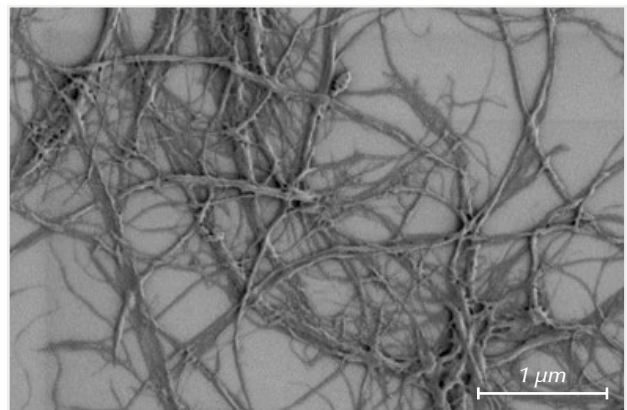
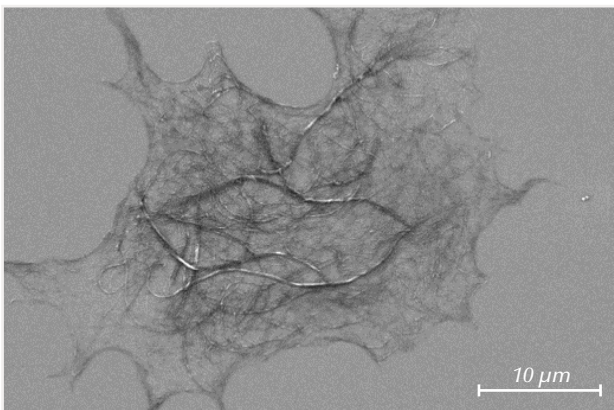


WHAT IS EXILVA MICROFIBRILLATED CELLULOSE (MFC)?

## NATURES OWN HIGH-END PERFORMANCE ENHANCER

Exilva is a three-dimensional network of cellulose microfibrils suspended in water. The microfibrils form flexible aggregates with a high surface area allowing for very efficient interactions with the surroundings/matrix (other components in the formulation). These interactions have a huge impact on the rheology (the flow properties) and are very dependent on the shear/force applied.



Micrometer size aggregate of cellulose microfibrils. Image on the left is 10 μm, image on the right is a magnification of the image to the left.

### CHARACTERISTICS OF EXILVA:

- Very high viscosity at rest
- Extreme shear thinning properties.
- High and tunable yield stress (“gel strength”)
- Extreme high water retention value (WRV)
- Excellent film forming properties
- Excellent air and gas barrier properties

AVAILABLE IN **TWO GRADES**:



BOTH GRADES IN **TWO TYPES**:



The differences between *Exilva P* and *Exilva F* are related mainly to the size of the aggregates of microfibrils, consequently to the 3D-network properties. These differences are reflected by the parameters in the table below.

BROOKFIELD VISCOSITY IN WATER	HIGHER FOR EXILVA F
SURFACE AREA/WATER RETENTION VALUE	HIGHER FOR EXILVA F
MECHANICAL PROPERTIES (TENSILE STRENGTH)	HIGHER FOR EXILVA F
EASE OF INCORPORATION/REDISPERSION IN WATER	EASIER FOR EXILVA P

THE PERFORMANCE OF THE 3D NETWORK IN APPLICATIONS IS **HIGHLY DEPENDENT ON THE MATRIX** IN THE RELEVANT APPLICATION.

Factors that could affect the performance of *Exilva* in an application are the following:

- Charge, density, size and load of particles in the matrix
- Ionic strength of matrix (mono or multivalent ions)
- Polarity of liquids / materials / solvents
- Ratio of organic phase to water phase

Both *Exilva P* and *Exilva F* are stable/robust in extreme pH conditions (pH 1 to 13).

## 01 **PHYSICAL PROPERTIES**

White, opaque and odor free.

## 02 **STORAGE**

Both grades should be stored in closed container protected from heat (<20C) and direct sunlight. Damaged if frozen.

## 03 **SHELF LIFE**

Stored as advised, both grades have a shelf life of at least 12 months.

### WHAT TO THINK ABOUT WHEN ADDING EXILVA?

It is important to disperse *Exilva* thoroughly (high shear) in all the available water to be used in the formulation. It is further recommended to introduce *Exilva*-water dispersion as early as possible in the formulation process.

Watch our dispersion how-to video on <http://hubs.ly/H06N87P0> or by scanning this code:

