

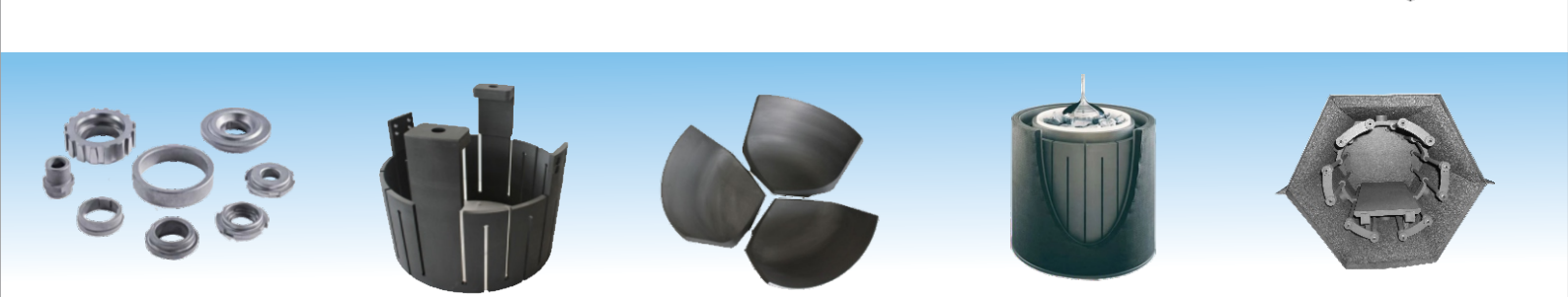
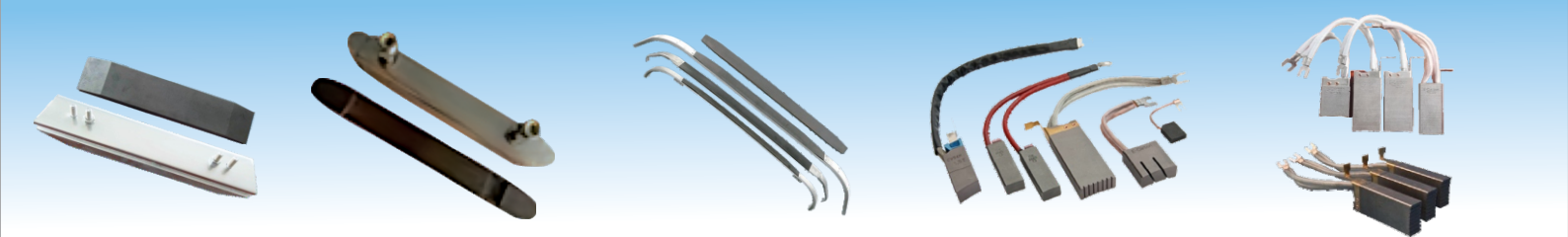


四川易卡朋科技有限公司

Sichuan ECC Sciotech Co., Ltd

轨道交通、新能源与半导体用碳石墨制品

Carbon Graphite Products for Rail Transit, New Energy & Semiconductor Industries





公司简介 Company Profile

四川易卡朋科技有限公司（原成都易卡朋电碳有限公司）成立于2016年，是一家专业从事碳石墨产品研发与制造的高新技术企业，拥有全球领先的碳石墨产品制造工艺技术，在成都、雅安、自贡建成了研发和生产基地，按照国际标准和中国国家标准生产，方便快捷地为国内外客户提供国际一流的高品质碳石墨产品，包括电碳产品事业部和特碳产品事业部：

Sichuan ECC Sciencetech Co., Ltd, originated from Chengdu ECC Carbon Co., Ltd, was founded in 2016. As a new & high-tech enterprise, it concentrates on the research and manufacture of carbon graphite products. Its research centers and manufacturing bases with advanced process techniques have been established in Chengdu, Ya'an and Zigong city. The company follows up international standards and Chinese national standards and widely provides top quality carbon graphite products at home and abroad, following with electric carbon products and specialty graphite products below:

电碳事业部 ELECTRIC CARBON DIVISION

◆ 碳滑板、导电靴、轮缘润滑棒：用于高铁动车、电力机车、地铁、市域轻轨等轨道交通领域所用受电弓碳滑板、包括用于第三轨、单轨、无轨电车、无人驾驶APM轻轨以及行车等以及用于高铁动车、电力机车的接地碳刷。
Carbon current collectors and carbon shoes for pantograph of high speed trains, EMUs, locomotives, subways and urban transport, including third rails, mono rails, trolley buses, computerized APM light rails and lift cranes and wheel flange lubricators and carbon lubrication bars, and earthing carbon brushes used in earth return devices for high speed trains, EMUs and locomotives.

◆ 风电碳刷、刷架：风力发电机碳刷、接地碳刷、防雷碳刷、变桨碳刷以及工业电机碳刷和刷架，用于火电、水电以及核电等行业。

Wind power carbon brushes and holders: Carbon brushes for wind power generation, grounding device, thunder proof and pitch control applications as well as carbon brushes & holders for industrial DC motors and power generators for thermal power, hydroelectric and nuclear power.

特碳事业部 SPECIALTY GRAPHITE DIVISION

◆ 太阳能光伏、LED、多晶硅、单晶硅、碳化硅等半导体用石墨热场和石墨保温元件。

Graphite hot zones and graphite insulation components for solar, LED and semiconductor applications including poly silicon, mono silicon, silicon carbide, etc.

