

Natural fibres. Simple and effective.

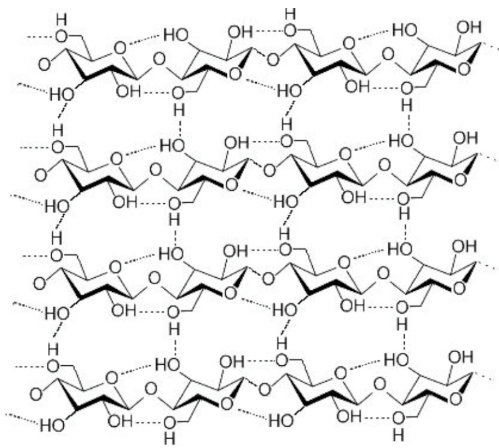
JELUCEL[®]

Functional Dietary Fibre Ingredient



Fundamentals

- All JELU food fibres are based on natural plants.
- All plants use cellulose - a natural sugar polymer as a fundamental framework.



Chemistry

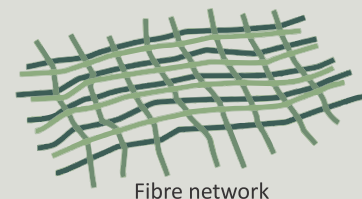
Cellulose is a polysaccharide

- Long chain sugar molecules with 2,000 - 20,000 glucose units
- Fully natural polymer
- Fundamental part of every plant
- Purified by cleaning processes of plants

Function in Food Products

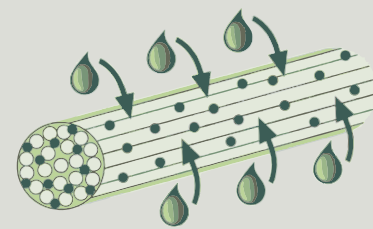
Function based on texture improvement

- More physical strength of finished product
- Maintaining the original softness
- Fibrous appearance
- 3 dimensional fibre network
- No gel forming structures



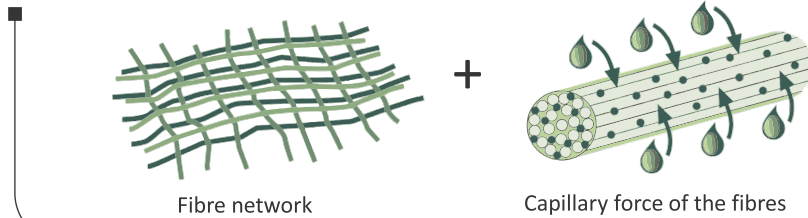
Function based on liquid absorption

- Heat - stable physical water retention
- Capacity related on fibre length
- Water is not freely available
- No change microbiology with more water
- Any liquid is absorbed (first available liquid will be sucked in)



Liquid absorption + fibre network = moisture balance

- Same moisture content throughout the finished product
- Stable Processing



Fibre network

Capillary force of the fibres

- MORE CONSTANT
- Drying processes
 - Baking processes
 - Moisturing processes
 - Heating processes
 - Cooling processes
 - Smoking processes

Advantage in Product

Better Texture

- More Elastic and Stronger Texture
- More Crispy & Crunchy
- Reduces Rubber like Bite (nan)
- Creamy MouthFeel
- More Juicy Product (NV) NV = Non Veg
- Less Shrinkage (NV)

Improves Health

- Reduction In Calorific Value
- Lower Fats (Low Oil Pick Up)
Water Inside The Fibres Prevents The Absorption Of Fat During Frying
- Insoluble Fibres

