VISCOSE CASINGS

CASINGS BASED ON NATURAL RAW MATERIALS

Kalle
KALLE GROUP

KALLE CASINGS ARE CERTIFIED FOR QUALITY

Kalle products meet the highest standards, with certifications in quality management, food safety, product safety, and energy management. Our commitment is to deliver outstanding products and flawless processes that empower our customers' success.

Kalle

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CONTENTS

VISCOSE CASINGS – CLASSIC: SEAMLESS FIBROUS CASINGS

Kalle Viscose casings start and finish their material-cycle in a close partnership with nature. The starting point is cellulose, a natural product derived from wood. Cellulose has to meet defined requirements in respect to physical properties and strength, combined in a natural manner with a fibrous paper to form the Kalle Fibrous casing.

The Kalle range of pure viscose casings is particularly popular among traditional sausage manufacturers due to its excellent transparency and smoke permeability. Ideal for raw and cooked sausages as well as cooked ham and processed cheese, Kalle Cellulose casings are available in every conceivable variant: ring, bladder or cylinder, uniform in shape or shaped, and in a wide range of converting types. Kalle is the only cellulose ring producer in the world.

The Kalle Fibrous casing, on the other hand, is the standard casing for firm dry sausages, especially when a precise and stable caliber is required for slicing products. For example, most of the salami used in pizzas around the world is cured in Kalle casings.

Today, Kalle can offer several thousand of different viscose casing articles.

SUSTAINABILITY

VISCOSE CASINGS – A PIECE OF NATURE

In 1929, Kalle introduced the Nalo sausage casing as the first real alternative to animal-derived casings. Decades later, these seamless fibrous casings are still a mainstay in the Kalle range. The only difference today is that the sheer variety of product variations would have been unimaginable in 1929.

1 100% NATURAL CASINGS

Nalo casings are made from cellulose obtained from wood. This material is processed through a number of steps to create viscose.

2 SUSTAINABILITY THROUGH INNOVATION

The breakthrough Kalle achieved in 1929 was to pass the liquid viscose through a ring nozzle and thus create a seamless tube. The product name, Nalo, is a contraction of the German word "nahtlos", meaning seamless.

Nalo casings are usually strengthened through the addition of a special fiber paper that is similar to that used in tea bags and coffee pods. The finished product is called a "Fibrous casing".

3 ECO-FRIENDLY PRODUCTS

When developing new products we are also careful to ensure that they have a positive impact on the environment. A prime example is the Kalle sponge cloth, which is used in almost every household as well as a diverse range of industries.

4 ENERGY EFFICIENCY

We are also working to help our customers save energy, for example via our value-added casings. These special casings eliminate production steps and thus reduce energy requirements.

Both the viscose and paper are made from renewable, natural materials. Kalle Fibrous casings are thus a popular choice among eco-aware customers and consumers.

RESEARCH & DEVELOPMENT

CONTINUOUS INNOVATION – SINCE 1863

Research and development is fundamental for our innovative products and technologies. Our aim is to create new solutions that are perfectly tailored to current and future market needs.

1 CUSTOMER-FOCUSED R&D

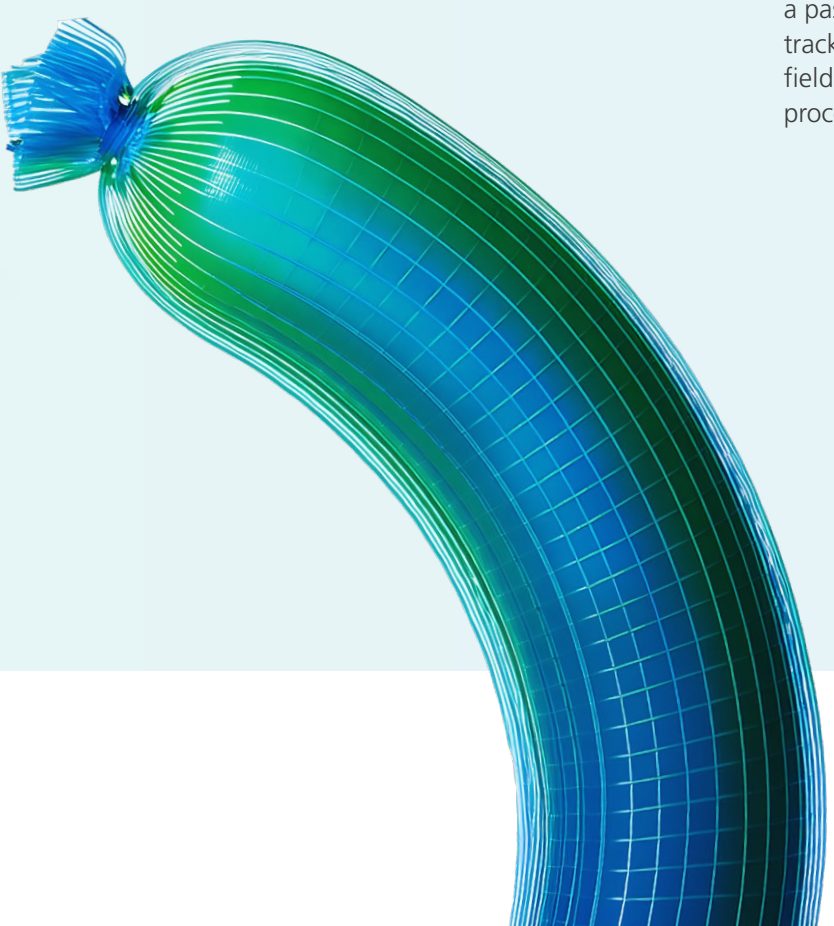
Innovation has been a hallmark of Kalle from the very beginning. Time and again, we have created important new products that become benchmarks in their respective segments. With each new innovation, we are guided and inspired by the needs and demands of our customers. And by working closely with them on joint development projects, we deliver new and more effective solutions.