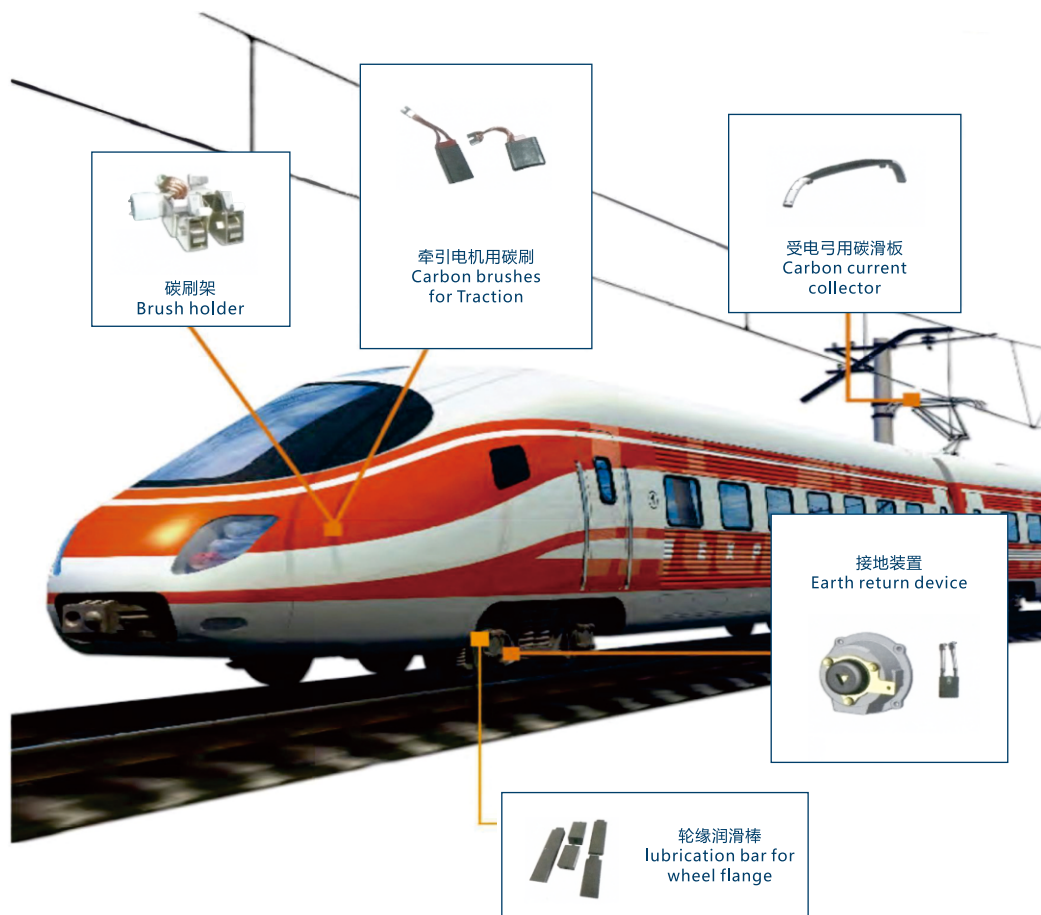
◆ 新能源汽车与机械用碳石墨零件如转子、刮片、密封环、轴承、垫圈等。

Carbon graphite parts such as graphite rotors, vanes, mechanical seals, bearings, bushes, etc., used in new energy vehicles and mechanical industries.

◆ 传统工业如高温热处理、陶瓷、石英、玻璃、冶金、有色金属等所需的各种特种碳石墨制品。

Carbon graphite products used in such conventional industries as high temperature treatment, ceramics, quartz, glass, metallurgy as well as non-ferrous metals, etc.

轨道交通电碳产品 Electric Carbon Products for Rail Transit



轨道交通领域用的电碳制品:

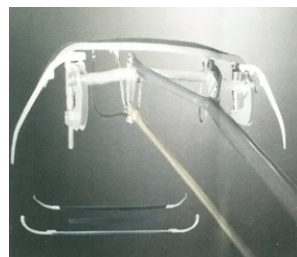
- 1、为行车提供动力的受电弓用碳滑板（包括用于高铁动车、电力机车、地铁轻轨、三轨、单轨、矿山机车、无轨电车、空铁、行车和磁悬浮机车）。
- 2、排除残余电流的接地装置用接地碳刷。
- 3、老式的电力机车及内燃机车牵引电机用碳刷。
- 4、为减轻车轮与铁轨磨损的轮缘润滑棒。

Following electric carbon items used in rail transit:

- 1、Carbon current collector for pantograph which supply power for the trainset for EMU, locomotive, 3rd rail, mono rail, mine locomotive, trolley bus, sky train, travelling crane and maglev train, etc.
- 2、Grounding carbon brush for elimination of residual current in ERD (Earthing Return Device).
- 3、Carbon brush for traction motor in old types of electric or diesel locomotive.
- 4、Lubrication bar for wheel flange which may reduce the wear between the wheel and the track.

