

what is the difference between
cellulose and cellulose?



viscose fibre specialities for
a new approach to paper

fine-tuning of paper characteristics

Controlling the quality of paper by using the right grade of pulp and auxiliary materials as well as selecting the appropriate process settings is a standard procedure in the paper making process. When the end product requires specific properties this may not be enough: Our viscose specialities offer you a wide range of possibilities to extend the spectrum of your paper's characteristics or even add new functionalities to your product.

From left to right:

Bramante:

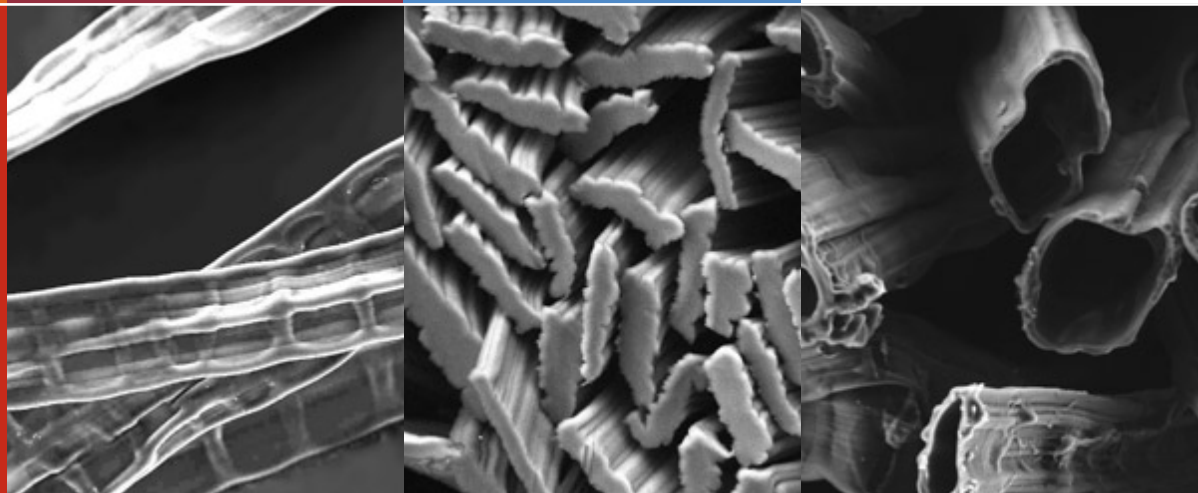
Hollow cross section in the wet state for excellent absorbency – collapsed cross section in the dry state for improved bonding characteristics.

Viloft:

Flat cross section for increased flexibility and softness.

Dante:

A further development of the Bramante fibre. The hollow cross section combined with a chemical modifier delivers an intrinsic fibre absorbency level four times higher than standard viscose fibres.

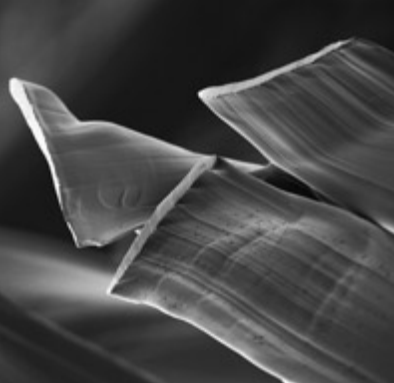


added value with viscose fibres

- Our viscose specialities help increase the tear resistance of the paper without loss of tear strength.
- Tests have shown that the paper's porosity can be precisely controlled by incorporating viscose fibres – a feature already used by manufacturers of tea bags, cigarette papers as well as many kinds of filters.
- Papers incorporating viscose fibres can exhibit better dewatering properties.
- When modified with additives, viscose fibres can improve the paper's retention characteristics.
- Our viscose specialities are produced from 100% cellulose and can therefore easily be incorporated into a paper matrix having the same surface chemistry as pulp fibres.
- Completely natural in origin, viscose fibres are fully biodegradable and therefore an environmentally sound alternative to other additives.
- Viscose fibres offer uniform and constant levels of quality from batch to batch.

Bellini:
Smooth, thin and flat cross section;
high flexibility and large surface area
with very good bonding properties

the viscose fibre tool box



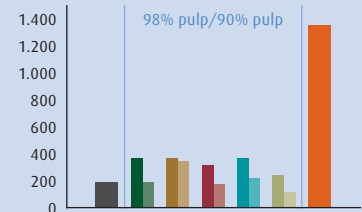
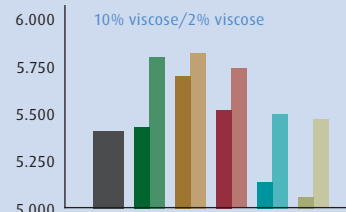
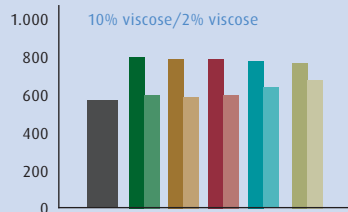
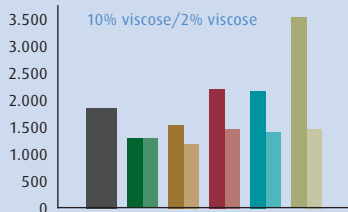
The viscose fibre process offers a broad and versatile tool box for the modification of viscose fibres, which enables us to create tailor-made solutions for the individual needs of our customers and a wide range of end uses.

