



HANGDA

Your Technology Partner for Permanent Magnets

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苏州航大新材料科技有限公司
Suzhou Hangda Advanced Materials Technology Co.,Ltd.



Suzhou Hangda

The Optimal Source for Samarium Cobalt



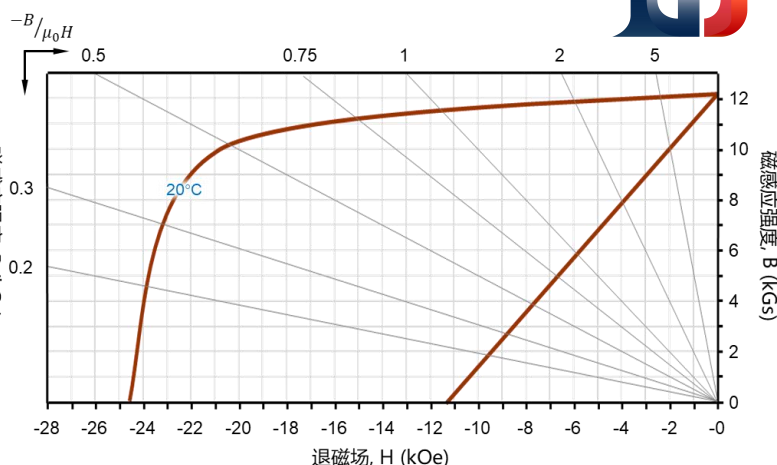
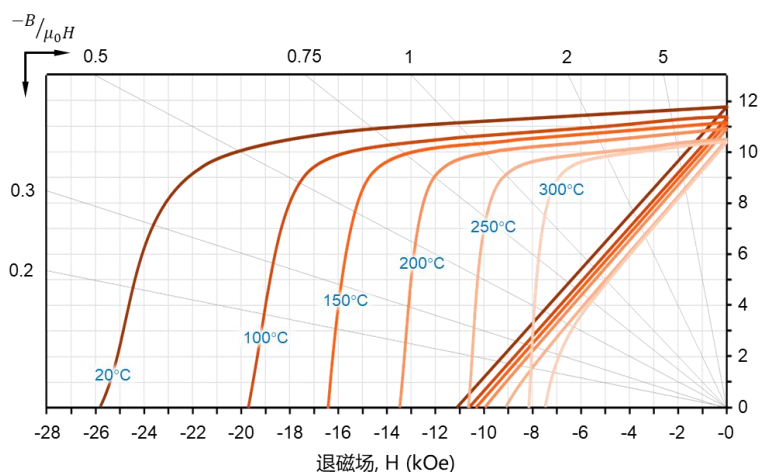
SuZhou Hangda

What You Need, We Provide

An expert samarium cobalt supplier, a strategic ally

Suzhou Hangda Advanced Materials Company is an expert developer and leading producer of Samarium Cobalt permanent magnets and related bespoke products for a variety of markets, including aerospace, rail, telecommunications, medicine, defense, oil, gas, power generation and automotive electronics. Since 2001, Suzhou Hangda has produced high-energy magnets to provide maximum performance for these industries. Our star products, **XGS 35H** and **XGS 26-T550**, are top performers in the market.

We are more than a material supplier. Our research team from the Chinese Academy of Sciences work closely with customers to provide magnetic solutions and optimized designs. From the concept to the product, our responsive and bespoke service will help customers to overcome new challenges and obstacles. In Hangda, technology fuels dreams, innovation leads the future. We are committed to creating glory together with you.



35.3

BHmax (MGOe)

12.08

Br (kGs)

11.4

Hc (kOe)

300°C

Max. Operating Temp.

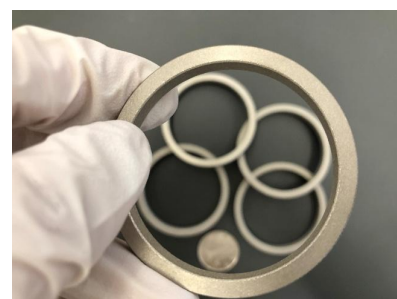
XGS 35H

Excellent Performance and Stability

Higher Performance, Lighter Weight

Hangda Advanced Materials Company's **XGS 35H** Samarium Cobalt (SmCo) is one of our star products and a market leader. Its high energy density provides new opportunities for designs and optimization, especially for applications where the performance, weight and size are primary concerns.

