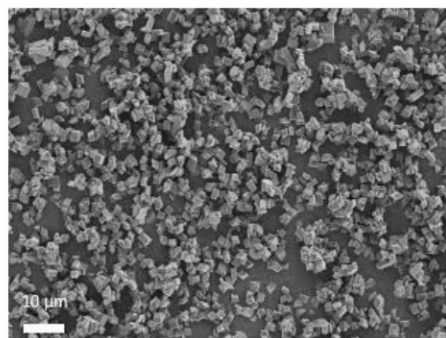




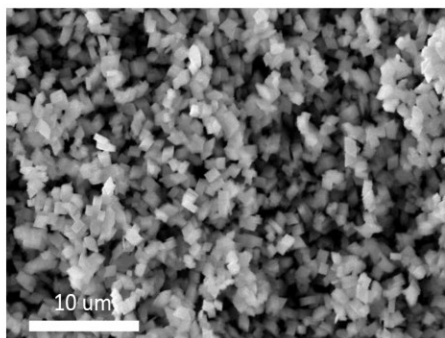
勃姆石(γ -AlOOH)是 γ -Al₂O₃的前驱体，勃姆石属于正交晶系，具有层状结构，每单一结构层，氧离子以立方密堆积排列在八面体的顶点，铝离子位于八面体的中央形成双层结构。通常勃姆石为白色晶体粉末，因其独特的晶体结构和形态，勃姆石具有分散性好、胶溶性好、耐热度高、阻燃性好等特点。

Boehmite (γ -AlOOH) is the precursor of γ -Al₂O₃. Boehmite belongs to the orthorhombic crystal system and has a layered structure. In each individual structural layer, oxygen ions are arranged in a cubic close-packed manner at the vertices of octahedrons, while aluminum ions occupy the centers of the octahedrons, forming a bilayer structure. Typically, boehmite appears as white crystalline powder. Due to its unique crystal structure and morphology, boehmite exhibits characteristics such as excellent dispersibility, good colloidal solubility, high heat resistance, and flame retardancy.

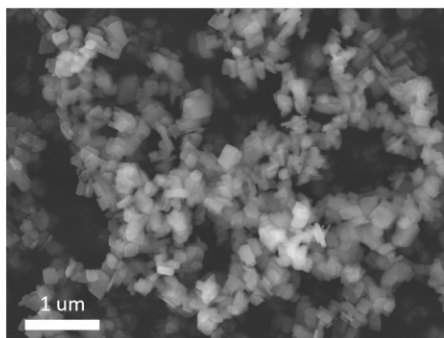
产品微观形貌



勃姆石QXXC001001样品SEM照片



勃姆石QXXC001002样品SEM照片

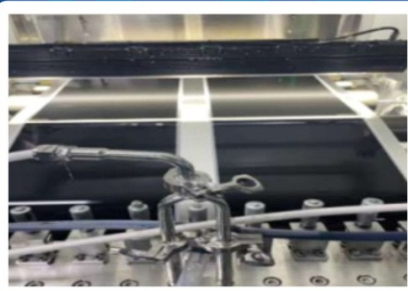


勃姆石QXXC001003样品SEM照片

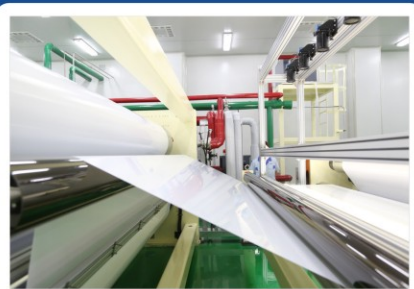
Model	QXXC001001	QXXC001002	QXXC001003
应用 Application	极片边缘涂覆 Electrode Edge Coating	隔膜涂覆 Separator Coating	隔膜涂覆/安全底涂 Separator/Safety Base Coating
外观 Appearance	白色粉体 White Powder	白色粉体 White Powder	白色粉体 White Powder
磁性颗粒 (粒径>150um) Magnetic Particle(>150um)	<15个/kg <15Pcs/kg	<15个/kg <15Pcs/kg	<15个/kg <15Pcs/kg
纯度 Purity	> 99.9%	> 99.9%	> 99.9%
含水率 Moisture Content	≤3500ppm	≤5000ppm	≤10000ppm
D50	1.0-2.5 μm	0.5-1.0 μm	0.25-0.45 μm
PH	6.0-9.0	5.0-10.0	6.0-10.0
SSA	2-6 m ² /g	4-9 m ² /g	6-15 m ² /g



