

R&D Materials – preliminary data sheet

Porous electrode materials and catalyst supports

Carbon fabrics made of stretch-broken yarn

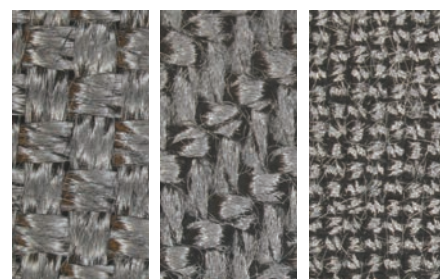


↑ Fabrics made of stretch-broken yarn exhibit an excellent drapability

Carbon fiber fabrics made of stretch-broken yarn exhibit a high porosity/permeability and good conductivity in combination with an excellent drapability and high tensile strength. These properties make them suitable as an electrode material for many applications, e. g. in the field of electrolysis, [microbial] fuel cells, electrochemical sensors or as catalyst carriers. By varying the fabrication parameters, i. e. the used yarn, the weaving parameters, or applying post-treatments, the fabrics can be adjusted to the requirements of the specific application.

Material data of carbon fabrics made of stretch-broken yarn [preliminary]

Properties		Units	Example 1	Example 2	Example 3
Thickness	[5 PSI]	μm	350	550	400
Area weight		g/m ²	230	230	140
Porosity		%	65	75	80
Compressibility	[1 MPa]	%	30	40	40
Through-plane area-specific resistance	[5 PSI]	mΩ x cm ²	80	80	70
Through-plane area-specific resistance	[1 MPa]	mΩ x cm ²	7	6	4
In-plane electric resistance		Ω x mm	0.2	0.2	0.3
In-plane gas permeability	[5 PSI]	10 ⁻¹² m ²	80	45	130
In-plane gas permeability	[1 MPa]	10 ⁻¹² m ²	9	3	10
Specific tear strength		N/mm	> 30	> 8	> 1.5



↑ The different surface structures of example 1, 2 and 3



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