XGS 35H is one of the top performing SmCo magnets in the market. It is ideal for maximizing performance while minimizing the size of magnetic products that are used in higher temperature environments:



- **Aerospace and aircraft**
Smaller and lighter design, higher reliability.



- **Telecommunications**
Miniature and precise design with excellent temperature stability.

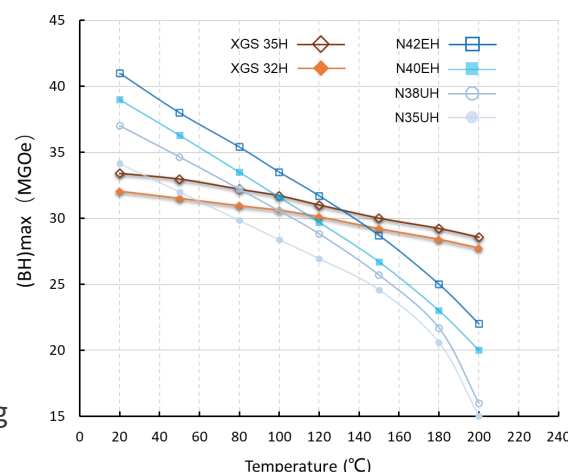


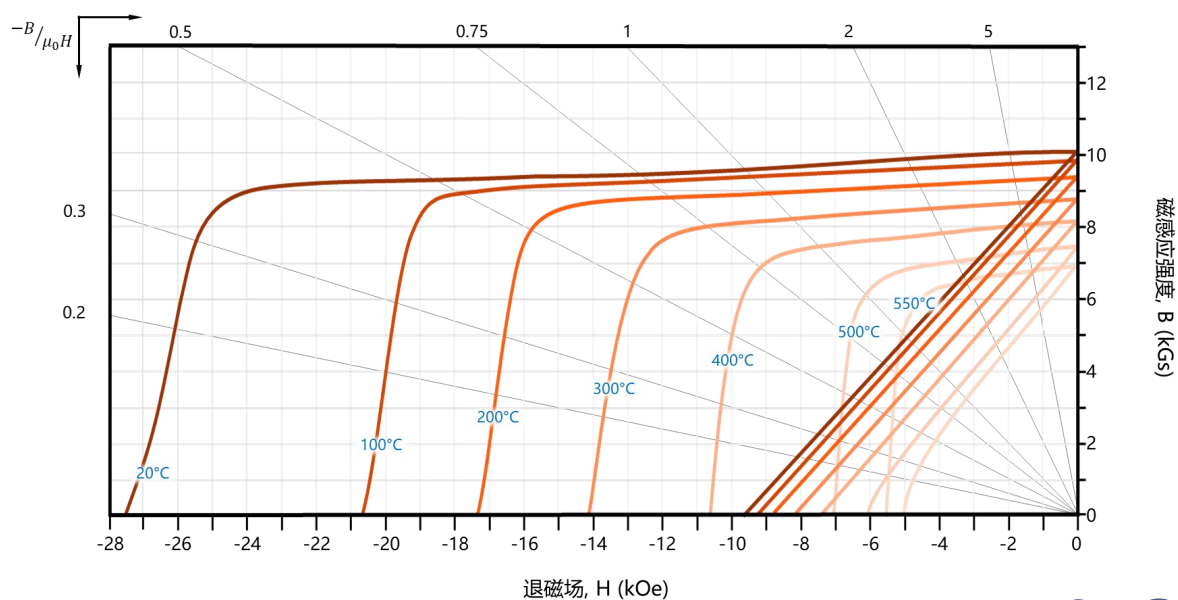
- **High-performance motor**
Maximizing torque and power even without water cooling.



- **Sensors and actuators**
Small reversible temperature coefficient, outstanding corrosion and demagnetization resistance.

Comparison of SmCo & NdFeB as a function of temperature





10.5_(550°C)
BHmax (MGOe)

10.2
Br (kGs)

9.6
Hc (kOe)

550°C
Max. Operating Temp.

