water heaters, plastic molds, soldering irons, metal-sheathed tubular elements, and cylindrical elements
Cr30Ni70	1250	⩾160h (1200℃) ⩾60h (1250℃)	Due to its excellent resistance to “green corrosion,” it can be used for heating elements in industrial furnaces.
Cr15Ni60	1150	⩾80h (1150℃)	Metal-sheathed tubular elements, such as hot plates, grills, toasters, storage heaters, tumble dryer air heaters, fan heaters, and hand dryer suspension coils.
Cr20Ni40	1100	⩾80h (1100℃)	Night storage heaters, convection heaters, heavy-duty rheostats, and fan heaters. This alloy is also used for cable and rope heaters in defrosting and de-icing elements, electric blankets and pads, car seats, baseboard heaters, and floor heaters, resistors.
Cr20Ni30	1050	⩾80h (1050℃)	Solid hot plates, open-coil heaters in HVAC systems, night heaters, convection heaters, heavy-duty rheostats, and fan heaters. It is also used for cable and rope heaters in defrosting and de-icing elements, electric blankets and pads, car seats, baseboard heaters.
SG140	1100	⩾80h (1100℃)	Characterized by no brown oxidation skin at medium and low temperatures, high strength at high temperatures, low creep, and less deformation, mainly used in heating elements for toughened glass furnace industry.
SG240	1150	⩾220h (1100℃) ⩾100h (1150℃)	Excellent Oxidation Resistance performance, corrosion resistance (except in environments containing sulfur and specific atmospheres), strong resistance to deformation, can be used for open-coil heating elements.

AVAILABLE PRODUCT SPECIFICATIONS:

01	**Cold Drawn Wire** **ϕ 0.01-10.00mm**	02	**Hot Rolled Rod** **ϕ 5.5–12.0mm**
03	**Flat Wire** **Thickness:0.05-0.35mm** **Width:0.50-4.50mm**	04	**Cold Rolled Strip** **Thickness:0.50-3.50mm** **Width:5.0-40.0mm**
05	**Hot Rolled Strip** **Thickness:4.0-6.0mm** **Width:15.0-40.0mm**	06	**Bar** **ϕ 10.0–20.0mm**



Bright Wire



Acid Wire



Oxidized Wire



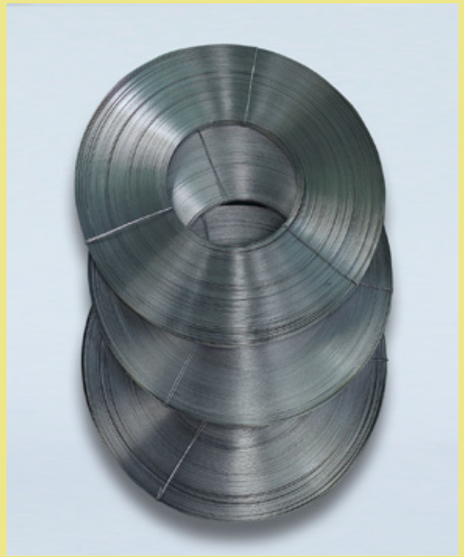
Fiber Wire



Bright Wire In Coil



Bright Wire On Spool



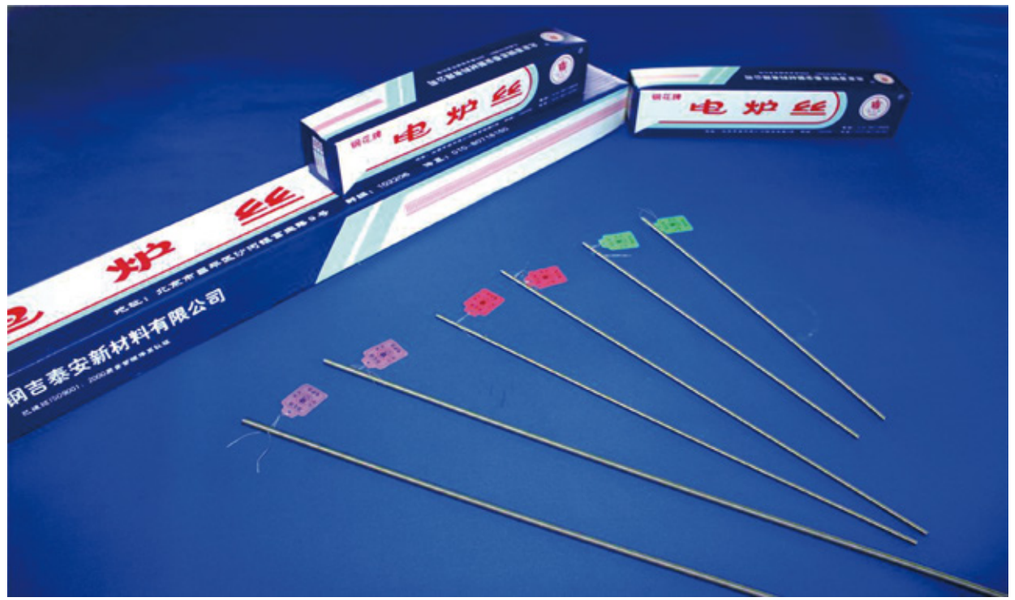
Cold-Rolled Strip

"SPARK" BRAND WIRE SPIRAL

The spark electric heating wire is well- known both domestically and internationally, and is a famous trademark in Beijing.

