



# High-tenacity Yarn Types & Properties

Polyester • Polyamide • Rayon

Edition 2023

## Indorama Ventures: Our Vision – Mission – Value

### Vision

To be a world-class sustainable chemical company making great products for society.

### Mission

We commit to be a responsible industry leader leveraging on the excellence of our people, processes, and technologies to create value for our stakeholders.

### Value

- The customer is why we exist.
- Our people make the difference.
- We see change as an opportunity.
- Diversity is our strength.
- We are responsible.

## The Indorama Mobility Group at a glance



**1 billion USD revenue**  
**~ 4.500 employees**  
**9 countries**  
**16 manufacturing facilities**  
**7 Innovation centers**

■ = Yarn

## **The Indorama Mobility Business: Superior Yarns and Textiles for today and tomorrow**

It collectively owns decades of Industry knowledge and experience as well as the brand equity of each company accumulated over the years in the technical yarn and fabrics for Automotive, Tire and Industrial sectors. The Group's target end-use markets are Tire reinforcement, Airbags, Seatbelts, Mechanical Rubber Goods (MRG), Sewing Threads, Fabrics, Ropes and Cordage and Composites wherein it has built strong market positions over the years. The Group has now a unique portfolio of fibers, yarns, single-end cords and fabrics based on polyester, polyamide, rayon and aramid hybrid as well as the innovative product pipelines from the on-going R&D programs.

The Group is organized into three business segments, namely Tire, Automotive Safety and Functional Materials. Each business segment seeks to deliver best customer value with its unified go-to-market strategy, aligned global manufacturing assets and combined product portfolio.



## Committed towards a sustainable Future

### Vision:

To be a world-class sustainable chemical company making great products for society.

- Sustainable practices are our number one objective from Indorama Mobility Group (IMG).
- Focused on producing low carbon footprint in order to provide sustainable solutions for your business.

## Its collective Efforts have result in these four Decarbonisation Targets:



**GHG INTENSITY  
REDUCTION**



**ENERGY INTENSITY  
REDUCTION**



**RENEWABLE ELECTRICITY  
CONSUMPTION**



**WATER INTENSITY  
REDUCTION**

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### Scottsboro, AL, US

#### High-tenacity Polyester Yarns

Diolen® 80T

Diolen® 785

Diolen® 787

#### High-tenacity Polyamide 6.6 Yarns

Enka® Nylon 135HRT

Enka® Nylon 140HRT

Enka® Nylon 442HRT

Enka® Nylon 446HRT

Enka® Nylon 447HRT

## Queretaro, MX

#### High-tenacity Polyester Yarn

Polyester HDI T-785

Polyester HDI T-787

Polyester T-792

Polyester T-793

● **Europe**

**Longlaville, FR**

**High-tenacity Polyester Yarns**

Polyester 1H75

Polyester 1H95

Polyester 1W70S

Polyester 1X50

Polyester 1X53

Polyester 1X54 / 1X54+

Polyester A360

Polyester A360HT

Polyester A363HT

Polyester 1G70

Polyester 1W70

Polyester 1W73

Polyester 1W78

Polyester 1W78T

Polyester 1W79

Polyester PET HCR

**Obernburg, DE**

**High-tenacity Polyester Yarns**

Diolen® 54S

Diolen® 57T

Diolen® 61ST

Diolen® 64ST

Diolen® 80T

Diolen® 164S

Diolen® 170ST

Diolen® 370ST-FC

Diolen® 174S

Diolen® 174ST

Diolen® 175SLC

Diolen® 181T

Diolen® 775

**High-tenacity Polyamide 6.6 Yarns**

Enka® Nylon 140HRT

Enka® Nylon 142HRT

Enka® Nylon 154HRST

Enka® Nylon 433HRST

Enka® Nylon 434HRT

Enka® Nylon 442HRT

Enka® Nylon 444HRST

Enka® Nylon 444HRT

Enka® Nylon 446HRT

Enka® Nylon 447HRT

**High-tenacity Polyamide 4.6 Yarns**

Stanylenka® 460HRST

● **Europe**

**Senica, SK**

**High-tenacity Polyester Yarns**

Polyester 151

Polyester 153

Polyester 355T

Polyester 365ST

Polyester 370ST

Polyester 380T

Polyester 381T

Polyester 159

Polyester 259

Polyester 1H75

**Lovosice, CZ**

**High-tenacity Rayon Yarns**

**Viscord**

Viscord

Viscord FR

Viscord HT

 **Asia**

**Kaiping, CN**

**High-tenacity Polyester filament Yarn**

Polyester 1H75  
Polyester 1W70  
Polyester 1W80  
Polyester 1X50  
Polyester 1X55

Polyester T712  
Polyester 1W72  
Polyester 1Y86

**Pingdingshan, CN**

**High-tenacity Polyamide 6.6 Yarns**

Enka® Nylon 446HRT-10  
Enka® Nylon 447HRT-10

**Our 3 Business Segments**



## Broad Capabilities

### Business Segments: Tire & Automotive Safety, Functional Materials

| Region             | Business Segment: TIRE |         |       | Business Segment: AUTOMOTIVE SAFETY |              |                |                     |                     |
|--------------------|------------------------|---------|-------|-------------------------------------|--------------|----------------|---------------------|---------------------|
| Mobility Group     | PET                    | PA 6.6* | Rayon | Airbag Yarns                        | Airbag Yarns | Seatbelt Yarns | Sewing Thread Yarns | Sewing Thread Yarns |
| Sites              | PET                    | PA 6.6* | Rayon | PET                                 | PA 6.6       | PET            | PET                 | PA 6.6              |
| Scottsboro, AL, US |                        |         |       | ■                                   | ■            |                |                     | ■                   |
| Queretaro, MX      | ■                      |         |       |                                     |              |                |                     |                     |
| Longjumeau, FR     | ■                      |         |       |                                     |              |                |                     |                     |
| Obernburg, DE      |                        | ■       |       | ■                                   | ■            | ■              |                     | ■                   |
| Senica, SK         | ■                      |         |       |                                     |              | ■              |                     |                     |
| Lovosice, CZ       |                        |         | ■     |                                     |              |                |                     |                     |
| Pingdingshan, CN   |                        |         |       |                                     | ■            |                |                     |                     |
| Kaiping, CN        | ■                      |         |       |                                     |              | ■              | ■                   |                     |

| Region             | Business Segment: FUNCTIONAL MATERIALS |         |       |               |               |               |      |        |       |
|--------------------|--|---------|-------|---------------|---------------|---------------|------|--------|-------|
| Mobility Group     | MRG                                    | MRG     | MRG   | Broad Fabrics | Broad Fabrics | Broad Fabrics | RNTS | RNTS   | RNTS  |
| Sites              | PET                                    | PA 6.6* | Rayon | PET           | PA 6.6        | Rayon         | PET  | PA 6.6 | Rayon |
| Scottsboro, AL, US | ■                                      | ■       |       | ■             | ■             |               | ■    | ■      |       |
| Queretaro, MX      | ■                                      |         |       | ■             |               |               | ■    |        |       |
| Longjumeau, FR     | ■                                      |         |       | ■             |               |               | ■    |        |       |
| Obernburg, DE      | ■                                      | ■       |       | ■             | ■             |               | ■    | ■      |       |
| Senica, SK         | ■                                      |         |       | ■             |               |               | ■    |        |       |
| Lovosice, CZ       |  |         | ■     |               |               | ■             |      |        | ■     |
| Kaiping, CN        | ■                                      |         |       | ■             |               |               |      |        |       |

\* includes PA 4.6

PET = Polyester | PA = Polyamide | MRG = Mechanical Rubber Good | RNTS = Ropes, Nets, Tows and Strappings



Tire segment



Automotive Safety segment

## Physical Parameters

|  |   |
|--|---|
| <b>Linear density (LD)</b><br><i>dtex</i>        | The mass per unit length of an essentially linear structure (1 dtex = 1 g / 10.000 m)   |
| <b>Breaking force (BF)</b><br><i>N</i>           | The maximum force applied to a test specimen carried to rupture during a tensile test under specified conditions  |
| <b>Breaking tenacity (BT)</b><br><i>mN/tex</i>   | The breaking force divided by linear density  |
| <b>Elongation at break (EAB)</b><br>%            | The elongation of a test specimen produced by the breaking force  |
| <b>Elongation at specified force (EASF)</b><br>% | The elongation of a test specimen produced by the specified force   |
| <b>Hot air shrinkage (HAS)</b><br>%              | The decrease in length of a test specimen caused by a treatment in hot air under specified temperature and time, expressed as a percentage of the length of the untreated test specimen. The lengths are measured (under specified pretension) before and during treatment. |

## Conversion Table

(Frequently used SI and American units)

|                       | Unit     |                     |           |
|-----------------------|----------|---------------------|-----------|
| <b>Breaking force</b> | 1 N      | 0.2248 Pounds (lbs) | 0.102 kgf |
| <b>Linear density</b> | 1 dtex   | 0.90 den            |           |
| <b>Tenacity</b>       | 1 mN/Tex | 0.01133 g/d         |           |
| <b>Dimension</b>      | 1 mm     | 0.03937 inches      |           |
| <b>Twist</b>          | 1 tpm    | 0.0254 tpi          |           |



## Abbreviations

### Used in Yarn Types

|              |                                    |
|--------------|------------------------------------|
| <b>AA</b>    | Adhesive Activated                 |
| <b>BF</b>    | Breaking Force                     |
| <b>BT</b>    | Breaking Tenacity                  |
| <b>DPF</b>   | Denier per Filament                |
| <b>EAB</b>   | Elongination at Break              |
| <b>EASF</b>  | Elongination at Specified Force    |
| <b>EASL</b>  | Elongination at Specified Load     |
| <b>FC</b>    | Food Contact                       |
| <b>FR</b>    | Flame Retardant                    |
| <b>HA</b>    | Adhesive Activated - High Adhesion |
| <b>HAS</b>   | Hot Air Shrinkage                  |
| <b>HD</b>    | High Denier Industrial yarn        |
| <b>HDPF</b>  | High Denier per Filament           |
| <b>HR</b>    | Heat Resistant                     |
| <b>HT</b>    | High Tenacity                      |
| <b>HT-HS</b> | High Tenacity - High Shrinkage     |
| <b>HT-LS</b> | High Tenacity - Low Shrinkage      |
| <b>LD</b>    | Linear Density                     |
| <b>LDI</b>   | Low Denier Industrial yarn         |
| <b>LDPF</b>  | Low Denier per Filament            |
| <b>NA</b>    | Non-Adhesive Activated             |
| <b>S</b>     | Stabilized                         |
| <b>SLC</b>   | Super Low Capillarity              |
| <b>TS</b>    | Thermal Shrinkage                  |

# SCOTTSBORO



## Contact

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Scottsboro Inc.**

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AL 35769

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## Certifications

- ISO 9001: 2015
- ISO 14001: 2015
- ISO 45001: 2018

Click [here](#) for all certificates

## Diolen® 80T

● HT ● Non-Adhesive Activated (NA)

| Linear density        | Number of filaments | Linear density | Breaking force | Breaking tenacity | Elongation at break | EASF (xN) | HAS 2 min. at 180°C |
|-----------------------|---------------------|----------------|----------------|-------------------|---------------------|-----------|---------------------|
| <i>(nominal dtex)</i> | <i>(nominal)</i>    | <i>dtex</i>    | <i>N</i>       | <i>mN/tex</i>     | <i>%</i>            | <i>%</i>  | <i>%</i>            |
| 470                   | 96                  | 470            | 37.7           | -                 | 18.5                | -         | 2.5                 |
| 550                   | 144                 | 550            | 43.5           | -                 | 20.5                | -         | 2.0                 |

Tensile testing is performed at a yarn twist of Z60 t/m

HAS – Hot-air shrinkage testing is performed with a pretension of 5 mN/tex

### Twisting and Make-up

| Linear density        | Number of filaments | Twist      | Package weight | Tube dimension L/Ø | Spool Ø   | Spools per pallet | Pallet net weight |
|-----------------------|---------------------|------------|----------------|--------------------|-----------|-------------------|-------------------|
| <i>(nominal dtex)</i> | <i>(nominal)</i>    | <i>t/m</i> | <i>kg</i>      | <i>mm</i>          | <i>mm</i> | <i>-</i>          | <i>kg</i>         |
| 470                   | 96                  | 0          | -              | -                  | -         | -                 | -                 |
| 550                   | 144                 | 0          | -              | -                  | -         | -                 | -                 |

Details based on full spools

|                                 |   |
|---------------------------------|---|
| <b>Package Type</b>             | Cylindrical bobbins                         |
| <b>Pallet dimension (H×L×W)</b> | 14 × 100 × 120 cm (5.5" x 39" x 47"; empty) |
| <b>Special remarks</b>          | Also available on beams.                    |
| <b>Applications</b>             | Airbags                                     |

## Diolen® 785

● HT ● Non-Adhesive Activated (NA)

| Linear density<br><i>(nominal dtex)</i> | Number of filaments<br><i>(nominal)</i> | Linear density<br><i>dtex</i> | Breaking force<br><i>N</i> | Breaking tenacity<br><i>mN/tex</i> | Elongation at break<br><i>%</i> | EASF (xN)<br><i>%</i> | HAS 2 min. at 180°C<br><i>%</i> |
|---|---|-------------------------------|----------------------------|------------------------------------|---------------------------------|-----------------------|---------------------------------|
| 940                                     | 140                                     | 940                           | 73.0                       | -                                  | 13.0                            | -                     | 6.0                             |
| 1100                                    | 140                                     | 1100                          | 88.0                       | -                                  | 13.0                            | -                     | 6.0                             |
| 1440                                    | 140                                     | 1440                          | 113.0                      | -                                  | 13.0                            | -                     | 6.0                             |
| 1670                                    | 192                                     | 1670                          | 134.0                      | -                                  | 14.0                            | -                     | 7.0                             |

Tensile testing is performed at a yarn twist of Z60 t/m

HAS – Hot-air shrinkage testing is performed with a pretension of 5 mN/tex

### Twisting and Make-up

| Linear density<br><i>(nominal dtex)</i> | Number of filaments<br><i>(nominal)</i> | Twist<br><i>t/m</i> | Package weight<br><i>kg</i> | Tube dimension L/Ø<br><i>mm</i> | Spool Ø<br><i>mm</i> | Spools per pallet<br><i>-</i> | Pallet net weight<br><i>kg</i> |
|---|---|---------------------|-----------------------------|---------------------------------|----------------------|-------------------------------|--------------------------------|
| 900                                     | 140                                     | 0                   | -                           | -                               | -                    | -                             | -                              |
| 1100                                    | 140                                     | 0                   | -                           | -                               | -                    | -                             | -                              |
| 1440                                    | 140                                     | 0                   | -                           | -                               | -                    | -                             | -                              |
| 1670                                    | 192                                     | 0                   | -                           | -                               | -                    | -                             | -                              |

Details based on full spools

|                                 |   |
|---------------------------------|---|
| <b>Package Type</b>             | Cylindrical bobbins                         |
| <b>Pallet dimension (H×L×W)</b> | 14 × 100 × 120 cm (5.5" × 39" × 47"; empty) |
| <b>Special remarks</b>          | Also available on beams.                    |
| <b>Applications</b>             | Airbags                                     |

## Diolen® 787

● HT ● Non-Adhesive Activated (NA) ● Micro dull

| Linear density<br><i>(nominal dtex)</i> | Number of filaments<br><i>(nominal)</i> | Linear density<br><i>dtex</i> | Breaking force<br><i>N</i> | Breaking tenacity<br><i>mN/tex</i> | Elongation at break<br><i>%</i> | EASF (xN)<br><i>%</i> | HAS 2 min. at 180°C<br><i>%</i> |
|---|---|-------------------------------|----------------------------|------------------------------------|---------------------------------|-----------------------|---------------------------------|
| 550                                     | 96                                      | 550                           | 39.0                       | -                                  | 24.0                            | -                     | 2.5                             |
| 940                                     | 140                                     | 940                           | 66.0                       | -                                  | 24.0                            | -                     | 3.0                             |
| 1100                                    | 140                                     | 1100                          | 76.5                       | -                                  | 24.0                            | -                     | 3.0                             |
| 1440                                    | 140                                     | 1440                          | 100.0                      | -                                  | 24.0                            | -                     | 3.0                             |

Tensile testing is performed at a yarn twist of Z60 t/m

HAS – Hot-air shrinkage testing is performed with a pretension of 5 mN/tex

## Twisting and Make-up

| Linear density<br><i>(nominal dtex)</i> | Number of filaments<br><i>(nominal)</i> | Twist<br><i>t/m</i> | Package weight<br><i>kg</i> | Tube dimension L/Ø<br><i>mm</i> | Spool Ø<br><i>mm</i> | Spools per pallet<br><i>-</i> | Pallet net weight<br><i>kg</i> |
|---|---|---------------------|-----------------------------|---------------------------------|----------------------|-------------------------------|--------------------------------|
| 550                                     | 96                                      | 0                   | -                           | -                               | -                    | -                             | -                              |
| 940                                     | 140                                     | 0                   | -                           | -                               | -                    | -                             | -                              |
| 1100                                    | 140                                     | 0                   | -                           | -                               | -                    | -                             | -                              |
| 1440                                    | 140                                     | 0                   | -                           | -                               | -                    | -                             | -                              |

Details based on full spools

|                                 |   |
|---------------------------------|---|
| <b>Package Type</b>             | Cylindrical bobbins                         |
| <b>Pallet dimension (H×L×W)</b> | 14 × 100 × 120 cm (5.5" × 39" × 47"; empty) |
| <b>Special remarks</b>          | Also available on beams.                    |
| <b>Applications</b>             | Airbags                                     |

## Enka® Nylon 135HRT

| Linear density<br>(nominal dtex) | Number of filaments<br>(nominal) | Linear density<br>dtex | Breaking force<br>N | Breaking tenacity<br>mN/tex | Elongation at break<br>% | EASF (xN)<br>% | HAS 2 min. at 180°C<br>% |
|----------------------------------|----------------------------------|------------------------|---------------------|-----------------------------|--------------------------|----------------|--------------------------|
| 940                              | 144                              | 940                    | 78.0                | -                           | 18.0                     | -              | 6.0                      |

Tensile testing is performed at a yarn twist of Z60 t/m

HAS – Hot-air shrinkage testing is performed with a pretension of 5 mN/tex

### Twisting and Make-up

| Linear density<br>(nominal dtex) | Number of filaments<br>(nominal) | Twist<br>t/m | Package weight<br>kg | Tube dimension<br>L/Ø<br>mm | Spool Ø<br>mm | Spools per pallet<br>- | Pallet net weight<br>kg |
|----------------------------------|----------------------------------|--------------|----------------------|-----------------------------|---------------|------------------------|-------------------------|
| 940                              | 144                              | 0            | -                    | -                           | -             | -                      | -                       |

Details based on full spools

|                                 |   |
|---------------------------------|---|
| <b>Package Type</b>             | Cylindrical bobbins                         |
| <b>Pallet dimension (H×L×W)</b> | 14 × 100 × 120 cm (5.5" x 39" x 47"; empty) |
| <b>Special remarks</b>          | Also available on beams.                    |
| <b>Applications</b>             | Airbags                                     |

## Enka® Nylon 140HRT

- Medium shrinkage

| Linear density<br>(nominal dtex) | Number of filaments<br>(nominal) | Linear density<br>dtex | Breaking force<br>N | Breaking tenacity<br>mN/tex | Elongation at break<br>% | EASF (xN)<br>% | HAS 2 min. at 180°C<br>% |
|----------------------------------|----------------------------------|------------------------|---------------------|-----------------------------|--------------------------|----------------|--------------------------|
| 940                              | 144                              | 940                    | 83.0                | -                           | 18.0                     | -              | 7.0                      |

Tensile testing is performed at a yarn twist of Z60 t/m

HAS – Hot-air shrinkage testing is performed with a pretension of 5 mN/tex

### Twisting and Make-up

| Linear density<br>(nominal dtex) | Number of filaments<br>(nominal) | Twist<br>t/m | Package weight<br>kg | Tube dimension<br>L/Ø<br>mm | Spool Ø<br>mm | Spools per pallet<br>- | Pallet net weight<br>kg |
|----------------------------------|----------------------------------|--------------|----------------------|-----------------------------|---------------|------------------------|-------------------------|
| 940                              | 144                              | 0            | -                    | -                           | -             | -                      | -                       |

