



What is Valida?

Valida is a natural, biodegradable and sustainable raw material, produced by processing woodfibres down to their smallest components (fibrils) through mechanical treatment. The branched fibres resulting from that treatment are commonly referred to as 'fibrillated cellulose fibres', or 'Valida'.

When dispersed in water, the Valida fibres form an interconnected three-dimensional (3D) spider web-like network through mechanical entanglement and chemical associations known as hydrogen bonds.

What are Valida's functional attributes?

Valida provides **stability to formulations** and **boosts additive performance** through homogeneous distribution of ingredients throughout the fibre network. Ingredients such as ultraviolet (UV)-filters and pigments will therefore impart better solar protection or enhanced colour development when introduced together with Valida. Emulsion stability is also improved.

Valida also introduces a **unique flow profile to formulations**. At rest, the fibres form a network, stabilising all ingredients. When a force is applied to the formulation, however,

the network deforms, causing the formulation to flow as if it is water. When the force is removed, the network rebuilds and stability returns to the system. This type of flow modification is **more commonly known as 'thixotropy'**.

Lastly, Valida shows excellent **water retention properties**, due to the drastic increase in surface area imparted to the fibres during the production process. This facilitates excellent hydration in personal care, water retention in adhesives or concrete and swell ability or other properties relating to water management in other applications.

What applications can Valida be used for?

The **stability, flow modification, water retention and surface area** make Valida suitable for a wide range of applications and everyday products, including **paper, packaging, construction, paints, coatings, adhesives, cosmetics and many more**.

Within paper and construction applications, Valida reinforces materials, while Valida provides flow modification and formulation structure in liquid formulations, boosting additive performance in the process. Valida is a viable alternative for synthetic ingredients in personal care and homecare applications due to its hydrating properties and high surface area, while also driving innovative formulation design through unique flow properties.

Fast facts

- Valida is produced from cellulose, the most abundant organic material on Earth.
- The raw material for Valida is woodfibre, sourced from certified, sustainably managed forests.
- Applications for Valida include personal care, paints, coatings, adhesives, concrete admixtures, and many more.
- Dispersed in water, Valida forms a 3D network through chemical associations, stabilising formulations in the process.
- Valida's core values are stability, flow modification, and water retention.
- Valida is a natural, sustainable alternative to microplastics and is certified by TUV Austria for soil and marine biodegradability.
- Valida is a safe ingredient. Safety statements are available on request.

Are there any application examples?

Valida is a sustainable raw material with significant potential in many market segments. Valida is commercially implemented in concrete, paints, coatings, adhesives, personal care and many other applications.

For more information, please contact Valida@sappi.com.

Valida is NOT a thickener!

Valida provides formulations with a stabilising network, structuring active ingredients while maintaining excellent flow properties if the formulation is squeezed, stirred, pumped, or moved in any other way. Therefore, **Valida should not be considered a thickener, but rather a stabiliser.**

What about Valida's naturality, biodegradability, recyclability and sustainability?

Valida is a natural, biodegradable and recyclable ingredient produced from cellulose through a mechanical process. The woodfibre raw material for Valida production originates from sustainably managed forests with high levels of certification. Valida is also certified by TUV Austria for soil and marine biodegradability.



Is Valida commercially available?

Valida is currently commercially available on a global scale in 3% and 8% solid content and Sappi is one of the leading suppliers of fibrillated cellulose overall.

How should Valida be incorporated?

Valida's performance is directly related to the activation of the fibres. In the raw material form, the fibres are pressed together and require energy input to separate again and assemble into a network. Examples of good manufacturing practice with Valida are as follows, in order of execution:

1. Dose Valida fibres in water:

Calculate the raw material dosage needed to go to a solid content of **0,4% in the water phase.**

2. Disperse according to dispersion guideline on lab scale:

2000 rpm for 20 minutes for low solid content (3%) grades;
2000 rpm for 25 minutes for high solid content (8%) grades;
10000 rpm for 5 minutes for high solid content (8%) grades.

3. Add other ingredients:

Reduce stirring to a minimum if or when adding ingredients sensitive to foaming. Foam can be trapped in the network, causing instability.

What is the compatibility of Valida with common systems?

Valida is hydrophilic, slightly negatively charged and chemically inert in formulations.

As a result, **Valida is stable in:**

- **Oil in water emulsions** and in some cases able to stabilise oil in water without surfactant/s.
- **Polar solvents**, provided they are small enough and can form hydrogen bonds with the network.
- **Nonionic and anionic surfactants.**
- **Up to ~7% of cationic surfactant.**
- **High electrolyte concentrations.**
- **pH 1 to 13.**

Are there study reports regarding safety?

Valida is non-toxic, readily biodegradable, non-irritating and does not penetrate into the skin. Valida does not contain any harmful ingredients or allergens, is gluten-free and does not contain any traces of Genetically Modified Organisms (GMOs) or other contaminants. Valida is a clean ingredient that has never been tested on animals.

For safety statements, **please contact** Valida@sappi.com.

Why Sappi?

Sappi is a global woodfibre group that uses every part of the tree to make each day more sustainable. As a leading supplier of fibrillated cellulose, Sappi offers global commercial supply of high-quality Valida grades, tailored to application needs. Together with our stakeholders, we are committed to building a thriving world with a bio-based, circular economy.