高铁、电力机车及地铁受电弓用碳滑板

Carbon current collector for pantograph which supplys power for the trianaset for EMU, locomotive and subway

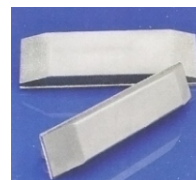
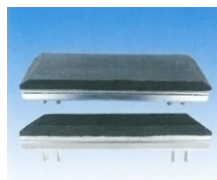
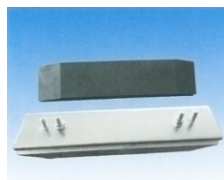
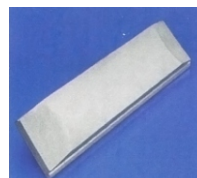


第三轨用碳滑板

Carbon current collector for 3rd rail

第三轨用碳滑板其金属托的材料和结构设计类似于架空线的碳滑板，但额外提供了机械安全装置以防机车侧面的跳动。为了使用稳定及节省成本，电镀金属板或是铝板被广泛采用，在有些线路上也有采用黄铜或是紫铜的。

Designs and carrier materials of third rail carbon collector are similar to collectors for overhead lines. Additional mechanical safety devices are provided for protection against lateral bumps. For reasons of stability and costs galvanized steel sheet and aluminium carriers have widely been accepted. In certain cases brass or copper carriers may also be used.



单轨用粉末冶金滑板

Powder metallurgy collector for mono rail



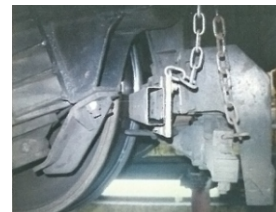
无轨电车用碳滑块

Carbon current collector for trolley buses



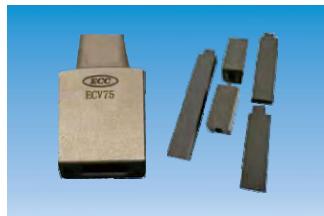
空铁接地用碳滑板

Carbon current collector for grounding device of sky train



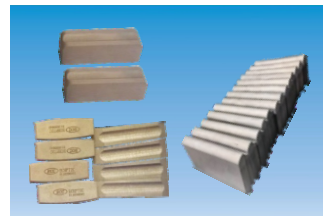
无人驾驶APM 轻轨用导电靴

Carbon conductive shoe for unpiloted light rail



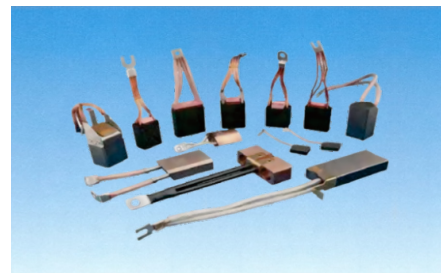
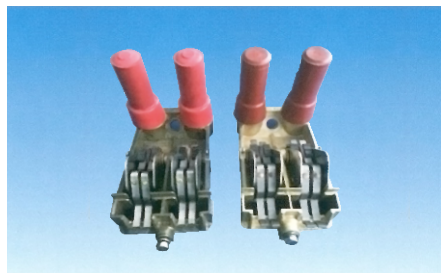
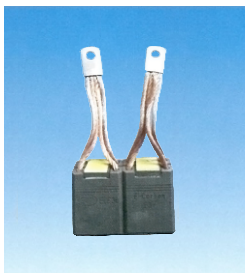
吊机、行车碳滑块

Carbon shoes for overhead cranes



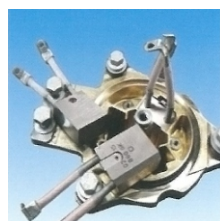
牵引电机用碳刷

Carbon brush for traction motor



接地装置及所用碳刷

Carbon brush for grounding device



碳滑板、集电靴牌号与技术参数

Technical Parameters for Carbon Current Collectors & Carbon Shoes

牌号 Grade	密度 Density g/cm ³	电阻率 S.E.R μΩm	洛氏硬度 Rockwell Hardness	抗折强度 Flexural Strength Mpa	金属含量 Max.Metal Content	电流密度 Current Load A/mm	主要用途 Main Applications
ECH22	1.7	38	80(HR5/150)	35	0	4-6	无轨电车 Trolleybus
ECH23	1.68	40	75(HR5/150)	30	0	4-6	无轨电车 Trolleybus
ECH68	1.68	38	75(HR5/150)	30	0	4-6	干线机车 Main-line locomotive
ECH71	1.71	35	80(HR5/150)	33	0	5-8	城轨机车 Urban rail locomotive
ECH73	1.73	30	85(HR5/150)	35	0	5-8	大电流城轨机车 Heavy load urban rail locomotive
ECHX68	1.68	38	80(HR5/150)	30	0	5-8	动车及机车 EMU and Locomotive
ECHS71	1.71	34	85(HR5/150)	30	0	5-8	动车及机车 EMU and Locomotive
ECHP72	1.73	34	95(HR5/150)	37	0	6-8	动车及机车 EMU and Locomotive
ECH23C	2.2	12	90(HR5/150)	60	30	10-12	无轨电车 Trolleybus
ECH68C	2.5	4	115(HR5/150)	65	40	12-16	大电流城轨机车 Heavy load urban rail locomotive
ECHX68C	2.6	4	110(HR5/150)	65	45	12-16	大电流城轨机车 Heavy load urban rail locomotive
ECH71C	2.3	4	110(HR5/150)	65	35	12-14	干线机车 Main-line locomotive
ECHS71C	2.35	4	110(HR5/150)	65	30	12-15	动车及地铁 EMU and Subway Train
ECHP72C	2.38	4	110(HR5/150)	65	35	16-20	动车及地铁 EMU and Subway Train
ECHP72B	2.4	4	115(HR5/150)	65	40	16-20	动车及地铁 EMU and Subway Train
ECF80	8	0.2	95(HR5/150)	110	80	25-30	粉末冶金滑板, 用于城轨的单轨和三轨机车 powder metallurgical collector used in monorail and third rail
ECF85	8.3	0.15	100(HR5/150)	120	85	25-30	粉末冶金滑板, 用于城轨的单轨和三轨机车 powder metallurgical collector used in monorail and third rail