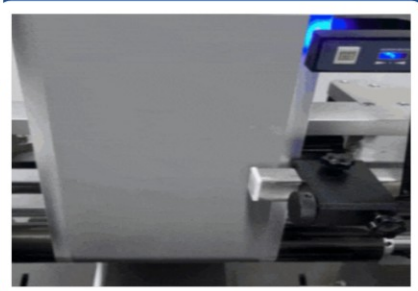
产品应用 PRODUCT APPLICATION



极片边缘涂覆
Electrode Edge Coating



隔膜涂覆
Separator Coating



安全底涂
Safety Base Coating

产品优势 PRODUCT ADVANTAGES

勃姆石在隔膜涂覆领域的优势:

低磁性异物、低硬度、低涂覆厚度、低热收缩率、高浆料稳定性、高固含-粘度-工艺适配性。

The advantages of boehmite in the field of separator coating include:

low magnetic foreign matter, low hardness, low coating thickness, low thermal shrinkage, high slurry stability, high solid content-viscosity-process adaptability.

勃姆石在极片边涂领域的优势:

高剥离强度、低磁性异物、高耐电解液性、高PVDF普适性、高浆料稳定性、高固含-粘度-工艺适配性。

The advantages of boehmite in the field of electrode edge coating include:

high peel strength, low magnetic foreign matter, high electrolyte resistance, high PVDF universality, high slurry stability, high solid content-viscosity-process adaptability.

勃姆石在安全底涂领域的优势:

低涂覆厚度、低热收缩率、高浆料稳定性、高耐电解液性。物理隔离箔材与活性物质、电解液，抑制高温下集流体与电解液的放热链式反应。

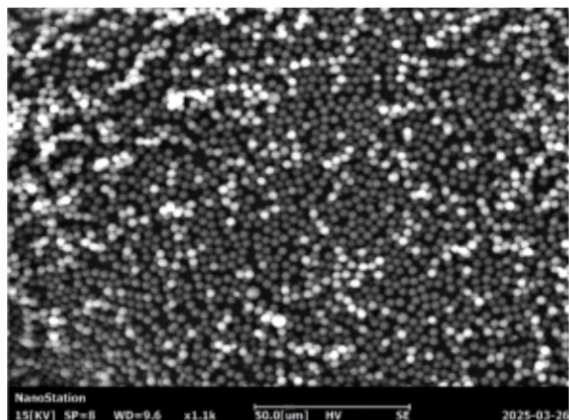
The advantages of boehmite in the field of Safety Base Coating include:

low coating thickness, low thermal shrinkage, high slurry stability, high electrolyte resistance, physically isolate the foil substrate from active materials and electrolyte, and suppress the exothermic chain reaction between current collector and electrolyte under high temperatures.



树脂微球作为硅碳负极原材料多孔碳的前驱体，是一种具有均匀完美球形结构的粉体材料，通常由酚类和醛类化合物通过缩聚反应制成，具有良好的分散性、热稳定性和可调节的粒径分布。

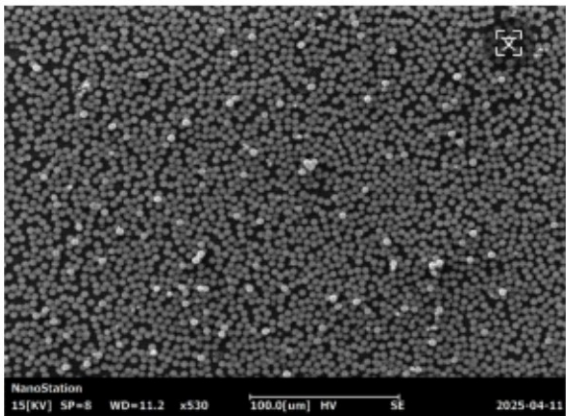
Resin micro ball, as the precursor of porous carbon in silicon-carbon anode raw materials, are a type of powder material with a uniform and perfect spherical structure. They are usually made by polycondensation reactions of phenolic and aldehyde compounds, and have good dispersibility, thermal stability, and adjustable particle size distribution.