Adds to Stability of Finish Goods

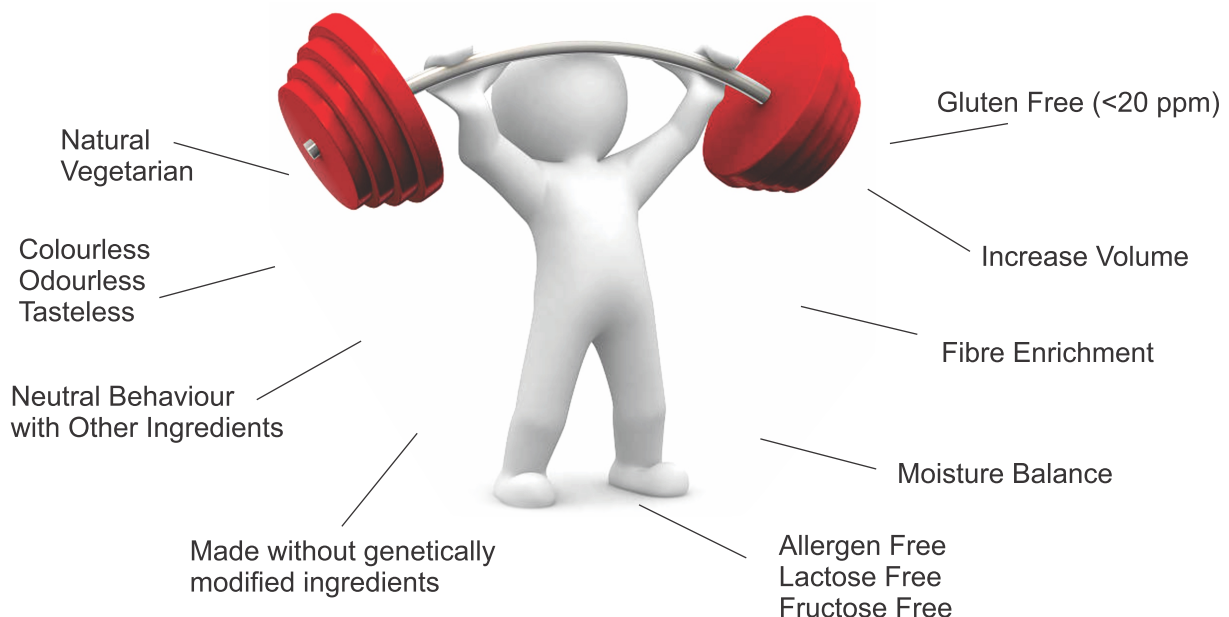
- Improves Homogenous & Liquid Binding

Advantage in Process

- Supports Emulsification
Capillary Force is valid For Fat And Water
- Reduces Synerises
Freezing/ De Freezing/ Baking/ Smoking/ Frying
- Reduces Processing Time
Freezing/ De Freezing/ Baking/ Smoking/ Frying

- Enhancing Capacity*
Due to Reduction in Processing Time
- Enhancing Yield*
Due to Water Retention
- Neutral Behaviour with Other Ingredients

*2-5% Vary from Product to Product





Bread

Fibres for Bread
Dark Bread, Brown Bread, White Bread

Advantages :-

- Increased Volume of Dough & Finish Bread
- Maintains Softness for Longer Time
- Improved Dietary Fibre Content (If 3-5% Fibre Addition)
- Appropriate mesh size
- High Tensile strength
- Better Yield

Quantity : 1-2% of Dough Weight

Apply : Prehydrate Fibres with Water & Mix Slowly for 5 min in the Mixer before adding flour.

Fibre : WF 300 µm



Rusk/Toast

Fibres for Rusk / Toast

Advantages :-

- Stronger Texture
- Less Breakage
- Increased Mechanical Stability
- Uniform Baking & Colour
- Maintains freshness for Longer Time
- Calorie Reduction
- Better Shelf Life Due To Water Balance
- Increase Crispiness

Quantity : 1-2% of Dry Flour Weight

Apply : Prehydrate Fibres with 4 times (Weight of Fibre) Water & Mix Slowly for 5 min in the Mixer before adding flour.

Fibre : WF 90 µm / WF 300 µm



Biscuits

Fibres for Biscuits

Advantages :-

- Improved Texture
- Reduces Breakages
- Increased Mechanical Stability
- High Yield
- Calorie Reduction
- Maintains Crispiness for Longer Time

Quantity : 1-2% of Dry Flour Weight

Apply : Add in Dry Flour & Mix thoroughly + Add Water as per Dough Elasticity (3 to 4 time of Fibre Weight)

Fibre : WF 90 µm



Khari

Fibres For Khari

Advantages:-

- Uniform Baking
- Better Mechanical Stability
- Better Texture
- Yield is improved
- Remains fresh for longer
- Dietary Fibre content is increased

Quantity : 1-2% of Dry Flour Weight

Apply : Add in Dry Flour & Mix thoroughly + Add Water as per Dough Elasticity (3 to 4 time of Fibre Weight)

Fibre : WF 90 µm



Donut

Fibres For Donut

Advantages:-

- Decrease oil / fat pick
- Donut become light (in weight)
- Uniform heating of product
- Dietary Fibre content is increased
- Volume is increased
- Yield is improved
- Remains fresh and soft for longer