Details based on full spools

|                                 |   |
|---------------------------------|---|
| <b>Package Type</b>             | Cylindrical bobbins                         |
| <b>Pallet dimension (H×L×W)</b> | 14 × 100 × 120 cm (5.5" × 39" × 47"; empty) |
| <b>Special remarks</b>          | Also available on beams.                    |
| <b>Applications</b>             | Airbags                                     |



## Enka® Nylon 442HRT

- Medium shrinkage

| Linear density<br>(nominal dtex) | Number of filaments<br>(nominal) | Linear density<br>dtex | Breaking force<br>N | Breaking tenacity<br>mN/tex | Elongation at break<br>% | EASF (xN)<br>% | HAS 2 min. at 180°C<br>% |
|----------------------------------|----------------------------------|------------------------|---------------------|-----------------------------|--------------------------|----------------|--------------------------|
| 470                              | 72                               | 470                    | 38.0                | -                           | 21.0                     | -              | 6.5                      |

Tensile testing is performed at a yarn twist of Z60 t/m

HAS – Hot-air shrinkage testing is performed with a pretension of 5 mN/tex

### Twisting and Make-up

| Linear density<br>(nominal dtex) | Number of filaments<br>(nominal) | Twist<br>t/m | Package weight<br>kg | Tube dimension<br>L/Ø<br>mm | Spool Ø<br>mm | Spools per pallet<br>- | Pallet net weight<br>kg |
|----------------------------------|----------------------------------|--------------|----------------------|-----------------------------|---------------|------------------------|-------------------------|
| 470                              | 72                               | 0            | -                    | -                           | -             | -                      | -                       |

Details based on full spools

|                                 |   |
|---------------------------------|---|
| <b>Package Type</b>             | Cylindrical bobbins                         |
| <b>Pallet dimension (H×L×W)</b> | 14 × 100 × 120 cm (5.5" × 39" × 47"; empty) |
| <b>Special remarks</b>          | Also available on beams.                    |
| <b>Applications</b>             | Airbags                                     |

## Enka® Nylon 446HRT

- Medium shrinkage

| Linear density<br>(nominal dtex) | Number of filaments<br>(nominal) | Linear density<br>dtex | Breaking force<br>N | Breaking tenacity<br>mN/tex | Elongation at Break<br>% | EASF (xN)<br>% | HAS 2 min. at 180°C<br>% |
|----------------------------------|----------------------------------|------------------------|---------------------|-----------------------------|--------------------------|----------------|--------------------------|
| 350                              | 144                              | 350                    | 28.0                | -                           | 22.9                     | -              | 7.0                      |
| 470                              | 144                              | 470                    | 40.0                | -                           | 22.0                     | -              | 6.5                      |
| 580                              | 144                              | 580                    | 47.0                | -                           | 23.0                     | -              | 6.0                      |
| 700                              | 108                              | 700                    | 58.0                | -                           | 22.5                     | -              | 5.7                      |
| 700                              | 108                              | 700                    | 58.0                | -                           | 20.0                     | -              | 5.7                      |

Tensile testing is performed at a yarn twist of Z60 t/m

HAS – Hot-air shrinkage testing is performed with a pretension of 5 mN/tex

### Twisting and Make-up

| Linear density<br>(nominal dtex) | Number of filaments<br>(nominal) | Twist<br>t/m | Package weight/diam<br>kg / mm | Tube dimension<br>L/Ø<br>mm | Spool Ø<br>mm | Packagees per pallet<br>- | Pallet net weight<br>kg |
|----------------------------------|----------------------------------|--------------|--------------------------------|-----------------------------|---------------|---------------------------|-------------------------|
| 350                              | 144                              | 0            | -                              | -                           | -             | -                         | -                       |
| 470                              | 144                              | 0            | -                              | -                           | -             | -                         | -                       |
| 580                              | 144                              | 0            | -                              | -                           | -             | -                         | -                       |
| 700                              | 108                              | 0            | -                              | -                           | -             | -                         | -                       |
| 700                              | 108                              | 0            | -                              | -                           | -             | -                         | -                       |

Details based on full spools

|                                 |   |
|---------------------------------|---|
| <b>Package Type</b>             | Cylindrical bobbins                         |
| <b>Pallet dimension (H×L×W)</b> | 14 × 100 × 120 cm (5.5" x 39" x 47"; empty) |
| <b>Special remarks</b>          | Also available on beams.                    |
| <b>Applications</b>             | Airbags                                     |

## Enka® Nylon 447HRT

| Linear density<br>(nominal dtex) | Number of filaments<br>(nominal) | Linear density<br>dtex | Breaking force<br>N | Breaking tenacity<br>mN/tex | Elongation at break<br>% | EASF (xN)<br>% | HAS 2 min. at 180°C<br>% |
|----------------------------------|----------------------------------|------------------------|---------------------|-----------------------------|--------------------------|----------------|--------------------------|
| 470                              | 144                              | 470                    | 36.5                | -                           | 23.0                     | -              | 7.5                      |
| 530                              | 144                              | 530                    | 36.5                | -                           | 27.5                     | -              | 7.5                      |
| 1060                             | 144                              | 1060                   | 70.2                | -                           | 22.8                     | -              | 7.6                      |

Tensile testing is performed at a yarn twist of Z60 t/m

HAS – Hot-air shrinkage testing is performed with a pretension of 5 mN/tex

### Twisting and Make-up

| Linear density<br>(nominal dtex) | Number of filaments<br>(nominal) | Twist<br>t/m | Package weight<br>kg | Tube dimension<br>L/Ø<br>mm | Spool Ø<br>mm | Spools per pallet<br>– | Pallet net weight<br>kg |
|----------------------------------|----------------------------------|--------------|----------------------|-----------------------------|---------------|------------------------|-------------------------|
| 470                              | 144                              | 0            | -                    | -                           | -             | -                      | -                       |
| 530                              | 144                              | 0            | -                    | -                           | -             | -                      | -                       |
| 1060                             | 144                              | 0            | -                    | -                           | -             | -                      | -                       |

Details based on full spools

|                                 |   |
|---------------------------------|---|
| <b>Package Type</b>             | Cylindrical bobbins                         |
| <b>Pallet dimension (H×L×W)</b> | 14 × 100 × 120 cm (5.5" × 39" × 47"; empty) |
| <b>Special remarks</b>          | Also available on beams.                    |
| <b>Applications</b>             | Airbags                                     |

# QUERÉTARO



## Contact

**Performance Fibers  
Operations Mexico,  
S. de R.L. de C.V.**

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## Certifications

- ISO 9001: 2015

Click [here](#) for all certificates

## Polyester HDI T-785

● HMLS ● Semi dull

| Linear density<br><i>(nominal dtex)</i> | Number of filaments<br><i>(nominal)</i> | Linear density<br><i>dtex</i> | Breaking force<br><i>N</i> | Breaking tenacity<br><i>mN/tex</i> | Elongation at Break<br><i>%</i> | EASL (xN)<br><i>%</i> | TS 2 min. at 177°C<br><i>%</i> |
|---|---|-------------------------------|----------------------------|------------------------------------|---------------------------------|-----------------------|--------------------------------|
| 1100                                    | 140                                     | 1144                          | 89.8                       | 785                                | 14.0                            | -                     | 9.5                            |
| 2890                                    | 384                                     | 2944                          | 232.6                      | 790                                | 13.2                            | -                     | 13.2                           |

Tensile testing is performed at a yarn twist of Z60 t/m

TS – Thermal shrinkage testing is performed with a pretension of 0.05 gpd

### Twisting and Make-up

| Linear density<br><i>(nominal dtex)</i> | Number of filaments<br><i>(nominal)</i> | Twist<br><i>t/m</i> | Package weight/diam<br><i>kg / mm</i> | Tube dimension L/Ø<br><i>mm</i> | Spool Ø<br><i>mm</i> | Packagees per pallet<br><i>-</i> | Pallet net weight<br><i>kg</i> |
|---|---|---------------------|---------------------------------------|---------------------------------|----------------------|----------------------------------|--------------------------------|
| 1100                                    | 140                                     | 0                   | 13.5 / 355                            | 230 / 94                        | -                    | 48                               | -                              |
| 2890                                    | 384                                     | 0                   | 13.5 / 355                            | 230 / 94                        | -                    | 48                               | -                              |

Details based on full spools

|                                 |                                |
|---------------------------------|--------------------------------|
| <b>Package Type</b>             | Cylindrical bobbins            |
| <b>Pallet dimension (H×L×W)</b> | on request                     |
| <b>Special remarks</b>          | Other twist levels on request. |
| <b>Applications</b>             | Tire reinforcements            |

## Polyester HDI T-787

● HMLS ● Semi dull

| Linear density        | Number of filaments | Linear density | Breaking force | Breaking tenacity | Elongation at Break | EASL (xN) | TS 2 min. at 177°C |
|-----------------------|---------------------|----------------|----------------|-------------------|---------------------|-----------|--------------------|
| <i>(nominal dtex)</i> | <i>(nominal)</i>    | <i>dtex</i>    | <i>N</i>       | <i>mN/tex</i>     | <i>%</i>            | <i>%</i>  | <i>%</i>           |
| 550                   | 70                  | 555            | 38.2           | 688               | 27.0                | -         | 7.0                |
| 940                   | 140                 | 933            | 64.1           | 687               | 26.0                | -         | 7.3                |
| 1100                  | 140                 | 1084           | 76.5           | 706               | 26.0                | -         | 8.4                |
| 1440                  | 192                 | 1444           | 99.4           | 688               | 27.5                | -         | 6.8                |
| 2200                  | 280                 | 2222           | 153.0          | 689               | 27.5                | -         | 6.8                |

Tensile testing is performed at a yarn twist of Z60 t/m

TS – Terminal shrinkage testing is performed with a pretension of 0.05 gpd

### Twisting and Make-up

| Linear density        | Number of filaments | Twist      | Package weight/diam | Tube dimension L/Ø | Spool Ø   | Packagees per pallet | Pallet net weight |
|-----------------------|---------------------|------------|---------------------|--------------------|-----------|----------------------|-------------------|
| <i>(nominal dtex)</i> | <i>(nominal)</i>    | <i>t/m</i> | <i>kg / mm</i>      | <i>mm</i>          | <i>mm</i> | <i>-</i>             | <i>kg</i>         |
| 550                   | 70                  | 0          | 13.5 / 355          | 230 / 94           | -         | 48                   | -                 |
| 940                   | 140                 | 0          | 13.5 / 355          | 230 / 94           | -         | 48                   | -                 |
| 1100                  | 140                 | 0          | 13.5 / 355          | 230 / 94           | -         | 48                   | -                 |
| 1440                  | 192                 | 0          | 13.5 / 355          | 230 / 94           | -         | 48                   | -                 |
| 2200                  | 280                 | 0          | 13.5 / 355          | 230 / 94           | -         | 48                   | -                 |

Details based on full spools

Package Type | Cylindrical bobbins

Pallet dimension (H×L×W) | on request

Special remarks | Other twist levels on request.

Applications | Tire reinforcements

## Polyester T-792

- HMLS
- Non-Adhesive Activated (NA)
- Semi dull

| Linear density        | Number of filaments | Linear density | Breaking force | Breaking tenacity | Elongation at Break | EASL (xN) | TS 2 min. at 177°C |
|-----------------------|---------------------|----------------|----------------|-------------------|---------------------|-----------|--------------------|
| <i>(nominal dtex)</i> | <i>(nominal)</i>    | <i>dtex</i>    | <i>N</i>       | <i>mN/tex</i>     | <i>%</i>            | <i>%</i>  | <i>%</i>           |
| <b>1100</b>           | 328                 | 1120           | 78.8           | 703               | -                   | -         | 7.0                |
| <b>1440</b>           | 432                 | 1457           | 102.7          | 705               | -                   | -         | 7.3                |
| <b>1670</b>           | 492                 | 1681           | 118.3          | 704               | -                   | -         | 8.4                |
| <b>2200</b>           | 492                 | 2235           | 153.5          | 687               | -                   | -         | 6.8                |

Tensile testing is performed at a yarn twist of Z60 t/m

TS – Terminal shrinkage testing is performed with a pretension of 0.05 gpd

### Twisting and Make-up

| Linear density        | Number of filaments | Twist      | Package weight/diam | Tube dimension L/Ø | Spool Ø   | Packagees per pallet | Pallet net weight |
|-----------------------|---------------------|------------|---------------------|--------------------|-----------|----------------------|-------------------|
| <i>(nominal dtex)</i> | <i>(nominal)</i>    | <i>t/m</i> | <i>kg / mm</i>      | <i>mm</i>          | <i>mm</i> | <i>-</i>             | <i>kg</i>         |
| <b>1100</b>           | 328                 | 0          | 10.8 / 284          | 230 / 94           | -         | 64                   | -                 |
| <b>1440</b>           | 432                 | 0          | 10.5 / 278          | 230 / 94           | -         | 64                   | -                 |
| <b>1670</b>           | 492                 | 0          | 11.4 / 258          | 300 / 94           | -         | 60                   | -                 |
| <b>2200</b>           | 492                 | 0          | 11.4 / 258          | 300 / 94           | -         | 60                   | -                 |

Details based on full spools

|                                 |                                |
|---------------------------------|--------------------------------|
| <b>Package Type</b>             | Cylindrical bobbins            |
| <b>Pallet dimension (H×L×W)</b> | on request                     |
| <b>Special remarks</b>          | Other twist levels on request. |
| <b>Applications</b>             | Tire reinforcements            |



## Polyester T-793

● HMLS ● Adhesive Activated (AA) ● Semi dull

| Linear density        | Number of filaments | Linear density | Breaking force | Breaking tenacity | Elongation at Break | EASL (xN) | TS 2 min. at 177°C |
|-----------------------|---------------------|----------------|----------------|-------------------|---------------------|-----------|--------------------|
| <i>(nominal dtex)</i> | <i>(nominal)</i>    | <i>dtex</i>    | <i>N</i>       | <i>mN/tex</i>     | <i>%</i>            | <i>%</i>  | <i>%</i>           |
| 1100                  | 328                 | 1120           | 78.8           | 703               | -                   | -         | 7.3                |

Tensile testing is performed at a yarn twist of Z60 t/m

TS – Thermal shrinkage testing is performed with a pretension of 0.05 gpd

## Twisting and Make-up

| Linear density        | Number of filaments | Twist      | Package weight/diam | Tube dimension L/Ø | Spool Ø   | Packagees per pallet | Pallet net weight |
|-----------------------|---------------------|------------|---------------------|--------------------|-----------|----------------------|-------------------|
| <i>(nominal dtex)</i> | <i>(nominal)</i>    | <i>t/m</i> | <i>kg / mm</i>      | <i>mm</i>          | <i>mm</i> | <i>-</i>             | <i>kg</i>         |
| 1100                  | 328                 | 0          | 11.4 / 258          | 300 / 94           | -         | 60                   | -                 |

Details based on full spools

|                                 |                                |
|---------------------------------|--------------------------------|
| <b>Package Type</b>             | Cylindrical bobbins            |
| <b>Pallet dimension (H×L×W)</b> | on request                     |
| <b>Special remarks</b>          | Other twist levels on request. |
| <b>Applications</b>             | Tire reinforcements            |

# LONGLAVILLE



## Contact

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## Certifications

- ISO 9001: 2015
- ISO 14001: 2015

Click [here](#) for all certificates

## Polyester 1H75

● HMLS ● Non-Adhesive Activated (NA) ● High tenacity

| Linear density        | Number of filaments | DPF | Breaking force | Breaking tenacity | Ultimate Elongation | EASF (xN) | TS 2 min. at 177°C |
|-----------------------|---------------------|-----|----------------|-------------------|---------------------|-----------|--------------------|
| <i>(nominal dtex)</i> | <i>(nominal)</i>    |     | <i>N</i>       | <i>mN/tex</i>     | <i>%</i>            | <i>%</i>  | <i>%</i>           |
| 1100 (D)              | -                   | -   | 83.3           | 776               | -                   | 5.2 (45N) | 3.5                |
| 1440 (D)              | -                   | -   | 112.0          | 776               | 11.4                | 6.1 (70N) | 3.8                |
| 1670 (D)              | -                   | -   | 130.0          | 776               | 10.8                | 5.5 (70N) | 3.8                |
| 2200                  | 384                 | 5.7 | 176.0          | 776               | 11.2                | 4.5 (70N) | 3.8                |
| 3340 (D)              | -                   | -   | 262.0          | 776               | -                   | 3.2 (70N) | 3.0                |

Tensile testing is performed at a yarn twist of Z60 t/m

TS – Terminal shrinkage testing is performed with a pretension of 0.05 gpd / D = under development

## Twisting and Make-up

| Linear density        | Number of filaments | Twist      | Package weight | Tube dimension L/Ø | Spool Ø   | Spools per pallet | Pallet net weight |
|-----------------------|---------------------|------------|----------------|--------------------|-----------|-------------------|-------------------|
| <i>(nominal dtex)</i> | <i>(nominal)</i>    | <i>t/m</i> | <i>kg</i>      | <i>mm</i>          | <i>mm</i> | <i>-</i>          | <i>kg</i>         |
| 1100 (D)              | -                   | 0          | -              | -                  | -         | -                 | -                 |
| 1440 (D)              | -                   | 0          | -              | -                  | -         | -                 | -                 |
| 1670 (D)              | -                   | 0          | -              | -                  | -         | -                 | -                 |
| 2200                  | 384                 | 0          | -              | -                  | -         | -                 | -                 |
| 3340 (D)              | -                   | 0          | -              | -                  | -         | -                 | -                 |

Details based on full spools / D = under development

|                                 |  |
|---------------------------------|--|
| <b>Package Type</b>             | Cylindrical bobbins  |
| <b>Pallet dimension (H×L×W)</b> | 105 × 120 × 112 cm   |
| <b>Special remarks</b>          | All yarn styles can be produced with or without adhesive activation. |
| <b>Applications</b>             | Tire reinforcements  |

## Polyester 1H95

- HMLS
- Non-Adhesive Activated (NA)
- Super High tenacity

| Linear density<br><i>(nominal dtex)</i> | Number of filaments<br><i>(nominal)</i> | DPF | Breaking force<br><i>N</i> | Breaking tenacity<br><i>mN/tex</i> | Ultimate Elongation<br><i>%</i> | EASF (xN)<br><i>%</i> | TS 2 min. at 177°C<br><i>%</i> |
|---|---|-----|----------------------------|------------------------------------|---------------------------------|-----------------------|--------------------------------|
| 1100 (D)                                | -                                       | -   | 95.0                       | 847                                | -                               | 5.2 (45N)             | 4.0                            |

Tensile testing is performed at a yarn twist of Z60 t/m

TS – Thermal shrinkage testing is performed with a pretension of 0.05 gpd / D = under development

## Twisting and Make-up

| Linear density<br><i>(nominal dtex)</i> | Number of filaments<br><i>(nominal)</i> | Twist<br><i>t/m</i> | Package weight<br><i>kg</i> | Tube dimension L/Ø<br><i>mm</i> | Spool Ø<br><i>mm</i> | Spools per pallet<br><i>-</i> | Pallet net weight<br><i>kg</i> |
|---|---|---------------------|-----------------------------|---------------------------------|----------------------|-------------------------------|--------------------------------|
| 1000 (D)                                | -                                       | 0                   | -                           | -                               | -                    | -                             | -                              |

Details based on full spools / D = under development

|                                 |  |
|---------------------------------|--|
| <b>Package Type</b>             | Cylindrical bobbins  |
| <b>Pallet dimension (H×L×W)</b> | 105 × 120 × 112 cm   |
| <b>Special remarks</b>          | All yarn styles can be produced with or without adhesive activation. |
| <b>Applications</b>             | Tire reinforcements  |

## Polyester 1W70S

● HMLS ● Non-Adhesive Activated (NA) ● Super High tenacity

| Linear density<br><i>(nominal dtex)</i> | Number of filaments<br><i>(nominal)</i> | DPF | Breaking force<br><i>N</i> | Breaking tenacity<br><i>mN/tex</i> | Ultimate Elongation<br><i>%</i> | EASF (xN)<br><i>%</i> | TS 2 min. at 177°C<br><i>%</i> |
|---|---|-----|----------------------------|------------------------------------|---------------------------------|-----------------------|--------------------------------|
| 1100                                    | 192                                     | 5.7 | 96.0                       | 856                                | 11.5                            | -                     | -                              |