2 FROM IDEA TO INNOVATION

To help us to transform the markets needs and customer demands into products, we implemented a highly efficient innovation process that allows close collaboration between departments. We also have a dedicated Technical Service Team which help identify and implement the right technical solutions for our customers worldwide.

3 EXPERTISE AND PASSION

At our R&D center in Wiesbaden and in Vista, California, our scientists, food technologists and engineers are constantly working on new products and processes. Combining scientific expertise with a passion for invention, our R&D teams have a long track record of successful innovations. Our primary fields of expertise are biopolymers (chemistry and processing), plastics technology and food technology.



SUSTAINABILITY THROUGH INNOVATION

Kalle is committed to continuous innovation not only for the sake of our customers. By rigorously improving technologies and processes, we are also helping to protect the environment and develop a sustainable economy.

Product advantages

- All-purpose use
- Highly transparent and glossy (except Schmal O)
- Excellent shrink
- Uniform smoke transfer
- Ready-to-fill shirred strands
- Natural raw materials
- Impermeable to grease
- Taste-free

NALO CELLULOSE

Permeable Cellulose casings based on natural raw materials in cylindrical, ring and stretchable form

Applications

Ideal for spreadable raw sausage, smoked scalded products and semi-durable products. Also suitable for cooked meat products, firm raw sausage, as a retractable casing for salmon ham, bacon and nut ham as well as smoked cheese.

Cylindrical form

- Nalo Schmal N
- Nalo Schmal O
- Nalo M

Ring form

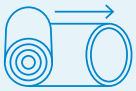
- Nalo Ring

Stretchable form

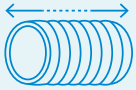
- Nalo ML
- Nalo GLI
- Nalo BIG

CONVERTED FORMS

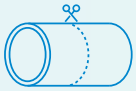
Reels



Shirred strands



Cut or tied pieces



DIAMETER RANGE

From 30 mm to 140 mm (Minimum order quantity 20.000 m)

PRINTING

With up to 6 colors, both sides

Nalo Ring can be printed with up to 2 colors on the inner side.

COLORS

- Clear
- Tinted
- Smoke brown

Other colors available on request.

PRODUCT RANGE AND CHARACTERISTICS

Nalo Cellulose

PRODUCT	NOMINAL DIAMETER	COLOR RANGE	CONVERTED FORM
Nalo Schmal N	30 – 60 mm	Clear, smoke brown	Reels, shirred strands, tied pieces
Nalo Schmal O	30 – 50 mm	Clear	Only as tied pieces
Nalo M	59 – 100 mm	Clear	Reels, shirred strands, tied pieces
Nalo Ring	32 – 47 mm	Clear, tinted, smoke brown	Reels, shirred strands, tied pieces
Nalo ML	50 – 140 mm	Clear	Reels, shirred strands, tied and cut pieces
Nalo GLI	45 – 75 mm	Clear	Reels, shirred strands, tied pieces
Nalo BIG	45 – 65 mm	Clear	Reels, shirred strands

PARAMETER	SPECIFICATION
Material composition	Casing from cellulose-hydrate.
Recommended storage time and conditions	Always store **Nalo Cellulose casings** in a cool and dry place using the original packaging. Protect from frost. By observing these recommendations, a storage time of **12 months** can be guaranteed from the date of production. With pre-moistened casings, the storage time is **6 months**.
Food safety conformity	**Nalo Cellulose casings (Nalo Schmal, Nalo M, Nalo ML, Nalo Ring, Nalo GLI, Nalo BIG)** comply with §§ 30, 31 of the German Food, Commodities and Feed Law (LFBG), with Recommendation XLIV of the German Federal Institute for Risk Assessment (BfR) as well as other corresponding BfR recommendations, with article 3 of the European Regulation (EG) No. 1935/2004 and with applicable regulations of the U.S. Food and Drug Administration (FDA).

All mentioned values are measured from clear casings. This information is based on our present knowledge.

PREPARATION AND SOAKING

Store **Nalo Cellulose casings** in their original packaging until processing

The shirred strands are always ready-to-fill. Do not soak!

Store unprocessed shirred strands in the carefully sealed plastic bag

Soaking periods (recommendations): Soaking times depend on the converted forms:

- Tied pieces should be soaked briefly (approximately 10 seconds). Take them out afterwards and wait approximately 1 minute before filling.

Water temperature: 20°C to 40°C. Optimum: 28°C. The casings should be completely submerged.

