

## WEIDMANN FIBER TECHNOLOGY

### NATIVE MICROFIBRILLATED CELLULOSE FOR WIDE RANGE OF APPLICATIONS: WMFC Q\_STANDARD

Earth's most abundant renewable resource is cellulose, an organic polymer. Cellulose is the main building material in all plants. WMFC Q\_standard provides this biological building material for a wide range of sophisticated applications. From reinforcing concrete to enhancing the mechanical properties of non-wovens, paper or board, from carrying active components in cosmetic applications to providing building blocks in bio-composites, WMFC Q\_standard provides unlimited opportunities to use a natural resource in your products. WMFC Q\_standard are cellulose fibrils that are produced focusing on the complete life cycle to maintain its biological footprint, from the source of the pulp, production, logistics to waste management.

#### RAW MATERIAL

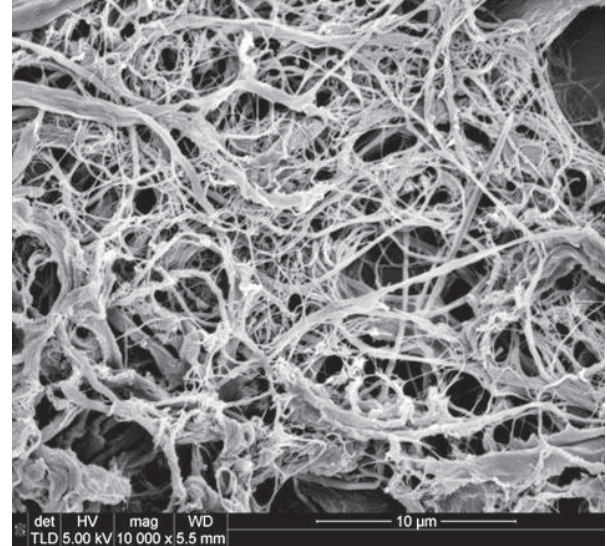
The raw material for WMFC Q\_standard is locally sourced, sustainably grown, bleached softwood pulp from EMAS and ISO 9001 certified suppliers. All pulps used are either ECF (elementary chlorine free) or TCF (total chlorine free) bleached. A blend of pulps sourced from different suppliers guarantees a long-term stability of quality.

#### RAW MATERIAL PROPERTIES

Parameter	Method	Unit	Property
Cellulose content	Internal	%	> 85
Hemicellulose content	Internal	%	> 5
Lignin content	Internal	%	< 1
DP	IEC 60450		800 - 1100
Ash	IEC 60641-2	%	0.1 - 0.5
pH	IEC 60641-2		5 - 8
Conductivity of aqueous extract	IEC 60641-2	mS/m	1.5 - 15

#### PROPERTIES OF WMFC Q\_STANDARD

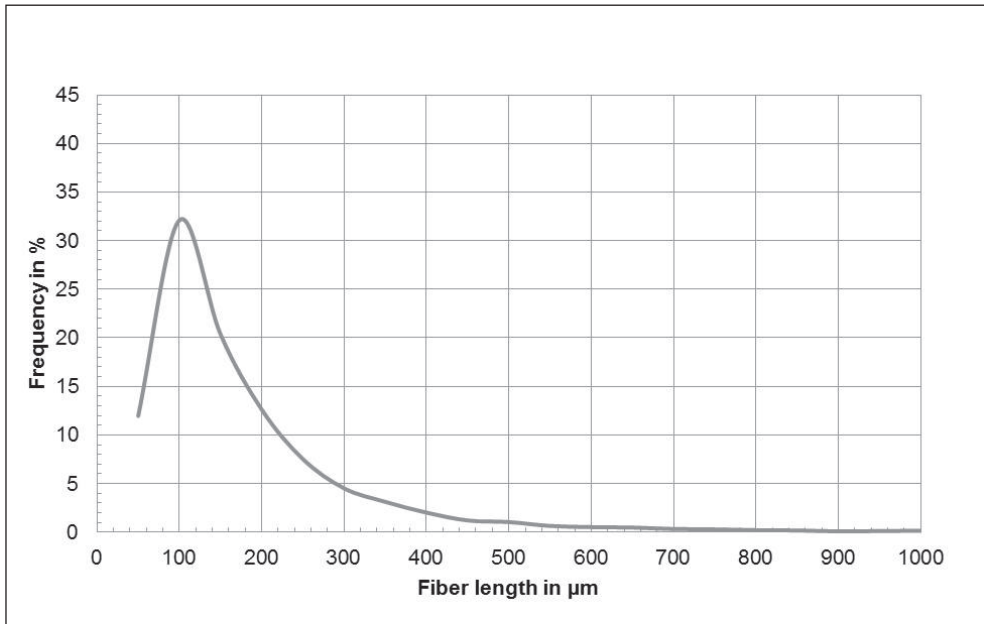
The combination of the chemical composition of the pulp and our unique process of defibrillation creates a product that meets the demands of a high quality bio-based material. WMFC Q\_standard shows excellent cleanliness combined with a neutral pH and a low conductivity of aqueous extract.