轨道交通接地碳刷牌号及技术参数

Technical Parameters of Earthing Brushes for Rail Transit

牌号 Grade	密度 Density g/cm ³	电阻率 S.E.R μΩm	洛氏硬度 Rockwell Hardness	肖氏硬度 Shore Hardness	抗折强度 Flexural Strength Mpa	电机圆周转速 Peripheral Speed m/s	电流密度 Current Load A/cm ²
ECC87	5.2	0.1	60HR10/60	N/A	55	25	18
ECC73	4.2	0.2	85HR10/60	N/A	44	30	15
ECC80	5.2	0.07	N/A	20	95	30	20
ECC85	5.1	0.8	63	N/A	58	28	22
ECC91	5.15	0.5	65	N/A	62	30	24

牵引电机碳刷牌号与技术参数

Technical Parameters of Brushes for Traction Motors

牌号 Grade	密度 Density g/cm ³	电阻率 S.E.R μΩm	洛氏硬度 Rockwell Hardness	抗折强度 Flexural Strength Mpa	电机圆周转速 Peripheral Speed m/s	电流密度 Current Load A/cm ²	主要用途 Main Applications
ECE30	1.58	40	87 (10/60)	21	35	10	牵引电机、汽轮发电机的高速励磁机、轧钢电动机、交流整流子电动机和其它换向困难的直流电机 For traction motors, turbonator' s exciter, steel rolling motor, AC commutator motor and other DC motors with difficult commutation
ECE31	1.62	50	92 (10/100)	20	50	12	
ECE35	1.67	54	85 (10/100)	24	45	12	
ECE36	1.7	59	90 (10/100)	26	40	12	
ECE37	1.57	62	90 (10/100)	23	45	12	换向优异、成膜性好, 适用于各型机车、船舶等牵引电机 Excellent in commutation, Good film-forming, Applicable for all kinds of traction motors of locomotive and ship
ECE31R	1.65	48	90 (10/100)	25	50	12	
ECE35R	1.73	52	100 (10/100)	31	45	12	
ECE36R	1.62	56	86 (10/100)	20	40	12	
ECE37R	1.75	60	103 (10/100)	35	40	12	机车、矿山牵引电机 For traction motors of locomotive and mine

无人驾驶APM轻轨用导电靴技术参数

Technical Specifications of Conductive Carbon Shoes for Driverless APM Light Rail

牌号 Grade	密度 Density g/cm ³	电阻率 S.E.R μΩm	肖氏硬度 Shore Hardness	抗折强度 Flexural Strength Mpa	圆周转速 Peripheral Speed m/s	电流密度 Current Load A/cm ²
ECF98	5.6	0.01	30	65	30	25
B98S	5.8	0.01	30	67	30	25

轨道交通用ECV75轮缘润滑棒技术参数

Data sheet of ECV75 lubrication bar for wheel flange

牌号 Grade	密度 Density g/cm ³	摩擦系数 Coefficient of friction	肖氏硬度 Shore Hardness	抗折强度 Flexural Strength Mpa	抗压强度 Compressive Strength Mpa	开口气孔率 Open Porosity %
ECV75	1.73	<0.1	55	15	32	19

该轮缘润滑棒的测试磨耗量为5mm/10000KM左右 Tested wear rate as 5mm/10000KM

风电用电碳产品:

Wind Power Electric Carbon Products:

- ◆ Carbon Brushes/发电机用碳刷
- ◆ Brush Holders/刷架
- ◆ Slip Rings/滑环
- ◆ Earth Dissipation Brushes /接地碳刷
- ◆ Lightning Protection Brushes /防雷电碳刷
- ◆ Hub Control Brushes /变桨碳刷



风电滑环总成

Slip Ring Assemblies



碳刷

通常双馈异步风力发电机会用到碳刷。易卡朋公司的ECC50碳刷是今天许多在用的风力发电机的标准牌号的碳刷，许多年的使用效果证明在各种环境条件及负载工况下，ECC50碳刷具有可靠的寿命保证。

Normally carbon brushes are used for doubly fed asynchronous wind generators. ECC50 carbon brushes have been widely used in wind power stations since years with stable and long term lifetime.

正确选择碳刷对维持风力发电机的正常运转是至关重要的。碳刷最关键的用途是在发电机，但同时碳刷也常被用于防雷电装置，接地装置，变桨机构（传输电力和信号）以及其它一些输电用途。

It is important to select the correct types of carbon brushes for wind generators. Meanwhile carbon brushes are also used for lightning protection devices, earth return devices, hub control system (electric and signal transmission) and so on.



风力发电机用碳刷
Carbon Brush for Wind Turbine



风力发电用碳刷
Carbon Brushes for Wind Turbine



易卡朋电碳风电常用碳刷牌号及技术参数

Carbon Brush Grades and Typical Properties for Wind Power

类别 Category	材质型号 Grade	电阻率 Specific Electrical Resistivity $\mu\Omega\text{m}$	密度 Density g/cm^3	抗折强度 Flexural strength MPa	洛氏硬度 Rockwell Hardness HR	电流密度 Current Density A/cm^2	圆周速度 Peripheral Speed m/s
相碳刷 Carbon brush for generator	ECC45	2.5	2.8	28	70 (10/60)	15	40
	ECC50	1.5	3.1	30	75 (10/60)	18	35
	ECS65	0.8	3.6	30	85 (10/60)	20	30
接地碳刷 Carbon brush for earthing	ECC50	1.5	3.1	30	75 (10/60)	18	35
	ECS65	0.8	3.6	30	85 (10/60)	20	30
	ECN45	18	1.45	10	55 (10/40)	11	60
	ECE17C	4	2.5	35	75 (10/60)	15	40
防雷碳刷 Carbon brush for lightning defence	ECE37C	8	2.4	32	80 (10/60)	15	50
	ECC75	0.2	4.2	50	80 (10/60)	22	30
	ECC90	0.18	4.2	52	80 (10/80)	24	30
变桨碳刷 Carbon brush for pitch control	ECE21	28	1.62	20	85 (10/60)	10	40
	ECE25	16	1.61	13	75 (10/60)	12	40