Tensile testing is performed at a yarn twist of Z60 t/m

TS – Terminal shrinkage testing is performed with a pretension of 0.05 gpd

## Twisting and Make-up

| Linear density<br><i>(nominal dtex)</i> | Number of filaments<br><i>(nominal)</i> | Twist<br><i>t/m</i> | Package weight<br><i>kg</i> | Tube dimension<br>L/Ø<br><i>mm</i> | Spool Ø<br><i>mm</i> | Spools per pallet<br><i>-</i> | Pallet net weight<br><i>kg</i> |
|---|---|---------------------|-----------------------------|------------------------------------|----------------------|-------------------------------|--------------------------------|
| 1100                                    | 192                                     | 0                   | -                           | -                                  | -                    | -                             | -                              |

Details based on full spools

|                                 |  |
|---------------------------------|--|
| <b>Package Type</b>             | Cylindrical bobbins  |
| <b>Pallet dimension (H×L×W)</b> | 105 × 120 × 112 cm   |
| <b>Special remarks</b>          | All yarn styles can be produced with or without adhesive activation. |
| <b>Applications</b>             | Engineered reinforcements  |

## Polyester 1X50

- HMLS
- Non-Adhesive Activated (NA)

| Linear density        | Number of filaments | DPF | Breaking force | Breaking tenacity | Ultimate Elongation | EASF (xN)           | TS 2 min. at 177°C |
|-----------------------|---------------------|-----|----------------|-------------------|---------------------|---------------------|--------------------|
| <i>(nominal dtex)</i> | <i>(nominal)</i>    |     | <i>N</i>       | <i>mN/tex</i>     | <i>%</i>            | <i>%</i>            | <i>%</i>           |
| <b>1100</b>           | 300                 | 3.7 | 76.5           | 685               | -                   | 5.2 (45N)           | 3.0                |
| <b>1440</b>           | 391                 | 3.7 | 98.1           | 678               | -                   | 4.3 (45N) 6.6 (70N) | 2.8                |
| <b>1670</b>           | 446                 | 3.7 | 118.1          | 704               | 11.2                | 3.9 (45N)           | 3.0                |
| <b>2200</b>           | 600                 | 3.7 | 156.1          | 693               | -                   | 2.8 (45N) 4.7 (70N) | 2.8                |
| <b>3340</b>           | 892                 | 3.7 | 235.0          | 696               | -                   | 3.3 (70N)           | 3.0                |

Tensile testing is performed at a yarn twist of Z60 t/m

TS – Terminal shrinkage testing is performed with a pretension of 0.05 gpd

### Twisting and Make-up

| Linear density        | Number of filaments | Twist      | Package weight | Tube dimension L/Ø | Spool Ø   | Spools per pallet | Pallet net weight |
|-----------------------|---------------------|------------|----------------|--------------------|-----------|-------------------|-------------------|
| <i>(nominal dtex)</i> | <i>(nominal)</i>    | <i>t/m</i> | <i>kg</i>      | <i>mm</i>          | <i>mm</i> | <i>-</i>          | <i>kg</i>         |
| <b>1100</b>           | 300                 | 0          | -              | -                  | -         | -                 | -                 |
| <b>1440</b>           | 391                 | 0          | -              | -                  | -         | -                 | -                 |
| <b>1670</b>           | 446                 | 0          | -              | -                  | -         | -                 | -                 |
| <b>2200</b>           | 600                 | 0          | -              | -                  | -         | -                 | -                 |
| <b>3340</b>           | 892                 | 0          | -              | -                  | -         | -                 | -                 |

Details based on full spools

|                                 |  |
|---------------------------------|--|
| <b>Package Type</b>             | Cylindrical bobbins  |
| <b>Pallet dimension (H×L×W)</b> | 105 × 120 × 112 cm   |
| <b>Special remarks</b>          | All yarn styles can be produced with or without adhesive activation. |
| <b>Applications</b>             | HMLS Standard: Tire reinforcements, engineered reinforcements        |

## Polyester 1X53

● HMLS ● Adhesive Activated (AA)

| Linear density        | Number of filaments | DPF | Breaking force | Breaking tenacity | Ultimate Elongation | EASF (xN)           | TS 2 min. at 177°C |
|-----------------------|---------------------|-----|----------------|-------------------|---------------------|---------------------|--------------------|
| <i>(nominal dtex)</i> | <i>(nominal)</i>    |     | <i>N</i>       | <i>mN/tex</i>     | <i>%</i>            | <i>%</i>            | <i>%</i>           |
| <b>1000</b>           | 300                 | 3.7 | 76.8           | 685               | -                   | 5.2 (45N)           | 3.0                |
| <b>1440</b>           | 391                 | 3.7 | 98.1           | 676               | -                   | 4.2 (45N)           | 2.8                |
| <b>1670</b>           | 446                 | 3.7 | 118.1          | 701               | -                   | 3.9 (45N)           | 3.0                |
| <b>2200</b>           | 600                 | 3.7 | 156.1          | 693               | -                   | 2.8 (45N) 4.7 (70N) | 2.8                |
| <b>3340</b>           | 892                 | 3.7 | 228.4          | 677               | -                   | 1.8 (45N) 3.3 (70N) | 3.0                |

Tensile testing is performed at a yarn twist of Z60 t/m

TS – Terminal shrinkage testing is performed with a pretension of 0.05 gpd

## Twisting and Make-up

| Linear density        | Number of filaments | Twist      | Package weight | Tube dimension L/Ø | Spool Ø   | Spools per pallet | Pallet net weight |
|-----------------------|---------------------|------------|----------------|--------------------|-----------|-------------------|-------------------|
| <i>(nominal dtex)</i> | <i>(nominal)</i>    | <i>t/m</i> | <i>kg</i>      | <i>mm</i>          | <i>mm</i> | <i>-</i>          | <i>kg</i>         |
| <b>1000</b>           | 300                 | 0          | -              | -                  | -         | -                 | -                 |
| <b>1440</b>           | 391                 | 0          | -              | -                  | -         | -                 | -                 |
| <b>1670</b>           | 446                 | 0          | -              | -                  | -         | -                 | -                 |
| <b>2200</b>           | 600                 | 0          | -              | -                  | -         | -                 | -                 |
| <b>3340</b>           | 892                 | 0          | -              | -                  | -         | -                 | -                 |

Details based on full spools

|                                 |  |
|---------------------------------|--|
| <b>Package Type</b>             | Cylindrical bobbins  |
| <b>Pallet dimension (H×L×W)</b> | 105 × 120 × 112 cm   |
| <b>Special remarks</b>          | All yarn styles can be produced with or without adhesive activation. |
| <b>Applications</b>             | HMLS Standard: Tire reinforcements, engineered reinforcements        |



## Polyester 1X54 / 1X54+

● HMLS ● Non-Adhesive Activated (NA) ● Medium tenacity

| Linear density<br><i>(nominal dtex)</i> | Number of filaments<br><i>(nominal)</i> | DPF | Breaking force<br><i>N</i> | Breaking tenacity<br><i>mN/tex</i> | Ultimate Elongation<br><i>%</i> | EASF (xN)<br><i>%</i> | TS 2 min. at 177°C<br><i>%</i> |
|---|---|-----|----------------------------|------------------------------------|---------------------------------|-----------------------|--------------------------------|
| 1440                                    | 391                                     | 3.7 | 104.0                      | 716                                | -                               | 4.2 (45N)             | 2.8                            |
| 1670                                    | 446                                     | 3.7 | 120.8                      | 716                                | -                               | 3.8 (45N)             | 3.0                            |
| 1670 <sup>1</sup>                       | 446                                     | 3.7 | 126.0                      | 747                                | -                               | 3.5 (45N)             | 3.0                            |

Tensile testing is performed at a yarn twist of Z60 t/m

TS – Terminal shrinkage testing is performed with a pretension of 0.05 gpd

### Twisting and Make-up

| Linear density<br><i>(nominal dtex)</i> | Number of filaments<br><i>(nominal)</i> | Twist<br><i>t/m</i> | Package weight<br><i>kg</i> | Tube dimension L/Ø<br><i>mm</i> | Spool Ø<br><i>mm</i> | Spools per pallet<br><i>-</i> | Pallet net weight<br><i>kg</i> |
|---|---|---------------------|-----------------------------|---------------------------------|----------------------|-------------------------------|--------------------------------|
| 1100                                    | 300                                     | 0                   | -                           | -                               | -                    | -                             | -                              |
| 1440                                    | 391                                     | 0                   | -                           | -                               | -                    | -                             | -                              |
| 1670                                    | 446                                     | 0                   | -                           | -                               | -                    | -                             | -                              |

Details based on full spools

|                                 |  |
|---------------------------------|--|
| <b>Package Type</b>             | Cylindrical bobbins  |
| <b>Pallet dimension (H×L×W)</b> | 105 × 120 × 112 cm   |
| <b>Special remarks</b>          | All yarn styles can be produced with or without adhesive activation. |
| <b>Applications</b>             | Tire reinforcements  |

<sup>1</sup> Product = 1X54+

## Polyester A360

● HMLS ● Non-Adhesive Activated (NA) ● Super HMLS Rayon Replacement

| Linear density<br><i>(nominal dtex)</i> | Number of filaments<br><i>(nominal)</i> | DPF | Breaking force<br><i>N</i> | Breaking tenacity<br><i>mN/tex</i> | Ultimate Elongation<br><i>%</i> | EASF (xN)<br><i>%</i> | TS 2 min. at 177°C<br><i>%</i> |
|---|---|-----|----------------------------|------------------------------------|---------------------------------|-----------------------|--------------------------------|
| 1840                                    | 391                                     | 4.7 | 102.0                      | 550                                | -                               | 3.3 (45N)             | 1.6                            |

Tensile testing is performed at a yarn twist of Z60 t/m

TS – Thermal shrinkage testing is performed with a pretension of 0.05 gpd

### Twisting and Make-up

| Linear density<br><i>(nominal dtex)</i> | Number of filaments<br><i>(nominal)</i> | Twist<br><i>t/m</i> | Package weight<br><i>kg</i> | Tube dimension L/Ø<br><i>mm</i> | Spool Ø<br><i>mm</i> | Spools per pallet<br><i>-</i> | Pallet net weight<br><i>kg</i> |
|---|---|---------------------|-----------------------------|---------------------------------|----------------------|-------------------------------|--------------------------------|
| 1840 (D)                                | 391                                     | 0                   | -                           | -                               | -                    | -                             | -                              |

Details based on full spools / D = under development

|                                 |  |
|---------------------------------|--|
| <b>Package Type</b>             | Cylindrical bobbins  |
| <b>Pallet dimension (H×L×W)</b> | 105 × 120 × 112 cm   |
| <b>Special remarks</b>          | All yarn styles can be produced with or without adhesive activation. |
| <b>Applications</b>             | Tire reinforcements, engineered reinforcements                       |

## Polyester A360HT

● HMLS ● Non-Adhesive Activated (NA) ● Super HMLS Rayon Replacement

| Linear density        | Number of filaments | DPF | Breaking force | Breaking tenacity | Ultimate Elongation | EASF (xN) | TS 2 min. at 177°C |
|-----------------------|---------------------|-----|----------------|-------------------|---------------------|-----------|--------------------|
| <i>(nominal dtex)</i> | <i>(nominal)</i>    |     | <i>N</i>       | <i>mN/tex</i>     | <i>%</i>            | <i>%</i>  | <i>%</i>           |
| 1840                  | 391                 | 4.7 | 110.0          | 595               | -                   | 3.3 (45N) | 1.8                |
| 2200 (D)              | -                   | -   | 135.1          | 600               | -                   | 2.5 (45N) | 2.5                |

Tensile testing is performed at a yarn twist of Z60 t/m

TS – Thermal shrinkage testing is performed with a pretension of 0.05 gpd / D = under development

### Twisting and Make-up

| Linear density        | Number of filaments | Twist      | Package weight | Tube dimension L/Ø | Spool Ø   | Spools per pallet | Pallet net weight |
|-----------------------|---------------------|------------|----------------|--------------------|-----------|-------------------|-------------------|
| <i>(nominal dtex)</i> | <i>(nominal)</i>    | <i>t/m</i> | <i>kg</i>      | <i>mm</i>          | <i>mm</i> | -                 | <i>kg</i>         |
| 1840                  | 391                 | 0          | -              | -                  | -         | -                 | -                 |
| 2200                  | -                   | 0          | -              | -                  | -         | -                 | -                 |

Details based on full spools

|                                 |  |
|---------------------------------|--|
| <b>Package Type</b>             | Cylindrical bobbins  |
| <b>Pallet dimension (H×L×W)</b> | 105 × 120 × 112 cm   |
| <b>Special remarks</b>          | All yarn styles can be produced with or without adhesive activation. |
| <b>Applications</b>             | Tire reinforcements, engineered reinforcements                       |

## Polyester A363HT

● HMLS ● Adhesive Activated (AA) ● Super HMLS Rayon Replacement

| Linear density        | Number of filaments | DPF | Breaking force | Breaking tenacity | Ultimate Elongation | EASF (xN) | TS 2 min. at 177°C |
|-----------------------|---------------------|-----|----------------|-------------------|---------------------|-----------|--------------------|
| <i>(nominal dtex)</i> | <i>(nominal)</i>    |     | <i>N</i>       | <i>mN/tex</i>     | <i>%</i>            | <i>%</i>  | <i>%</i>           |
| 870                   | -                   | -   | 50.5           | 580               | -                   | -         | 2.9                |
| 1100                  | -                   | -   | 67.0           | 600               | -                   | -         | 2.7                |
| 1440                  | -                   | -   | 87.1           | 600               | -                   | -         | 2.7                |
| 2200                  | -                   | -   | 133.0          | 591               | -                   | -         | 2.5                |

Tensile testing is performed at a yarn twist of Z60 t/m

TS – Terminal shrinkage testing is performed with a pretension of 0.05 gpd

## Twisting and Make-up

| Linear density        | Number of filaments | Twist      | Package weight | Tube dimension L/Ø | Spool Ø   | Spools per pallet | Pallet net weight |
|-----------------------|---------------------|------------|----------------|--------------------|-----------|-------------------|-------------------|
| <i>(nominal dtex)</i> | <i>(nominal)</i>    | <i>t/m</i> | <i>kg</i>      | <i>mm</i>          | <i>mm</i> | <i>-</i>          | <i>kg</i>         |
| 1100                  | -                   | 0          | -              | -                  | -         | -                 | -                 |
| 1440                  | -                   | 0          | -              | -                  | -         | -                 | -                 |
| 1670                  | -                   | 0          | -              | -                  | -         | -                 | -                 |
| 2200                  | -                   | 0          | -              | -                  | -         | -                 | -                 |

Details based on full spools

|                                 |  |
|---------------------------------|--|
| <b>Package Type</b>             | Cylindrical bobbins  |
| <b>Pallet dimension (H×L×W)</b> | 105 × 120 × 112 cm   |
| <b>Special remarks</b>          | All yarn styles can be produced with or without adhesive activation. |
| <b>Applications</b>             | HMLS Standard: Tire reinforcements, engineered reinforcements        |

## Polyester 1G70

● HT ● Non-Adhesive Activated (NA)

| Linear density<br><i>(nominal dtex)</i> | Number of filaments<br><i>(nominal)</i> | DPF | Breaking force<br><i>N</i> | Breaking tenacity<br><i>mN/tex</i> | Ultimate Elongation<br><i>%</i> | EASF (xN)<br><i>%</i> | TS 2 min. at 177°C<br><i>%</i> |
|---|---|-----|----------------------------|------------------------------------|---------------------------------|-----------------------|--------------------------------|
| 2200                                    | -                                       | -   | 193.0                      | 860                                | -                               | -                     | 10.5                           |

Tensile testing is performed at a yarn twist of Z60 t/m

TS – Thermal shrinkage testing is performed with a pretension of 0.05 gpd

## Twisting and Make-up

| Linear density<br><i>(nominal dtex)</i> | Number of filaments<br><i>(nominal)</i> | Twist<br><i>t/m</i> | Package weight<br><i>kg</i> | Tube dimension<br>L/Ø<br><i>mm</i> | Spool Ø<br><i>mm</i> | Spools per pallet<br><i>-</i> | Pallet net weight<br><i>kg</i> |
|---|---|---------------------|-----------------------------|------------------------------------|----------------------|-------------------------------|--------------------------------|
| 2200                                    | -                                       | 0                   | -                           | -                                  | -                    | -                             | -                              |

Details based on full spools

|                                 |  |
|---------------------------------|--|
| <b>Package Type</b>             | Cylindrical bobbins  |
| <b>Pallet dimension (H×L×W)</b> | 105 × 120 × 112 cm   |
| <b>Special remarks</b>          | All yarn styles can be produced with or without adhesive activation. |
| <b>Applications</b>             | Geotextiles  |

## Polyester 1W70

● HT ● Non-Adhesive Activated (NA)

| Linear density        | Number of filaments | DPF  | Breaking force | Breaking tenacity | Ultimate Elongation | EASF (xN) | TS 2 min. at 177°C |
|-----------------------|---------------------|------|----------------|-------------------|---------------------|-----------|--------------------|
| <i>(nominal dtex)</i> | <i>(nominal)</i>    |      | <i>N</i>       | <i>mN/tex</i>     | <i>%</i>            | <i>%</i>  | <i>%</i>           |
| <b>1100</b>           | 192                 | 5.7  | 93.0           | 831               | 13.5                | -         | 8.0                |
| <b>2200</b>           | 192                 | 11.5 | 187.5          | 824               | 14.0                | -         | 8.0                |

Tensile testing is performed at a yarn twist of Z60 t/m

TS – Thermal shrinkage testing is performed with a pretension of 0.05 gpd

### Twisting and Make-up

| Linear density        | Number of filaments | Twist      | Package weight | Tube dimension L/Ø | Spool Ø   | Spools per pallet | Pallet net weight |
|-----------------------|---------------------|------------|----------------|--------------------|-----------|-------------------|-------------------|
| <i>(nominal dtex)</i> | <i>(nominal)</i>    | <i>t/m</i> | <i>kg</i>      | <i>mm</i>          | <i>mm</i> | <i>-</i>          | <i>kg</i>         |
| <b>1100</b>           | 192                 | 0          | -              | -                  | -         | -                 | -                 |
| <b>2200</b>           | 192                 | 0          | -              | -                  | -         | -                 | -                 |

Details based on full spools

|                                 |  |
|---------------------------------|--|
| <b>Package Type</b>             | Cylindrical bobbins  |
| <b>Pallet dimension (H×L×W)</b> | 105 × 120 × 112 cm   |
| <b>Special remarks</b>          | All yarn styles can be produced with or without adhesive activation. |
| <b>Applications</b>             | Engineered reinforcements  |

## Polyester 1W73

● HT ● Adhesive Activated (AA)

| Linear density<br><i>(nominal dtex)</i> | Number of filaments<br><i>(nominal)</i> | DPF | Breaking force<br><i>N</i> | Breaking tenacity<br><i>mN/tex</i> | Ultimate Elongation<br><i>%</i> | EASF (xN)<br><i>%</i> | TS 2 min. at 177°C<br><i>%</i> |
|---|---|-----|----------------------------|------------------------------------|---------------------------------|-----------------------|--------------------------------|
| 1100                                    | 192                                     | 5.7 | 92.3                       | 823                                | 13.5                            | -                     | 8.0                            |

Tensile testing is performed at a yarn twist of Z60 t/m

TS – Terminal shrinkage testing is performed with a pretension of 0.05 gpd

### Twisting and Make-up

| Linear density<br><i>(nominal dtex)</i> | Number of filaments<br><i>(nominal)</i> | Twist<br><i>t/m</i> | Package weight<br><i>kg</i> | Tube dimension L/Ø<br><i>mm</i> | Spool Ø<br><i>mm</i> | Spools per pallet<br><i>-</i> | Pallet net weight<br><i>kg</i> |
|---|---|---------------------|-----------------------------|---------------------------------|----------------------|-------------------------------|--------------------------------|
| 1100                                    | 192                                     | 0                   | -                           | -                               | -                    | -                             | -                              |

Details based on full spools / D = under development

|                                 |  |
|---------------------------------|--|
| <b>Package Type</b>             | Cylindrical bobbins  |
| <b>Pallet dimension (H×L×W)</b> | 105 × 120 × 112 cm   |
| <b>Special remarks</b>          | All yarn styles can be produced with or without adhesive activation. |
| <b>Applications</b>             | Engineered reinforcements  |