" SPARK" brand wire spiral is manufactured by using high quality Fe-Cr-Al resistance heating alloy wire as the raw materials, formed by means of high speed automatic coiling machine of which the power capacity is controlled by computer. The characteristics of our products are high temperature resisting, rapid warming-up, long operating life, stable resistance, small capacity deflection, uniform pitch after extension, bright and clean surface. it is widely used as small electric ovens, muffle, air heating conditioners, various oven , electric heating tube and household electric appliances.

Various non-standard wire spirals can be designed and manufacture according to consumer's requirements.



STANDARD PRODUCT SPECIFICATIONS

Rated Power/w	Rated Voltage/v	Wire Diameter/mm	Coil Outer Diameter/mm	Coil Length (Reference Value) /mm	Coil Weight /g
300	220	0.25	3.7	122	1.9
500	220	0.35	3.9	196	4.3
600	220	0.40	4.2	228	6.1
800	220	0.50	4.7	302	11.1
1000	220	0.60	4.9	407	18.5
1200	220	0.70	5.6	474	28.5
1500	220	0.80	5.8	554	39.0
2000	220	0.95	6.1	676	57.9
2500	220	1.10	6.9	745	83.3
3000	220	1.20	7.1	792	98.3

MANAGEMENT SYSTEM

Comprehensive quality management runs through the research and development, operation, and manufacturing processes.

- Certified by ISO9001-2015 Quality Management System.
- GB/T24001-2016/ISO14001-2015 Environmental Management System.
- GB/T45001-2020/ISO45001-2018 Occupational Health and Safety Management System.
- GB/T29490-2013 Intellectual property management system.
- **Main products have passed EU ROHS and REACH certification.**













Intellectual Property

- Recognized as a Beijing-level pilot unit for intellectual property in September 2021.
- Recognized as a Beijing-level demonstration unit for intellectual property in 2022.
- Applied for 102 domestic and foreign related patents, with 68 authorized patents.
- Obtained 7 Software Copyrights and 8 Trademarks.















SERVICE SUPPORT

GITANE adheres to the service concept of customer first and quality priority, providing customers with professional technical services and continuously meeting their needs for products and services.

THE DOMESTIC TECHNICAL SERVICE LAYOUT IS AS FOLLOWS:

HUABEI REGION
Beijing, Tianjin, Hebei Province, Shanxi Province
Inner Mongolia Autonomous Region

CENTRAL PLAINS REGION
Henan Province, Hubei Province, Hunan Province,
Jiangxi Province

NORTHEAST REGION
Heilongjiang Province, Jilin Province, Liaoning Province

SOUTHWEST REGION
Sichuan Province, Chongqing

HUADONG REGION
Shandong Province, Fujian Province, Shanghai, Jiangsu Province, Zhejiang Province, Anhui Province, Fujian Province

HUANAN REGION
Guangdong Province, Guangxi Zhuang Autonomous Region

NORTHWEST REGION
Shanxi Province, Gansu Province, Qinghai Province

TAIWAN,HONG KONG AND MACAO REGION
Taiwan Province

OVERSEAS TECHNICAL SERVICES ARE DISTRIBUTED AS FOLLOWS:

ASIAN REGION
Korea, India,Iran, Turkey, Thailand, Japan, Kuwait

AMERICAS REGION
America, Mexico, Brazil,Peru

EUROPEAN REGION
Russia, Germany, England, Austria, Belarus, Poland, Romania

AFRICAN REGION
Egypt



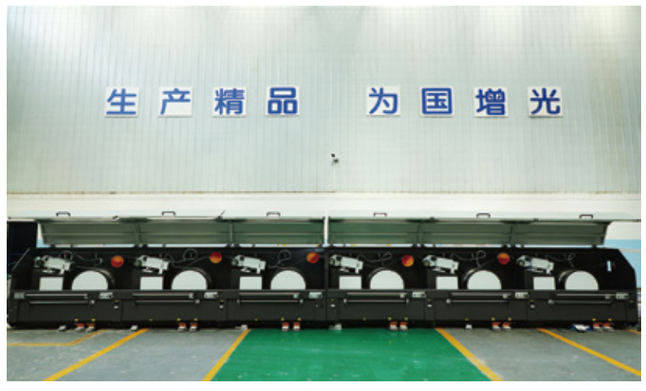
RESEARCH AND DEVELOPMENT PLATFORM

Beijing Shougang Gitane New Material Corporation is now the Beijing Enterprise Technology Center and has a professional R&D design team with strong technical strength. The technology center covers an area of about 1,000 square meters in total, including about 350 square meters of test site, equipped with perfect inspection and testing equipment.