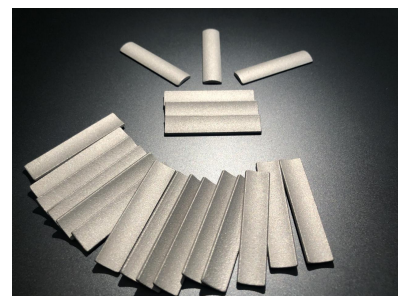
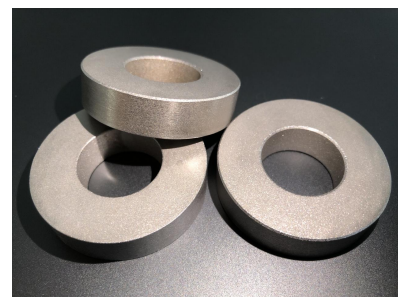
XGS T550

Ultra-high temperature & No demagnetization

Applications in Ultra-high temperature and extreme environments

Hangda Company's **XGS T550** Samarium Cobalt (SmCo) is one of our star products. Its high heat resistance ensures that our SmCo does not produce irreversible demagnetization at ultra-high temperatures.

The Hangda engineering team has a deep understanding of the sciences behind SmCo magnets. Therefore, the magnetic performance and thermal stabilization of magnets can be customized to satisfy customer's requirements. Please contact Hangda engineers for more options and further information. Our professional team is at your service.



Physical properties of Hangda Company's Samarium Cobalt (SmCo)

Thermal Properties

Characteristic		Units	Value
Reversible Temp. Coefficients	$\alpha(B_r)$	%/°C	-0.03
	$\beta(H_{c2})$	%/°C	-0.2
Coefficient of Thermal Expansion	// C	10 ⁻⁶ /K	11
	⊥ C	10 ⁻⁶ /K	13
Thermal Conductivity		W/(m·°C)	10
Max. Recommended Use Temp		°C	550
Curie Temperature, T _c		°C	810

Other Properties

Characteristic		Units	Value
Flexural Strength	// C	MPa	110
	⊥ C	MPa	120
Compressive Strength		MPa	800
Young's Modulus		GPa	140
Density		g/cm ³	8.4
Electrical Resistivity, ρ		μΩ · cm	90

T1、High-end SmCo & bespoke products (Customizable)

Superior Performance SmCo

- High energy product **35.3** MGOe
- High operating temperature
- Outstanding corrosion resistance
- High demagnetization resistance

Ultra-High Heat Resistance SmCo

- Operating temperature up to **550°C**
- Outstanding corrosion resistance
- Superior demagnetization resistance

Temperature Compensated SmCo

- Small reversible temperature coefficient **-0.01%/°C**
- Outstanding corrosion resistance
- High demagnetization resistance

Bespoke Products

- Provide bespoke application design services based on high-performance and advanced material for customers
- Develop high-performance magnetic assemblies across multiple categories

T2、CORE TECHNOLOGY

01

Material Design

Our research and development in comprehensive oxygen-free technology is the first to achieve mass production of SmCo products while fundamentally ensuring material purity.

Our technical team boasts a robust foundation in theoretical expertise and has amassed a wealth of experience through years of database accumulation. Their profound capabilities extend to crafting innovative compositions from scratch, exhibiting an innate talent for originality.

02

Hangda Oxygen-Free Technology

03

Biphasic Regulation Technology

The technical team possesses a profound understanding of the underlying logic of materials science and electromagnetics. By seamlessly integrating the magnetic material properties with application requirements, they have successfully developed a wide range of high-performance magnetic assemblies products across multiple categories.

With precise control over the high remanent phase and high coercivity phase, a highly intact and dense nanoscale biphasic structure is formed, substantially enhancing the performance of the magnet.

04

Magnetic Assemblies Research and Development

10+ invention patents and
30+ utility model patents



Innovation Patents

We have a team of multiple Ph.D. experts in the field of materials science and engineering, supported by our academician team from the Chinese Academy of Sciences, a leading institution in China. Our technology is at the forefront of the international scene, reflected in our possession of numerous core patents.

Conformance Quality

We have a complete production line for magnetic materials, machining processes, and testing platforms, enabling us to provide customers with diversified customized products. With direct factory sales, we guarantee both the quality and competitive pricing advantage.