Water that is too hot or too cold or soaking for too long or for not enough time may change the characteristics of the casings

Only use fresh drinking water for soaking

FILLING AND CLOSING

Put the shirred strands with the pointed end in direction of the filling machine on the filling horn and fill up to the recommended filling diameter

Closure is possible with all conventional clipping equipment and tying methods

Please ensure that the correct clip size is chosen, and that the closing equipment is in the best possible condition

To achieve the recommended filling diameter, please ensure that the correct size of filling horn is used. It should be only slightly smaller than the inner bore of the shirred strand

SMOKING AND MATURING

Suitable for all maturing processes

To avoid smoke marks, the casing's surface should be kept free of condensation water, but always with sufficient moisture

Excessive drying decreases smoke permeability and can lead to bursting and tearing

Dry only moderately while curing

Smoke at approximately 85% relative humidity

HEATING

Depending on weight, heat sausages to the required core temperature in a lying or hanging position

COOLING

After heating, cool sausages to the required core temperature as usual

Avoid fast cooling with high airflow in the cooler

Product advantages

- Very good maturing properties
- Excellent shrink properties
- Uniform smoke transfer
- Excellent shape retention
- Precise diameter consistency
- High mechanical strength
- Impermeable to grease

NALO FIBROUS

Cellulose-fibrous casings with defined meat cling and good smoke permeability

Applications

Smoked scalded meat products, cooked meat products and raw sausages as well as cooked hams and processed cheese.

PRESTICKING

For products that are as air-free as possible.

Presticking sizes

- Fine, medium, large

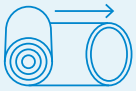
Presticking pattern

- Single 13 x 26 mm
- Double 13 x 13 mm

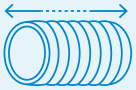
The presticking sizes and patterns can be combined = 6 different varieties with traditional presticking. For shirred strands, only the sizes fine and medium are available.

CONVERTED FORMS

Reels

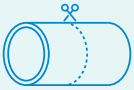


Shirred strands



Bundles

Cut or tied pieces



DIAMETER RANGE

From 32 mm to 165 mm

PRINTING

With up to 6 colors, both sides

COLORS

The colors of **Nalo Fibrous** can be found in the relevant color range on page 28 or upon request.

INFO

Don't forget to check out **Nalo Fibrous ELA**, our Fibrous casing with a lightweight construction for optimized elasticity and a touch more filling capacity or **NaloProtect**, our Fibrous casing offering maximum mold protection.

PRODUCT RANGE AND CHARACTERISTICS

Nalo Fibrous

Impregnations for defined meat cling

Nalo Fibrous casings are available from very good meat cling to easy peel. There are various grades:

PRODUCT	IMPREGNATION	ADHESION
Nalo Fibrous I	With meat cling impregnation	High to medium adhesion
Nalo Fibrous N	No impregnation	Light adhesion to easy to peel
Nalo Fibrous P	With peeling impregnation	Easy to peel to very easy to peel
Special Type: Nalo Fibrous S	With meat cling impregnation	Very strong adhesion, matt surface

Also available as double-viscose casings (ID / IV, ND / NV, PD / PV).

Technical data

PARAMETER	SPECIFICATION
Material composition	Casings are based on cellulose, fibrous paper, glycerin and water.
Recommended storage time and conditions	Always store **Nalo Fibrous** casings in a cool and dry place using the original packaging. Protect from frost. By observing these recommendations, a storage time of **24 months** can be guaranteed from the date of production. For pre-moistened shirred strands the storage time is **6 months**.
Food safety conformity	**Nalo Fibrous** casings comply with §§ 30, 31 of the German Food, Commodities and Feed Law (LFBG), with Recommendation XLIV of the German Federal Institute for Risk Assessment (BfR) as well as other corresponding BfR recommendations, with article 3 of the European Regulation (EG) No. 1935/2004 and with applicable regulations of the U.S. Food and Drug Administration (FDA).

All mentioned values are measured from clear casings. This information is based on our present knowledge.

PREPARATION AND SOAKING

Store **Nalo Fibrous** casins in its original packaging until processing

Soaking periods (recommendations): Soaking times depend on the converted forms:

- 15 minutes for tied pieces
- 30 minutes for shirred strands (more time is required for high shirring densities)
- 60 minutes for printed casings

Water temperature: 20°C to 40°C. Optimum: 28°C. The casing should be completely submerged

Water that is too hot or too cold or soaking for too long or for not enough time may change the characteristics of the casings

Only use fresh drinking water for soaking

FILLING AND CLOSING

Put the shirred strands with the pointed end in direction of the filling machine on the filling horn and fill up to the recommended filling diameter

Closure is possible with all conventional clipping equipment and tying methods

Please ensure that the correct clip size is chosen, and that the closing equipment is in the best possible condition

To achieve the recommended filling diameter, please ensure that the correct size of filling horn is used. It should be only slightly smaller than the inner bore of the shirred strand

SMOKING AND MATURING

Suitable for all maturing processes

To avoid smoke marks, the casing's surface should be kept free of condensation water, but always with sufficient moisture

Smoke at approximately 85% relative humidity

HEATING

Depending on weight, heat sausages to the required core temperature in a lying or hanging position