Quantity : 1-2% of Dry Flour Weight

Apply : Add in Dry Flour & Mix thoroughly + Add Water as per Dough Elasticity (3 to 4 time of Fibre Weight)

Fibre : WF 90/300 µm



Cakes, Pastry, Cakes bars

Fibres for Cakes, Pastry, Cakes bars

Advantages:-

- Support Emulsification
- Improves Moisture Dispersion
- Increased Volume of Dough & Finish Cakes
- Improves texture
- Maintains Freshness for Longer Time Frame

Quantity : 1-2% of Dry Flour Weight

Apply : Prehydrate Fibres with 4 times (Weight of Fibre) Water & Mix Slowly for 5 min in the Mixer before adding flour.

Fibre : WF 300 µm



Pizza Base

Fibres For Pizza Base / Breads

Advantages:-

- Increased Volume of Dough
- Maintains Softness for Longer Time
- Improved Dietary Fibre Content (If 3-5 Fibre Addition)
- High Tensile strength
- Better Crispiness post Baking
- Better Yield
- Enhance Mouthfeel

Quantity : 1-2% of Dry Flour Weight 5 times (Weight of Fibre) Water & Mix Slowly for 5 min in the Mixer before adding flour.

Fibre : WF 300 µm



Waffles

Fibres For Waffles

Advantages:-

- Stronger Texture
- Less Breakage
- Mechanical stability is increased
- Cutting behaviour is improved
- Maintains Crispiness for Longer Time

Quantity : 1-2% of Dry Flour Weight

Apply : Add in Dry Flour & Mix thoroughly + Add Water as per Dough Elasticity (3 to 4 time of Fibre Weight)

Fibre : WF 90 µm



Confectionery

Fibres For Confectionery

Baking Stable Fillings

- (Fruit Fillings ; Chocolate Fillings, Cream Fillings, Jams)
- Improved Viscosity
- Better Baking Resistancy Due To Stronger Texture
- Creamy Mouth Feel
- Less Syneresis During Baking Process

Icings

Improved Viscosity
Improved Heat Stability
Smoother Surface
Creamy Mouth Feel

Quantity : 2 - 4 % of Dry Flour Weight

Fibre : WF 30 µm



Jelly Products

Fibres for Jelly Products

Jelly Products:

- Anticaking
- Calorie Reduction
- Improved Texture
- Flavour Carrier For Liquid Flavours
- Save Cost

Chewing Gum:

Anticaking
Flavour Carrier For Liquid Flavours

Quantity : 10%

Fibre : WF 90 µm



Frozen Food

Fibres for Frozen Food

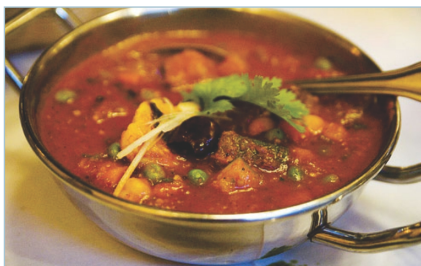
Advantages :-

- Improves Yield
- Maintains Softness
- Freezing and thawing stability is improved
- Reduce Ice Crystallisation
- Dough volume and dough yield are improved
- Moisture dispersant effect is improved

Quantity : 1-2% of Dry Flour Weight

Apply : Add in Dry Flour & Mix thoroughly
+ Add Water as per Dough Elasticity
(3 to 4 time of Fibre Weight)
Or Prehydrate with Water & Mix
thoroughly

Fibre : WF 90 /300 µm



Packed Curry/Dal

Fibres for Curry/Dal

Advantages :-

- Increase Volume due to addition of Water & Fibre
- Freezing and thawing stability is improved
- Reduce Ice Crystallisation
- Support Emulsification
- Reduces Syneresis
- Stronger Texture
- Better Mouthfeel

Quantity : 3-5% of Finished Curry Weight

Apply : Prehydrate Fibres with 4 times
Water & add towards end of
preparation of curry, Mix throughly.

Fibre : WF 300 µm



Frozen Naan, Roti, Paratha, Kulcha, Khakra

Fibres for Naan, Roti, Paratha, Kulcha, Khakra

Advantages :-

- Increases Dough Volume
- Improves Yield
- Maintains Softness for Longer Time Frame
- Freezing and thawing stability is improved
- Moisture dispersant effect is improved

Quantity : 1-2% of Dough Weight

Apply : Prehydrate Fibres with 4 times
(Weight of Fibre) Water & Mix Slowly
for 5 min in the Mixer before adding
flour.