It won the China Industry-University-Institute Cooperation Innovation Award, and has long-term cooperation with universities such as University of Science and Technology Beijing and Liaoning University of Science and Technology.



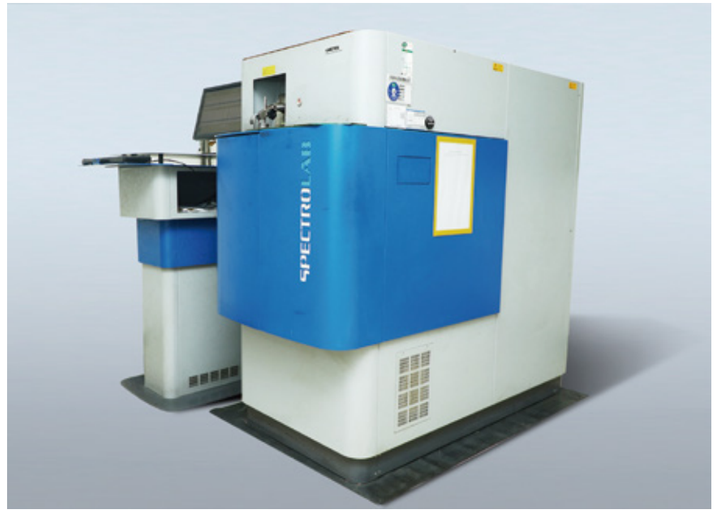
























HONOR

- IN 2010 It was rated as a “national high-tech enterprise”.
- IN 2011 The title of “changping district industry-university-institute integration demonstration enterprise”.
- IN 2012 “Iron-chromium-aluminum metal fiber wire” was rated as a “national key new product” by the ministry of science and technology.
- IN 2013 The “beijing municipal high and new technology achievement transformation demonstration enterprise”.
- IN 2013 It was rated as a “zhongguancun high-tech enterprise”.
- IN 2015 The “automobile exhaust purification iron-chromium-aluminum high-performance new material research achievement transformation project” won the first prize for beijing innovation achievements.
- IN 2020 Ultra-high temperature fecral alloy won the “beijing new technology and new products (service) certificate”.
- IN 2021 The development and industrialization project of high-performance fecral alloy technology was evaluated as internationally advanced by the beijing institute of metals.
- IN 2022 Beijing specialized, fine, characteristic and new “little giant” enterprises, specialized, fine, characteristic and new small and medium-sized enterprises.
- IN 2022 National-level specialized, fine, characteristic and new “little giant” enterprises.
- IN 2022 The research and development of electrothermal alloy cleaning process technology and its application were evaluated as internationally advanced by the beijing institute of metals.
- IN 2022 Three products including high-performance fecral alloy used in photovoltaic cell mirror diffusion furnaces, high-performance fecral alloy used in chip heat treatment furnaces, and high-performance fecral porous fiber materials were awarded the “beijing new technology and new products (service) certificate”.
- IN 2023 It was rated as a “national green factory enterprise”.
- IN 2023 The r&d and application project of high-end fecral alloy wire (silk steel) was evaluated as internationally advanced by the beijing institute of metals.
- IN 2025 Recognized as a National Manufacturing Single-Champion Enterprise.




QUALITY MANAGEMENT SYSTEM CERTIFICATE
BEIJING SHOUGANG-GITANE NEW MATERIALS CO., Ltd.
GB/T 19001-2016/ISO 9001:2015 standard.


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中规认证
中规（北京）认证有限公司



2010

Awarded "National High-tech Enterprise"

2012

The "The Fe-Cr-Al Metal Fiber Wire Material Project" was awarded the "National Key New Product Certificate"





2015

The “automobile exhaust purification iron-chromium-aluminum high-performance new material research achievement transformation project” won the first prize for beijing innovation achievements.

2013

Honored as "Zhongguancun High-tech Enterprise"





2015

Awarded the China Industry-University-Research Institute Collaboration Innovation Award



2021

High-performance Fe-Cr-Al alloy technology development and industrialization project evaluated as "international advanced level" by the Beijing Metal Society.

2020

Ultra-high temperature Fe-Cr-Al alloy recognized as a "Beijing New Technology New Product (Service)"





2022

Recognized as a Beijing Specialized, Sophisticated, Innovative and Unique “Little Giant” Enterprises as well as a Specialized, Sophisticated, Innovative and Unique Small and Medium-sized Enterprises

2023

Awarded Nationally Recognized Green Manufacturing Facility

