



AmaDema's Products Technical Data Sheet



Technical Data Sheet

Electrospun Nanofiber of Polyamide 6 (PA6)



Characteristics

Product Name:	NanoWeld®
Type:	Nonwoven veil
Color:	White/grey-white
Available format:	Rolls
Length:	100m Minimum
Width:	0.5m
Substrate:	Siliconized paper

Product Variant	NanoWeld® Standard	NanoWeld® Plus
Composition	PA6	PA6+CNTs
Porosity	88%	85%
Max. Processing Temperature	180°C	180°C
Tensile Strength	4.7MPa	6.2MPa
Areal Weight	2-3gsm	2-3gsm
	<i>Available in additional gsm upon request</i>	

Storage and Handling

- Store sealed, away from direct sunlight, at RT in dry conditions.
- Handle with care to avoid tearing. Cut the nanofiber veil at desired shape, with well-sharpened knife, before removing from substrate.
- During composites lay-up process, placement of the nanofabric onto the wet lamina or prepreg lamina is recommended with the substrate on top. Use the substrate to evenly adhere the nanofabric on the lamina and then peel the substrate off gently.

Safety

Both NanoWeld® variants are considered non-hazardous in handling and have a low risk of inhalation. The NanoWeld® Plus variant that contains nanoparticles can be handled in a similar manner as the CNTs are embedded within the polymer nanofiber and have low risk of leaching. Always use respiratory protection, work in well-ventilated areas and wear gloves to minimize risk of exposure.

Disclaimer

All information is believed to be accurate, but it is important to note that the performance and safety of nanofibers may depend on a variety of factors, including the specific conditions of use, further processing, and the expertise of the user, thus is provided without acceptance of liability.



Technical Data Sheet

Electrospun Polyacrylonitrile (PAN) Nanofibers



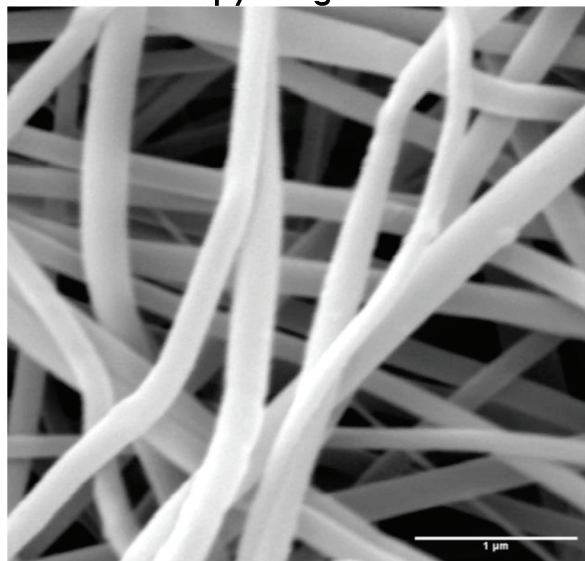
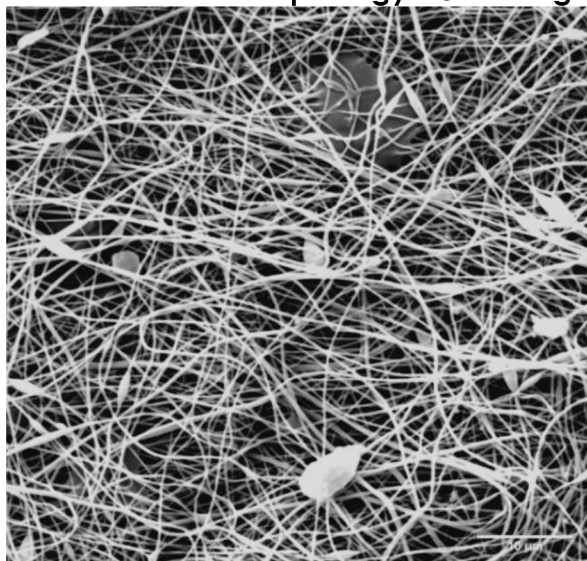
General Information

Product Name:	NanoWeld®
Product Variant:	NanoWeld® Plus - PAN
Type:	Nonwoven veil
Color:	White/grey-white
Format:	Roll
Length:	10m
Width:	0.5m
Substrate:	Siliconized paper

Properties and Characteristics

Composition	PAN+ 0.25 wt.% MWCNTs
Porosity	84%
Max. Operating Temperature	225°C
Tensile Strength	3.2 ± 0.3 MPa
Toughness	0.45 ± 0.07 MJ · m ⁻³
Air permeability	2.19 ± 0.19 m ³ /min/m ² testing area 20 cm ² /200 Pa
Areal Weight	2.6 ± 0.2 gsm
Fiber Diameter	187 ± 40 nm
Thickness	14 ± 2 μm

Morphology – Scanning Electron Microscopy Images



Technical Data Sheet

Electrospun Nanofiber of Polyvinylidene fluoride (PVDF)



Characteristics

Product Name:	NanoWeld®
Type:	Nonwoven veil
Color:	White/grey-white
Available format:	Rolls
Length:	100m Minimum
Width:	0.5m
Substrate:	Siliconized paper

Product Variant	NanoWeld® Standard	NanoWeld® Plus
Composition	PVDF	PVDF+CNTs
Porosity	98%	89%
Max. Operating Temperature	154°C	154°C
Tensile Strength	3.8 MPa	2.3 MPa
Areal Weight	2-3gsm	2-3gsm
<i>Available in additional gsm upon request</i>		

Storage and Handling

- Store sealed, away from direct sunlight, at RT in dry conditions.
- Handle with care to avoid tearing. Cut the nanofiber veil at desired shape, with well-sharpened knife, before removing from substrate.
- During composites lay-up process, placement of the nanofabric onto the wet lamina or prepreg lamina is recommended with the substrate on top. Use the substrate to evenly adhere the nanofabric on the lamina and then peel the substrate off gently.

Safety

Both NanoWeld® variants are considered non-hazardous in handling and have a low risk of inhalation. The NanoWeld® Plus variant that contains nanoparticles can be handled in a similar manner as the CNTs are embedded within the polymer nanofiber and have low risk of leaching. Always use respiratory protection, work in well-ventilated areas and wear gloves to minimize risk of exposure.

Disclaimer

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Technical Data Sheet

Electrospun Polyvinylidene fluoride (PVDF) Nanofibers



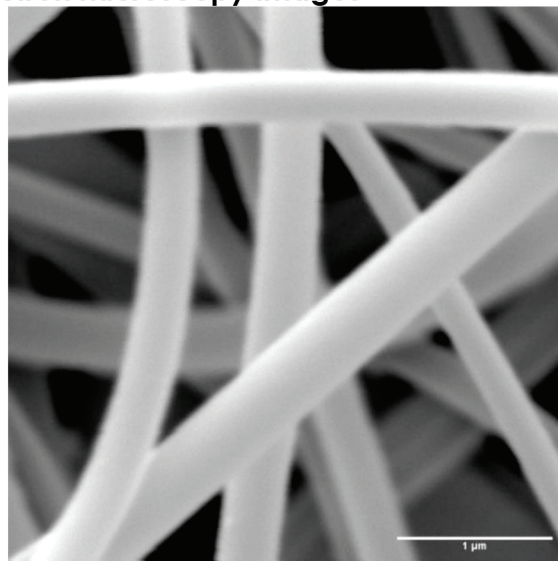
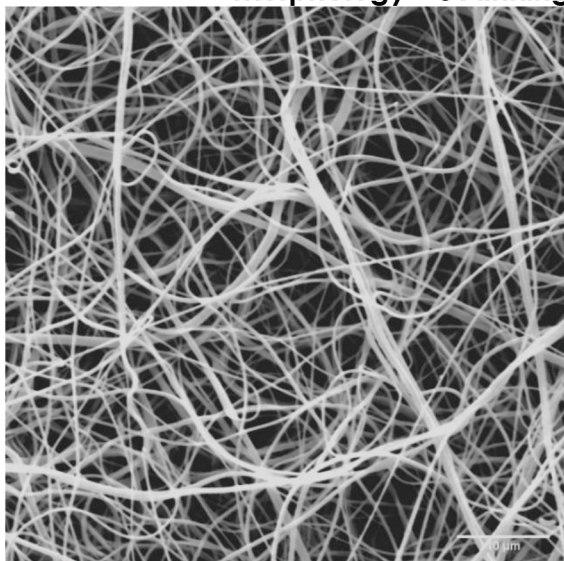
General Information

Product Name:	NanoWeld®
Product Variant:	NanoWeld® Plus - PVDF
Type:	Nonwoven veil
Color:	White/grey-white
Format:	Roll
Length:	10m
Width:	0.5m
Substrate:	Siliconized paper

Properties and Characteristics

Composition	PVDF + 0.20 wt.% MWCNTs
Porosity	83%
Max. Operating Temperature	154°C
Tensile Strength	3.3 ± 0.2 MPa
Toughness	1.36 ± 0.19 MJ · m ⁻³
Air permeability	6.89 ± 0.16 m ³ /min/m ² testing area 20 cm ² /200 Pa
Areal Weight	3.4 ± 0.1 gsm
Fiber Diameter	334 ± 70 nm
Thickness	11 ± 2 μm

Morphology – Scanning Electron Microscopy Images



Technical Data Sheet

Electrospun Nanofiber of Polyacrylonitrile (PAN)



Characteristics

Product Name:	NanoWeld®
Type:	Nonwoven veil
Color:	White/grey-white
Available format:	Rolls
Length:	100m Minimum
Width:	0.5m
Substrate:	Siliconized paper

Product Variant	NanoWeld® Standard	NanoWeld® Plus
Composition	PAN	PAN+CNTs
Porosity	84%	80%
Max. Operating Temperature	225°C	225°C
Tensile Strength	5.3MPa	6MPa
Areal Weight	2-3gsm	2-3gsm
	<i>Available in additional gsm upon request</i>	

Storage and Handling

- Store sealed, away from direct sunlight, at RT in dry conditions.
- Handle with care to avoid tearing. Cut the nanofiber veil at desired shape, with well-sharpened knife, before removing from substrate.
- During composites lay-up process, placement of the nanofabric onto the wet lamina or prepreg lamina is recommended with the substrate on top. Use the substrate to evenly adhere the nanofabric on the lamina and then peel the substrate off gently.

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