牌号 Grade	密度 Density g/cm^3	电阻率 S.E.R $\mu\Omega\text{m}$	洛氏硬度 Hardness Rockwell B	肖氏硬度 Shore Hardness	抗折强度 Flexural Strength Mpa	线速度 Peripheral Speed m/s	电流密度 Current Load A/cm^2	金属含量 Metal Content %	主要用途 Main Application
CW40	2.8	2.3	—	75	30	40	16	40	用于发电机
CW54	3.2	1.5	—	85	32	40	18	50	用于发电机
CW68	3.8	0.4	—	84	36	35	20	67	用于接地装置
CW74	4.2	0.2	—	85	45	30	22	87	用于防雷电装置
AG20	3.8	0.3	—	75	30	20	25	20	用于接地装置
AG65	4.4	0.35	—	85	30	20	25	65	用于接地装置
RE66	1.23	23	—	—	6	80	10	—	用于接地装置
RC53	3.2	1.3	84 HR10/60	—	30	35	20	50	用于发电机
V2141	1.26	20.8	—	—	5.3	30	10	—	用于接地装置
RC87	5.2	0.10	60 HR10/60	—	55	25	20	85	用于防雷电装置
RC95	6.2	0.12	75 HR10/60	—	115	20	25	95	用于变桨装置
RE75	1.56	25	58 HR10/60	—	21	50	12	—	用于变桨装置

工业电机与发电机碳刷

Carbon Brushes for Industrial Motors & Power Generators



类别 Category	材质型号 Material Grade	电阻率 S.E.R $\mu\Omega m$	密度 Density g/cm ³	抗折强度 Flexural Strength Mpa	洛氏硬度 Rockwell Hardness HRB	电流密度 Current Density A/cm ²	圆周速度 Peripheral Speed m/s	主要用途 Main Applications
天然石墨 Natural Graphite	ECN28	22	1.28	5.2	N/A	10	80	集电性能优异, 用于高速汽轮发电机 Excellent current collecting property. For high speed turbonator
	ECN31	23	1.31	5	N/A	10	70	集电性能优异, 用于中速汽轮发电机 Excellent current collecting property. For medium speed turbonator
	ECN35	21	1.35	5	N/A	8	70	集电性能优异, 用于中速汽轮发电机 Excellent current collecting property. For medium speed turbonator
	ECN39	20	1.39	5.5	N/A	8	70	集电性能优异, 用于低速水轮发电机 Excellent current collecting property. For low speed hydro-generator
	ECN45	18	1.45	10	N/A	11	60	直流发电机、同步发电机集电环 DC generator and Synchronos generator's collecting ring
树脂石墨 Resin bonded graphite	ECR12	120	1.78	34	85(10/60)	10	35	直流和交流变速电机 DC and AC variable speed motor
	ECR21	210	1.70	32	82(10/60)	8	35	直流和交流变速电机 DC and AC variable speed motor
	ECR48	480	1.66	18	80(10/40)	6	40	直流和交流变速电机 DC and AC variable speed motor
	ECR120	1200	1.58	23	84(10/40)	5	40	起动力矩大的交流电机 big starting torque AC motor
电化石墨 Electro-graphite	ECE10	10	1.62	10	100(10/20)	12	50	80-120V直流发电机、直流电焊机 80-120V DC generator, DC electric welding machine
	ECE17	13	1.58	8	103(10/20)	12	50	高速汽轮发电机集电环、小型直流电机 High speed turbonator's collecting ring, Small DC generator
	ECE20	20	1.56	11	90(10/60)	10	45	汽轮发电机励磁机和牵引直流电机 Turbonator's exciter, DC traction motor
	ECE25	16	1.61	13	75(10/60)	12	40	
	ECE21	28	1.62	20	85(10/60)	10	40	有换向要求和有机振动的牵引直流电机 The reversing required and vibrating DC traction motor
	ECE30	40	1.58	21	87(10/60)	10	35	120-400V直流电机 120-400V DC motor
	ECE31	50	1.62	20	92(10/100)	12	50	
	ECE35	54	1.67	24	85(10/100)	12	45	牵引电机、汽轮发电机的高速励磁机、轧钢电动机、交流整流子电动机和其它 Traction motor, Turbonator's exciter, Steel rolling motor, AC commutator machine, Other DC motor
	ECE36	59	1.7	26	90(10/100)	12	40	
	ECE37	62	1.57	23	90(10/100)	12	45	
浸渍电化石墨 Impregnated electro-graphite	ECE31R	48	1.65	25	90(10/100)	12	50	换向优异、成膜性好, 适用于各型机车、船舶等牵引电机 Excellent reversing, Good film-forming, Applicable for all kinds of engines and haulage machine
	ECE35R	52	1.73	31	100(10/100)	12	45	
	ECE36R	56	1.62	20	86(10/100)	12	40	
	ECE37R	60	1.75	35	103(10/100)	12	40	机车、矿山牵引电机 Engine, Mine traction motor
金属石墨 Metal graphite	ECC45	2.5	2.8	28	70(10/60)	15	40	
	ECC50	1.5	3.1	30	75(10/60)	18	35	风力发电机、异步电动机集电环、低电压直流电机 Wind driven generator, Asynchronous motor's collecting ring, Low voltage DC motor
	ECC55	1.0	3.2	32	78(10/60)	15	35	
	ECC65	0.4	3.9	45	80(10/60)	18	30	低电压直流发电机和变速电机集电环、接地环 Low voltage DC generator, variable speed motor's collecting ring, grounding ring
	ECC75	0.2	4.2	50	80(10/60)	22	30	
	ECC90	0.18	4.2	52	80(10/80)	24	30	工业触点、滑块、接地装置和电镀生产线 Contact for industries, Sliding block, Grounding device, production line for electric plating
	ECC50	1.5	3.1	30	75(10/60)	18	35	交流微型电机 Mini AC motor
	ECS65	0.8	3.6	30	85(10/60)	20	30	
	ECS85	0.1	6	45	90(10/60)	20	—	信号装置触点 Contact of signal device
浸金属石墨 Metal impregnated graphite	ECE10C	6	2.2	30	70(10/60)	15	40	
	ECE17C	4	2.5	35	75(10/60)	15	40	交流滑环电机、接地环 AC slip ring motor, grounding ring
	ECE37C	6	2.4	32	80(10/60)	15	35	
	ECE17S	8	2.1	25	65(10/60)	14	45	腐蚀性环境交流滑环电机 AC slip ring motor used in corrosion condition