树脂微球RMB-1样品SEM照片

Model	RMB-1
外观 Appearance	橙红色粉体 Orange Red Powder
碳化得率 Carbonization Yield	≥55%
含水率 Moisture Content	≤2%
磁性物质 Magnetic Matter	≤50ppm
D50	1.0-3.0μm
Span	≤0.6
PH	6.0-9.0

Model	RMB-2
外观 Appearance	橙红色粉体 Orange Red Powder
碳化得率 Carbonization Yield	≥55%
含水率 Moisture Content	≤2%
磁性物质 Magnetic Matter	≤50ppm
D50	3.0-6.0μm
Span	≤0.6
PH	6.0-9.0



树脂微球RMB-2样品SEM照片

产品应用 PRODUCT APPLICATION



航天航空
Aerospace



硅碳负极原材料
Silicon-carbon anode
raw material



半导体
Semiconductor

精准粒径与优异分散性：

粒径精准控制，单分散性极佳，颗粒大小均一、分布集中

Precise particle size and excellent dispersibility:

Precise control of particle size, excellent monodispersity, uniform particle size, and concentrated distribution

高效生产得率：

碳化得率 $\geq 55\%$ ，活化得率 $\geq 60\%$

High production yield:

Carbonization yield $\geq 55\%$, activation yield $\geq 60\%$

高热稳定性：

造孔孔容 $\geq 1.5\text{cm}^3/\text{g}$ ，比表 $\geq 3200\text{m}^2/\text{g}$ ，依然保持完美球形

High thermal stability:

After activation, pore volume $\geq 1.5\text{cm}^3/\text{g}$, SSA $\geq 3200\text{m}^2/\text{g}$, still maintaining a perfect spherical shape

高抗压强度特性：

三维交联结构赋予超强抗压能力，单颗粒抗压强度 $\geq 1200\text{MPa}$ ，远超同类产品

High compressive strength characteristics:

the three-dimensional cross-linked structure endows it with super strong compressive strength, with a single particle compressive strength $\geq 1200\text{MPa}$, far exceeding similar products

高氮官能团参杂：

含氮量 $\geq 10\%$ ，赋予产品高化学活性和电导率

High nitrogen functional group doping:

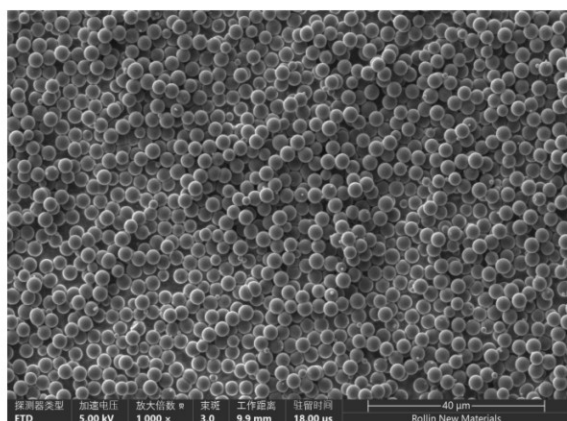
Nitrogen content $\geq 10\%$, endowing the product with high chemical activity and conductivity

产品优势
PRODUCT ADVANTAGES



树脂碳球是以我司自主研发生产的树脂微球为前驱体，经过高温碳化工艺控制，形成无粘连、高单分散性的完美球形结构，适配多孔碳孔径和孔容的精准调控，赋予材料优异的综合性能。

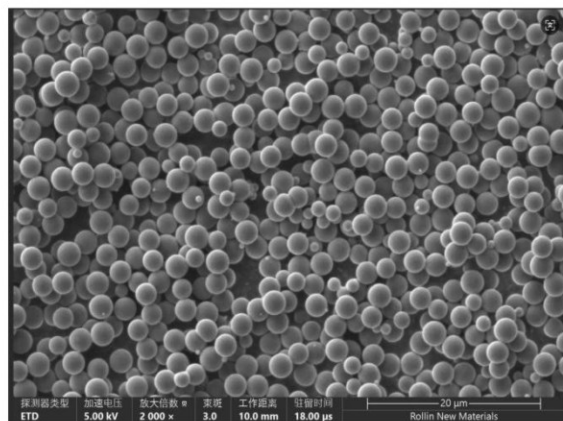
Resin carbon ball is made from resin micro ball independently developed and produced by our company as precursors. Through high-temperature carbonization process control, it forms a perfect spherical structure without adhesion and high monodispersity, which is suitable for precise control of pore size and pore volume of porous carbon, endowing the material with excellent comprehensive performance.



