

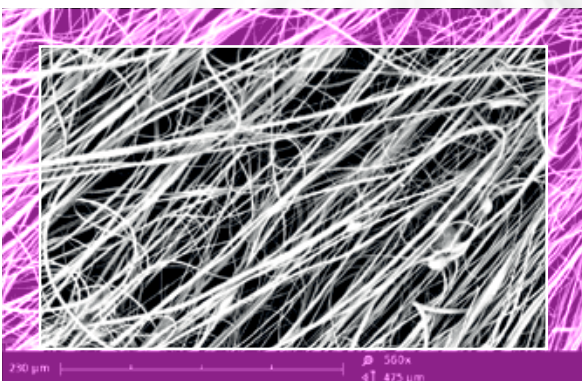
SiO₂ (CFSP)

NnF CERAM[®] – SiO₂ (CENTRIFUGAL FORCES SPINNING)

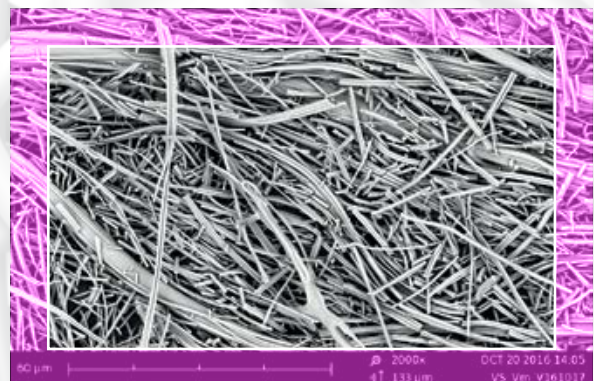
Product description

Amorphous silicon dioxide nanofibrous material is a special functional material with unique properties represented by fine fibrous structure and high specific surface area. This material is produced by Centrifugal Spinning Technology which enables to produce fibers with diameter between 400 – 800 nm with relatively large distribution of fiber diameters. Physical structure of the fibers can be either COTTON or POWDER (after milling which brings also shortening). High specific surface area and very high aspect ratio can bring several advantages to new or existing products. This type of material can be produced in large volumes with easy and fast upscaling capacity. SiO₂ nanofibers can be also used as a support material for different catalytic nanoparticles (Pt, Pd, Ag, Fe..) which are embedded in the porous nanofiber structure within one production step (no additional coating).

Images



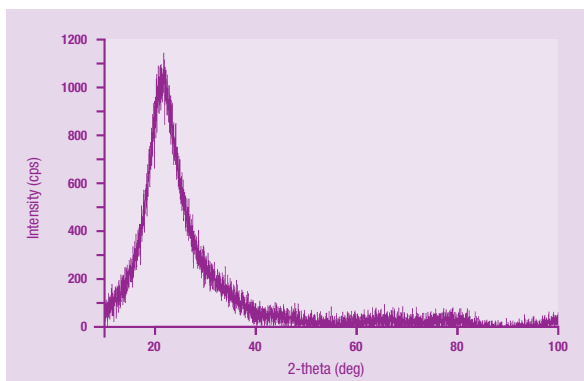
SEM image, magnification: 560x



SEM image after milling, magnification: 2000x

Physical properties

■ Crystal phase



■ Physical form and structure



Material characteristics

fiber structure	glassy nanofiber
typical fiber diameter	400 – 800 nm
fiber length *	2 to hundreds of μm
specific surface area **	50 – 500 m²/g
crystal phase	amorphous SiO₂
volume of 1 kg fibers in cotton	55 – 60 l
physical form	3D cotton/white fluffy powder

* can be modified (shortened) by milling

** can be modified by calcination temperature

If you need any material modification, please feel free to contact us.

Stable nanoporous material | Excellent electrical insulator – electrical conductivity $< 10^{-18} \text{ Sm}^{-1}$ | High thermal shock resistance | Refractive index 1.45 | Melting point 1665 °C | Thermal conductivity $1.3 \text{ Wm}^{-1}\text{K}^{-1}$

Applications

Composite reinforcement | Filtration | Separation | Li-ion battery separators | Sensors | Humidity sorbents

Important notice for purchaser

All statements, technical information and recommendations contained in this document are based on tests conducted by PARDAM's R&D team and its approved equipment and are believed to be reliable. However the accuracy or completeness of the tests is not guaranteed. THE FOLLOWING IS MADE IN LIEU OF ALL WARRANTIES, EXPRESS OR IMPLIED, INCLUDING THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. The manufacturer's and seller's only obligation will be to replace the quantity of the product proved to be defective. Neither the seller nor the manufacturer will be liable for any injury, loss or damage, direct, indirect or consequential, arising out of the use of the product. Before using, the user must determine the suitability of the product for their intended use.