## Polyester 1W78

● HT ● Non-Adhesive Activated (NA)

| Linear density        | Number of filaments | DPF | Breaking force | Breaking tenacity | Ultimate Elongation | EASF (xN) | TS 2 min. at 177°C |
|-----------------------|---------------------|-----|----------------|-------------------|---------------------|-----------|--------------------|
| <i>(nominal dtex)</i> | <i>(nominal)</i>    |     | <i>N</i>       | <i>mN/tex</i>     | <i>%</i>            | <i>%</i>  | <i>%</i>           |
| 2200                  | 384                 | 5.7 | 181.8          | 810               | 10.6                | -         | 4.5                |
| 3300                  | 500                 | 6.6 | 271.4          | 810               | 11.6                | -         | 4.5                |
| 4400                  | 768                 | 5.7 | 359.2          | 800               | 12.0                | -         | 4.5                |

Tensile testing is performed at a yarn twist of Z60 t/m

TS – Thermal shrinkage testing is performed with a pretension of 0.05 gpd

### Twisting and Make-up

| Linear density        | Number of filaments | Twist      | Package weight | Tube dimension L/Ø | Spool Ø   | Spools per pallet | Pallet net weight |
|-----------------------|---------------------|------------|----------------|--------------------|-----------|-------------------|-------------------|
| <i>(nominal dtex)</i> | <i>(nominal)</i>    | <i>t/m</i> | <i>kg</i>      | <i>mm</i>          | <i>mm</i> | <i>-</i>          | <i>kg</i>         |
| 1100                  | 192                 | 0          | -              | -                  | -         | -                 | -                 |
| 2200                  | 384                 | 0          | -              | -                  | -         | -                 | -                 |
| 4400                  | 768                 | 0          | -              | -                  | -         | -                 | -                 |

Details based on full spools

|                                 |  |
|---------------------------------|--|
| <b>Package Type</b>             | Cylindrical bobbins  |
| <b>Pallet dimension (H×L×W)</b> | 105 × 120 × 112 cm   |
| <b>Special remarks</b>          | All yarn styles can be produced with or without adhesive activation. |
| <b>Applications</b>             | Geotextiles  |



## Polyester 1W78T

● HT ● Non-Adhesive Activated (NA)

| Linear density        | Number of filaments | DPF | Breaking force | Breaking tenacity | Ultimate Elongation | EASF (xN) | TS 2 min. at 177°C |
|-----------------------|---------------------|-----|----------------|-------------------|---------------------|-----------|--------------------|
| <i>(nominal dtex)</i> | <i>(nominal)</i>    |     | <i>N</i>       | <i>mN/tex</i>     | <i>%</i>            | <i>%</i>  | <i>%</i>           |
| <b>2200</b>           | 384                 | 5.7 | 190.0          | 846               | 10.6                | -         | 4.5                |

Tensile testing is performed at a yarn twist of Z60 t/m

TS – Thermal shrinkage testing is performed with a pretension of 0.05 gpd

### Twisting and Make-up

| Linear density        | Number of filaments | Twist      | Package weight | Tube dimension L/Ø | Spool Ø   | Spools per pallet | Pallet net weight |
|-----------------------|---------------------|------------|----------------|--------------------|-----------|-------------------|-------------------|
| <i>(nominal dtex)</i> | <i>(nominal)</i>    | <i>t/m</i> | <i>kg</i>      | <i>mm</i>          | <i>mm</i> | <i>-</i>          | <i>kg</i>         |
| <b>2200</b>           | 384                 | 0          | -              | -                  | -         | -                 | -                 |

Details based on full spools

|                                 |  |
|---------------------------------|--|
| <b>Package Type</b>             | Cylindrical bobbins  |
| <b>Pallet dimension (H×L×W)</b> | 105 × 120 × 112 cm   |
| <b>Special remarks</b>          | All yarn styles can be produced with or without adhesive activation. |
| <b>Applications</b>             | Geotextiles  |

## Polyester 1W79

● HT ● Adhesive Activated (AA, HA) ● High tenacity – Medium shrinkage

| Linear density<br><i>(nominal dtex)</i> | Number of filaments<br><i>(nominal)</i> | DPF | Breaking force<br><i>N</i> | Breaking tenacity<br><i>mN/tex</i> | Ultimate Elongation<br><i>%</i> | EASF (xN)<br><i>%</i> | TS 2 min. at 177°C<br><i>%</i> |
|---|---|-----|----------------------------|------------------------------------|---------------------------------|-----------------------|--------------------------------|
| 1100                                    | 192                                     | 5.7 | 90.8                       | 810                                | 10.6                            | -                     | 4.5                            |
| 1670*                                   | 250                                     | 6.7 | 136.6                      | 810                                | 10.6                            | -                     | 4.5                            |
| 2200*                                   | 384                                     | 5.7 | 181.8                      | 810                                | 10.6                            | -                     | 4.5                            |
| 3340*                                   | 500                                     | 6.7 | 271.4                      | 810                                | 11.6                            | -                     | 4.5                            |

Tensile testing is performed at a yarn twist of Z60 t/m

TS – Terminal shrinkage testing is performed with a pretension of 0.05 gpd

\*HA activated

### Twisting and Make-up

| Linear density<br><i>(nominal dtex)</i> | Number of filaments<br><i>(nominal)</i> | Twist<br><i>t/m</i> | Package weight<br><i>kg</i> | Tube dimension L/Ø<br><i>mm</i> | Spool Ø<br><i>mm</i> | Spools per pallet<br><i>-</i> | Pallet net weight<br><i>kg</i> |
|---|---|---------------------|-----------------------------|---------------------------------|----------------------|-------------------------------|--------------------------------|
| 1100                                    | 192                                     | 0                   | -                           | -                               | -                    | -                             | -                              |
| 1670*                                   | 250                                     | 0                   | -                           | -                               | -                    | -                             | -                              |
| 2200*                                   | 384                                     | 0                   | -                           | -                               | -                    | -                             | -                              |
| 3340*                                   | 500                                     | 0                   | -                           | -                               | -                    | -                             | -                              |

Details based on full spools

\*HA activated

|                                 |  |
|---------------------------------|--|
| <b>Package Type</b>             | Cylindrical bobbins  |
| <b>Pallet dimension (H×L×W)</b> | 105 × 120 × 112 cm   |
| <b>Special remarks</b>          | All yarn styles can be produced with or without adhesive activation. |
| <b>Applications</b>             | Engineered reinforcements  |

## Polyester PET HCR

● HT ● Non-Adhesive Activated (NA)

| Linear density<br><i>(nominal dtex)</i> | Number of filaments<br><i>(nominal)</i> | DPF | Breaking force<br><i>N</i> | Breaking tenacity<br><i>mN/tex</i> | Ultimate Elongation<br><i>%</i> | EASF (xN)<br><i>%</i> | TS 2 min. at 177°C<br><i>%</i> |
|---|---|-----|----------------------------|------------------------------------|---------------------------------|-----------------------|--------------------------------|
| 2200 (D)                                | -                                       | -   | 182.7                      | 814                                | -                               | 2.8 (45N)             | 3.3                            |

Tensile testing is performed at a yarn twist of Z60 t/m

TS – Thermal shrinkage testing is performed with a pretension of 0.05 gpd / D = under development

## Twisting and Make-up

| Linear density<br><i>(nominal dtex)</i> | Number of filaments<br><i>(nominal)</i> | Twist<br><i>t/m</i> | Package weight<br><i>kg</i> | Tube dimension<br>L/Ø<br><i>mm</i> | Spool Ø<br><i>mm</i> | Spools per pallet<br><i>-</i> | Pallet net weight<br><i>kg</i> |
|---|---|---------------------|-----------------------------|------------------------------------|----------------------|-------------------------------|--------------------------------|
| 2200 (D)                                | -                                       | 0                   | -                           | -                                  | -                    | -                             | -                              |

Details based on full spools / D = under development

|                                 |  |
|---------------------------------|--|
| <b>Package Type</b>             | Cylindrical bobbins  |
| <b>Pallet dimension (H×L×W)</b> | 105 × 120 × 112 cm   |
| <b>Special remarks</b>          | All yarn styles can be produced with or without adhesive activation. |
| <b>Applications</b>             | Geotextiles  |

# OBERNBURG



## Contact

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## Certifications

- ISO 9001: 2015
- ISO 14001: 2015
- ISO 50001: 2018
- REACH 1907/2006/EC
- Fachbetrieb nach WHG

Click [here](#) for all certificates

## Diolen®

| Type No. | Linear density | Number of filaments | Main Applications  |
|----------|----------------|---------------------|--|
|          | (nominal dtex) | (nominal)           |  |
| 54S      | 550            | 28                  | Seatbelts  |
| 57T      | 140            | 24                  | Broad fabrics, Sail cloth, Seatbelts   |
|          | 225            | 48                  |  |
|          | 280            | 48                  |  |
|          | 330            | 48                  |  |
|          | 420            | 96                  |  |
|          | 550            | 96                  |  |
| 61ST     | 280            | 48                  | Broad fabrics  |
|          | 550            | 105                 |  |
| 64ST     | 550            | 105                 | Mechanical rubber goods (MRG)  |
| 80T      | 470            | 96                  | Airbags  |
|          | 550            | 96                  |  |
| 164S     | 1100           | 210                 | Mechanical rubber goods (MRG), Broad fabrics, Light-weight conveyor and processing belts, Heavy-weight conveyor belts, Geotextiles, Hoses, Transmission belts, |
|          | 1670           | 210                 |  |
|          | 2200           | 420                 |  |
|          | 3300           | 630                 |  |
|          | 9900           | 1890                |  |
|          | 19800          | 3780                |  |
|          | 170ST          | 1100                |  |
| 1670     |                | 210                 |  |
| 370ST-FC | 1100           | 210                 | Food packaging applications, Textiles with food contact  |
| 174S     | 700            | 210                 | Broad fabrics, Light-weight conveyor and processing belts, Geotextiles, Hoses  |
|          | 1100           | 210                 |  |
|          | 1440           | 210                 |  |
|          | 1670           | 210                 |  |
|          | 2200           | 420                 |  |
|          | 2880           | 420                 |  |
|          | 3300           | 630                 |  |
| 174ST    | 1100           | 210                 | Broad fabrics, Light-weight conveyor and processing belts  |
| 175SLC   | 1100           | 210                 | Broad fabrics, Tents, Textile constructions  |
|          | 1670           | 210                 |  |
|          | 2200           | 420                 |  |
| 181T     | 880            | 105                 | Broad fabrics, Sail cloth  |
| 775      | 1100           | 210                 | Mechanical rubber goods (MRG), Geotextiles, Transmission belts, Hoses  |
|          | 3300           | 630                 |  |

## Diolen® 54S

● HT-LS ● Non-Adhesive Activated (NA) ● HDPF yarn

| Linear density<br><i>(nominal dtex)</i> | Number of filaments<br><i>(nominal)</i> | Linear density<br><i>dtex</i> | Breaking force<br><i>N</i> | Breaking tenacity<br><i>mN/tex</i> | Elongation at break<br><i>%</i> | EASF (xN)<br><i>%</i> | HAS 2 min. at 180°C<br><i>%</i> |
|---|---|-------------------------------|----------------------------|------------------------------------|---------------------------------|-----------------------|---------------------------------|
| 550                                     | 28                                      | 554                           | 35.2                       | 635                                | 25.5                            | 13.2 (14.9N)          | 1.7                             |

Tensile testing is performed at a yarn twist of Z60 t/m  
 HAS – Hot-air shrinkage testing is performed with a pretension of 1 mN/tex  
 HDPF – High denier per filament

### Twisting and Make-up

| Linear density<br><i>(nominal dtex)</i> | Number of filaments<br><i>(nominal)</i> | Twist<br><i>t/m</i> | Package weight<br><i>kg</i> | Tube dimension L/Ø<br><i>mm</i> | Spool Ø<br><i>mm</i> | Spools per pallet<br><i>-</i> | Pallet net weight<br><i>kg</i> |
|---|---|---------------------|-----------------------------|---------------------------------|----------------------|-------------------------------|--------------------------------|
| 550                                     | 28                                      | 0                   | 3.75                        | 300/94                          | 190                  | 75                            | 285                            |
|   | 28                                      | Z130                | 3.75                        | 290/94                          | 186                  | 75                            | 285                            |

Details based on full spools

|                                 |                                |
|---------------------------------|--------------------------------|
| <b>Package Type</b>             | Cylindrical bobbins            |
| <b>Pallet dimension (H×L×W)</b> | 111 × 126 × 101 cm             |
| <b>Special remarks</b>          | Other twist levels on request. |
| <b>Applications</b>             | Seatbelts                      |

## Diolen® 57T

● HT ● Non-Adhesive Activated (NA)

| Linear density        | Number of filaments | Linear density | Breaking force | Breaking tenacity | Elongation at break | EASF (xN)   | HAS 2 min. at 180°C |
|-----------------------|---------------------|----------------|----------------|-------------------|---------------------|-------------|---------------------|
| <i>(nominal dtex)</i> | <i>(nominal)</i>    | <i>dtex</i>    | <i>N</i>       | <i>mN/tex</i>     | <i>%</i>            | <i>%</i>    | <i>%</i>            |
| 140                   | 24                  | 141            | 8.6            | 609               | 16.3                | 3.6 (3.8N)  | 11.1                |
| 225                   | 48                  | 227            | 14.5           | 638               | 13.3                | 3.5 (6.1N)  | 12.1                |
| 280                   | 48                  | 278            | 16.3           | 586               | 17.4                | 3.9 (7.6N)  | 9.9                 |
| 330                   | 48                  | 332            | 20.2           | 608               | 17.5                | 4.0 (9.0N)  | 10.1                |
| 420                   | 96                  | 424            | 25.5           | 601               | 15.2                | 3.7 (11.4N) | 8.4                 |
| 550                   | 96                  | 554            | 33.5           | 605               | 15.6                | 3.9 (14.9N) | 8.9                 |

Tensile testing is performed at a yarn twist of Z60 t/m

HAS – Hot-air shrinkage testing is performed with a pretension of 5 mN/tex

### Twisting and Make-up

| Linear density        | Number of filaments | Twist      | Package weight | Tube dimension L/Ø | Spool Ø   | Spools per pallet | Pallet net weight |
|-----------------------|---------------------|------------|----------------|--------------------|-----------|-------------------|-------------------|
| <i>(nominal dtex)</i> | <i>(nominal)</i>    | <i>t/m</i> | <i>kg</i>      | <i>mm</i>          | <i>mm</i> | <i>–</i>          | <i>kg</i>         |
| 140                   | 24                  | 0          | 5.0            | 290/94             | 200       | 75                | 375               |
|                       | 24                  | Z300       | 2.5            | 230/69/52          | 180       | 144               | 360               |
| 225                   | 48                  | 0          | 5.0            | 290/94             | 200       | 75                | 375               |
|                       | 48                  | Z300       | 2.5            | 230/69/52          | 175       | 160               | 401               |
| 280                   | 48                  | 0          | 7.5            | 290/94             | 240       | 60                | 450               |
|                       | 48                  | Z100       | 7.5            | 290/94             | 250       | 60                | 450               |
|                       | 48                  | Z300       | 7.5            | 290/94             | 250       | 48                | 360               |
| 330                   | 48                  | 0          | 7.5            | 290/94             | 240       | 60                | 450               |
|                       | 48                  | Z100       | 7.5            | 290/94             | 250       | 60                | 450               |
| 420                   | 96                  | 0          | 7.5            | 300/94             | 240       | 60                | 450               |
|                       | 96                  | Z200       | 7.5            | 290/94             | 250       | 60                | 450               |
| 550                   | 96                  | 0          | 7.5            | 300/94             | 240       | 60                | 450               |
|                       | 96                  | Z60        | 7.5            | 290/94             | 250       | 60                | 450               |
|                       | 96                  | Z180       | 7.5            | 290/94             | 250       | 60                | 450               |

Details based on full spools

|                                 |   |
|---------------------------------|---|
| <b>Package Type</b>             | Cylindrical bobbins                                     |
| <b>Pallet dimension (H×L×W)</b> | 111 × 126 × 101 cm                                      |
| <b>Special remarks</b>          | Other twist levels on request. Also available on beams. |
| <b>Applications</b>             | Broad fabrics, sail cloth and seatbelts                 |

## Diolen® 61ST

- HT-LS ● Non-Adhesive Activated (NA)

| Linear density<br><i>(nominal dtex)</i> | Number of filaments<br><i>(nominal)</i> | Linear density<br><i>dtex</i> | Breaking force<br><i>N</i> | Breaking tenacity<br><i>mN/tex</i> | Elongation at break<br><i>%</i> | EASF (xN)<br><i>%</i> | HAS 2 min. at 180°C<br><i>%</i> |
|---|---|-------------------------------|----------------------------|------------------------------------|---------------------------------|-----------------------|---------------------------------|
| <b>280</b>                              | 48                                      | 281                           | 18.3                       | 651                                | 17.6                            | 7.2 (7.6N)            | 1.7                             |
| <b>550</b>                              | 105                                     | 556                           | 38.0                       | 683                                | 23.0                            | 11.0 (14.9N)          | 1.4                             |

Tensile testing is performed at a yarn twist of Z60 t/m

HAS – Hot-air shrinkage testing is performed with a pretension of 1 mN/tex

## Twisting and Make-up

| Linear density<br><i>(nominal dtex)</i> | Number of filaments<br><i>(nominal)</i> | Twist<br><i>t/m</i> | Package weight<br><i>kg</i> | Tube dimension L/Ø<br><i>mm</i> | Spool Ø<br><i>mm</i> | Spools per pallet<br><i>–</i> | Pallet net weight<br><i>kg</i> |
|---|---|---------------------|-----------------------------|---------------------------------|----------------------|-------------------------------|--------------------------------|
| <b>280</b>                              | 48                                      | 0                   | 7.5                         | 290/94                          | 230                  | 60                            | 450                            |
|   | 48                                      | Z60                 | 7.5                         | 290/94                          | 230                  | 60                            | 450                            |
|   | 48                                      | S/Z130              | 7.5                         | 290/94                          | 240                  | 60                            | 450                            |
| <b>550</b>                              | 105                                     | 0                   | 7.5                         | 290/94                          | 230                  | 60                            | 450                            |
|   | 105                                     | Z60                 | 7.5                         | 290/94                          | 230                  | 60                            | 450                            |
|   | 105                                     | S/Z100              | 7.5                         | 290/94                          | 240                  | 60                            | 450                            |

Details based on full spools

|                                 |   |
|---------------------------------|---|
| <b>Package Type</b>             | Cylindrical bobbins                                     |
| <b>Pallet dimension (H×L×W)</b> | 111 × 126 × 101 cm                                      |
| <b>Special remarks</b>          | Other twist levels on request. Also available on beams. |
| <b>Applications</b>             | Broad fabrics   |



## Diolen® 64ST

- HT-LS
- Non-Adhesive Activated (NA)

| Linear density        | Number of filaments | Linear density | Breaking force | Breaking tenacity | Elongation at break | EASF (xN)   | HAS 2 min. at 180°C |
|-----------------------|---------------------|----------------|----------------|-------------------|---------------------|-------------|---------------------|
| <i>(nominal dtex)</i> | <i>(nominal)</i>    | <i>dtex</i>    | <i>N</i>       | <i>mN/tex</i>     | <i>%</i>            | <i>%</i>    | <i>%</i>            |
| 550                   | 105                 | 554            | 39.6           | 716               | 16.3                | 5.8 (14.9N) | 1.4                 |

Tensile testing is performed at a yarn twist of Z60 t/m

HAS – Hot-air shrinkage testing is performed with a pretension of 1 mN/tex

## Twisting and Make-up

| Linear density        | Number of filaments | Twist      | Package weight | Tube dimension L/Ø | Spool Ø   | Spools per pallet | Pallet net weight |
|-----------------------|---------------------|------------|----------------|--------------------|-----------|-------------------|-------------------|
| <i>(nominal dtex)</i> | <i>(nominal)</i>    | <i>t/m</i> | <i>kg</i>      | <i>mm</i>          | <i>mm</i> | <i>–</i>          | <i>kg</i>         |
| 550                   | 105                 | 0          | 7.5            | 290/94             | 230       | 60                | 450               |

Details based on full spools

|                                 |   |
|---------------------------------|---|
| <b>Package Type</b>             | Cylindrical bobbins                                     |
| <b>Pallet dimension (H×L×W)</b> | 111 × 126 × 101 cm                                      |
| <b>Special remarks</b>          | Other twist levels on request. Also available on beams. |
| <b>Applications</b>             | Mechanical rubber goods (MRG)                           |