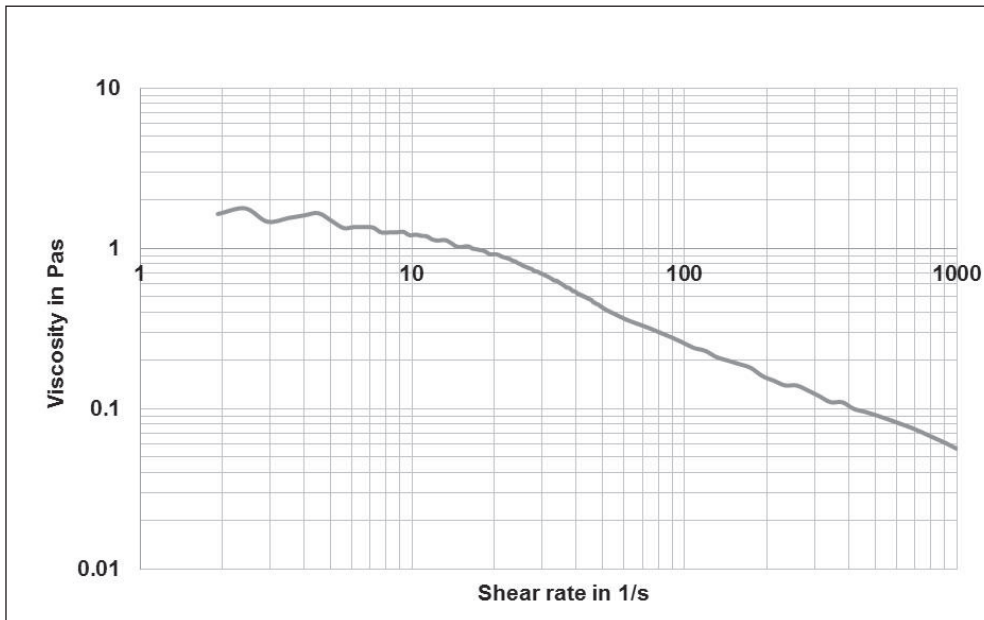
Scanning Electron Microscope (SEM) image of WMFC

A narrowly defined particle size distribution around 100 µm guarantees a very high surface area and accessibility of the cellulose hydroxyl and carboxyl groups for further modification. WMFC Q\_standard offers an economic balance between a high water retention value and dry-out behaviour.

Parameter	Method	Unit	Property
Water retention value	Internal	g H <sub>2</sub> O / g WMFC	10 - 15
Ash content	IEC 60641-2	%	0.2 - 0.8
pH	IEC 60641-2		6.0 - 8.0
DP	IEC 60450		800 - 1000
Conductivity of aqueous extract	IEC 60641-2	mS/m	2 - 30
Viscosity @ 100 1/s	Internal	Pas	0.15 - 0.25
Viscosity @ 500 1/s	Internal	Pas	0.06 - 0.10
Viscosity @ 1000 1/s	Internal	Pas	0.03 - 0.06
Particle size ≤ 200 µm	TAPPI-T271	%	≥ 65
Particle size ≥ 500 µm	TAPPI-T271	%	≤ 4



Average fiber length distribution of WMFC Q\_standard



Viscosity of WMFC Q\_standard

### ADDITIONAL INFORMATION

WEIDMANN Microfibrillated Cellulose Q\_standard is offered in a range of solid contents from 2 to 25 %. The durability of WMFC Q\_standard at 10 °C is twelve (12) weeks, at 25 °C six (6) weeks. The durability can be extended by adding a biocide but may influence certain product properties. Please contact us for any special requirements.