树脂碳球RCB-1样品SEM照片

Model	RCB-1
外观 Appearance	黑色粉体 Black Powder
活化得率 Activation Yield	≥60%
含水率 Moisture Content	≤1%
磁性物质 Magnetic Matter	≤50ppm
D00	≥1.0μm
D50	1.0-3.0μm
Dmax	≤6.0μm
SSA	≤50m ² /g

Model	RCB-2
外观 Appearance	黑色粉体 Black Powder
活化得率 Activation Yield	≥60%
含水率 Moisture Content	≤1%
磁性物质 Magnetic Matter	≤50ppm
D00	≥1.0μm
D50	3.0-5.0μm
Dmax	≤8.0μm
SSA	≤50m ² /g



树脂碳球RCB-2样品SEM照片



产品优势

PRODUCT ADVANTAGES

形态优异/Excellent morphology

颗粒无粘连、大小均一，球形度高、分散性好，批次一致性强

Particles without adhesion, uniform size, high sphericity, good dispersion, strong batch consistency

强度出众/Outstanding strength

单颗粒抗压强度 $\geq 800\text{MPa}$ ，耐高压、不易破碎，适配锂电池极片加工工艺

Single particle compressive strength $\geq 800\text{MPa}$, high pressure resistance, not easily broken, suitable for lithium battery electrode processing technology

可定制化/Customizable

适配物理活化和化学活化工艺，可精确控制孔径和孔容，亦可实现高比表高孔容多孔碳，助力提升硅碳负极能量密度与倍率性能

Suitable for physical and chemical activation processes, can accurately control pore size and pore volume, and can also achieve porous carbon with high specific surface area and high pore volume, helping to improve the energy density and rate performance of silicon-carbon anodes

产品应用

PRODUCT APPLICATION



物理活化原材料

Raw material for physical activation



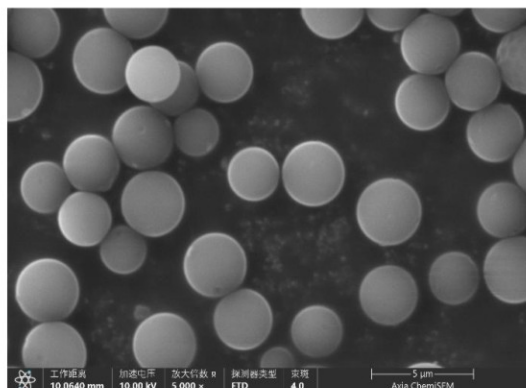
化学活化原材料

Raw material for chemical activation



树脂多孔碳是一种通过高温活化树脂碳球制备的具有球形结构的碳材料，具有高比表面积、高孔容、可调控的孔隙结构和优异的抗压强度，可作为硅碳负极的碳骨架，有利于硅的高含量、高分散沉积，且有效降低硅碳负极的膨胀系数。

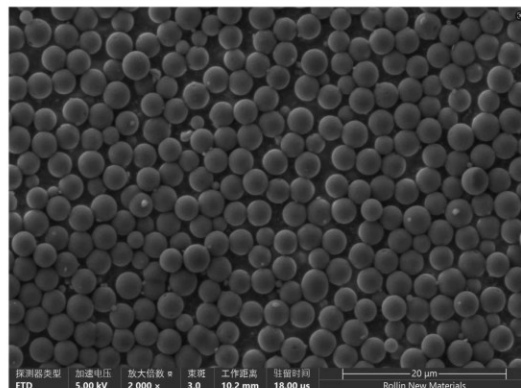
Resin porous carbon is a carbon material with a spherical structure prepared by high-temperature activation of resin carbon ball. It has a high specific surface area, high pore volume, controllable pore structure, and excellent compressive strength. It can be used as a carbon skeleton for silicon-carbon anodes, which is conducive to high content and high dispersion deposition of silicon, and effectively reduces the expansion coefficient of silicon-carbon anodes.



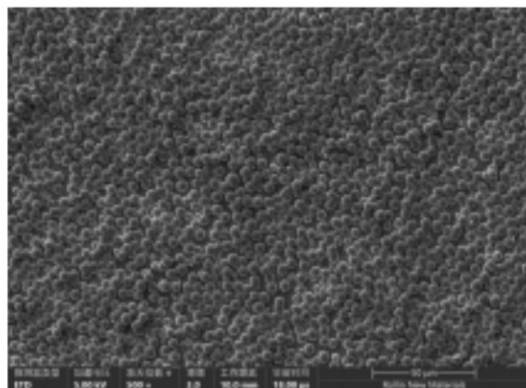
树脂多孔碳RPC-1样品SEM照片

Model	RPC-1
外观 Appearance	黑色粉体 Black Powder
孔容 Pore Volume	0.7-1.8cm ³ /g
含水率 Moisture Content	≤2%
磁性物质 Magnetic Matter	≤50ppm
D50	1.0-3.0μm
SSA	1500-3200m ² /g
PH	6.0-8.0