## Diolen® 80T

● HT ● Non-Adhesive Activated (NA)

| Linear density<br><i>(nominal dtex)</i> | Number of filaments<br><i>(nominal)</i> | Linear density<br><i>dtex</i> | Breaking force<br><i>N</i> | Breaking tenacity<br><i>mN/tex</i> | Elongation at break<br><i>%</i> | EASF (xN)<br><i>%</i> | HAS 2 min. at 180°C<br><i>%</i> |
|---|---|-------------------------------|----------------------------|------------------------------------|---------------------------------|-----------------------|---------------------------------|
| 470                                     | 96                                      | 472                           | 37.7                       | 799                                | 18.5                            | 7.3 (12.7N)           | 2.5                             |
| 550                                     | 96                                      | 558                           | 44.4                       | 796                                | 18.4                            | 7.0 (14.9N)           | 2.5                             |

Tensile testing is performed at a yarn twist of Z60 t/m

HAS – Hot-air shrinkage testing is performed with a pretension of 5 mN/tex

## Twisting and Make-up

| Linear density<br><i>(nominal dtex)</i> | Number of filaments<br><i>(nominal)</i> | Twist<br><i>t/m</i> | Package weight<br><i>kg</i> | Tube dimension L/Ø<br><i>mm</i> | Spool Ø<br><i>mm</i> | Spools per pallet<br><i>–</i> | Pallet net weight<br><i>kg</i> |
|---|---|---------------------|-----------------------------|---------------------------------|----------------------|-------------------------------|--------------------------------|
| 470                                     | 96                                      | 0                   | 7.5                         | 300/94                          | 230                  | 60                            | 450                            |
| 550                                     | 96                                      | 0                   | 7.5                         | 300/94                          | 230                  | 60                            | 450                            |

Details based on full spools

|                                 |                          |
|---------------------------------|--------------------------|
| <b>Package Type</b>             | Cylindrical bobbins      |
| <b>Pallet dimension (H×L×W)</b> | 111 × 126 × 101 cm       |
| <b>Special remarks</b>          | Also available on beams. |
| <b>Applications</b>             | Airbags                  |

## Diolen® 164S

● HT-LS ● Adhesive Activated (AA)

| Linear density        | Number of filaments | Linear density | Breaking force | Breaking tenacity | Elongation at break | EASF (xN)  | HAS 2 min. at 180°C |
|-----------------------|---------------------|----------------|----------------|-------------------|---------------------|------------|---------------------|
| <i>(nominal dtex)</i> | <i>(nominal)</i>    | <i>dtex</i>    | <i>N</i>       | <i>mN/tex</i>     | <i>%</i>            | <i>%</i>   | <i>%</i>            |
| 1100                  | 210                 | 1122           | 84.8           | 756               | 13.5                | 6.2 (45N)  | 3.2                 |
| 1670                  | 210                 | 1683           | 127.0          | 755               | 14.0                | 6.5 (68N)  | 3.2                 |
| 2200                  | 420                 | 2255           | 167.5          | 743               | 14.0                | 6.4 (90N)  | 3.2                 |
| 3300                  | 630                 | 3395           | 251.0          | 739               | 14.0                | 6.6 (135N) | 3.2                 |
| 9900                  | 1890                | 10130          | 728.0          | 728               | 15.0                | 7.3 (405N) | 3.2                 |
| 19800                 | 3780                | 20150          | 1428.0         | 709               | 15.7                | 8.3 (810N) | 3.2                 |

Tensile testing is performed at a yarn twist of Z60 t/m

HAS – Hot-air shrinkage testing is performed with a pretension of 5 mN/tex

### Twisting and Make-up

| Linear density        | Number of filaments | Twist      | Package weight | Tube dimension L/Ø | Spool Ø   | Spools per pallet | Pallet net weight |
|-----------------------|---------------------|------------|----------------|--------------------|-----------|-------------------|-------------------|
| <i>(nominal dtex)</i> | <i>(nominal)</i>    | <i>t/m</i> | <i>kg</i>      | <i>mm</i>          | <i>mm</i> | <i>–</i>          | <i>kg</i>         |
| 1100                  | 210                 | 0          | 11.3           | 290/94             | 250       | 48                | 533               |
|                       | 210                 | S/Z60      | 11.3           | 290/94             | 275       | 48                | 542               |
|                       | 210                 | S/Z130     | 11.3           | 290/94             | 275       | 39                | 441               |
| 1670                  | 210                 | 0          | 11.3           | 290/94             | 265       | 48                | 542               |
|                       | 210                 | S/Z60      | 11.3           | 290/94             | 275       | 48                | 542               |
| 2200                  | 420                 | 0          | 11.3           | 290/94             | 255       | 48                | 542               |
|                       | 420                 | S/Z100     | 11.3           | 290/94             | 280       | 39                | 441               |
| 3300                  | 630                 | 0          | 11.3           | 290/94             | 260       | 48                | 542               |
|                       | 630                 | S/Z100     | 11.3           | 290/94             | 280       | 39                | 441               |
| 9900                  | 1890                | 0          | 8              | 290/94             | 245       | 48                | 384               |
| 19800                 | 3780                | 0          | 8              | 290/94             | 260       | 48                | 384               |

Details based on full spools

|                                 |  |
|---------------------------------|--|
| <b>Package Type</b>             | Cylindrical bobbins  |
| <b>Pallet dimension (H×L×W)</b> | 111 × 126 × 101 cm   |
| <b>Special remarks</b>          | Other yarn counts and twist levels on request. Also available on beams.  |
| <b>Applications</b>             | Mechanical rubber goods (MRG), broad fabrics, light-weight conveyor and processing belts, heavy-weight conveyor belts, geotextiles, hoses and transmission belts |

## Diolen® 165ST

● HT-LS ● Adhesive Activated (AA)

| Linear density<br><i>(nominal dtex)</i> | Number of filaments<br><i>(nominal)</i> | Linear density<br><i>dtex</i> | Breaking force<br><i>N</i> | Breaking tenacity<br><i>mN/tex</i> | Elongation at break<br><i>%</i> | EASF (xN)<br><i>%</i> | HAS 2 min. at 180°C<br><i>%</i> |
|---|---|-------------------------------|----------------------------|------------------------------------|---------------------------------|-----------------------|---------------------------------|
| <b>1100</b>                             | 210                                     | 1117                          | 88.5                       | 792                                | 13.8                            | 6.6 (45N)             | 3.6                             |
| <b>1670</b>                             | 210                                     | 1675                          | 136.4                      | 814                                | 13.6                            | 6.9 (68N)             | 3.4                             |

Tensile testing is performed at a yarn twist of Z60 t/m

HAS – Hot-air shrinkage testing is performed with a pretension of 5 mN/tex

### Twisting and Make-up

| Linear density<br><i>(nominal dtex)</i> | Number of filaments<br><i>(nominal)</i> | Twist<br><i>t/m</i> | Package weight<br><i>kg</i> | Tube dimension L/Ø<br><i>mm</i> | Spool Ø<br><i>mm</i> | Spools per pallet<br><i>–</i> | Pallet net weight<br><i>kg</i> |
|---|---|---------------------|-----------------------------|---------------------------------|----------------------|-------------------------------|--------------------------------|
| <b>1100</b>                             | S/Z100                                  | 0                   | 14.4                        | 290/94                          | 300                  | 33                            | 475                            |
| <b>1670</b>                             | 210                                     | 0                   | 14.4                        | 300/94                          | 300                  | 33                            | 475                            |

Details based on full spools

|                                 |  |
|---------------------------------|--|
| <b>Package Type</b>             | Cylindrical bobbins  |
| <b>Pallet dimension (H×L×W)</b> | 111 × 126 × 101 cm   |
| <b>Special remarks</b>          | Other twist levels on request.                             |
| <b>Applications</b>             | Mechanical rubber goods (MRG), light-weight conveyor belts |

## Diolen® 170ST

- HT-LS ● Non-Adhesive Activated (NA)

| Linear density<br><i>(nominal dtex)</i> | Number of filaments<br><i>(nominal)</i> | Linear density<br><i>dtex</i> | Breaking force<br><i>N</i> | Breaking tenacity<br><i>mN/tex</i> | Elongation at break<br><i>%</i> | EASF (xN)<br><i>%</i> | HAS 2 min. at 180°C<br><i>%</i> |
|---|---|-------------------------------|----------------------------|------------------------------------|---------------------------------|-----------------------|---------------------------------|
| <b>1100</b>                             | 210                                     | 1119                          | 80.0                       | 715                                | 21.8                            | 13.6 (45N)            | 1.6                             |
| <b>1670</b>                             | 210                                     | 1705                          | 124.5                      | 730                                | 22.3                            | 13.8 (68N)            | 1.6                             |

Tensile testing is performed at a yarn twist of Z60 t/m

HAS – Hot-air shrinkage testing is performed with a pretension of 1 mN/tex

### Twisting and Make-up

| Linear density<br><i>(nominal dtex)</i> | Number of filaments<br><i>(nominal)</i> | Twist<br><i>t/m</i> | Package weight<br><i>kg</i> | Tube dimension L/Ø<br><i>mm</i> | Spool Ø<br><i>mm</i> | Spools per pallet<br><i>–</i> | Pallet net weight<br><i>kg</i> |
|---|---|---------------------|-----------------------------|---------------------------------|----------------------|-------------------------------|--------------------------------|
| <b>1100</b>                             | 210                                     | 0                   | 14.4                        | 300/94                          | 300                  | 33                            | 475                            |
|   | 210                                     | Z60                 | 14.4                        | 290/94                          | 300                  | 33                            | 475                            |
|   | 210                                     | S/Z100              | 14.4                        | 290/94                          | 300                  | 33                            | 475                            |
| <b>1670</b>                             | 210                                     | 0                   | 14.4                        | 300/94                          | 300                  | 33                            | 475                            |
|   | 210                                     | S/Z60               | 14.4                        | 290/94                          | 300                  | 33                            | 475                            |

Details based on full spools

|                                 |   |
|---------------------------------|---|
| <b>Package Type</b>             | Cylindrical bobbins                                       |
| <b>Pallet dimension (H×L×W)</b> | 111 × 126 × 101 cm  |
| <b>Special remarks</b>          | Other twist levels on request. Also available on beams.   |
| <b>Applications</b>             | Broad fabrics, light-weight conveyor and processing belts |

## Diolen® 370ST-FC

● HT-LS ● Non-Adhesive Activated (NA) ● Food contact

| Linear density<br>(nominal dtex) | Number of filaments<br>(nominal) | Linear density<br>dtex | Breaking force<br>N | Breaking tenacity<br>mN/tex | Elongation at break<br>% | EASF (xN)<br>% | HAS 2 min. at 180°C<br>% |
|----------------------------------|----------------------------------|------------------------|---------------------|-----------------------------|--------------------------|----------------|--------------------------|
| 1100                             | 192                              | 1115                   | 80.9                | 722                         | 24.5                     | 15.4 (45N)     | 1.6                      |

Tensile testing is performed at a yarn twist of Z60 t/m

HAS – Hot-air shrinkage testing is performed with a pretension of 1 mN/tex

## Twisting and Make-up

| Linear density<br>(nominal dtex) | Number of filaments<br>(nominal) | Twist<br>t/m | Package weight<br>kg | Tube dimension<br>L/Ø<br>mm | Spool Ø<br>mm | Spools per pallet<br>– | Pallet net weight<br>kg |
|----------------------------------|----------------------------------|--------------|----------------------|-----------------------------|---------------|------------------------|-------------------------|
| 1100                             | 192                              | -            | 14.4                 | 300/96                      | 295           | 33                     | 475                     |

Details based on full spools

|                                 |  |
|---------------------------------|--|
| <b>Package Type</b>             | Cylindrical bobbins  |
| <b>Pallet dimension (H×L×W)</b> | 110 × 120 × 100 cm   |
| <b>Special remarks</b>          | Other twist levels on request. Also available on beams.    |
| <b>Applications</b>             | Food packaging applications and textiles with food contact |

## Diolen® 174S

- HT-LS
- Non-Adhesive Activated (NA)

| Linear density        | Number of filaments | Linear density | Breaking force | Breaking tenacity | Elongation at break | EASF (xN)   | HAS 2 min. at 180°C |
|-----------------------|---------------------|----------------|----------------|-------------------|---------------------|-------------|---------------------|
| <i>(nominal dtex)</i> | <i>(nominal)</i>    | <i>dtex</i>    | <i>N</i>       | <i>mN/tex</i>     | <i>%</i>            | <i>%</i>    | <i>%</i>            |
| <b>700</b>            | 210                 | 700            | 54.0           | 771               | 18.2                | 11.3 (28N)  | 1.1                 |
| <b>1100</b>           | 210                 | 1122           | 84.8           | 756               | 19.3                | 12.1 (45N)  | 1.2                 |
| <b>1440</b>           | 210                 | 1451           | 106.0          | 730               | 19.0                | 12.1 (59N)  | 1.3                 |
| <b>1670</b>           | 210                 | 1705           | 130.0          | 762               | 20.5                | 12.9 (68N)  | 1.0                 |
| <b>2200</b>           | 420                 | 2245           | 167.0          | 744               | 20.2                | 12.6 (90N)  | 1.1                 |
| <b>2880</b>           | 420                 | 2890           | 214.0          | 740               | 20.0                | 12.4 (118N) | 1.2                 |
| <b>3300</b>           | 630                 | 3400           | 248.0          | 729               | 20.5                | 12.8 (135N) | 1.1                 |

Tensile testing is performed at a yarn twist of Z60 t/m

HAS – Hot-air shrinkage testing is performed with a pretension of 1 mN/tex

### Twisting and Make-up

| Linear density        | Number of filaments | Twist      | Package weight | Tube dimension L/Ø | Spool Ø   | Spools per pallet | Pallet net weight |
|-----------------------|---------------------|------------|----------------|--------------------|-----------|-------------------|-------------------|
| <i>(nominal dtex)</i> | <i>(nominal)</i>    | <i>t/m</i> | <i>kg</i>      | <i>mm</i>          | <i>mm</i> | <i>–</i>          | <i>kg</i>         |
| <b>700</b>            | 210                 | Z100       | 5.65           | 290/94             | 200       | 60                | 340               |
|                       | 210                 | 0          | 11.3           | 290/94             | 260       | 48                | 542               |
| <b>1100</b>           | 210                 | S/Z60      | 11.3           | 290/94             | 270       | 48                | 542               |
|                       | 210                 | S/Z100     | 11.3           | 290/94             | 280       | 48                | 542               |
|                       | 210                 | S/Z130     | 11.3           | 290/94             | 280       | 39                | 441               |
|                       | 210                 | 0          | 11.3           | 290/94             | 270       | 48                | 542               |
| <b>1670</b>           | 210                 | 0          | 11.3           | 290/94             | 260       | 48                | 542               |
|                       | 210                 | Z60        | 11.3           | 290/94             | 265       | 48                | 542               |
|                       | 210                 | S/Z130     | 11.3           | 290/94             | 280       | 39                | 441               |
| <b>2200</b>           | 420                 | 0          | 11.3           | 290/94             | 280       | 48                | 542               |
|                       | 420                 | S/Z60      | 11.3           | 290/94             | 270       | 48                | 542               |
|                       | 420                 | Z130       | 11.3           | 290/94             | 280       | 39                | 441               |
| <b>2880</b>           | 420                 | Z60        | 5.65           | 290/94             | 200       | 60                | 340               |
|                       | 630                 | 0          | 11.3           | 290/94             | 290       | 48                | 542               |
| <b>3300</b>           | 630                 | Z60        | 11.3           | 290/94             | 300       | 48                | 542               |
|                       | 630                 | Z100       | 11.3           | 290/94             | 305       | 39                | 441               |

Details based on full spools

|                                 |  |
|---------------------------------|--|
| <b>Package Type</b>             | Cylindrical bobbins  |
| <b>Pallet dimension (H×L×W)</b> | 111 × 126 × 101 cm   |
| <b>Special remarks</b>          | Other yarn counts and twist levels on request. Also available on beams.          |
| <b>Applications</b>             | Broad fabrics, light-weight conveyor and processing belts, geotextiles and hoses |

## Diolen® 174ST

- HT-LS ● Non-Adhesive Activated (NA)

| Linear density<br><i>(nominal dtex)</i> | Number of filaments<br><i>(nominal)</i> | Linear density<br><i>dtex</i> | Breaking force<br><i>N</i> | Breaking tenacity<br><i>mN/tex</i> | Elongation at break<br><i>%</i> | EASF (xN)<br><i>%</i> | HAS 2 min. at 180°C<br><i>%</i> |
|---|---|-------------------------------|----------------------------|------------------------------------|---------------------------------|-----------------------|---------------------------------|
| 1100                                    | 210                                     | 1122                          | 85.0                       | 758                                | 19.3                            | 12.1 (45N)            | 1.2                             |

Tensile testing is performed at a yarn twist of Z60 t/m

HAS – Hot-air shrinkage testing is performed with a pretension of 1 mN/tex

## Twisting and Make-up

| Linear density<br><i>(nominal dtex)</i> | Number of filaments<br><i>(nominal)</i> | Twist<br><i>t/m</i> | Package weight<br><i>kg</i> | Tube dimension L/Ø<br><i>mm</i> | Spool Ø<br><i>mm</i> | Spools per pallet<br><i>-</i> | Pallet net weight<br><i>kg</i> |
|---|---|---------------------|-----------------------------|---------------------------------|----------------------|-------------------------------|--------------------------------|
| 1100                                    | 210                                     | 0                   | 11.3                        | 290/94                          | 260                  | 48                            | 542                            |

Details based on full spools

|                                 |   |
|---------------------------------|---|
| <b>Package Type</b>             | Cylindrical bobbins                                       |
| <b>Pallet dimension (H×L×W)</b> | 111 × 126 × 101 cm  |
| <b>Special remarks</b>          | Also available on beams.                                  |
| <b>Applications</b>             | Broad fabrics, light-weight conveyor and processing belts |



## Diolen® 175SLC

● HT-LS ● Non-Adhesive Activated (NA) ● Low capillarity

| Linear density<br><i>(nominal dtex)</i> | Number of filaments<br><i>(nominal)</i> | Linear density<br><i>dtex</i> | Breaking force<br><i>N</i> | Breaking tenacity<br><i>mN/tex</i> | Elongation at break<br><i>%</i> | EASF (xN)<br><i>%</i> | HAS 2 min. at 180°C<br><i>%</i> |
|---|---|-------------------------------|----------------------------|------------------------------------|---------------------------------|-----------------------|---------------------------------|
| <b>1100</b>                             | 210                                     | 1144                          | 84.0                       | 734                                | 19.6                            | 12.1 (45N)            | 1.3                             |
| <b>1670</b>                             | 210                                     | 1722                          | 127.5                      | 740                                | 19.9                            | 12.1 (68N)            | 1.3                             |
| <b>2200</b>                             | 420                                     | 2281                          | 163.2                      | 715                                | 19.3                            | 11.8 (90N)            | 1.3                             |

Tensile testing is performed at a yarn twist of Z60 t/m

HAS – Hot-air shrinkage testing is performed with a pretension of 1 mN/tex

## Twisting and Make-up

| Linear density<br><i>(nominal dtex)</i> | Number of filaments<br><i>(nominal)</i> | Twist<br><i>t/m</i> | Package weight<br><i>kg</i> | Tube dimension L/Ø<br><i>mm</i> | Spool Ø<br><i>mm</i> | Spools per pallet<br><i>–</i> | Pallet net weight<br><i>kg</i> |
|---|---|---------------------|-----------------------------|---------------------------------|----------------------|-------------------------------|--------------------------------|
| <b>1100</b>                             | 210                                     | 0                   | 11.3                        | 290/94                          | 260                  | 48                            | 542                            |
|   | 210                                     | Z60                 | 11.3                        | 290/94                          | 270                  | 48                            | 542                            |
|   | 210                                     | S/Z100              | 11.3                        | 290/94                          | 280                  | 48                            | 542                            |
| <b>1670</b>                             | 210                                     | 0                   | 11.3                        | 290/94                          | 260                  | 48                            | 542                            |
|   | 210                                     | Z60                 | 11.3                        | 290/94                          | 270                  | 48                            | 542                            |
| <b>2200</b>                             | 420                                     | 0                   | 11.3                        | 290/94                          | 260                  | 48                            | 542                            |
|   | 420                                     | Z60                 | 11.3                        | 290/94                          | 270                  | 48                            | 542                            |