太阳能、LED、半导体、新能源汽车以及传统工业用特种石墨产品

Specialty Graphite Products for Solar, LED, Semiconductor, New Energy Vehicles and Conventional Industries

易卡朋特种石墨材料参数表 Datasheet of ECC Specialty Graphite Materials

牌号 Grade	体积密度 Density (g/cm ³)	空隙度 Porosity (%)	肖氏硬度 Shore Hardness	电阻率 Electric Resistivity (μΩm)	抗折强度 Flexural Strength (Mpa)	抗压强度 Compressive Strength (Mpa)	热膨胀系数 Thermal Expansion (10 ⁻⁶ K ⁻¹)	热导率 Thermal Conductivity (W/mK)	颗粒度 Grain size (μm)
等静压石墨 Isostatic Pressed Graphit									
ECD75	1.75	20	50	14	40	95	4.0	95	15
ECD80	1.8	15	55	13	48	110	4.1	100	10
ECD83	1.83	12	55	10	55	130	4.2	100	6
模压石墨 Die Molded Graphite									
ECM78	1.78	16	52	14	35	70	4.1	94	14
ECM83	1.83	14	55	12	40	80	4.2	105	12
挤压石墨 Extruded Graphite									
ECE60	1.60	23	30	12	10	20	3.8	120	2
ECE70	1.70	20	36	11	14	28	3.9	130	0.8
ECE75	1.75	17	39	9	25	50	4.0	135	0.5
备注: 以上挤压石墨牌号的颗粒度单位为毫米(mm)									
Note: The unit of dimension for above extruded graphite is mm									
振动成型石墨 Vibro Molded Graphite									
ECZ70	1.70	22	50	12	12	28	3.8		2
ECZ73	1.73	18	50	11	18	35	3.9		0.8
备注: 以上振动成型石墨牌号的颗粒度单位为毫米(mm)									
Note: The unit of dimension for above vibro molded graphite is mm									
石墨软毡 Graphite Soft Felt									
牌号 Grade	体积密度 Density (g/cm ³)	碳含量 Carbon Content %	灰分Ash Content %	拉伸强度 Strength of Extension Mpa	导热系数 Coefficient of Thermal Conductivl ty W/mk	20℃热传导 性Thermal Conductivity at 20℃ W/mk	1000℃热 传导性 Thermal Conductivi ty at 1000℃ W/mk	处理温度 Processing Temperature C°	真空或惰性气 体下使用温度 Operating Temperature Vaccum or Inner Gas C°
ECSF	0.1	>99	<1	>0.1	0.03	0.25	0.46	2000	<3000

石墨硬毡 Graphite Rigid Felt									
ECRF	0.15	>99	<1	>1.8	0.06	0.6	0.9	2000	<3000
碳碳复合材料 Carbon Reinforced Carbon Composite Material									
牌号 Grade	体积密度 Density (g/cm³)	弯曲强度 Bending Strength MPa	拉伸强度 Strength of Extension MPa	热膨胀系数 Thermal Expansion (10 ⁻⁶ K ⁻¹)	使用温度 Operating Temperature Vacuum or Inner Gas atmosphereC°				
ECT32	1.32	90	60	0.5	<3000				
ECT51	1.51	135	76	0.6	<3000				
ECT62	1.62	170	98	0.7	<3000				
杂质含量典型值 Typical Impurity Content (ppm)									
灰分		</= 500		</= 20		</= 5			
Ag		<0.5		<0.5		<0.5			
Al		10- 20		<0.1		<0.01			
B		5-10		1		<0.02			
Ca		30 - 50		1		<0.01			
Cl		15-20		1		<0.01			
Co		0.1-0.2		<0.1		<0.01			
Cr		0.1-0.3		<0.1		<0.01			
Cu		1-2		0.2		< 0.01			
Fe		10-30		0.5		0.02			
Gd		<0.01		<0.01		<0.01			
Li		<0.05		<0.05		<0.05			
K		1-2		<1		<1			
Mg		1-5		0.15		0.01			
Mn		0.1 -0.3		<0.1		0.01			
Mo		0.1-0.2		<0.1		<0.1			
Na		1-5		<1		<1			
Ni		1-3		<0.1		0.02			
P		0.1 -0.3		<0.3		<0.3			
S		10 -20		<2		<2			
Si		30- 50		<2		0.5			
Sn		<0.1		<0.1		<0.1			
Ti		10-20		0.5		0.01			
V		10-20		0.2		0.02			
Zn		<0.1		<0.1		<0.1			
备注：纯化石墨和碳碳复合材料的灰分小于5ppm；纯化软毡和硬毡的灰分小于10ppm									
Note：Impurity for graphite and carbon carbon composite is less than 5ppm and less than 10ppm for soft and rigid felt									