Model	RPC-2
外观 Appearance	黑色粉体 Black Powder
孔容 Pore Volume	0.8-1.8cm ³ /g
含水率 Moisture Content	≤2%
磁性物质 Magnetic Matter	≤50ppm
D50	3.0-5.0μm
SSA	1500-3200m ² /g
PH	6.0-8.0



树脂多孔碳RPC-2样品SEM照片



树脂多孔碳RPC-3样品SEM照片

Model	RPC-3
外观 Appearance	黑色粉体 Black Powder
孔容 Pore Volume	0.7-1.8cm ³ /g
含水率 Moisture Content	≤2%
磁性物质 Magnetic Matter	≤50ppm
D50	5.0-7.0μm
SSA	1500-3200m ² /g
PH	6.0-8.0



产品优势

PRODUCT ADVANTAGES

高比表高孔容/High specific surface area and high pore volume:

基于自主创新化学活化法，我司树脂多孔碳具有 $3200\text{m}^2/\text{g}$ 以上的超大比表面积， $1.5\text{cm}^3/\text{g}$ 以上的理想孔容，精准覆盖了微孔、介孔多级孔隙体系，能为纳米硅沉积提供充足位点，沉硅量可以达到65%以上

Based on our proprietary chemical activation method, our resin porous carbon features an ultra-large specific surface area exceeding $3,200\text{ m}^2/\text{g}$ and an ideal pore volume surpassing $1.5\text{ cm}^3/\text{g}$. It precisely covers a hierarchical pore system of micropores and mesopores, providing abundant sites for nanosilicon deposition, with a silicon loading capacity reaching over 65%

高含氮量/High nitrogen content:

基于精准分子设计，我司多孔碳材料含氮量超过4%，含氮官能团有助于提高电子转移能力和锂离子贴壁传输能力，显著提高硅碳负极的首效和降低电池内部阻抗

Based on precise molecular design, our porous carbon material has a nitrogen content of over 4%. The nitrogen-containing functional groups help improve the electron transfer ability and lithium ion adhesion transmission ability, significantly enhancing the initial efficiency and reducing the internal impedance of the battery

高抗压性/High compressive strength:

我司树脂多孔碳单颗粒抗压强度达 700Mpa 以上，基于树脂多孔碳球形结构的各向同性抗压能力，让硅碳负极展现出卓越的抗破裂性能

Our resin porous carbon has a single particle compressive strength of over 700Mpa . Based on the isotropic compressive strength of the resin porous carbon spherical structure, the silicon-carbon anode exhibits excellent fracture resistance

产品系列全覆盖/Full coverage of product series:

在锂电领域，低孔容多孔碳面向长循环、低膨胀需求，高孔容多孔碳面向高容量、高倍率需求

The porous carbon with low porosity is produced for long cycle and low expansion requirements, while the porous carbon with high porosity is produced for high capacity and high rate requirements In the field of lithium batteries

产品应用

PRODUCT APPLICATION



硅碳负极

Silicon-carbon anode



超级电容

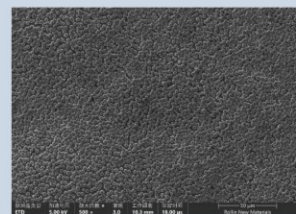
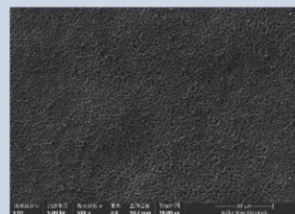
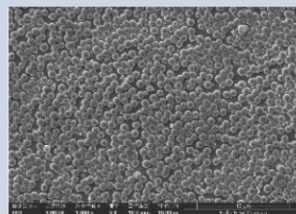
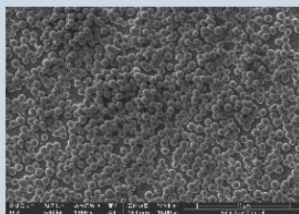
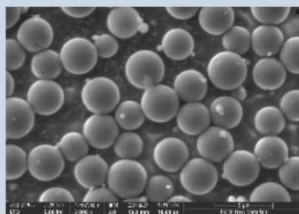
Supercapacitors