Details based on full spools

|                                 |  |
|---------------------------------|--|
| <b>Package Type</b>             | Cylindrical bobbins  |
| <b>Pallet dimension (H×L×W)</b> | 111 × 126 × 101 cm   |
| <b>Special remarks</b>          | Other twist levels on request. Also available on beams.<br>Processing recommendations available. |
| <b>Applications</b>             | Broad fabrics, tents and textile constructions   |

## Diolen® 181T

● HT ● Non-Adhesive Activated (NA)

| Linear density        | Number of filaments | Linear density | Breaking force | Breaking tenacity | Elongation at break | EASF (xN) | HAS 2 min. at 180°C |
|-----------------------|---------------------|----------------|----------------|-------------------|---------------------|-----------|---------------------|
| <i>(nominal dtex)</i> | <i>(nominal)</i>    | <i>dtex</i>    | <i>N</i>       | <i>mN/tex</i>     | <i>%</i>            | <i>%</i>  | <i>%</i>            |
| 880                   | 105                 | 883            | 57.4           | 650               | 15.0                | 7.2 (36N) | 9.0                 |

Tensile testing is performed at a yarn twist of Z60 t/m

HAS – Hot-air shrinkage testing is performed with a pretension of 5 mN/tex

### Twisting and Make-up

| Linear density        | Number of filaments | Twist      | Package weight | Tube dimension L/Ø | Spool Ø   | Spools per pallet | Pallet net weight |
|-----------------------|---------------------|------------|----------------|--------------------|-----------|-------------------|-------------------|
| <i>(nominal dtex)</i> | <i>(nominal)</i>    | <i>t/m</i> | <i>kg</i>      | <i>mm</i>          | <i>mm</i> | <i>–</i>          | <i>kg</i>         |
| 880                   | 105                 | 0          | 14.4           | 300/94             | 300       | 33                | 475               |

Details based on full spools

|                                 |                                |
|---------------------------------|--------------------------------|
| <b>Package Type</b>             | Cylindrical bobbins            |
| <b>Pallet dimension (H×L×W)</b> | 111 × 126 × 101 cm             |
| <b>Special remarks</b>          | Other twist levels on request. |
| <b>Applications</b>             | Broad fabrics and sail cloth   |

## Diolen® 775

● HT ● Adhesive Activated (AA)

| Linear density        | Number of filaments | Linear density | Breaking force | Breaking tenacity | Elongation at break | EASF (xN)  | HAS 2 min. at 180°C |
|-----------------------|---------------------|----------------|----------------|-------------------|---------------------|------------|---------------------|
| <i>(nominal dtex)</i> | <i>(nominal)</i>    | <i>dtex</i>    | <i>N</i>       | <i>mN/tex</i>     | <i>%</i>            | <i>%</i>   | <i>%</i>            |
| <b>1100</b>           | 210                 | 1121           | 89.0           | 794               | 11.5                | 4.4 (45N)  | 6.0                 |
| <b>3300</b>           | 630                 | 3395           | 259.0          | 763               | 12.3                | 4.7 (135N) | 6.0                 |

Tensile testing is performed at a yarn twist of Z60 t/m

HAS – Hot-air shrinkage testing is performed with a pretension of 5 mN/tex

### Twisting and Make-up

| Linear density        | Number of filaments | Twist      | Package weight | Tube dimension L/Ø | Spool Ø   | Spools per pallet | Pallet net weight |
|-----------------------|---------------------|------------|----------------|--------------------|-----------|-------------------|-------------------|
| <i>(nominal dtex)</i> | <i>(nominal)</i>    | <i>t/m</i> | <i>kg</i>      | <i>mm</i>          | <i>mm</i> | <i>–</i>          | <i>kg</i>         |
| <b>1100</b>           | 210                 | 0          | 11.0           | 290/94             | 265       | 48                | 528               |
| <b>3300</b>           | 630                 | 0          | 11.0           | 290/94             | 262       | 48                | 528               |

Details based on full spools

|                                 |  |
|---------------------------------|--|
| <b>Package Type</b>             | Cylindrical bobbins  |
| <b>Pallet dimension (H×L×W)</b> | 111 × 126 × 101 cm   |
| <b>Special remarks</b>          | Other yarn counts on request.  |
| <b>Applications</b>             | Mechanical rubber goods (MRG), geotextiles, hoses and transmission belts |

## Enka® Nylon

PA 6.6 HT

| Type No. | Linear density<br><i>(nominal dtex)</i> | Number of filaments<br><i>(nominal)</i> | Main Applications   |
|----------|---|---|---|
| 140HRT   | 940                                     | 140                                     | Air springs, Broad fabrics, Conveyor belts, Hoses, Narrow fabrics, Ropes, Sewing threads, Tires, Transmission belts |
|          | 1400                                    | 210                                     |   |
|          | 1880                                    | 280                                     |   |
|          | 2100                                    | 280                                     |   |
| 142HRT   | 940                                     | 140                                     | Air springs, Hoses, Ropes, Special tires  |
|          | 1400                                    | 210                                     |   |
| 154HRST  | 940                                     | 140                                     | Mechanical rubber goods (MRG), Bicycle racing tires, Broad and Narrow fabrics, Nets                                 |
|          | 1880                                    | 280                                     |   |
| 433HRST  | 235                                     | 36                                      | Sewing threads, Mechanical rubber goods (MRG), Tires  |
|          | 312                                     | 72                                      |   |
|          | 470                                     | 72                                      |   |
| 434HRT   | 78 <sup>1</sup>                         | 36                                      | Mechanical rubber goods (MRG), Fishing lines  |
| 442HRT   | 470                                     | 72                                      | Airbags   |
| 444HRST  | 110                                     | 18                                      | Air springs, Broad and Narrow fabrics, Sewing threads, Tires  |
|          | 235                                     | 36                                      |   |
|          | 470                                     | 72                                      |   |
| 444HRT   | 235                                     | 36                                      | Broad and Narrow fabrics  |
| 446HRT   | 350 <sup>1</sup>                        | 140                                     | Airbags, Sewing threads (700 dtex)  |
|          | 470 <sup>1</sup>                        | 140                                     |   |
|          | 580                                     | 140                                     |   |
|          | 700                                     | 108                                     |   |
| 447HRT   | 235 <sup>1</sup>                        | 72                                      | Airbags   |
|          | 350 <sup>1</sup>                        | 144                                     |   |
|          | 470 <sup>1</sup>                        | 144                                     |   |

## Stanylenka®

| Type No. | Linear density<br><i>(nominal dtex)</i> | Number of filaments<br><i>(nominal)</i> | Main Applications                                |
|----------|---|---|--|
| 460HRST  | 470                                     | 72                                      | Airbag sewing threads, transmission belts, tires |
|          | 940                                     | 144                                     |  |
|          | 1400                                    | 216                                     |  |

<sup>1</sup> LDPF yarn types (Low denier per filament)

## Enka® Nylon 140HRT

- Medium shrinkage

| Linear density        | Number of filaments | Linear density | Breaking force | Breaking tenacity | Elongation at break | EASF (xN)     | HAS 2 min. at 180°C |
|-----------------------|---------------------|----------------|----------------|-------------------|---------------------|---------------|---------------------|
| <i>(nominal dtex)</i> | <i>(nominal)</i>    | <i>dtex</i>    | <i>N</i>       | <i>mN/tex</i>     | <i>%</i>            | <i>%</i>      | <i>%</i>            |
| 940                   | 140                 | 942            | 80.3           | 852               | 18.4                | 9.7 (45N)     | 5.1                 |
| 1400                  | 210                 | 1405           | 119.2          | 848               | 19.1                | 10.2 (68N)    | 5.1                 |
| 1880                  | 280                 | 1895           | 160.2          | 845               | 20.0                | 10.4 (90N)    | 5.1                 |
| 2100                  | 280                 | 2105           | 175.3          | 833               | 20.0                | 10.5 (100.8N) | 5.2                 |

Tensile testing is performed at a yarn twist of Z60 t/m

HAS – Hot-air shrinkage testing is performed with a pretension of 5 mN/tex

### Twisting and Make-up

| Linear density        | Number of filaments | Twist      | Package weight | Tube dimension L/Ø | Spool Ø   | Spools per pallet | Pallet net weight |
|-----------------------|---------------------|------------|----------------|--------------------|-----------|-------------------|-------------------|
| <i>(nominal dtex)</i> | <i>(nominal)</i>    | <i>t/m</i> | <i>kg</i>      | <i>mm</i>          | <i>mm</i> | <i>–</i>          | <i>kg</i>         |
| 940                   | 140                 | 0          | 10.0           | 300/94             | 270       | 48                | 480               |
|                       | 140                 | Z60        | 5.0            | 290/94             | 210       | 60                | 300               |
|                       | 140                 | Z130       | 10.0           | 290/94             | 285       | 39                | 390               |
| 1400                  | 210                 | 0          | 10.0           | 300/94             | 270       | 48                | 480               |
|                       | 210                 | 0          | 14.2           | 300/94             | 320       | 33                | 470               |
| 1880                  | 280                 | 0          | 10.0           | 300/94             | 270       | 48                | 480               |
|                       | 280                 | Z60        | 10.0           | 290/94             | 280       | 39                | 390               |
| 2100                  | 280                 | 0          | 10.0           | 300/94             | 270       | 48                | 480               |

Details based on full spools

|                          |  |
|--------------------------|--|
| Package Type             | Cylindrical bobbins  |
| Pallet dimension (H×L×W) | 111 × 126 × 101 cm   |
| Special remarks          | Other twist levels on request.   |
| Applications             | Air springs, broad fabrics, conveyor belts, hoses, narrow fabrics, ropes, sewing threads, tires and transmission belts |

## Enka® Nylon 142HRT

- Medium shrinkage

| Linear density<br>(nominal dtex) | Number of filaments<br>(nominal) | Linear density<br>dtex | Breaking force<br>N | Breaking tenacity<br>mN/tex | Elongation at break<br>% | EASF (xN)<br>% | HAS 2 min. at 180°C<br>% |
|----------------------------------|----------------------------------|------------------------|---------------------|-----------------------------|--------------------------|----------------|--------------------------|
| 940                              | 140                              | 942                    | 86.7                | 920                         | 18.5                     | 9.5 (45N)      | 5.8                      |
| 1400                             | 210                              | 1408                   | 129.6               | 920                         | 19.3                     | 10.2 (68N)     | 5.9                      |

Tensile testing is performed at a yarn twist of Z60 t/m

HAS – Hot-air shrinkage testing is performed with a pretension of 5 mN/tex

### Twisting and Make-up

| Linear density<br>(nominal dtex) | Number of filaments<br>(nominal) | Twist<br>t/m | Package weight<br>kg | Tube dimension L/Ø<br>mm | Spool Ø<br>mm | Spools per pallet<br>– | Pallet net weight<br>kg |
|----------------------------------|----------------------------------|--------------|----------------------|--------------------------|---------------|------------------------|-------------------------|
| 940                              | 140                              | 0            | 10.0                 | 300/94                   | 270           | 48                     | 480                     |
| 1400                             | 210                              | 0            | 10.0                 | 300/94                   | 270           | 48                     | 480                     |

Details based on full spools

|                                 |   |
|---------------------------------|---|
| <b>Package Type</b>             | Cylindrical bobbins                         |
| <b>Pallet dimension (H×L×W)</b> | 111 × 126 × 101 cm                          |
| <b>Special remarks</b>          |   |
| <b>Applications</b>             | Air springs, hoses, ropes and special tires |

## Enka® Nylon 154HRST

- Low shrinkage

| Linear density<br>(nominal dtex) | Number of filaments<br>(nominal) | Linear density<br>dtex | Breaking force<br>N | Breaking tenacity<br>mN/tex | Elongation at break<br>% | EASF (xN)<br>% | HAS 2 min. at 180°C<br>% |
|----------------------------------|----------------------------------|------------------------|---------------------|-----------------------------|--------------------------|----------------|--------------------------|
| 940                              | 140                              | 961                    | 72.2                | 751                         | 25.3                     | 12.9 (45N)     | 3.0                      |
| 1880                             | 280                              | 1905                   | 139.3               | 731                         | 26.2                     | 13.6 (90N)     | 3.1                      |

Tensile testing is performed at a yarn twist of Z60 t/m

HAS – Hot-air shrinkage testing is performed with a pretension of 5 mN/tex

### Twisting and Make-up

| Linear density<br>(nominal dtex) | Number of filaments<br>(nominal) | Twist<br>t/m | Package weight<br>kg | Tube dimension<br>L/Ø<br>mm | Spool Ø<br>mm | Spools per pallet<br>– | Pallet net weight<br>kg |
|----------------------------------|----------------------------------|--------------|----------------------|-----------------------------|---------------|------------------------|-------------------------|
| 940                              | 140                              | 0            | 10.0                 | 300/94                      | 270           | 48                     | 480                     |
|                                  | 140                              | Z60          | 10.0                 | 290/94                      | 280           | 39                     | 390                     |
|                                  | 140                              | Z130         | 5.0                  | 290/94                      | 210           | 60                     | 300                     |
| 1880                             | 280                              | 0            | 10.0                 | 300/94                      | 270           | 48                     | 480                     |
|                                  | 280                              | Z60          | 10.0                 | 290/94                      | 280           | 39                     | 390                     |

Details based on full spools

|                          |   |
|--------------------------|---|
| Package Type             | Cylindrical bobbins   |
| Pallet dimension (H×L×W) | 111 × 126 × 101 cm  |
| Special remarks          | Other twist levels on request.  |
| Applications             | Mechanical rubber goods (MRG), bicycle racing tires, broad and narrow fabrics, nets |

## Enka® Nylon 433HRST

- Low elongation at break - high breaking force

| Linear density<br><i>(nominal dtex)</i> | Number of filaments<br><i>(nominal)</i> | Linear density<br><i>dtex</i> | Breaking force<br><i>N</i> | Breaking tenacity<br><i>mN/tex</i> | Elongation at break<br><i>%</i> | EASF (xN)<br><i>%</i> | HAS 2 min. at 180°C<br><i>%</i> |
|---|---|-------------------------------|----------------------------|------------------------------------|---------------------------------|-----------------------|---------------------------------|
| 235                                     | 36                                      | 236                           | 19.8                       | 839                                | 20.8                            | 7.2 (5.6N)            | 4.8                             |
| 312                                     | 72                                      | 318                           | 27.2                       | 855                                | 20.8                            | 7.2 (7.5N)            | 4.7                             |
| 470                                     | 72                                      | 474                           | 38.8                       | 818                                | 20.7                            | 7.2 (11.3N)           | 4.8                             |

Tensile testing is performed at a yarn twist of Z60 t/m

HAS – Hot-air shrinkage testing is performed with a pretension of 5 mN/tex

### Twisting and Make-up

| Linear density<br><i>(nominal dtex)</i> | Number of filaments<br><i>(nominal)</i> | Twist<br><i>t/m</i> | Package weight<br><i>kg</i> | Tube dimension L/Ø<br><i>mm</i> | Spool Ø<br><i>mm</i> | Spools per pallet<br><i>–</i> | Pallet net weight<br><i>kg</i> |
|---|---|---------------------|-----------------------------|---------------------------------|----------------------|-------------------------------|--------------------------------|
| 235                                     | 36                                      | 0                   | 8.8                         | 290/94                          | 267                  | 42                            | 370                            |
| 312                                     | 72                                      | 0                   | 8.8                         | 290/94                          | 267                  | 42                            | 370                            |
| 470                                     | 72                                      | 0                   | 8.8                         | 290/94                          | 267                  | 42                            | 370                            |

Details based on full spools

|                                 |   |
|---------------------------------|---|
| <b>Package Type</b>             | Cylindrical bobbins                                     |
| <b>Pallet dimension (H×L×W)</b> | 111 × 126 × 101 cm                                      |
| <b>Special remarks</b>          | Other twist levels on request.                          |
| <b>Applications</b>             | Sewing threads, mechanical rubber goods (MRG) and tires |



## Enka® Nylon 434HRT

● LDPF yarn

| Linear density<br>(nominal dtex) | Number of filaments<br>(nominal) | Linear density<br>dtex | Breaking force<br>N | Breaking tenacity<br>mN/tex | Elongation at break<br>% | EASF (xN)<br>% | HAS 2 min. at 180°C<br>% |
|----------------------------------|----------------------------------|------------------------|---------------------|-----------------------------|--------------------------|----------------|--------------------------|
| 78                               | 36                               | 82                     | 5.8                 | 707                         | 23                       | 6.8 (1.9N)     | 8.6                      |

Tensile testing is performed at a yarn twist of Z60 t/m

HAS – Hot-air shrinkage testing is performed with a pretension of 5 mN/tex

### Twisting and Make-up

| Linear density<br>(nominal dtex) | Number of filaments<br>(nominal) | Twist<br>t/m | Package weight<br>kg | Tube dimension<br>L/Ø<br>mm | Spool Ø<br>mm | Spools per pallet<br>– | Pallet net weight<br>kg |
|----------------------------------|----------------------------------|--------------|----------------------|-----------------------------|---------------|------------------------|-------------------------|
| 78                               | 36                               | 0            | 4.4                  | 290/94                      | 200           | 75                     | 330                     |

Details based on full spools

|                                 |   |
|---------------------------------|---|
| <b>Package Type</b>             | Cylindrical bobbins                             |
| <b>Pallet dimension (H×L×W)</b> | 111 × 126 × 101 cm                              |
| <b>Special remarks</b>          | Low denier per filament.                        |
| <b>Applications</b>             | Mechanical rubber goods (MRG) and fishing lines |

## Enka® Nylon 442HRT

- Medium shrinkage

| Linear density<br>(nominal dtex) | Number of filaments<br>(nominal) | Linear density<br>dtex | Breaking force<br>N | Breaking tenacity<br>mN/tex | Elongation at break<br>% | EASF (xN)<br>% | HAS 2 min. at 180°C<br>% |
|----------------------------------|----------------------------------|------------------------|---------------------|-----------------------------|--------------------------|----------------|--------------------------|
| 470                              | 72                               | 470                    | 40.0                | 851                         | 21.5                     | 6.1 (11.3N)    | 6.0                      |

Tensile testing is performed at a yarn twist of Z60 t/m

HAS – Hot-air shrinkage testing is performed with a pretension of 5 mN/tex

### Twisting and Make-up

| Linear density<br>(nominal dtex) | Number of filaments<br>(nominal) | Twist<br>t/m | Package weight<br>kg | Tube dimension<br>L/Ø<br>mm | Spool Ø<br>mm | Spools per pallet<br>– | Pallet net weight<br>kg |
|----------------------------------|----------------------------------|--------------|----------------------|-----------------------------|---------------|------------------------|-------------------------|
| 470                              | 72                               | 0            | 9.0                  | 150/94                      | 360           | 48                     | 450                     |

Details based on full spools

|                                 |                    |
|---------------------------------|--------------------|
| <b>Package Type</b>             | Cheeses            |
| <b>Pallet dimension (H×L×W)</b> | 112 × 126 × 101 cm |
| <b>Special remarks</b>          |                    |
| <b>Applications</b>             | Airbags            |

## Enka® Nylon 444HRST

- Low shrinkage

| Linear density<br>(nominal dtex) | Number of filaments<br>(nominal) | Linear density<br>dtex | Breaking force<br>N | Breaking tenacity<br>mN/tex | Elongation at break<br>% | EASF (xN)<br>% | HAS 2 min. at 180°C<br>% |
|----------------------------------|----------------------------------|------------------------|---------------------|-----------------------------|--------------------------|----------------|--------------------------|
| 110                              | 18                               | 112                    | 8.2                 | 732                         | 26.0                     | 7.8 (2.6N)     | 3.6                      |
| 235                              | 36                               | 238                    | 17.7                | 744                         | 25.7                     | 8.0 (5.6N)     | 3.7                      |
| 470                              | 72                               | 476                    | 34.0                | 714                         | 25.5                     | 8.2 (11.3N)    | 3.7                      |