Technology Services

Our team possesses a profound understanding of the underlying logical connections between materials science, electromagnetics, and end-products. We are capable of providing magnetic materials and bespoke solutions from the perspective of our customers, effectively enhancing their product competitiveness.

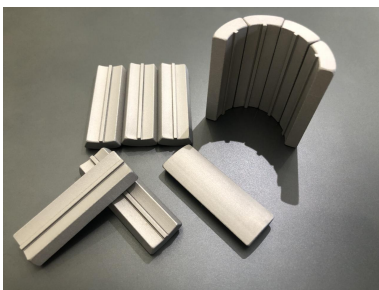
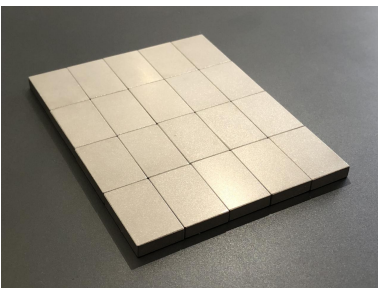
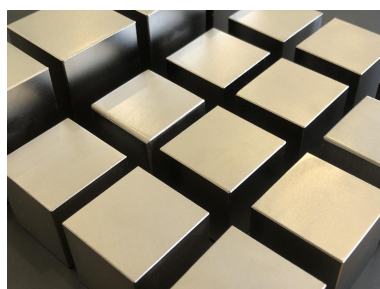
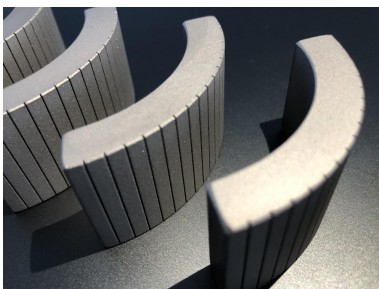
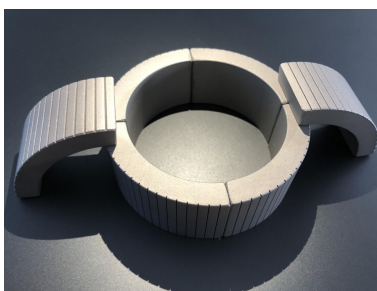
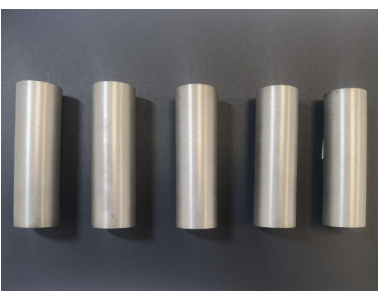
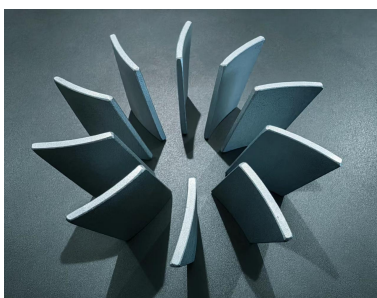
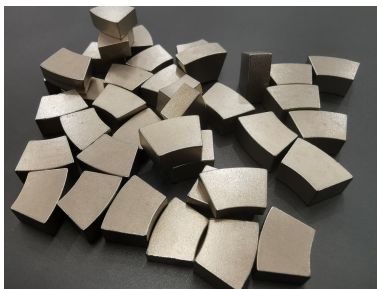
location advantage