COOLING

After heating, cool sausages to the required core temperature as usual

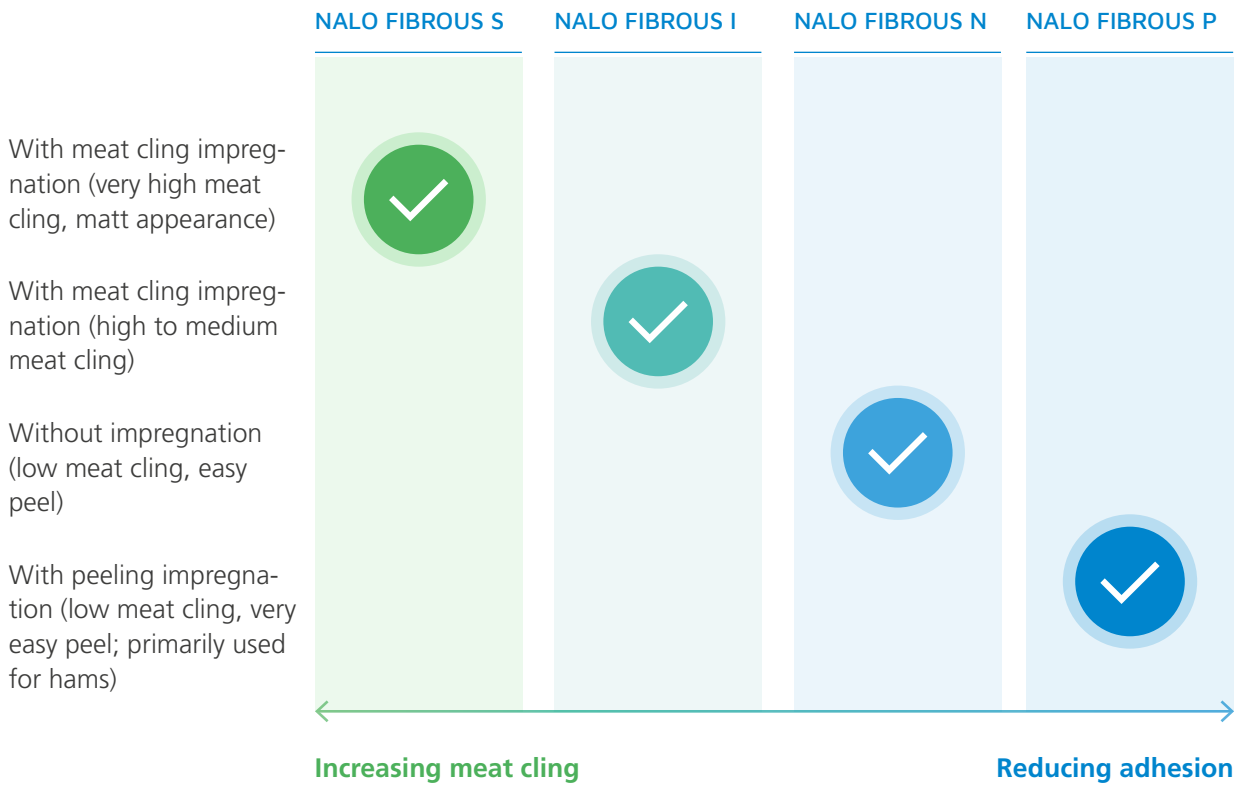
Avoid fast cooling with high airflow in the cooler

EXCURSION IMPREGNATION

Impregnation platform for fibrous casings

Meat cling will always depend on the recipe of the individual meat and sausage product. However, with our range of impregnations from very high to light adhesion, Nalo Fibrous casings offer solutions for any processed meat application.

Meat cling impregnation Nalo Fibrous



Also available as double-viscose casings (ID / IV, ND / NV, PD / PV).

The adhesion capabilities of the base types can be adjusted according to applications and processes, a multitude of cling and peel possibilities are available. Working with our product experts, yield, quality and productivity can be improved considerably.

Examples of tailor made solutions:

Dry sausage such as Italian Salami (naturally matured and dried), hard salami packed in bags as well as precooked dry sausage such as pepperoni for automatic peeling application.

PRODUCT OVERVIEW NALO FIBROUS

Efficient solutions and constant high quality

NALO FIBROUS I

EXCELLENT MEAT CLING

The general casing for dry sausage. Due to its excellent meat cling, the casing adheres tightly to the product during the entire maturing and drying phase. The very good shrink capacity also ensures perfect adhesion during the drying process. The single viscose coating provides a brilliant, glossy look to the final sausage.

NALO FIBROUS N

EASY TO PEEL

The casing is well suited for sliced processed dry products, such as pepperoni sausages, other pizza toppings, cooked and dry hams. Due to the low adhesion, it can be peeled easily without tearing. The high diameter consistency ensures equal size of the slices - each one consistent to the other.

NALO FIBROUS P

VERY EASY TO PEEL

Due to its extremely smooth peeling capabilities, **Nalo Fibrous P** is the ideal casing for slicing application, especially for scalded and dry processed meat products as well as cooked hams.

NALO FIBROUS S

VERY HIGH MEAT CLING AND MICRO-FINE ROUGH SURFACE

Nalo Fibrous S offers excellent maturing properties and is therefore the ideal casing for high-quality long matured dry meat products. The micro-fine rough surface gives the product a high-matt appearance.