Tensile testing is performed at a yarn twist of Z60 t/m

HAS – Hot-air shrinkage testing is performed with a pretension of 5 mN/tex

### Twisting and Make-up

| Linear density<br>(nominal dtex) | Number of filaments<br>(nominal) | Twist<br>t/m | Package weight<br>kg | Tube dimension L/Ø<br>mm | Spool Ø<br>mm | Spools per pallet<br>– | Pallet net weight<br>kg |
|----------------------------------|----------------------------------|--------------|----------------------|--------------------------|---------------|------------------------|-------------------------|
| 110                              | 18                               | 0            | 4.4                  | 290/94                   | 200           | 75                     | 330                     |
|                                  | 36                               | 0            | 4.8                  | 290/94                   | 210           | 75                     | 360                     |
| 235                              | 36                               | 0            | 9.5                  | 290/94                   | 260           | 42                     | 400                     |
|                                  | 36                               | Z130         | 4.8                  | 290/94                   | 215           | 75                     | 360                     |
| 470                              | 72                               | 0            | 8.0                  | 290/94                   | 250           | 48                     | 385                     |
|                                  | 72                               | S/Z130       | 8.0                  | 290/94                   | 265           | 48                     | 385                     |

Details based on full spools

|                                 |   |
|---------------------------------|---|
| <b>Package Type</b>             | Cylindrical bobbins   |
| <b>Pallet dimension (H×L×W)</b> | 111 × 126 × 101 cm  |
| <b>Special remarks</b>          | Other twist levels on request. Also available on beams.         |
| <b>Applications</b>             | Air springs, broad and narrow fabrics, sewing threads and tires |

## Enka® Nylon 444HRT

- Medium shrinkage

| Linear density<br>(nominal dtex) | Number of filaments<br>(nominal) | Linear density<br>dtex | Breaking force<br>N | Breaking tenacity<br>mN/tex | Elongation at break<br>% | EASF (xN)<br>% | HAS 2 min. at 180°C<br>% |
|----------------------------------|----------------------------------|------------------------|---------------------|-----------------------------|--------------------------|----------------|--------------------------|
| 235                              | 36                               | 238                    | 17.7                | 744                         | 24.0                     | 8.0 (5.6N)     | 6.0                      |

Tensile testing is performed at a yarn twist of Z60 t/m

HAS – Hot-air shrinkage testing is performed with a pretension of 5 mN/tex

### Twisting and Make-up

| Linear density<br>(nominal dtex) | Number of filaments<br>(nominal) | Twist<br>t/m | Package weight<br>kg | Tube dimension<br>L/Ø<br>mm | Spool Ø<br>mm | Spools per pallet<br>– | Pallet net weight<br>kg |
|----------------------------------|----------------------------------|--------------|----------------------|-----------------------------|---------------|------------------------|-------------------------|
| 235                              | 36                               | 0            | 9.5                  | 290/94                      | 260           | 42                     | 400                     |

Details based on full spools

|                                 |                          |
|---------------------------------|--------------------------|
| <b>Package Type</b>             | Cylindrical bobbins      |
| <b>Pallet dimension (H×L×W)</b> | 111 × 126 × 101 cm       |
| <b>Special remarks</b>          |                          |
| <b>Applications</b>             | Broad and narrow fabrics |

## Enka® Nylon 446HRT

- Medium shrinkage - LDPF yarn (350, 470dtex)

| Linear density<br>(nominal dtex) | Number of filaments<br>(nominal) | Linear density<br>dtex | Breaking force<br>N | Breaking tenacity<br>mN/tex | Elongation at break<br>% | EASF (xN)<br>% | HAS 2 min. at 180°C<br>% |
|----------------------------------|----------------------------------|------------------------|---------------------|-----------------------------|--------------------------|----------------|--------------------------|
| 350 <sup>1</sup>                 | 140                              | 352                    | 30.5                | 866                         | 22.5                     | 7.1 (8.4N)     | 5.4                      |
| 470 <sup>1</sup>                 | 140                              | 474                    | 40.0                | 844                         | 22.5                     | 7.0 (11.3N)    | 5.6                      |
| 580                              | 140                              | 582                    | 47.5                | 816                         | 21.5                     | 7.0 (13.9N)    | 5.5                      |
| 700*                             | 108                              | 715                    | 60.3                | 843                         | 20.2                     | 10.5 (34N)     | 5.7                      |

Tensile testing is performed at a yarn twist of Z60 t/m

HAS – Hot-air shrinkage testing is performed with a pretension of 5 mN/tex

### Twisting and Make-up

| Linear density<br>(nominal dtex) | Number of filaments<br>(nominal) | Twist<br>t/m | Package weight<br>kg | Tube dimension L/Ø<br>mm | Spool Ø<br>mm | Spools per pallet<br>– | Pallet net weight<br>kg |
|----------------------------------|----------------------------------|--------------|----------------------|--------------------------|---------------|------------------------|-------------------------|
| 350                              | 140                              | 0            | 9.0                  | 150/94                   | 360           | 48                     | 450                     |
| 470                              | 140                              | 0            | 9.0                  | 150/94                   | 360           | 48                     | 445                     |
| 580                              | 140                              | 0            | 9.0                  | 150/94                   | 360           | 48                     | 445                     |
| 700                              | 108                              | 0            | 9.0                  | 150/94                   | 360           | 48                     | 445                     |

Details based on full spools

|                                 |                                      |
|---------------------------------|--------------------------------------|
| <b>Package Type</b>             | Cheeses                              |
| <b>Pallet dimension (H×L×W)</b> | 112 × 126 × 101 cm                   |
| <b>Special remarks</b>          | Also available on beams.             |
| <b>Applications</b>             | Airbags, (*) also for Sewing threads |

<sup>1</sup> LDPF yarn

## Enka® Nylon 447HRT

- High shrinkage LDPF yarn

| Linear density<br>(nominal dtex) | Number of filaments<br>(nominal) | Linear density<br>dtex | Breaking force<br>N | Breaking tenacity<br>mN/tex | Elongation at break<br>% | EASF (xN)<br>% | HAS 2 min. at 180°C<br>% |
|----------------------------------|----------------------------------|------------------------|---------------------|-----------------------------|--------------------------|----------------|--------------------------|
| 235                              | 72                               | 236                    | 16.8                | 712                         | 23.2                     | 7.8 (5.6N)     | 8.6                      |
| 350                              | 144                              | 351                    | 25.6                | 729                         | 24.2                     | 7.2 (8.4N)     | 8.1                      |
| 470                              | 144                              | 474                    | 35.0                | 738                         | 23.2                     | 6.9 (11.3N)    | 7.8                      |

Tensile testing is performed at a yarn twist of Z60 t/m

HAS – Hot-air shrinkage testing is performed with a pretension of 5 mN/tex

### Twisting and Make-up

| Linear density<br>(nominal dtex) | Number of filaments<br>(nominal) | Twist<br>t/m | Package weight<br>kg | Tube dimension L/Ø<br>mm | Spool Ø<br>mm | Spools per pallet<br>– | Pallet net weight<br>kg |
|----------------------------------|----------------------------------|--------------|----------------------|--------------------------|---------------|------------------------|-------------------------|
| 235                              | 72                               | 0            | 9.5                  | 290/94                   | 275           | 42                     | 395                     |
| 350                              | 144                              | 0            | 9.5                  | 290/94                   | 278           | 42                     | 405                     |
| 470                              | 144                              | 0            | 9.5                  | 290/94                   | 278           | 42                     | 400                     |
| 470*                             | 144                              | 0            | 9.0                  | 150/94                   | 360           | 48                     | 445                     |

Details based on full spools

|                                 |                          |                    |
|---------------------------------|--------------------------|--------------------|
| <b>Package Type</b>             | Cylindrical bobbins      | * Cheeses          |
| <b>Pallet dimension (H×L×W)</b> | 111 × 126 × 101 cm       | 112 × 126 × 101 cm |
| <b>Special remarks</b>          | Also available on beams. |                    |
| <b>Applications</b>             | Airbags                  |                    |

## Stanylenka®

### Stanylenka® 460HRST

- Low shrinkage

| Linear density<br><i>(nominal dtex)</i> | Number of filaments<br><i>(nominal)</i> | Linear density<br><i>dtex</i> | Breaking force<br><i>N</i> | Breaking tenacity<br><i>mN/tex</i> | Elongation at break<br><i>%</i> | EASF (xN)<br><i>%</i> | HAS 2 min. at 180°C<br><i>%</i> |
|---|---|-------------------------------|----------------------------|------------------------------------|---------------------------------|-----------------------|---------------------------------|
| 470                                     | 72                                      | 478                           | 35.1                       | 734                                | 21.8                            | 7.4 (11.3N)           | 3.5                             |
| 940                                     | 144                                     | 955                           | 70.2                       | 735                                | 19.3                            | 9.0 (45N)             | 4.4                             |
| 1400                                    | 216                                     | 1430                          | 102.0                      | 713                                | 19.3                            | 9.3 (68N)             | 4.5                             |

Tensile testing is performed at a yarn twist of Z60 t/m

HAS – Hot-air shrinkage testing is performed with a pretension of 5 mN/tex

### Twisting and Make-up

| Linear density<br><i>(nominal dtex)</i> | Number of filaments<br><i>(nominal)</i> | Twist<br><i>t/m</i> | Package weight<br><i>kg</i> | Tube dimension L/Ø<br><i>mm</i> | Spool Ø<br><i>mm</i> | Spools per pallet<br><i>–</i> | Pallet net weight<br><i>kg</i> |
|---|---|---------------------|-----------------------------|---------------------------------|----------------------|-------------------------------|--------------------------------|
| 470                                     | 72                                      | 0                   | 4.3                         | 290/94                          | 194                  | 75                            | 323                            |
| 940                                     | 144                                     | 0                   | 4.2                         | 290/94                          | 185                  | 75                            | 315                            |
| 1400                                    | 216                                     | 0                   | 4.2                         | 290/94                          | 185                  | 75                            | 315                            |

Details based on full spools

|                          |  |
|--------------------------|--|
| Package Type             | Cylindrical bobbins                              |
| Pallet dimension (H×L×W) | 111 × 126 × 101 cm                               |
| Special remarks          | Other twist levels on request.                   |
| Applications             | Airbag sewing threads, transmission belts, tires |



## Contact

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## Certifications

- ISO 9001: 2015
- ISO 14001: 2015
- ISO 45001: 2018
- ISO 50001: 2018

Click [here](#) for all certificates



## Polyester 151

● HT ● Adhesive Activated (AA)

| Linear density        | Number of filaments | Linear density | Breaking force | Breaking tenacity | Elongation at break | EASF (xN)  | HAS 2 min. at 180°C |
|-----------------------|---------------------|----------------|----------------|-------------------|---------------------|------------|---------------------|
| <i>(nominal dtex)</i> | <i>(nominal)</i>    | <i>dtex</i>    | <i>N</i>       | <i>mN/tex</i>     | <i>%</i>            | <i>%</i>   | <i>%</i>            |
| <b>1100</b>           | 192                 | 1123           | 93             | 828               | 17.5                | 8.2 (45N)  | 5.0                 |
| <b>1440</b>           | 332                 | 1490           | 124            | 832               | 15.8                | 8.1 (60N)  | 5.0                 |
| <b>1670</b>           | 332                 | 1692           | 139            | 822               | 16.5                | 8.4 (70N)  | 5.0                 |
| <b>2200</b>           | 332                 | 2228           | 184            | 826               | 16.3                | 8.2 (90N)  | 5.0                 |
| <b>3300</b>           | 498                 | 3350           | 274            | 818               | 16.7                | 8.3 (133N) | 5.0                 |

Tensile testing is performed at a yarn twist of Z50 t/m

HAS – Hot-air shrinkage testing is performed with a pretension of 1 mN/tex

### Twisting and Make-up

| Linear density        | Number of filaments | Twist      | Package weight | Tube dimension L/Ø | Spool Ø   | Spools per pallet | Pallet net weight |
|-----------------------|---------------------|------------|----------------|--------------------|-----------|-------------------|-------------------|
| <i>(nominal dtex)</i> | <i>(nominal)</i>    | <i>t/m</i> | <i>kg</i>      | <i>mm</i>          | <i>mm</i> | <i>-</i>          | <i>kg</i>         |
| <b>1100</b>           | 192                 | -          | 13.4           | 300/110            | 288       | 40                | 536               |
| <b>1440</b>           | 332                 | -          | 13.4           | 300/110            | 288       | 40                | 536               |
| <b>1670</b>           | 332                 | -          | 13.4           | 300/110            | 288       | 40                | 536               |
| <b>2200</b>           | 332                 | -          | 13.4           | 300/110            | 288       | 40                | 536               |
| <b>3300</b>           | 498                 | -          | 13.4           | 300/110            | 288       | 40                | 536               |

Details based on full spools

|                                 |                     |
|---------------------------------|---------------------|
| <b>Package Type</b>             | Cylindrical bobbins |
| <b>Pallet dimension (H×L×W)</b> | 172 × 120 × 80 cm   |

|                     |  |
|---------------------|--|
| <b>Applications</b> | Conveyor belt fabrics, processing belts, geotextiles and hoses |
|---------------------|--|

## Polyester 153

● HT ● Adhesive Activated (AA)

| Linear density<br><i>(nominal dtex)</i> | Number of filaments<br><i>(nominal)</i> | Linear density<br><i>dtex</i> | Breaking force<br><i>N</i> | Breaking tenacity<br><i>mN/tex</i> | Elongation at break<br><i>%</i> | EASF (xN)<br><i>%</i> | HAS 2 min. at 180°C<br><i>%</i> |
|---|---|-------------------------------|----------------------------|------------------------------------|---------------------------------|-----------------------|---------------------------------|
| 1100                                    | 192                                     | 1120                          | 83.1                       | 742                                | 20.9                            | -                     | 2.8                             |
| 1670                                    | 332                                     | 1697                          | 125.5                      | 740                                | 21.0                            | -                     | 2.8                             |
| 2200                                    | 332                                     | 2222                          | 164.7                      | 749                                | 21.0                            | -                     | 2.9                             |
| 3300                                    | 498                                     | 3333                          | 246.4                      | 739                                | 21.0                            | -                     | 2.8                             |

Tensile testing is performed at a yarn twist of Z50 t/m

HAS – Hot-air shrinkage testing is performed with a pretension of 1 mN/tex

### Twisting and Make-up

| Linear density<br><i>(nominal dtex)</i> | Number of filaments<br><i>(nominal)</i> | Twist<br><i>t/m</i> | Package weight<br><i>kg</i> | Tube dimension L/Ø<br><i>mm</i> | Spool Ø<br><i>mm</i> | Spools per pallet<br><i>-</i> | Pallet net weight<br><i>kg</i> |
|---|---|---------------------|-----------------------------|---------------------------------|----------------------|-------------------------------|--------------------------------|
| 1100                                    | 192                                     | -                   | 13.4                        | 300/110                         | 288                  | 40                            | 536                            |
| 1670                                    | 332                                     | -                   | 13.4                        | 300/110                         | 288                  | 40                            | 536                            |
| 2200                                    | 332                                     | -                   | 13.4                        | 300/110                         | 288                  | 40                            | 536                            |
| 3300                                    | 498                                     | -                   | 13.4                        | 300/110                         | 288                  | 40                            | 536                            |

Details based on full spools

Package Type | Cylindrical bobbins

Pallet dimension (H×L×W) | 172 × 120 × 80 cm

Applications | Conveyor belt fabrics

## Polyester 355T

● HT ● Non-Adhesive Activated (NA)

| Linear density        | Number of filaments | Linear density | Breaking force | Breaking tenacity | Elongation at break | EASF (xN) | HAS 2 min. at 180°C |
|-----------------------|---------------------|----------------|----------------|-------------------|---------------------|-----------|---------------------|
| <i>(nominal dtex)</i> | <i>(nominal)</i>    | <i>dtex</i>    | <i>N</i>       | <i>mN/tex</i>     | <i>%</i>            | <i>%</i>  | <i>%</i>            |
| <b>1100</b>           | 192                 | 1120           | 93             | 830               | 13.0                | 5.7 (45N) | 6.0                 |
| <b>1440</b>           | 192                 | 1465           | 122            | 833               | 13.1                | 6.0 (60N) | 5.9                 |
| <b>1670</b>           | 192                 | 1695           | 141            | 838               | 13.8                | 5.6 (70N) | 6.0                 |
| <b>2200</b>           | 384                 | 2225           | 184            | 820               | 13.5                | 6.2 (90N) | 6.0                 |
| <b>3300</b>           | 498                 | 3327           | 270            | 812               | 14.2                | 5.0 (90N) | 5.8                 |

Tensile testing is performed at a yarn twist of Z50 t/m

HAS – Hot-air shrinkage testing is performed with a pretension of 1 mN/tex

### Twisting and Make-up

| Linear density        | Number of filaments | Twist      | Package weight | Tube dimension L/Ø | Spool Ø   | Spools per pallet | Pallet net weight |
|-----------------------|---------------------|------------|----------------|--------------------|-----------|-------------------|-------------------|
| <i>(nominal dtex)</i> | <i>(nominal)</i>    | <i>t/m</i> | <i>kg</i>      | <i>mm</i>          | <i>mm</i> | <i>-</i>          | <i>kg</i>         |
| <b>1100</b>           | 192                 | -          | 10.0           | 300/94             | 255       | 33                | 330               |
| <b>1440</b>           | 192                 | -          | 10.0           | 300/94             | 250       | 33                | 330               |
| <b>1670</b>           | 192                 | -          | 10.0           | 300/94             | 250       | 33                | 330               |
| <b>2200</b>           | 384                 | -          | 10.0           | 300/94             | 250       | 33                | 330               |
| <b>3300</b>           | 498                 | -          | 10.0           | 300/110            | 255       | 36                | 360               |

Details based on full spools

|                                 |                     |
|---------------------------------|---------------------|
| <b>Package Type</b>             | Cylindrical bobbins |
| <b>Pallet dimension (H×L×W)</b> | 110 × 120 × 100 cm  |

**Applications** | Ropes, hoses, nets and narrow fabrics

## Polyester 365ST

● HT ● Adhesive Activated (AA)

| Linear density<br><i>(nominal dtex)</i> | Number of filaments<br><i>(nominal)</i> | Linear density<br><i>dtex</i> | Breaking force<br><i>N</i> | Breaking tenacity<br><i>mN/tex</i> | Elongation at break<br><i>%</i> | EASF (xN)<br><i>%</i> | HAS 2 min. at 180°C<br><i>%</i> |
|---|---|-------------------------------|----------------------------|------------------------------------|---------------------------------|-----------------------|---------------------------------|
| <b>1100</b>                             | 192                                     | 1117                          | 93.4                       | 837                                | 15.1                            | 6.4 (45N)             | 4.1                             |
| <b>1670</b>                             | 192                                     | 1686                          | 136.9                      | 810                                | 14.9                            | 6.6 (70N)             | 4.3                             |
| <b>2200</b>                             | 384                                     | 2224                          | 183.9                      | 827                                | 14.6                            | 6.3 (90N)             | 3.9                             |
| <b>3300</b>                             | 498                                     | 3322                          | 273.9                      | 823                                | 14.7                            | 6.2 (135N)            | 3.8                             |

Tensile testing is performed at a yarn twist of Z50 t/m

HAS – Hot-air shrinkage testing is performed with a pretension of 5 mN/tex

### Twisting and Make-up

| Linear density<br><i>(nominal dtex)</i> | Number of filaments<br><i>(nominal)</i> | Twist<br><i>t/m</i> | Package weight<br><i>kg</i> | Tube dimension L/Ø<br><i>mm</i> | Spool Ø<br><i>mm</i> | Spools per pallet<br><i>-</i> | Pallet net weight<br><i>kg</i> |
|---|---|---------------------|-----------------------------|---------------------------------|----------------------|-------------------------------|--------------------------------|
| <b>1100</b>                             | 192                                     | -                   | 14.4                        | 300/94                          | 295                  | 33                            | 475                            |
| <b>1670</b>                             | 192                                     | -                   | 14.4                        | 300/94                          | 295                  | 33                            | 475                            |
| <b>2200</b>                             | 384                                     | -                   | 14.4                        | 300/94                          | 295                  | 33                            | 475                            |
| <b>3300</b>                             | 498                                     | -                   | 14.4                        | 300/110                         | 295                  | 24                            | 345                            |

Details based on full spools

|                                 |  |
|---------------------------------|--|
| <b>Package Type</b>             | Cylindrical bobbins                    |
| <b>Pallet dimension (H×L×W)</b> | 110 × 120 × 80 cm / 110 x 120 x 100 cm |
| <b>Applications</b>             | MRG                                    |