Porosity of sheets in viscose/pulp blends;
air permeability test (Bendtsen ml/min)

Tear resistance of sheets
in viscose/pulp blends (mN)

Tear strength of sheets
in viscose/pulp blends (metres)

Number of double folds of sheets
in viscose/pulp blends (n)



- Manufacturers of filter papers can improve the porosity control of their product by using our fibres: As a result of the different cross sections available, a blend with our viscose fibres enables paper porosity to be tailored to meet the needs of specific end uses.

- Even small quantities of our viscose fibres can significantly increase the tear resistance of a speciality paper.
- In a blend with eucalyptus pulp, by incorporation of 10% viscose fibres tear resistance increases on average by 40%, at an incorporation of 2% viscose the increase in tear resistance still amounts to 15%.

- A blend with our viscose specialities can enhance the tear strength of paper sheets.
- The use of our fibres delivers an improvement in tear strength with an increase of tear resistance – which can not be achieved by simply higher refining.

- Blends with viscose fibres show a significantly better result in double fold testing than the 100% pulp reference.

- fibre cross section**

The shape of the fibre cross section is the key to fibre properties. In addition to our well-known fibres with round, flat and trilobal cross sections, we have developed fibres with innovative cross sections which are particularly suitable for incorporation into paper.

- fibre dimensions**

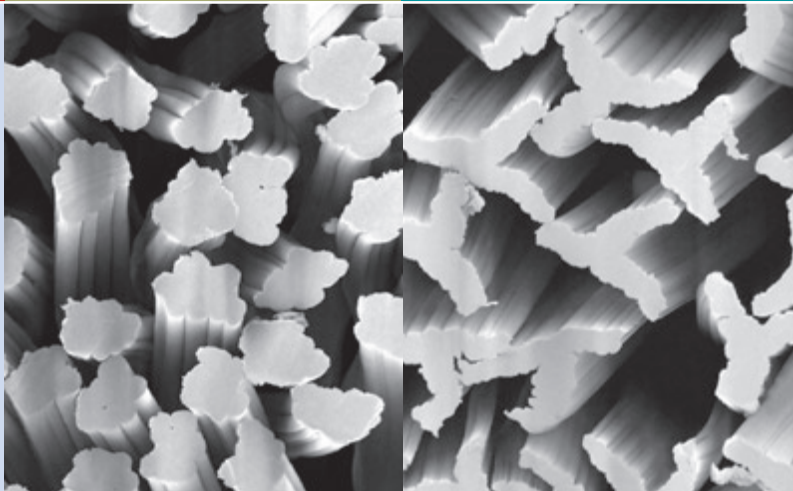
Unlike natural cellulosic fibres, viscose fibres can be produced in a constant and defined fibre length and fibre diameter as required by the final use of the fibre. Kelheim Fibres produces short cut viscose fibres in a range from 0,5 to 28dtex in the standard round cross section, corresponding to an equivalent diameter of 7 to 48 micrometers. For short cut applications the fibre can be supplied in a range of cut lengths between three and twelve millimetres.

- fibre functionality**

In addition to the parameters of cross section and dimension our R&D specialists have developed a number of modifications which give our fibres further special properties. New functional fibres can be realised by incorporating special additives – such as pigments or micro-capsules – into the fibre matrix; The structure of the viscose fibre is modified by adapting spinning conditions and chemical modification of the fibres can deliver fibres with anionic or cationic properties.



- 100% Eucalyptus pulp
- Bellini
- Bramante
- VILOFT®
- GALAXY®
- DANUFIL®
- 100% Bramante 40min Jorko



From left to right:

DANUFIL®:
"All-round" fibre – supreme quality for a multitude of different applications.

GALAXY®:
Trilobal cross section with a very large surface area for an outstanding absorption capacity.

competence in paper – our in-house technical centre

Knowledge of our customer's products and an understanding of our customer's business is crucial for our work. This allows us to offer fibres that are tailor-made to meet the specific requirements of our customers. We operate pilot plants which allow us to produce – on a small scale – different products using our speciality fibre technologies.

For paper applications we run an inclined wire machine – so we are able to test our fibres under production conditions on site. For analysis of the test material we work in close cooperation with professionals from the Institute for Paper, Pulp and Fibre Technology (part of the Graz University of Technology, www.ipz.tugraz.at) and from the department for Paper Technology (University of Applied Sciences Munich www.hm.edu).



natural advantage



Viscose fibres are made of 100% natural cellulose and can therefore be easily incorporated in the papermaking process. At the same time, viscose fibres are fully biodegradable and hence offer an environmentally sound alternative to other additives.

innovation and competence



For us, innovation is the key to a successful future. Our dynamic R&D team is focussed on continuously improving our products and meeting our customers' specific needs.

Our new fibre developments are the basis for innovative tailor-made solutions for our customers' individual requirements.



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company overview

Kelheim Fibres GmbH is one of the leading producers of viscose speciality fibres. Innovative products, flexible technologies and strong customer orientation as well as active environmental protection are the basis for our company's success.

From our production plant and headquarters which are located in Kelheim in Southern Germany, our products are exported worldwide. Our viscose fibres are used in widely diverse applications ranging from fashion, hygiene and medical products through to the paper and wet laid industry.