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PRODUCT CATALOG

Structure defines function. We design nanoporous carbon with intention.

About Us



Momentum Materials® is a materials company specializing in the development and manufacturing of high-performance pitch-derived carbon materials for energy and environmental technologies. Built on nearly two decades of research and innovation originating from the University of Calgary, we transform proprietary carbon processing technologies into scalable products that enable next-generation electrochemical and industrial applications.

Our portfolio includes hard-templated nanoporous carbon, mesophase pitch, and carbon-supported catalysts for fuel cells, electrolyzers, batteries, supercapacitors, adsorption, and filtration. We also provide customized materials and technical support to accelerate innovation and commercialization.

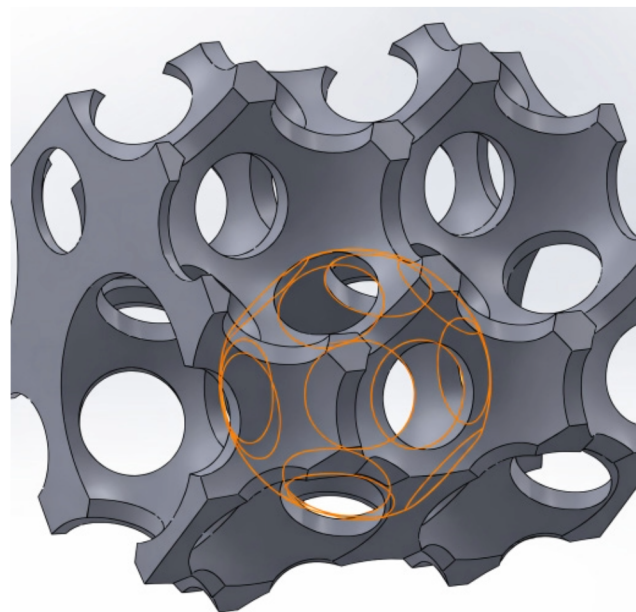
This catalog focuses exclusively on our nanoporous carbon products. For information about our full product portfolio, please visit our [website](#) or [contact us](#).



NCP Supports™

A 3D interconnected carbon framework with tunable pore sizes from 3 to 1000 nm. Key features include:

- Stable porous structure with no significant collapse under pressures up to 16 MPa
- High graphitizability for enhanced electrical conductivity and carbon corrosion



Applications: Catalyst supports for PEM fuel cells, PEM electrolyzers, and other heterogeneous catalytic processes; nanoscale adsorption, filtration, and precision separation.

SPECIFICATIONS

Product	Pore Size (nm)	SSA (m ² /g) ¹	V (mL/g) ²	EC (S/cm) ³
NCP-D7X	7 & 100	≥500	1–2	2–10
NCP-10	10	≥300	1–2	2–10
NCP-20	20	480	1–2	2–10
NCP-50	50	330	1–2	2–10
NCP-100	100	260	1–2	2–10
NCP-120	120	180	1–2	2–10
NCP-7-HT	7	540	1–2	>10
NCP-D10Pro	10	≥500	1–2	>10
NCP-10-HT	10	≥300	1–2	>10
NCP-20-HT	20	340	1–2	>10
NCP-50-HT	50	220	1–2	>10
NCP-100-HT	100	200	1–2	>10
NCP-500-HT	500	40	1–2	>10
Custom	3–1000	20–700	0.1–4.0	0.01–100

1. BET specific surface area
2. Pore volume
3. Electrical conductivity

Ash content (SiO₂) ≤ 0.5 wt.%

Moisture content ≤ 0.5 wt.%

Tap density: 0.08–0.3 g/cm³

Particle size: D50: 1.4–2.2 μm; D90 ≤ 5.5 μm

MCP Series

Designed for next-generation silicon-carbon anodes in lithium-ion batteries. Momentum Materials has established a commercial production line for pitch-derived, hard-templated mesoporous carbon.

Features

- Precisely controlled pore size with a narrow pore size distribution and high mesoporosity
- High mechanical strength and excellent thermal shock resistance
- Three-dimensional interconnected pore networks for enhanced ion and electron transport

Applications: Silicon-carbon anodes, PEM fuel cells, supercapacitors, catalysis, adsorption and filtration.