Fibre : WF 90/300 µm



Instant Food / Premix / Retox

Fibres for Instant Food / Premix / Retox

Advantages :-

- Ensure Absorption of free Water
- Stronger Texture
- Reduce Syneresis
- Supports Emulsification
- Uniform Heating
- Better Yield
- Better Mouthfeel

These product can be applied in instant
food & premixes soups, dhokla, dosa, bada,
sweets, etc

Quantity : 1-2% of Dry Flour Weight

Apply : Prehydrate & Mix thoroughly

Fibre : WF 30/90/300 µm



Sambar Vada

Fibres For Sambar Vada

Advantages:-

- Decrease oil / fat pickup
- More crispy
- Uniform heating
- Dietary Fibre content is increased
- Volume is increased
- Yield is improved
- Remains fresh for longer

Quantity : 1-2% of Wet Flour Weight

Apply : Add in wet Flour & Mix throughly
+ Add Water as per Dough Elasticity
(3 to 4 time of Fibre Weight)

Fibre : WF 90 µm



Nuggets

Fibres For Nuggets

Advantages:-

- Support Texture
- Reduce Shrinkage
- Ensure Stability of Finish Product
- Reduced caloric value
- Less Oily
- More crispy

Quantity : 1-2% of Meat Weight of Jelucel WF/90/300 with smooth mouthfeel
1-2 % of Meat Weight Jelucel WF 300 with more textured mouthfeel & higher yield

Apply : Add in Dry Flour & Mix thoroughly + Add Water as per Dough Elasticity

Fibre : (4 time of Fibre Weight-WF 90)
(6 time Fibre Weight WF 300)



Sausages & Salami

Fibres for Sausages & Salami

Advantages:-

- Support Texture
- Homogeneous Liquid Binding
- Improve Liquid Binding
- Reduced caloric value
- Less Syneresis
- More Stable Filling of Casings
- Better Yield

Quantity : 1-2% of Meat Weight of Jelucel WF 300/1000 µm

Apply : Add with spices at the end of cutting process



Minced Meat, Meat Ball & Patties

Fibres For Minced Meat, Meat Ball & Patties

Advantages:-

- Improved stability of finished products
- Caloric reduction due to water retention during frying
- More Juicy due to moisture retention
- Reduce Shrinkage during frying
- Better yield

Quantity : 1-3% of Meat Weight of Jelucel WF 300/400/1000 µm

Apply : Add during spice mixing (400) or with meat during grinding process (300/ 1000) by spreading the fibres evenly over the meat.



Tumbling Meat (Chicken Tikka Etc..)

Fibres For Tumbling Meat (Chicken Tikka Etc..)

Advantages:-

- Enhance Yield
- Retain Flavour
- Freezing & Thawing Stability
- Homogeneous liquid Binding

Quantity : 0.5-1% of Meat weight

Apply : Add in marination process.

Fibre : WF30 µm



Fried Chicken / Meat / Fish / Prawn

Fibres For Fried Chicken / Meat / Fish / Prawn

Advantages:-

- Increase Crispyness
- Enhances Texture
- Reduce Oil Pickup
- Addition of Dietary Fibre Content
- Reduced calorie value
- Swift Frying

Quantity : 1- 4% of Dry Flour Weight

Fibre : WF 90 µm



Fresh Fish and Frozen Meat with Injection Process

Fibres For Fresh Fish and Frozen Meat With Injection Process

Advantages:-

- Prevention of liquid from leaking out of fresh meat packed in portion
- Life retention even cooking at high temperature

Quantity : 0,8 % - 1% of Brine of Jelucel WF 90 µm

Apply : Add into the Brine and inject it



Frozen Regular Samosa, Kachori, Pakoda

Fibres for Samosa, Kachori, Pakoda

Advantages :-

- Reduces Oil Pickup
- Dietary Fibre content is increased
- Volume is increased
- Dough Yield increases
- Remains fresh for longer
- Removes Cracks after defreeze

Quantity : 1-2% of Dry Flour Weight

Apply : Add in Dry Flour & Mix thoroughly
+ Add Water as per Dough Elasticity
(3 to 4 time of Fibre Weight)