多孔碳典型数据 Typical Data of Resin Porous Carbon

RPC-1系列

电镜图/SEM



Model		RPC-1-0.7	RPC-1-0.8	RPC-1-1.0	RPC-1-1.2	RPC-1-1.5
孔 容 (cm^3/g) Pore volume		0.75	0.86	1.05	1.21	1.42
比表面积 (m^2/g) SSA		1737	1947	2389	2682	2920
平均孔径(nm) Average Pore Size		1.57	1.67	1.73	1.87	1.93
粒径 (μm) Particle Size	D00	1.035	1.035	1.163	1.163	1.163
	D10	1.834	1.843	1.901	1.946	1.926
	D50	2.609	2.613	2.673	2.695	2.751
	D90	3.719	3.711	3.777	3.758	4.141
	D99	4.892	4.867	4.951	5.006	6.770

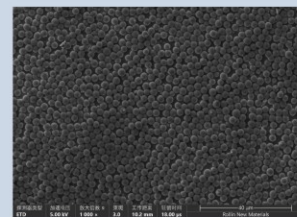
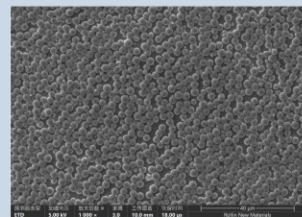
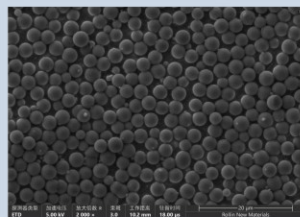
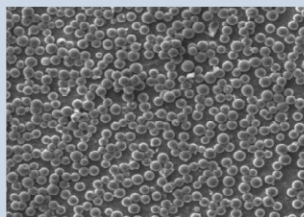
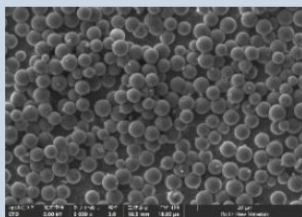




多孔碳典型数据 Typical Data of Resin Porous Carbon

RPC-2系列

电镜图/SEM



Model		RPC-2-0.8	RPC-2-1.0	RPC-2-1.2	RPC-2-1.5	RPC-2-1.6
孔 容 (cm^3/g) Pore volume		0.83	1.02	1.25	1.44	1.57
比表面积 (m^2/g) SSA		1983	2394	2723	2919	3151
平均孔径(nm) Average Pore Size		1.63	1.70	1.84	1.93	2.05
粒径 (μm) Particle Size	D00	1.467	1.647	1.467	1.467	1.467
	D10	2.507	2.698	2.605	2.540	2.547
	D50	3.839	3.964	3.967	3.897	4.047
	D90	5.936	6.284	6.795	6.522	6.628
	D99	8.551	9.935	9.873	10.249	9.939

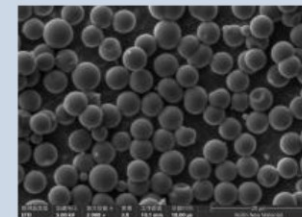
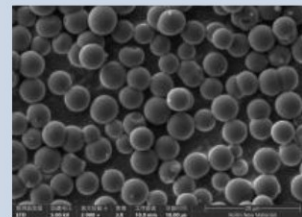
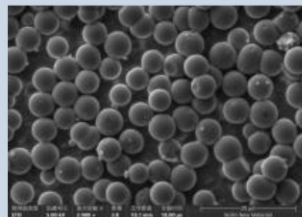
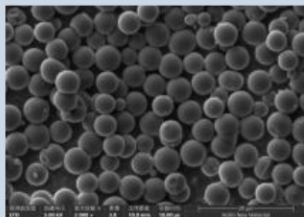




多孔碳典型数据 Typical Data of Resin Porous Carbon

RPC-3系列

电镜图/SEM



Model		RPC-3-0.7	RPC-3-0.9	RPC-3-1.1	RPC-3-1.5
孔 容 (cm^3/g) Pore volume		0.6962	0.9236	1.1304	1.4767
比表面积 (m^2/g) SSA		1564	2127	2470	3020
平均孔径(nm) Average Pore Size		1.7803	1.7366	1.8304	1.9558
粒径 (μm) Particle Size	D10	3.680	3.914	3.747	3.739
	D50	5.303	5.296	5.147	5.095
	D90	7.821	7.059	7.077	6.954
	D99	11.265	8.580	8.972	8.763
SPAN		0.78	0.59	0.64	0.63