产品应用

Products Applications

- ◆ 石墨热场与保温元件: 太阳能光伏、LED、半导体用石墨热场和石墨保温元件
Graphite heat fields and graphite insulation components for solar, LED and semiconductor applications

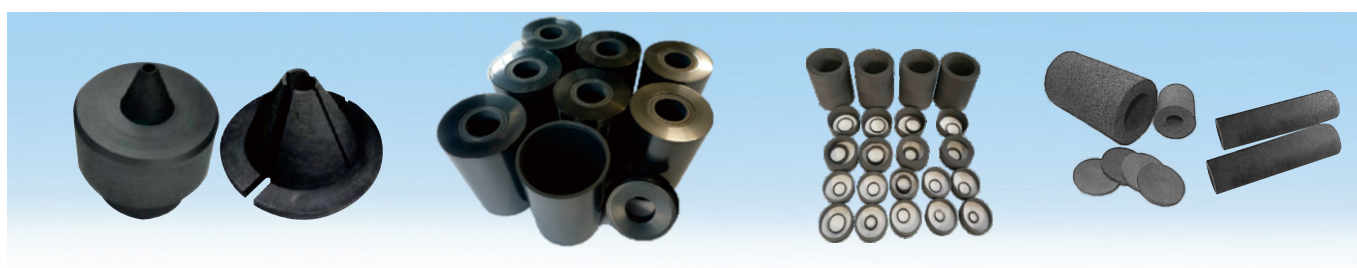


单晶石墨热场

Graphite hot zone for mono-silicon pulling

多晶石墨热场

Graphite hot zone for multi-silicon casting

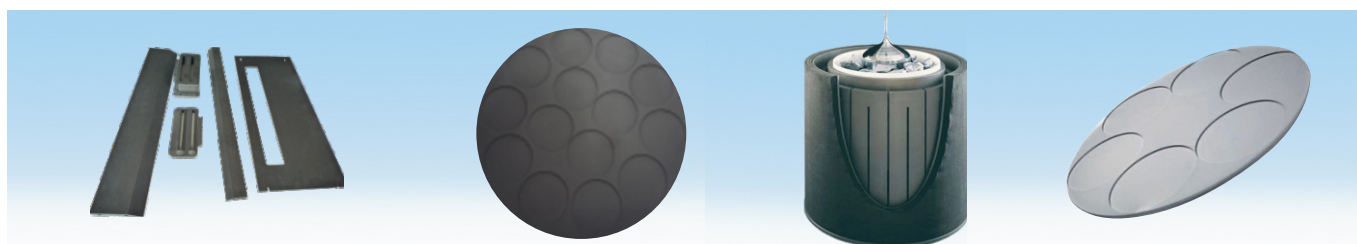


生产多晶硅用石墨卡瓣
Graphite chucks for polysilicon production

碳化硅晶体用石墨坩埚
Graphite crucibles for SiC crystal

纯化石墨件
Purified graphite part

多孔石墨
Porous graphite



离子注入
Graphite parts for ion implanting

纯化石墨件
Purified graphite susceptor

单晶硅拉制用石墨热场
Graphite hot zone for monocrystal silicon pulling

碳化硅涂层石墨基座
SiC coated graphite susceptor

- ◆ 碳石墨零件: 新能源汽车与机械用碳石墨零件如转子、刮片、密封环、轴承、垫圈等
Such parts as graphite rotors, vanes, mechanical seals, bearings, bushes, etc, used in new energy automobiles and mechanical industries