Fibre : WF 90 µm



Namkeen, Farsan

Fibres for Namkeen, Farsan

Advantages :-

- Uniform heating
- Reduces Oil pickup
- Dietary Fibre content is increased
- Volume is increased
- Yield is improved
- Increase & Maintains Crispiness for Longer Time

Quantity : 1% - 3% of Dry Flour Weight

Apply : Add in Dry Flour & Mix thoroughly
+ Add Water as per Dough Elasticity
(3 to 4 time of Fibre Weight)

Fibre : WF 90 µm



Sweets

Fibres for Sweets (Soan Cake, Kaju Katli, Motichur Laddu, etc)

Advantages :-

- Enhances Yield
- Improves Softness
- Remains fresh for Long
- Good Texture
- Enhanced Cutting Behaviour
- Reduced Calories
- Improves freezing and de freezing properties
- Creamy Mouth Feel

Quantity : 1-2% of Dry Flour Weight

Application in Sweets :

Add in Maida, Besan, Atta & Mix thoroughly
OR Add in slurry

OR

Add Dry Fibre in kaju Based Sweets at the end of Heating Process
(Kaju Katli)

Fibre : WF 90/300 µm



Khakhra & Chakli

Fibres for Khakhra & Chakli

Advantages :-

- Improves Crispiness
- Improves Texture
- Maintains freshness for longer time

Quantity : 1-2% of Dry Flour Weight

Apply : Add in Dry Flour & Mix thoroughly
+ Add Water as per Dough Elasticity
(3 to 4 time of Fibre Weight)

Fibre : WF 90 µm



Papad

Fibres for Papad

Advantages :-

- Improved Texture
- Dough Volume is increased
- Yield is improved
- Reduces Roasting Time
- Uniform heating of Product
- Dietary Fibre content is increased
- Maintain Crispiness for Longer Time

Quantity : 1-2% of Dry Flour Weight

Apply : Add in Dry Flour & Mix thoroughly
+ Add Water as per Dough Elasticity
(3 to 4 time of Fibre Weight)

Fibre : WF 90 µm



Cheese

Fibres For Cheese

Block Cheese, Light Cheese, Cheese Analogues, Spread Cheese, Process Cheese

Advantages :-

- Improves Yield due to Moisture Retention
- Improves Cutting behavior
- Easier Slicing due to better Texture
- Texture is optimized
- Improves Creamy Mouth feel

Quantity : 1-2% of Dry Flour Weight

Apply : Add Prehydrated Fibres during Melting/Texturizing process of Cheese

Fibre : WF 30/90/300 µm

Shredded Cheese:

Advantages :-

- Reduced Agglomeration Due To Anticaking
- Easier Production Of Powdered Cheese Due To More Dry Appearance Of Finished Product
- Anticaking For Regular Shredded Cheese (F.E. Pizza Cheese)
- Improved Moisture Balance Resulting In Better Shelf Life



Diet Products

Dietary Fibre Drinks, Slimming Drinks

- Improved Dietary Fibre Content
- Less Calories
- Improved Creamy Mouthfeel
- Less Hungry Feeling
- Flavour Carrier For Liquid Flavours
- Better Product Consistency Of Powder Mix Products

Senior Food & Clinical Products

- Improved Dietary Fibre Content
- Less Calories
- Less Hungry Feeling
- Better And Easier Bowel Movement



Spices

Fibres For Spices

Advantages:-

- Act as Anti-Caking Agents
- Absorbs Free Oil Release / Liquid

Quantity : Depending on Oil/Liquid Release

Apply : Mix in Spices directly

Fibre : WF 90 µm



Fiber Chocolate

Fibres For Chocolate

Advantages:-

- Creamy Mouth Feel
- Homogenous Binding
- Increase Mechanical Stability
- Dietary Fibre content is increased
- Cutting Behaviour in enhanced
- Support Emulsification

Quantity : 1-2% of Dry Flour Weight

Apply : Mix thoroughly with Cocoa Powder

Fibre : WF 30/90 µm



Pasta

Fibres For Pasta

Advantages:-

- Reduce breakage of pasta and noodles
- Allow finer pasta shapes to be manufactured
- Increase fibre content

Quantity : 1-2% of Dry Flour Weight

Apply : Add in Dry Flour & Mix throughly + Add Water as per Dough Elasticity (3 to 4 time of Fibre Weight)