Product advantages

- Excellent shape due to rigid net, giving an appetizing appearance
- Easy to handle + net in one step
- Defined meat cling and easy to peel
- High mechanical strength
- Ideal maturing properties
- Very good smoke transfer
- Precise diameter consistency

NALONET

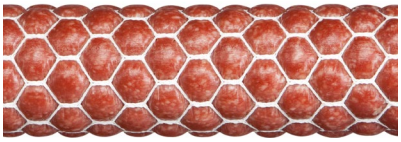
Cellulose-fibrous casing with defined meat cling and strongly anchored, rigid net in three versions

Applications

For dry and scalded processed meat products, cured cooked products and for processed cheese.

TYPES OF NET

Honeycomb



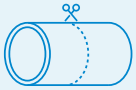
Rectangular

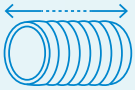
Chain

Availability of other netting types upon request.

CONVERTED FORMS

Tied pieces Shirred strands (upon request)





DIAMETER RANGE

From 40 mm to 130 mm

COLORS

- Clear
- White (net color)

Other net colors available on request.

PRODUCT RANGE AND CHARACTERISTICS

NaloNet

PRODUCT	IMPREGNATION	ADHESION
NaloNet I-028	With meat cling impregnation	High to medium adhesion
NaloNet N	No impregnation	Light adhesion to easy to peel
NaloNet P	With peeling impregnation	Easy to peel to very easy to peel

Technical data

PARAMETER	SPECIFICATION
Material composition	Casings are based on cellulose, fibrous material, glycerin, and water. The nets are made of polyester.
Recommended storage time and conditions	Always store **NaloNet** in a cool and dry place using the original packaging. Protect from frost. By observing these recommendations, a storage period of **6 months** can be guaranteed from the date of production.
Food safety conformity	**NaloNet** complies with §§ 30, 31 of the German Food, Commodities and Feed Law (LFBG), with Recommendation XLIV of the German Federal Institute for Risk Assessment (BfR) as well as other corresponding BfR recommendations, with article 3 of the European Regulation (EG) No. 1935/2004 and with applicable regulations of the U.S. Food and Drug Administration (FDA).

All mentioned values are measured from clear casings. This information is based on our present knowledge.

PREPARATION AND SOAKING

Store **NaloNet** casings in their original packaging until processing

Soaking periods (recommendations): Soaking times depend on the converted forms:

- 15 minutes for tied pieces
- 30 minutes for shirred strands (more time is required for high shirring densities)

Water temperature: 20°C bis 40°C. Optimum: 28°C. The casing should be completely submerged

Water that is too hot or too cold or soaking for too long or for not enough time may change the characteristics of the casings

Only use fresh drinking water for soaking

FILLING AND CLOSING

Open the shirred strands at the colored clip and fill up to the recommended filling diameter

Filling diameter is identical to nominal diameter

Closure is possible with all conventional clipping equipment and tying methods

To achieve the recommended filling diameter, please ensure that the correct size of filling horn is used. It should be only slightly smaller than the inner bore of the shirred strand

SMOKING AND MATURING

Suitable for all smoking and maturing processes

HEATING

Depending on weight, heat sausages to the required core temperature in a lying or hanging position

COOLING

After heating, cool sausages to the required core temperature as usual

Avoid fast cooling with high airflow in the cooler

Clip recommendations*

The clip size for **NaloNet** must always be bigger than for a Fibrous casing without net. For reel clips the clip size should be **at least two sizes bigger**.

PRODUCT	CLIP DIAMETER	SIZE	
Nalo Fibrous	Diameter 63 Clip	5-9	5 x 2,0
NaloNet	Diameter 63 Clip	15-11	5 x 2,0

Either type 15 or 18 is possible.
For single clips, we recommend the series 700, 800 or 8700, resp. E210, E410, E510 (depending on the diameter).

* Clip recommendations are guidelines and depend on the clipping machine used.
Before using the casing, the clip recommendation should be confirmed by the clip producer and updated if necessary.

Product advantages

- Triple freshness guarantee
  - + Water-vapor barrier
  - + Oxygen barrier
  - + Aroma barrier
- High diameter consistency for precise cylindrical processed meat products
- Naturally matt appearance

NALO TOP

Cellulose-fibrous casing with barrier offers the triple freshness guarantee

Applications

Unsmoked scalded and cooked processed meat products.

TRIPLE FRESHNESS GUARANTEE

Water-vapor barrier

- Products stay fresh for a long time without weight-loss

Oxygen barrier

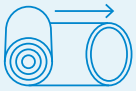
- No oxidation influences and no discoloration

Aroma barrier

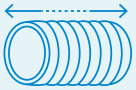
- Intense and pure taste

CONVERTED FORMS

Reels

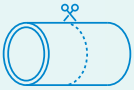


Shirred strands



Bundles

Cut or tied pieces



DIAMETER RANGE

From 40 mm to 120 mm

PRINTING

With up to 6 colors, both sides

Besides attractive standard designs, we also make customized designs in line with your individual wishes and specifications.

COLORS

The colors of Nalo Top can be found in the relevant color range on page 29.

