



Fibers for Life.

# Plant-based and Natural Materials

SUSTAINABLE MATERIALS FOR INDUSTRIAL APPLICATIONS

**Powdered Cellulose**

**Cotton Fiber**

**Sisal Fiber**

**Hemp Fiber**

**Secondary Cellulose**

# Fibers from Nature.



Nature is the best inventor. We use the innovative JRS plant fiber technology to get the best out of nature without damaging it. We transform the numerous functions of these valuable natural materials into solutions for our customers around the world in many industries.

We are a manufacturer, problem solver and reliable system/technology partner. As an owner-operated family company, we have strong roots in Germany since 1878. As a corporate group, JRS employs nearly 4,000 employees in over 90 global locations. A spirit of inventiveness, courage and close customer relations has shaped what began as a classic oil and grain mill into being a global market and knowledge leader for sustainable, functional plant fiber technology.

# Solutions from JRS.

Our unique combination of longstanding expertise, innovative technology and comprehensive production experience ensures that you will always be one step ahead of the competition.

Our key global production locations offer competent advice with innovative plant-based solutions for your specific challenges. As a market and technology leader, we can ensure the sustainable improvement of your production.



# Multiple Applications.

ADHESIVE



SPACKLE/PUTTY



CEMENT



PAINT



PLASTIC



RUBBER




PAPER/TISSUE



ASPHALT




# General Functions.




transport liquids  
from A to B



binding agent



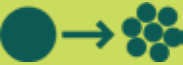
synergize with other  
thickening agents



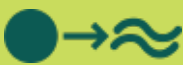
reduce cracking




increase  
productivity



tablet  
disintegration




increase flowability



accelerate  
processes



encapsulate



coat and cover  
materials



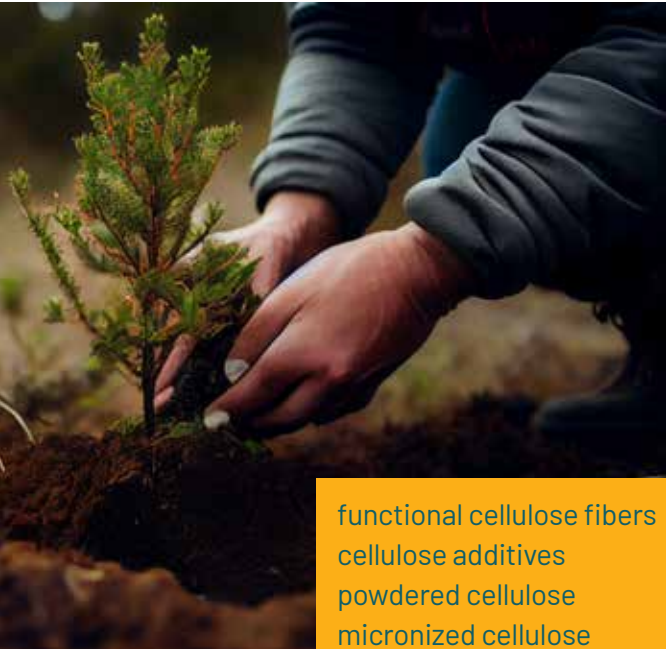
separate solids  
from liquids



replace hazardous  
materials

# Celluloses.

Cellulose is obtained from a wide variety of sustainable, plant-based raw materials. JRS has united a number of different functional cellulose products that are used in many important industrial sectors.



- functional cellulose fibers
- cellulose additives
- powdered cellulose
- micronized cellulose
- cellulose pellets
- cellulose flour
- cellulose granulates
- cellulose blends
- cellulose compounds
- cellulose derivatives
- cellulose gels
- methylcellulose
- hydroxypropyl methylcellulose

## Powdered Cellulose



A sustainably harvested and certified fiber produced from trees, JRS Powdered Cellulose is used in a wide variety of applications such as automotive parts, ceramics, rubber, plastics and resins, coatings and building materials. Common functionalities include superior binding, rheology control and added strength.



### BENEFITS

- Compatible with most chemicals and solvents
- High chemical purity and very low in ash content
- Non-abrasive
- Provides enhanced structural integrity and dimensional stability
- Lightweight bulking agent
- Superior binding



-  Premium and standard grades available
-  Average fiber length: begins at 10 $\mu$ m



## Cotton Fiber

A byproduct of the textile industry, JRS Cotton Fiber is an economical and cost effective substitute for other additives in rubber, plastic compound, coatings, plastics and texture products.

### BENEFITS

Matrix reinforcing properties create added dimensional stability

Inert and insoluble in acids and alkali

Highly absorptive

Soft/non-abrasive



**+** Several grades available

**+** Average fiber length:  
250 - 900 $\mu$ m

**+** Standard color:  
white or dark blue;  
customization available

## Sisal Fiber

Produced from the vegetable plant, agave sisalana, JRS Sisal Fiber is an environmentally friendly and cost-effective functional filler that helps to provide strength and flexibility to refractory products, brake blocks/pads and construction products.



### BENEFITS


Application dependent, flexural strength and impact resistance improve significantly

High capacity tensile strength

Enhanced 'green' strength

Matrix building



 Premium and standard grades available

 Average fiber length: 4,000 - 25,000µm



## Hemp Fiber

Produced from a variety grown specifically for industrial use which contains less than 0.3% THC, industrial hemp has been used since the late 1500's in a fabric form.

Hemp fiber can add enhanced green strength and lightweight bulking. It is an environmentally friendly fibers, providing a negative carbon impact.

### BENEFITS

Can go in compostable materials and bioplastics


Negative carbon source

Can provide enhanced tensile strength and impact resistance

Lightweight bulking



 Standard grades available

 Average fiber lengths:  
75, 150 and 200 micron

## Secondary Cellulose

Upcycled fiber mainly comprised of magazine stock, pulp wrappers, box cuttings and uncirculated printed materials.

Secondary cellulose is an economical choice that acts as a filler but is highly absorptive yet sheer thinning.



### BENEFITS

- Economical
- Rheology modifier
- Lightweight bulking agent
- Sheer thinning
- Reduces syneresis
- Binder



- + Standard grades available in gray, white, and brown
- + Average fiber lengths: 250 - 1500 microns



## Your JRS Global Partner



- Production Sites
- Sales Companies
- R&D Application Technology Centers

## Your JRS partners for North America

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