SPECIFICATIONS

Product	Pore Size (nm)	SSA (m ² /g) ¹	V (mL/g) ²	Tap density (g/cm ³)	Ash (wt.%)	Moisture (wt.%)
MCP-4	4-6	700-1300	0.7-1.2	0.2-0.5	<0.5	<3
MCP-4-HT	4-6	700-1300	0.7-1.2	0.2-0.5	<0.5	<3
Custom	2-1000	20-2000	0.6-3.0	0.1-0.5	<0.5	<3

1. BET specific surface area
2. Pore volume

Sulfur: <3000 ppm

Fe: <70 ppm

Metal content (Cr, Ni, Cu, Al): <20 ppm

Alkali metals (Li, Na, K): <620 ppm

Particle size: D50: 1.4-2.2 µm; D90 ≤5.5 µm

MCP-4-HT is more hydrophobic and electrically conductive than MCP-4

Frequently Asked Questions

1. What are the differences between NCP and MCP series?

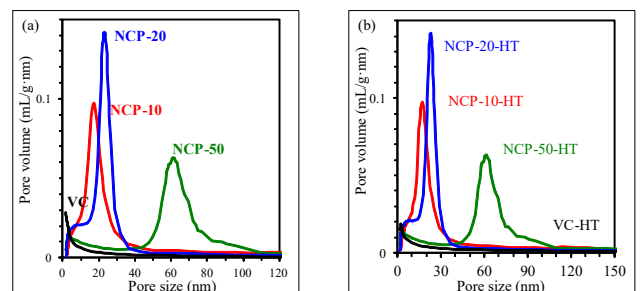
The NCP and MCP series are produced from different carbon precursors. NCP is made from naphthalene-based mesophase pitch, while MCP is produced from lower-cost pitch precursors. As a result, NCP contains no sulfur and has a lower iron content (<35 ppm). In comparison, MCP contains sulfur (<3,000 ppm) and has a relatively higher iron content (<70 ppm).

2. What is the structure of NCP and MCP carbon products?

Both NCP and MCP carbon materials are composed of closely packed graphene layers. They are carbon particles with a highly porous internal structure. The particles are typically milled to a particle size distribution with a D50 of 1.4–2.2 μm and a D90 of $\leq 5.5 \mu\text{m}$.

3. What are the pore size distribution of NCP and MCP?

Because our carbon materials are produced using a hard-template method, the pore size distribution can be precisely controlled. The difference between NCP and NCP-HT is explained at [Answer 6](#).



4. What is the thermal stability of NCP and MCP?

The NCP-HT product exhibits excellent thermal stability in air, as demonstrated by thermogravimetric analysis (TGA) (Forouzandeh, 2017). In the figure, CIC refers to the NCP material. We don't have data for MCP yet.

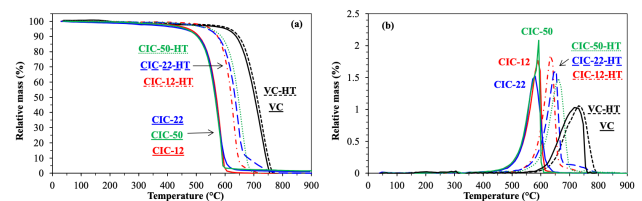


Figure 5.1 (a) Thermogravimetric and (b) differential thermogravimetric (DTG) profiles of the carbons under study here in air at a heating rate of 2 °C/min.

5. What are the prices of NCP and MCP?

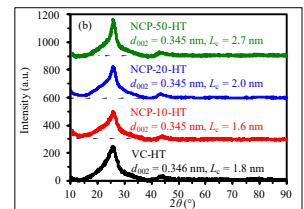
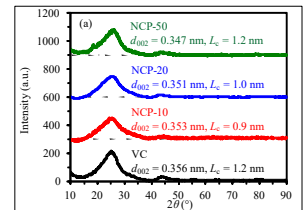
For small quantities, pricing is available through our [online store](#). For bulk purchases, pricing depends on the order volume and supply terms. We offer better pricing for larger quantities and long-term supply agreements. For customized products, pricing depends on the project scope and the required quantity. Please feel free to [contact us](#) for a quotation.

Frequently Asked Questions

6. What is the difference between NCP and NCP-HT (or MCP and MCP-HT)?

"HT" denotes high-temperature treated. As-prepared NCP (or MCP) typically contains 2–4 at% oxygen in the form of oxygen-containing functional groups, such as hydroxyl and carboxyl groups, making the material relatively hydrophilic.

After high-temperature treatment, the resulting NCP-HT (or MCP-HT) is nearly pure carbon, with most oxygen-containing functional groups removed. This makes the material more hydrophobic and increases its electrical conductivity due to its higher degree of graphitization, as confirmed by X-ray diffraction (XRD) analysis.



Contact Us.

Small quantities for initial evaluation can be ordered through our online shop:
<https://momentummaterials.com/shop/>

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