PRODUCT RANGE AND CHARACTERISTICS

Nalo Top

DIAMETER IN MM/ LENGTHS OF CUT PIECES IN CM	FILLING DIAMETER IN MM	APPROXIMATE FILLED WEIGHT
40 / 19	42	135 g
45 / 20	48	180 g
45 / 25	48	250 g
50 / 20	53	220 g
50 / 25	53	300 g
50 / 30	53	400 g
50 / 40	53	640 g
50 / 50	53	850 g
55 / 21	58	260 g
60 / 20	65	310 g
60 / 25	65	460 g
60 / 30	65	600 g
60 / 40	65	940 g
60 / 50	65	1260 g
60 / 60	65	1600 g
75 / 40	81	1500 g
75 / 50	81	2000 g
75 / 60	81	2500 g
90 / 40	103	2300 g
90 / 50	103	3100 g
90 / 60	103	3900 g
105 / 50	108	3400 g

Technical data

PARAMETER	SPECIFICATION
Material composition	Casings are based on cellulose, fibrous material, glycerin, and water.

PARAMETER	SPEZIFIKATION
Recommended storage time and conditions	Always store **Nalo Top** in a cool and dry place using the original packaging. Protect from frost. By observing these recommendations, the following storage times can be guaranteed from the date of production: Reels **6 months**, shirred strands **12 months**, cut and tied pieces **24 months**.
Food safety conformity	**Nalo Top** complies with §§ 30, 31 of the German Food, Commodities and Feed Law (LFBG), with Recommendation XLIV of the German Federal Institute for Risk Assessment (BfR), corresponding BfR recommendations as well as article 3 of the European Regulation (EG) No. 1935/2004.

PREPARATION AND SOAKING

Store **Nalo Top** in their original packaging until processing

Soaking periods (recommendations): Soaking times depend on the converted forms:

- 15 minutes for tied pieces
- 30 minutes for shirred strands (more time is required for high shirring densities)
- 60 minutes for printed casings

Water temperature: 20°C bis 40°C. Optmium: 28°C. The casing should be completely submerged

Water that is too hot or too cold or soaking for too long or for not enough time may change the characteristics of the casings

Only use fresh drinking water for soaking

FILLING AND CLOSING

Open the shirred strands at the colored clip and fill up to the recommended filling diameter

Closure is possible with all conventional clipping equipment and tying methods

Please ensure that the correct clip size is chosen, and that the closing equipment is in the best possible condition

To achieve the recommended filling diameter, please ensure that the correct size of filling horn is used. It should be only slightly smaller than the inner bore of the shirred strand

HEATING

Depending on weight, heat sausages to the required core temperature in a lying or hanging position

COOLING

Cool **Nalo Top** by showering

Cool products down to the requested core temperature by intensive showering

Avoid fast cooling with high airflow in the cooler, since one-sided drying may lead to bursting

All mentioned values are measured from clear casings. This information is based on our present knowledge.

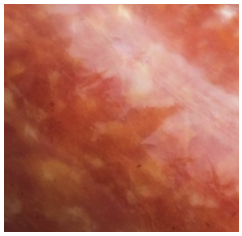
NATURAL FOOD COLORING
for eye-catching and sustainable looks