Fibre : WF 30/90 µm



Vital Food

Dietary fibre is a vital food ingredient for humans

Dietary fibre content

Food	Dietary fibre content per 100 gram
Bran	10 - 45 gram
Whole Grain Cereals	1 - 2 gram
Vegetables	0.5 - 3.5 gram
Nuts	2 - 5 gram
Fresh Fruits	0.5 - 3.5 gram
Meat, Fish	0 gram
JELUCEL Fibres	96 gram

Guidelines on fibre intake

- The **American Dietetic Association (ADA)** recommends a minimum of 20-35 g/day for a healthy adult.
- The ADA's recommendation for a child is 5 g/day (e.g., a 4-year old should consume 9 g/day).
- The British Nutrition Foundation recommends a minimum fibre intake of 12-24 g/day for healthy adults.

All JELUCEL Fibres are Insoluble Dietary Fibres.

Product Names

JELUCEL + Fibre Source + Length

Wheat - WF

30 µm
90 µm
300 µm
1000 µm

Plant - PF

30 µm
90 µm
300 µm
1000 µm

Oat - OF

90 µm
300 µm

Length	30 µm	90 µm	300 µm	1000 µm
Size	Shortest	Short	Long	Like Cotton
Water Retention Ratio	1:3	1:4	1:7	1:11
Texture	Fine	Medium	Strong	Like Cotton
Mouth Feel	Creamy	Smooth	Juicy	-
Yeild	Low	Medium	High	Very High
Dietary Fibre	High	High	High	High

All the different type of Fibres have similar funtions, application and results. They Only Differ from the source they are extracted.

Food Safety

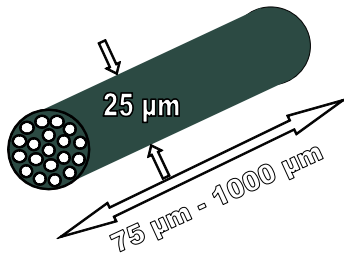
- i) **Wheat / Oat Fibres :**
Considered as Food Stuff
Eg : Wheat Fibre Extracted from Wheat Spears & hence consider as wheat Stuff.
- ii) **Plant Fibres (only) :**
Considered as Food Additive published by the Codex E460(ii)

Special function of 30 µm fibres*

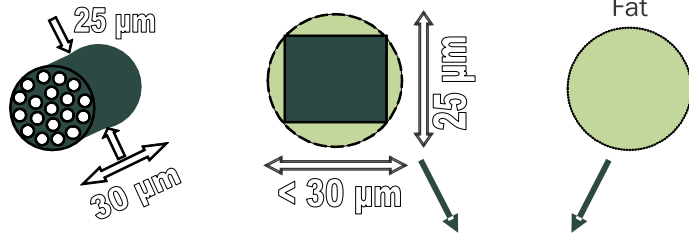
Fat replacement

Only possible with 30 µm fibres based on physical exception

Regular fibre > 30 µm



Fibre 30 µm



rolling on the tongue = creamy mouthfeel

Jelucel is the only company in World manufacturing 30 Micron Fibre

Benefits to Manufacturer & Consumer



Manufacturer

- Economical
- Multifunctional
- Extremely High Level of Moisture Binding
- Reduces Oil Pickup
- No Gel Formation
- Saves Cost
- Saves Time
- Enhanced Quality
- Enhance Capacity
- Increase Dough Volume / Yield
- Better Nutritional Properties

Consumer

- Pure Plant Fibre
- Pure, Insoluble Fibre
- Creamy Mouth Feel
- Enhanced Texture
- Good Health
- Low Oil Diet
- Better Nutritional Food



Natural fibres. Simple and effective.

JELU-WERK – your manufacturer of natural additives

Certificates

HALAL



ISO 22000



HACCP



Kosher



Imported & Marketed in India by :

SALASAR ALLOYS & STEEL INDUSTRIES PVT. LTD.

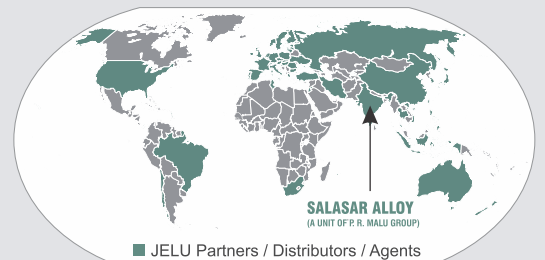


Packaging
• 20 kg Paper bags



JELU-WERK process natural fibres into versatile functional additives.

JELU-WERK global network



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