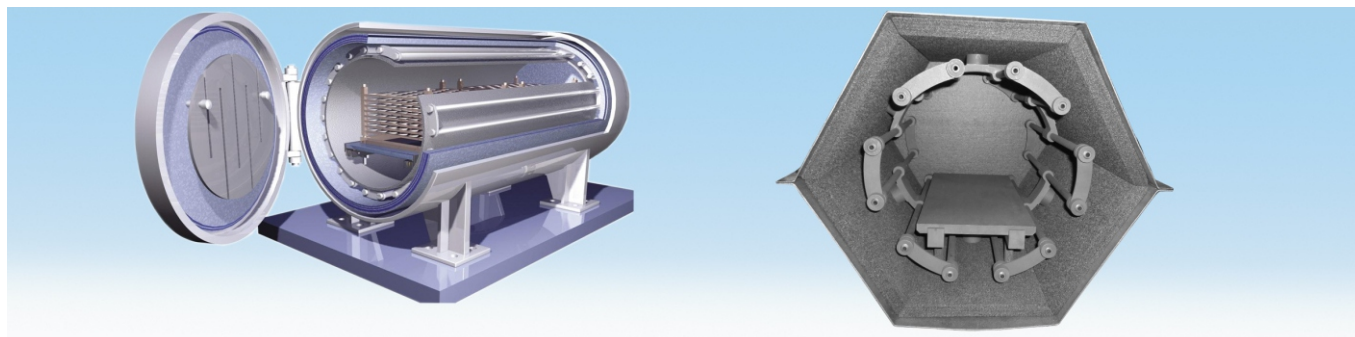
各种石墨密封件
Various graphite seals

碳石墨轴承
Carbon graphite bearings

气泵转子
Graphite rotors & vanes for pump

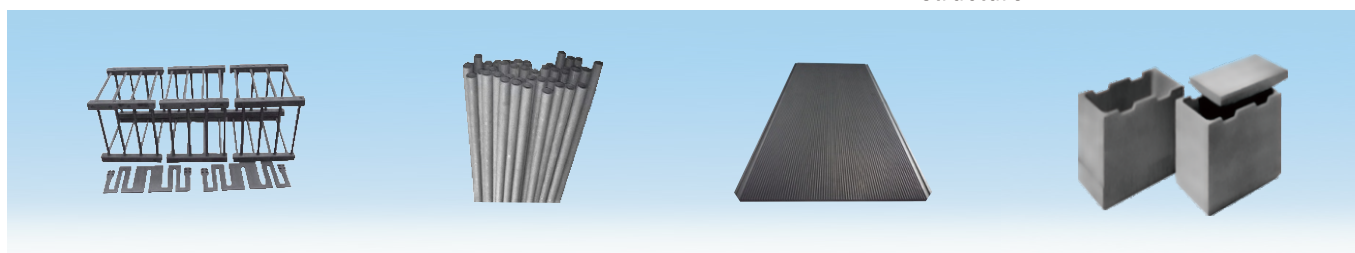
石墨轴瓦
Graphite bushes

◆ 特种石墨制品: 传统工业如高温热处理、陶瓷、玻璃、冶金、有色金属等所需各种特种碳石墨制品
Carbon graphite products used in such conventional industries as high temperature treatment, ceramics, glass, metallurgy as well as non-ferrous metals



真空炉构造
Vacuum furnace construction

石墨热场结构
Graphite hot zone structure

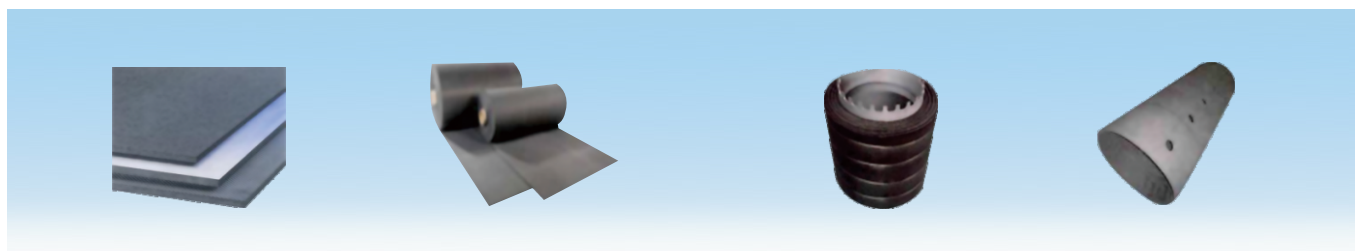


真空炉用石墨加热系统
Graphite heating system

石墨加热管/棒
Graphite heating tube/rod

硬质合金棒材烧结舟
Graphite tray for carbide rod sintering

金属粉末烧结
Graphite boat for metal powder sintering

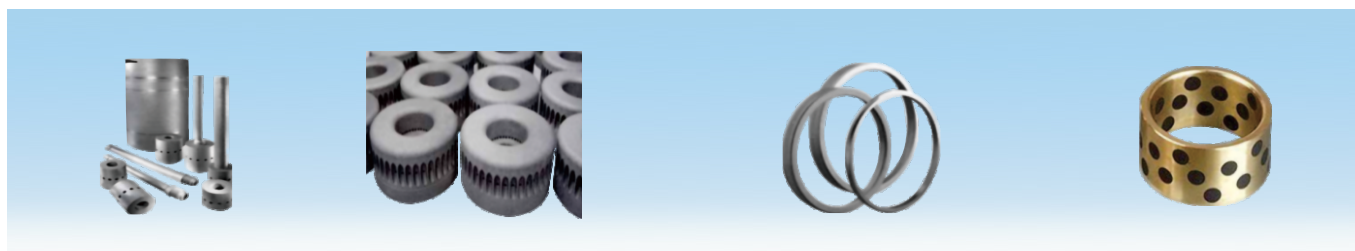


石墨硬毡
Graphite rigid felt

石墨软毡
Graphite soft felt

石墨保温组件
Graphite insulation assemblies

石墨屏蔽筒
Graphite susceptor



铝熔液净化用除气石墨转子
Graphite rotor system for aluminum degassing

铝棒铸造用油气石墨环
Graphite ring for aluminum rod casting

镶嵌石墨轴承
Graphite embedded bearings

本样本册的编写仅限于我们掌握的知识，其目的是为客户大概介绍我们的产品及其用途，故不应将所介绍的特定用途的某种产品的技术参数视作其合格与否的保证值。

This brochure is based on our present state of knowledge and is intended to provide general notes on our products and their uses. It is not therefore be construed as guaranteeing specific properties of the products described or their suitabilityFor a particular application.



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