COLOR RANGE*

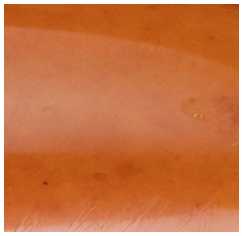
NALO CELLULOSE

CLEAR | KRAKAUER

CLEAR | METTWURST



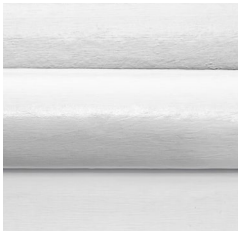
TINTED



SMOKE BROWN

NALO FIBROUS

WHITE



CLEAR

BAK

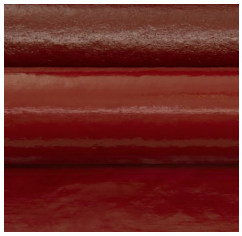
HAZELNUT

OCHRE

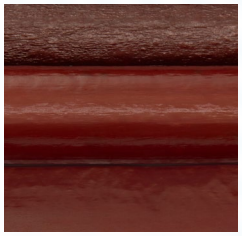
BAK NAT

RED

MARASCHINO



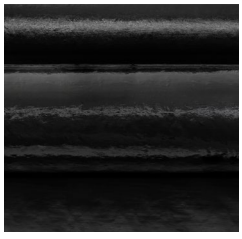
CHERRY



TERRACOTTA

MERANTI

BLACK



BLUE

LIGHT BLUE

FANTASTIC NEW COLORS

NALO TOP

WHITE

CLEAR

NATURAL

CREAM

GOLD

YELLOW

ORANGE

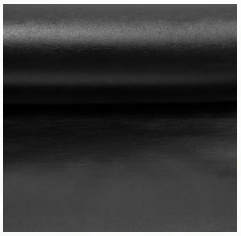
RED

RED ORANGE

LIGHT BROWN

BROWN

BLACK



Our exceptional NEW COLOR RANGE

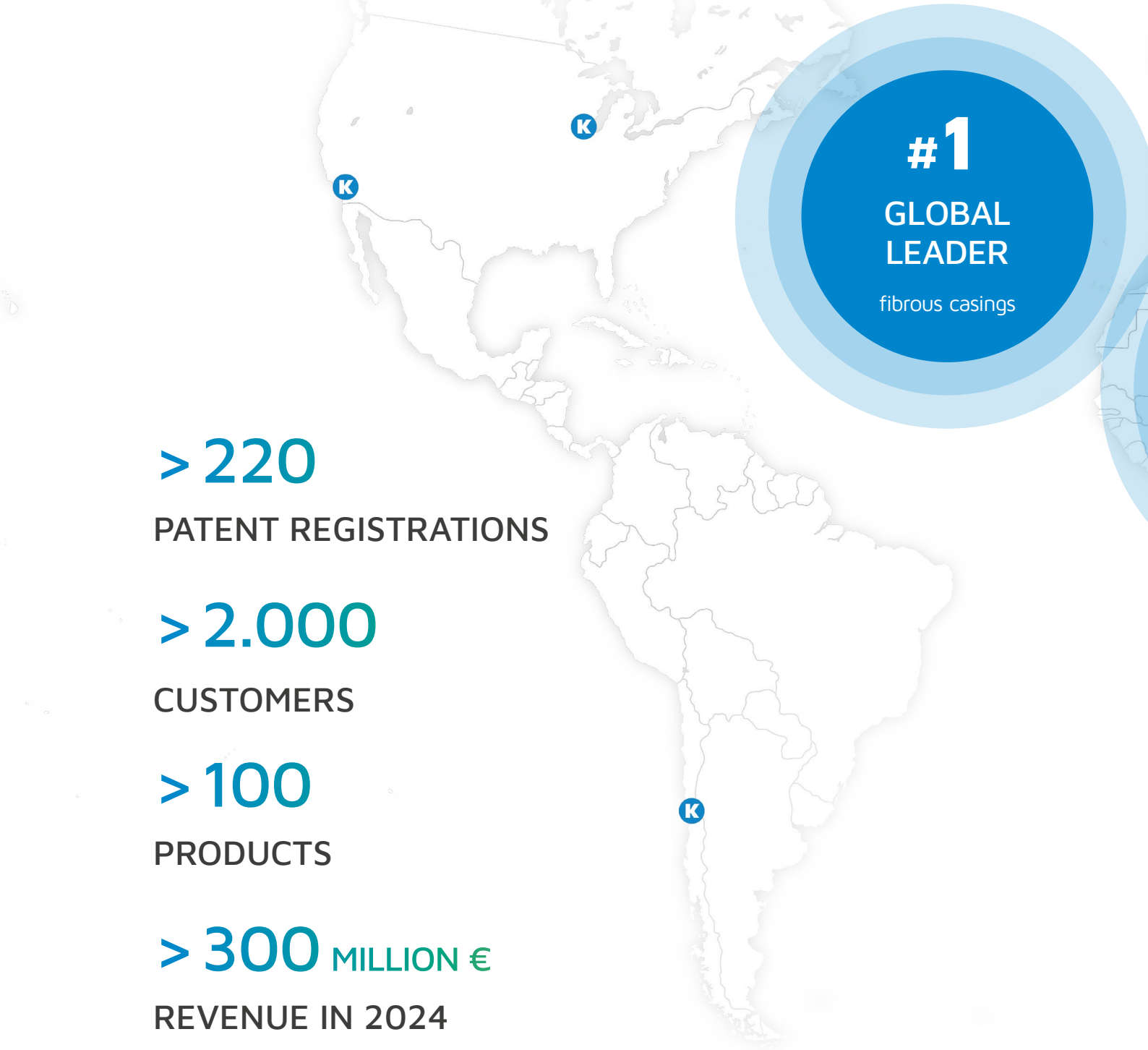
* To create a realistic color experience stuffed casing plus applications with different types of meat have been used.

