

## UPM AND NANOTECHNOLOGY

### What is Nanotechnology?

Nanotechnology is engineering of functional systems at the molecular scale of 1 - 100 nanometers (nm). It offers a wide range of new opportunities to improve existing materials and create new materials with high added value. Due to their smaller size, altered volume and surface ratio, nanomaterials show different physical and chemical properties than their related bulk materials and therefore have drawn major interest. Nanosized materials bear the potential of many new applications in many fields and industries. The advantages of nanotechnology are being used for example in coatings, computer chips, suntan lotion, clothing, cosmetics and medical devices.

The International Organization for Standardization defines the term "nanomaterial" as "material with any external dimensions in the nanoscale or having internal structure or surface structure in the nanoscale". The term "nanoscale" is defined as size range from approximately 1 nm to 100 nm.

The EU Commission has given the following recommendation for defining nanomaterial (2011/696/EU): "Nanomaterial means a natural, incidental or manufactured material containing particles, in an unbound state or as an aggregate or as an agglomerate and where, for 50 % or more of the particles in the number size distribution, one or more external dimensions is in the size range 1 nm-100 nm".

### UPM paper products

UPM recognizes the concerns of its' various interest groups concerning nanoparticles and nanomaterials in general. Currently UPM isn't using any intentionally manufactured nanomaterials as a raw material in paper production. For more information about UPM paper products pls. contact Mrs. Anne Lihvonen.

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