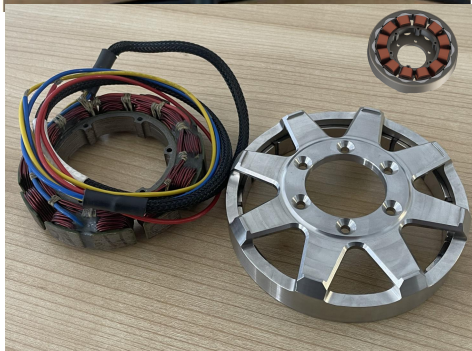
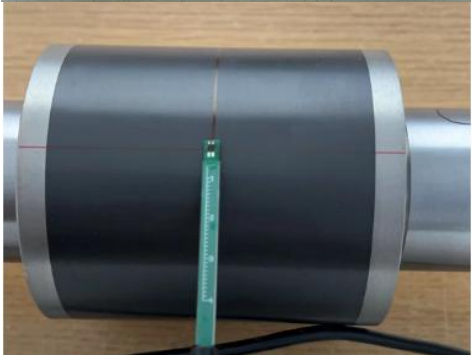
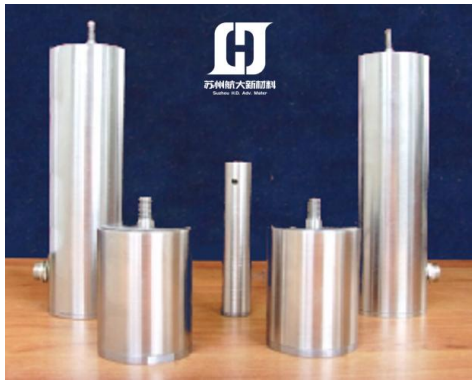
Hangda is located in the High-tech Zone of Suzhou city, positioned in the core area of the Yangtze River Delta. This strategic location enables us to quickly reach various regions across the country, ensuring convenient product transportation and prompt service response.

PRODUCT TYPE

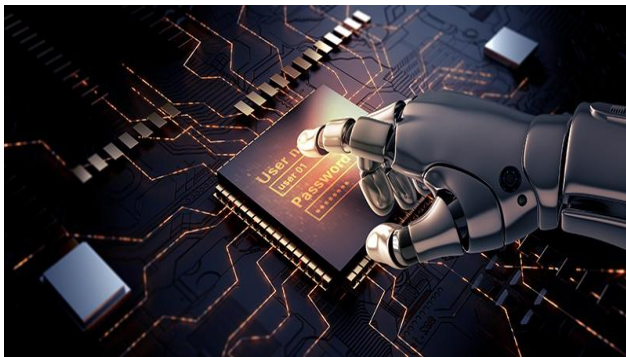
产品牌号	测试温度	剩磁 B _r		磁感矫顽力 H _{cb}		内禀矫顽力 H _{cj}		最大磁能积 (BH) _{max}		剩磁温度系数	内禀矫顽力温度系数	居里温度	最大工作温度
	℃	T	kGs	kA/m	kOe	kA/m	kOe	kJ/m³	MGOe	-%/℃	-%/℃	℃	℃
高性能系列													
XGS 35H	20	1.18-1.21	11.8-12.1	870-918	10.9-11.5	≥1990	≥25	263~279	33~35	0.03	0.20	>810	350
XGS 34H	20	1.16-1.20	11.6-12.0	855-910	10.7-11.4	≥1990	≥25	255~271	32~34	0.03	0.20	>810	
XGS 33HB	20	1.14-1.16	11.4-11.6	833-884	10.5-11.1	≥1990	≥25	247~263	31~33	0.03	0.20	>810	
XGS 33HA	20	1.13-1.15	11.3-11.5	833-884	10.5-11.1	≥1990	≥25	243~255	30.5~32	0.03	0.20	>810	
XGS 32H	20	1.11-1.145	11.1-11.45	818-868	10.3-10.9	≥1990	≥25	239~255	30~32	0.03	0.20	>810	
XGS 30H	20	1.08-1.12	10.8-11.2	796-849	10.0-10.7	≥1990	≥25	223~239	28~30	0.03	0.20	>810	
XGS 28H	20	1.04-1.09	10.4-10.9	767-827	9.6-10.4	≥1990	≥25	207~223	26~28	0.03	0.20	>810	
XGS 26H	20	1.00-1.05	10.0-10.5	737-796	9.3-10.0	≥1990	≥25	191~207	24~26	0.03	0.20	>810	
XGS 24H	20	0.95-1.01	9.5-10.1	700-766	8.8-9.6	≥1990	≥25	175~191	22~24	0.03	0.20	>810	
XGS 35	20	1.18-1.21	11.8-12.1	870-918	10.9-11.5	≥1433	≥18	263~279	33~35	0.03	0.20	>810	300
XGS 34	20	1.16-1.20	11.6-12.0	855-910	10.7-11.4	≥1433	≥18	255~271	32~34	0.03	0.20	>810	
XGS 33	20	1.13-1.16	11.3-11.6	833-884	10.5-11.1	≥1433	≥18	239~255	30~32	0.03	0.20	>810	
XGS 32	20	1.11-1.145	11.1-11.45	818-868	10.3-10.9	≥1433	≥18	239~255	30~32	0.03	0.20	>810	
XGS 30	20	1.08-1.12	10.8-11.2	796-849	10.0-10.7	≥1433	≥18	223~239	28~30	0.03	0.20	>810	
XGS 28	20	1.04-1.09	10.4-10.9	767-827	9.6-10.4	≥1433	≥18	207~223	26~28	0.03	0.20	>810	
XGS 26	20	1.00-1.05	10.0-10.5	737-796	9.3-10.0	≥1433	≥18	191~207	24~26	0.03	0.20	>810	
XGS 24	20	0.95-1.01	9.5-10.1	700-766	8.8-9.6	≥1433	≥18	175~191	22~24	0.03	0.20	>810	
XGS 35M	20	1.18-1.21	11.8-12.1	854-918	10.7-11.5	≥955	≥12	263~279	33~35	0.03	0.20	>810	250
XGS 34M	20	1.16-1.20	11.6-12.0	840-910	10.5-11.4	≥955	≥12	255~271	32~34	0.03	0.20	>810	
XGS 33M	20	1.13-1.16	11.3-11.6	833-884	10.3-11.1	≥955	≥12	239~255	30~32	0.03	0.20	>810	
XGS 32M	20	1.11-1.17	11.1-11.7	803-887	10.1-10.9	≥955	≥12	239~255	30~32	0.03	0.20	>810	
XGS 30M	20	1.08-1.12	10.8-11.2	782-849	9.8-10.7	≥955	≥12	223~239	28~30	0.03	0.20	>810	
XGS 28M	20	1.04-1.09	10.4-10.9	753-827	9.5-10.4	≥955	≥12	207~223	26~28	0.03	0.20	>810	
XGS 26M	20	1.00-1.05	10.0-10.5	724-796	9.1-10.0	≥955	≥12	191~207	24~26	0.03	0.20	>810	
XGS 24M	20	0.95-1.01	9.5-10.1	688-766	8.6-9.6	≥955	≥12	175~191	22~24	0.03	0.20	>810	
超高温系列													
XGS 26-T550	20	0.93-1.02	9.3-10.2	677-796	8.5-10.0	≥1990	≥25	183~207	23~26	0.03	0.15	>820	550
	550	0.65-0.76	6.5-7.6	358-510	4.5-6.4	398-637	5.0-8.0	72~88	9~11	-		-	
XGS 25-T500	20	0.95-1.03	9.5-10.3	725-764	9.1-9.6	≥1990	≥25	175~199	22~25	0.03	0.15	>820	500
	500	0.65-0.80	6.5-8.0	446-518	5.6-6.5	525-717	6.6-9.0	79~103	10~13	-		-	
XGS 31-T350	20	1.08-1.13	10.8-11.3	796-876	10.0-11.0	≥1990	≥25	223~247	28~31	0.03	0.20	>810	350
	350	0.85-1.00	8.5-10.0	557-637	7.0-8.0	637-796	8.0-10.0	151~175	19~22	-		-	
低温度系数系列													
XGS 22-TC-T350	20	0.91-0.96	9.1-9.6	685-732	8.6-9.2	≥1433	≥18	151~175	19~22	0.01	0.20	>810	350
XGS 18-TC-T500	20	0.85-0.91	8.5-9.1	597-709	7.5-8.9	≥1433	≥18	127~143	16~18	0.01	0.15	>820	500

Tips : 1 T = 10 kGs = 10000 Gs; 1 kA/m = 0.01256 kOe = 12.56Oe; 1 MGOe = 7.96 kJ/m³.





Hangda product are seeing increasingly widespread applications in fields such as aerospace, rail, telecommunications, medicine, defense, oil, gas, power generation and automotive electronics. Notably, they possess irreplaceable strategic value in the defense sectors, including aerospace, naval vessels, and radar communications.





Magnetizing Industry & Cleaning the Earth

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