1500
EMPLOYEES

>100
COUNTRIES

14
PRODUCTION SITES

1
R&D CENTRE



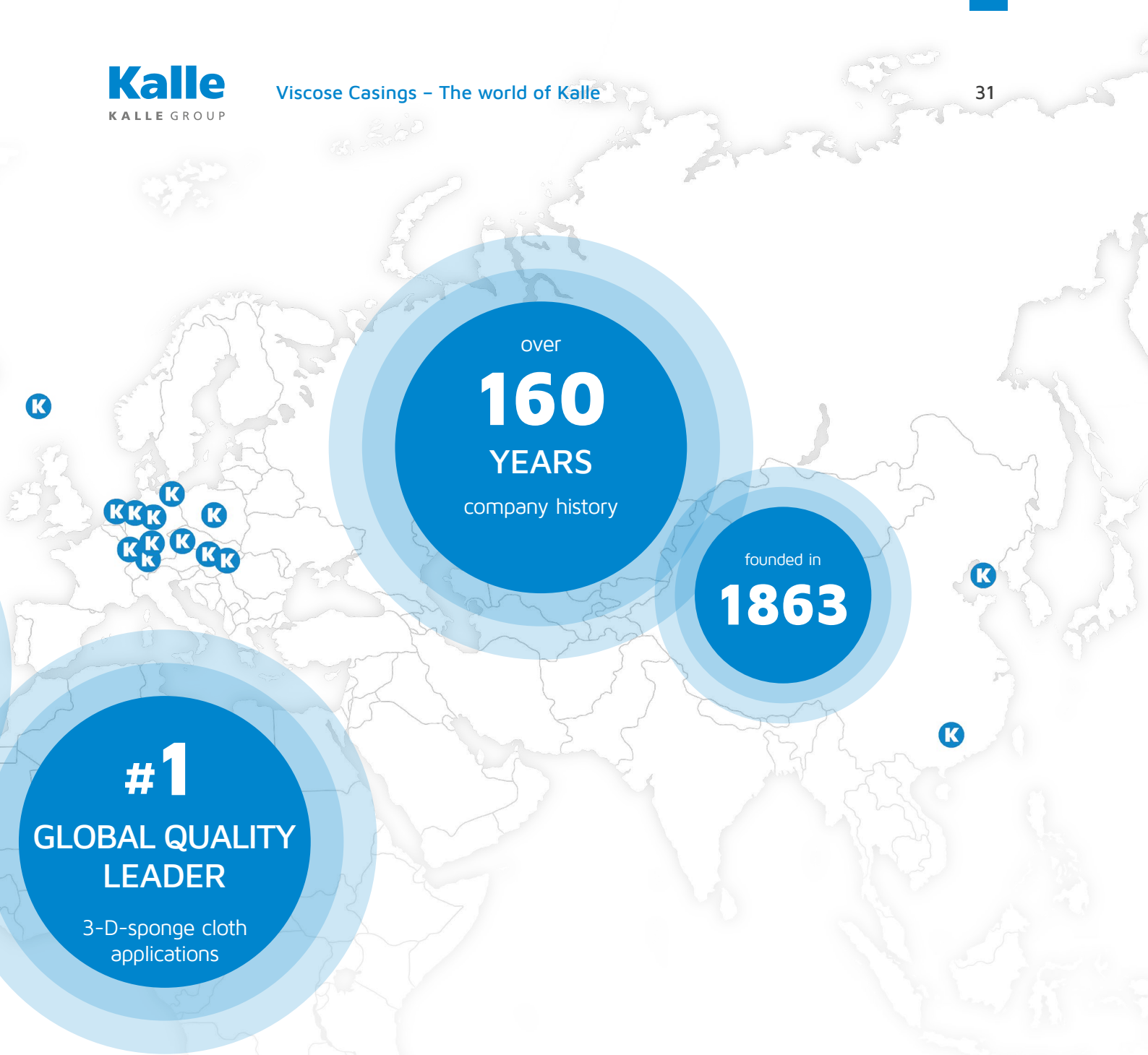
#1
GLOBAL LEADER
fibrous casings

> 220
PATENT REGISTRATIONS

> 2.000
CUSTOMERS

> 100
PRODUCTS

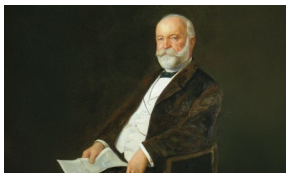
> 300 MILLION €
REVENUE IN 2024



A MULTITUDE OF APPLICATIONS ACROSS NUMEROUS SEGMENTS (EXCERPT)

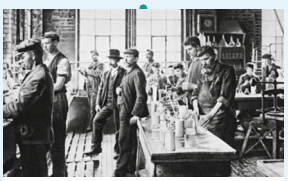
- Scalded Products
- Cheese Products
- Cooked Meat Products
- Cooked Sausage
- Pepperoni
- Raw Sausage
- Pet Food
- Vegan Products
- Wiener (Franks, Links)
- All-purpose cleaning wipes

1863



Kalle & Co. founded by Dr. Wilhelm Kalle

1907



Hoechst acquires majority interest in Kalle

1929

First seamless cellulose casing and launch of Nalo brand

1955

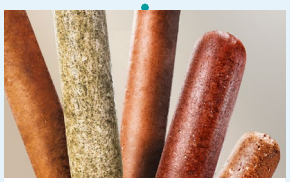
Start of sponge cloth production

2022

NewFoodSystems
Neue Lebensmittelsysteme

NewFoodSystems: Research on protein-based casings

14/15



Cooperation with international fast-food company and development of a Clean-Label Casing

2013

First spice-coated casing in shirred form

1963

First synthetic casing, Nalophan, made from polyester

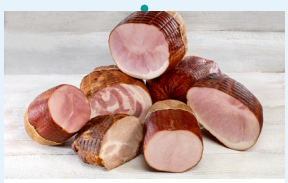
1990

Start of modern, polyamide-based polymer production

1995

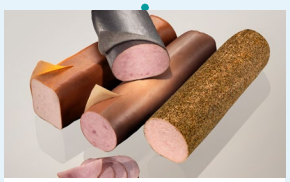
Spin-off of Kalle GmbH from Hoechst AG

2010



Acquisition of Jif-Pak, entry into netting segment

2005



Kalle begins producing and marketing Value-Added Casings

00/02

Acquisition of Oskuda and Texda, entry into textile casing segment

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Kalle

KALLE GROUP

PT PURYTEK TUNGGAL PRIMA

JAKARTA
Perkantoran Gunung Sahari Indah E-2
Jln. Gunung Sahari Raya 13 (Ancol)
Jakarta 14420, Indonesia
T +62 21 6459651 F +62 21 6405630

SURABAYA
Jln. Pucang Anom No. 62
Surabaya 60282, Indonesia
T +62 31 99443000 F +62 31 99443300

MEDAN
SEMARANG

Kalle GmbH

Rheingaustraße 190 – 196 | 65203 Wiesbaden | Germany | info@kallegroup.com | kallegroup.com

You can find us here:

April 2025