## Polyester 370ST

- HT-LS ● Non-Adhesive Activated (NA)

| Linear density        | Number of filaments | Linear density | Breaking force | Breaking tenacity | Elongation at break | EASF (xN)  | HAS 2 min. at 180°C |
|-----------------------|---------------------|----------------|----------------|-------------------|---------------------|------------|---------------------|
| <i>(nominal dtex)</i> | <i>(nominal)</i>    | <i>dtex</i>    | <i>N</i>       | <i>mN/tex</i>     | <i>%</i>            | <i>%</i>   | <i>%</i>            |
| <b>1100</b>           | 192                 | 1119           | 80.9           | 722               | 24.5                | 15.4 (45N) | 1.6                 |
| <b>1670</b>           | 192                 | 1688           | 122.8          | 727               | 24.7                | 15.8 (70N) | 1.7                 |
| <b>2200</b>           | 384                 | 2226           | 153.0          | 687               | 25.9                | 15.8 (90N) | 1.8                 |
| <b>3300</b>           | 498                 | 3356           | 238.0          | 709               | 24.0                | 10.0 (90N) | 2.2                 |

Tensile testing is performed at a yarn twist of Z50 t/m

HAS – Hot-air shrinkage testing is performed with a pretension of 1 mN/tex

### Twisting and Make-up

| Linear density        | Number of filaments | Twist      | Package weight | Tube dimension L/Ø | Spool Ø   | Spools per pallet | Pallet net weight |
|-----------------------|---------------------|------------|----------------|--------------------|-----------|-------------------|-------------------|
| <i>(nominal dtex)</i> | <i>(nominal)</i>    | <i>t/m</i> | <i>kg</i>      | <i>mm</i>          | <i>mm</i> | <i>-</i>          | <i>kg</i>         |
| <b>1100</b>           | 192                 | -          | 14.4           | 300/94             | 295       | 33                | 475               |
| <b>1670</b>           | 192                 | -          | 14.4           | 300/94             | 295       | 33                | 345               |
| <b>2200</b>           | 384                 | -          | 14.4           | 300/94             | 295       | 33                | 345               |
| <b>3300</b>           | 498                 | -          | 14.4           | 300/110            | 296       | 24                | 345               |

Details based on full spools

|                                 |  |
|---------------------------------|--|
| <b>Package Type</b>             | Cylindrical bobbins                    |
| <b>Pallet dimension (H×L×W)</b> | 110 × 120 × 100 cm / 110 x 120 x 80 cm |

|                     |                          |
|---------------------|--------------------------|
| <b>Applications</b> | Broad and narrow fabrics |
|---------------------|--------------------------|

## Polyester 380T

● HT-LS ● Non-Adhesive Activated (NA)

| Linear density<br><i>(nominal dtex)</i> | Number of filaments<br><i>(nominal)</i> | Linear density<br><i>dtex</i> | Breaking force<br><i>N</i> | Breaking tenacity<br><i>mN/tex</i> | Elongation at break<br><i>%</i> | EASF (xN)<br><i>%</i> | HAS 15 min. at 190°C<br><i>%</i> |
|---|---|-------------------------------|----------------------------|------------------------------------|---------------------------------|-----------------------|----------------------------------|
| 1100                                    | 105                                     | 1125                          | 92.4                       | 820                                | 11.8                            | 5.1 (45N)             | 11.6                             |

Tensile testing is performed at a yarn twist of Z50 t/m

HAS – Hot-air shrinkage testing is performed with a pretension of 1 mN/tex

## Twisting and Make-up

| Linear density<br><i>(nominal dtex)</i> | Number of filaments<br><i>(nominal)</i> | Twist<br><i>t/m</i> | Package weight<br><i>kg</i> | Tube dimension L/Ø<br><i>mm</i> | Spool Ø<br><i>mm</i> | Spools per pallet<br><i>-</i> | Pallet net weight<br><i>kg</i> |
|---|---|---------------------|-----------------------------|---------------------------------|----------------------|-------------------------------|--------------------------------|
| 1100                                    | 105                                     | -                   | 11                          | 300/94                          | 257                  | 33                            | 363                            |

Details based on full spools

|                                 |                     |
|---------------------------------|---------------------|
| <b>Package Type</b>             | Cylindrical bobbins |
| <b>Pallet dimension (H×L×W)</b> | 110 × 120 × 80 cm   |
| <b>Applications</b>             | Seatbelts           |

## Polyester 381T

- HT-S    ● Non-Adhesive Activated (NA)

| Linear density<br><i>(nominal dtex)</i> | Number of filaments<br><i>(nominal)</i> | Linear density<br><i>dtex</i> | Breaking force<br><i>N</i> | Breaking tenacity<br><i>mN/tex</i> | Elongation at break<br><i>%</i> | EASF (xN)<br><i>%</i> | HAS 2 min. at 180°C<br><i>%</i> |
|---|---|-------------------------------|----------------------------|------------------------------------|---------------------------------|-----------------------|---------------------------------|
| 1100                                    | 104                                     | 1120                          | 75                         | 670                                | 14.9                            | 6.3 (45N)             | 9.2                             |

Tensile testing is performed at a yarn twist of Z50 t/m

HAS – Hot-air shrinkage testing is performed with a pretension of 5 mN/tex

### Twisting and Make-up

| Linear density<br><i>(nominal dtex)</i> | Number of filaments<br><i>(nominal)</i> | Twist<br><i>t/m</i> | Package weight<br><i>kg</i> | Tube dimension L/Ø<br><i>mm</i> | Spool Ø<br><i>mm</i> | Spools per pallet<br><i>-</i> | Pallet net weight<br><i>kg</i> |
|---|---|---------------------|-----------------------------|---------------------------------|----------------------|-------------------------------|--------------------------------|
| 1100                                    | 104                                     | -                   | 14.4                        | 300/94                          | 295                  | 23                            | 475                            |

Details based on full spools

|                                 |                     |
|---------------------------------|---------------------|
| <b>Package Type</b>             | Cylindrical bobbins |
| <b>Pallet dimension (H×L×W)</b> | 110 × 120 × 100 cm  |
| <b>Applications</b>             | Sail cloth          |

## Polyester 159

● HMLS ● Adhesive Activated (AA)

| Linear density<br><i>(nominal dtex)</i> | Number of filaments<br><i>(nominal)</i> | Linear density<br><i>dtex</i> | Breaking force<br><i>N</i> | Breaking tenacity<br><i>mN/tex</i> | Elongation at break<br><i>%</i> | EASF (xN)<br><i>%</i> | HAS 2 min. at 180°C<br><i>%</i> |
|---|---|-------------------------------|----------------------------|------------------------------------|---------------------------------|-----------------------|---------------------------------|
| 1100                                    | 250                                     | 1130                          | 82                         | 710                                | 14.7                            | 5.4 (45N)             | 5.2                             |
| 1440                                    | 332                                     | 1510                          | 106                        | 702                                | 15.2                            | 5.5 (60N)             | 5.2                             |
| 1670                                    | 375                                     | 1685                          | 120                        | 712                                | 14.5                            | 5.6 (70N)             | 5.2                             |
| 2200                                    | 498                                     | 2281                          | 158                        | 701                                | 14.9                            | 5.7 (90N)             | 5.2                             |

Tensile testing is performed at a yarn twist of Z50 t/m

HAS – Hot-air shrinkage testing is performed with a pretension of 1 mN/tex

## Twisting and Make-up

| Linear density<br><i>(nominal dtex)</i> | Number of filaments<br><i>(nominal)</i> | Twist<br><i>t/m</i> | Package weight<br><i>kg</i> | Tube dimension L/Ø<br><i>mm</i> | Spool Ø<br><i>mm</i> | Spools per pallet<br><i>-</i> | Pallet net weight<br><i>kg</i> |
|---|---|---------------------|-----------------------------|---------------------------------|----------------------|-------------------------------|--------------------------------|
| 1100                                    | 250                                     | -                   | 13.4                        | 300/110                         | 288                  | 40                            | 536                            |
| 1440                                    | 332                                     | -                   | 13.4                        | 300/110                         | 288                  | 40                            | 536                            |
| 1670                                    | 375                                     | -                   | 13.4                        | 300/110                         | 288                  | 40                            | 536                            |
| 2200                                    | 498                                     | -                   | 13.4                        | 300/110                         | 288                  | 40                            | 536                            |

Details based on full spools

Package Type | Cylindrical bobbins

Pallet dimension (H×L×W) | 172 × 120 × 80 cm

Applications | Tire cord fabrics



## Polyester 259

- HMLS
- Non-Adhesive Activated (NA)

| Linear density<br><i>(nominal dtex)</i> | Number of filaments<br><i>(nominal)</i> | Linear density<br><i>dtex</i> | Breaking force<br><i>N</i> | Breaking tenacity<br><i>mN/tex</i> | Elongation at break<br><i>%</i> | EASF (xN)<br><i>%</i> | HAS 2 min. at 180°C<br><i>%</i> |
|---|---|-------------------------------|----------------------------|------------------------------------|---------------------------------|-----------------------|---------------------------------|
| <b>1100</b>                             | 250                                     | 1127                          | 80                         | 710                                | 14.7                            | 5.4 (45N)             | 5.2                             |
| <b>1440</b>                             | 332                                     | 1510                          | 106                        | 702                                | 15.2                            | 5.5 (60N)             | 5.2                             |
| <b>1670</b>                             | 375                                     | 1685                          | 120                        | 712                                | 14.5                            | 5.6 (70N)             | 5.2                             |
| <b>2200</b>                             | 498                                     | 2281                          | 160                        | 701                                | 14.9                            | 5.7 (90N)             | 5.2                             |

Tensile testing is performed at a yarn twist of Z50 t/m

HAS – Hot-air shrinkage testing is performed with a pretension of 1 mN/tex

## Twisting and Make-up

| Linear density<br><i>(nominal dtex)</i> | Number of filaments<br><i>(nominal)</i> | Twist<br><i>t/m</i> | Package weight<br><i>kg</i> | Tube dimension L/Ø<br><i>mm</i> | Spool Ø<br><i>mm</i> | Spools per pallet<br><i>-</i> | Pallet net weight<br><i>kg</i> |
|---|---|---------------------|-----------------------------|---------------------------------|----------------------|-------------------------------|--------------------------------|
| <b>1100</b>                             | 250                                     | -                   | 13.4                        | 300/110                         | 288                  | 40                            | 536                            |
| <b>1440</b>                             | 332                                     | -                   | 13.4                        | 300/110                         | 288                  | 40                            | 536                            |
| <b>1670</b>                             | 375                                     | -                   | 13.4                        | 300/110                         | 288                  | 40                            | 536                            |
| <b>2200</b>                             | 498                                     | -                   | 13.4                        | 300/110                         | 288                  | 40                            | 536                            |

Details based on full spools

**Package Type** | Cylindrical bobbins

**Pallet dimension (H×L×W)** | 172 × 120 × 80 cm

**Applications** | Tire cord fabrics

## Polyester 1H75

- HMLS
- Non-Adhesive Activated (NA)

| Linear density<br><i>(nominal dtex)</i> | Number of filaments<br><i>(nominal)</i> | Linear density<br><i>dtex</i> | Breaking force<br><i>N</i> | Breaking tenacity<br><i>mN/tex</i> | Elongation at break<br><i>%</i> | EASF (xN)<br><i>%</i> | HAS 2 min. at 180°C<br><i>%</i> |
|---|---|-------------------------------|----------------------------|------------------------------------|---------------------------------|-----------------------|---------------------------------|
| <b>1100</b>                             | 376                                     | 1116                          | 86                         | 770                                | 12.5                            | 4.9 (45N)             | 5.7                             |
| <b>1440</b>                             | 498                                     | 1498                          | 116                        | 774                                | 11.7                            | 4.8 (60N)             | 5.7                             |
| <b>1670</b>                             | 498                                     | 1694                          | 131                        | 773                                | 12.4                            | 5.1 (70N)             | 5.7                             |
| <b>2200</b>                             | 564                                     | 2265                          | 176                        | 777                                | 13.0                            | 5.2 (90N)             | 5.7                             |

Tensile testing is performed at a yarn twist of Z50 t/m

HAS – Hot-air shrinkage testing is performed with a pretension of 1 mN/tex

### Twisting and Make-up

| Linear density<br><i>(nominal dtex)</i> | Number of filaments<br><i>(nominal)</i> | Twist<br><i>t/m</i> | Package weight<br><i>kg</i> | Tube dimension L/Ø<br><i>mm</i> | Spool Ø<br><i>mm</i> | Spools per pallet<br><i>-</i> | Pallet net weight<br><i>kg</i> |
|---|---|---------------------|-----------------------------|---------------------------------|----------------------|-------------------------------|--------------------------------|
| <b>1100</b>                             | 376                                     | -                   | 13.4                        | 300/110                         | 288                  | 40                            | 536                            |
| <b>1440</b>                             | 498                                     | -                   | 13.4                        | 300/110                         | 288                  | 40                            | 536                            |
| <b>1670</b>                             | 498                                     | -                   | 13.4                        | 300/110                         | 288                  | 40                            | 536                            |
| <b>2200</b>                             | 564                                     | -                   | 13.4                        | 300/110                         | 288                  | 40                            | 536                            |

Details based on full spools

**Package Type** | Cylindrical bobbins

**Pallet dimension (H×L×W)** | 172 × 120 × 80 cm

**Applications** | Tire cord fabrics



## Contact

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## Certifications

- ISO 9001: 2015
- ISO 14001: 2015
- ISO 45001: 2018
- ISO 50001: 2018

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## Viscord

- Micro dull

| Linear density<br>(nominal)<br>dtex | Linear density<br>(real)<br>dtex | Breaking force<br>(cond.)<br>N | Elongation at 45N<br>(cond.)<br>% | Breaking force<br>N | Elongation at 45N<br>% | Finish<br>content<br>% | Wet<br>shrinkage<br>% |
|-------------------------------------|----------------------------------|--------------------------------|-----------------------------------|---------------------|------------------------|------------------------|-----------------------|
| 1220 CS3                            | 1240                             | 55                             | 9.4                               | 64                  | 5.1                    | 0.4                    | 8.5                   |
| 1840 CS3                            | 1870                             | 85                             | 5                                 | 100                 | 2.3                    | 0.4                    | 8                     |
| 1840 CS3HM                          | 2020                             | 93                             | 5                                 | 110                 | 1.9                    | 0.4                    | 8                     |
| 1840 CS4 <sup>1</sup>               | 1870                             | 82                             | 7.5                               | 98                  | 2.5                    | 0.4                    | 8                     |
| 2440 CS3                            | 2440                             | 115                            | 3.3                               | 135                 | 1.5                    | 0.4                    | 8                     |
| 1550 CS3 <sup>2</sup>               | 1550                             | 70                             | 8.6                               | 80                  | 3.5                    | 0.4                    | 9                     |
| 3680 CS3 <sup>2</sup>               | 3740                             | 170                            | 1.4                               | 200                 | 0.6                    | 0.4                    | 9                     |
| 3680 CS3 <sup>2</sup>               | 4990                             | 211                            | 0.7                               | 258                 | 0.4                    | 0.4                    | 9                     |

Tensile testing is performed at a yarn twist of Z100 t/m

HAS – Hot-air shrinkage testing is performed with a pretension of 1 mN/tex

## Twisting and Make-up

| Package weight<br>+/- 0.2<br>kg | Twist<br>t/m | Tube dimension<br>L/Inside Ø<br>mm | Spool<br>Ø<br>mm | Stroke<br>mm | Spools<br>per pallet<br>– | Pallet<br>Dimension<br>L/B/H<br>cm | Average<br>Pallet<br>Weight<br>kg |
|---------------------------------|--------------|------------------------------------|------------------|--------------|---------------------------|------------------------------------|-----------------------------------|
| 5.2                             | Z100         | 290/94                             | 195              | 260          | 69                        | 120/107/103                        | 350                               |
| 11.0                            | 0            | 290/94                             | 255              | 265          | 54                        | 120/107/110                        | 600                               |

Details based on full spools

|                                 |                                |
|---------------------------------|--------------------------------|
| <b>Package Type</b>             | Cylindrical bobbins            |
| <b>Pallet dimension (H×L×W)</b> | 111 × 126 × 101 cm             |
| <b>Special remarks</b>          | Other twist levels on request. |
| <b>Applications</b>             | Tire cord fabrics              |

<sup>1</sup> Standard Product / <sup>2</sup> Special Product (on customer request)

## Viscord FR

● Micro dull

| Linear density<br>(nominal)<br>dtex | No. of filament | Linear density<br>(real)<br>dtex | Tenacity cond.<br>(cN/tex) | Tenacity wet<br>(cN/tex) | Elongation cond.<br>% | Elongation wet<br>% | Hot water shrinkage<br>% | LOI [%]<br><i>min</i> |
|-------------------------------------|-----------------|----------------------------------|----------------------------|--------------------------|-----------------------|---------------------|--------------------------|-----------------------|
| 150                                 | 76              | 153                              | 26                         | 14                       | 10                    | 24                  | 14                       | 26                    |
| 2440                                | 1320            | 2450                             | 24                         | 12                       | 7                     | 18                  | 13                       | 26                    |

Tensile testing is performed on zero twist yarn

HAS – Hot-air shrinkage testing is performed with a pretension of 1 mN/tex / LOI [%] = 26 (mm)

## Viscord HT

- Micro dull

| Linear density<br>(nominal)<br>dtex | No. of filament | Linear density<br>(real)<br>dtex | Tenacity cond.<br>(cN/tex) | Tenacity wet<br>(cN/tex) | Elongation cond.<br>% | Elongation wet<br>% | Hot water shrinkage<br>% |
|-------------------------------------|-----------------|----------------------------------|----------------------------|--------------------------|-----------------------|---------------------|--------------------------|
| 150                                 | 76              | 153                              | 36                         | 19                       | 10                    | 22                  | 14                       |

Tensile testing is performed on zero twist yarn

HAS – Hot-air shrinkage testing is performed with a pretension of 1 mN/tex



## Contact

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## Certifications

- ISO 9001: 2015
- ISO 14001: 2015
- ISO 45001: 2018
- ISO 50001: 2011
- IATF 16949: 2016

Click [here](#) for all certificates

## DSP® 1H75

- HMLS ● Adhesive Activated (AA)

| Linear density | Number of filaments | Linear density | Breaking Force | Breaking tenacity | Elongation at Break | EASL (xN)   | TS 2 min. at 177°C |
|----------------|---------------------|----------------|----------------|-------------------|---------------------|-------------|--------------------|
| <i>dtex</i>    | <i>(nominal)</i>    | <i>dtex</i>    | <i>N</i>       | <i>cN/tex</i>     | <i>%</i>            | <i>%</i>    | <i>%</i>           |
| <b>1000</b>    | 300                 | 1100           | 85.9           | 770               | 10.0                | 5.0 (44.5N) | 4.8                |
| <b>1300</b>    | 391                 | 1440           | 111.7          | 770               | 10.0                | 4.3 (44.5N) | 4.3                |
| <b>1500</b>    | 391                 | 1670           | 130.0          | 770               | 10.5                | 5.5 (66.6N) | 4.5                |
| <b>2000</b>    | 600                 | 2200           | 173.7          | 770               | 10.5                | 4.0 (66.6N) | 4.5                |

Tensile testing is performed at a yarn twist of Z60 t/m

TS – Thermal shrinkage testing is performed with a pretension of 0.05 gpd

## Twisting and Make-up

| Linear density        | Number of filaments | Twist      | Package weight | Tube dimension L/Ø | Spool Ø   | Spools per pallet | Pallet net weight |
|-----------------------|---------------------|------------|----------------|--------------------|-----------|-------------------|-------------------|
| <i>(nominal dtex)</i> | <i>(nominal)</i>    | <i>t/m</i> | <i>kg</i>      | <i>mm</i>          | <i>mm</i> | <i>-</i>          | <i>kg</i>         |
| <b>1000</b>           | 300                 | 0          | -              | -                  | -         | -                 | -                 |
| <b>1300</b>           | 391                 | 0          | -              | -                  | -         | -                 | -                 |
| <b>1500</b>           | 391                 | 0          | -              | -                  | -         | -                 | -                 |
| <b>2000</b>           | 600                 | 0          | -              | -                  | -         | -                 | -                 |

Details based on full spools

|                                 |  |
|---------------------------------|--|
| <b>Package Type</b>             | Cylindrical bobbins                                |
| <b>Pallet dimension (H×L×W)</b> | 105 × 113 × 111 cm                                 |
| <b>Special remarks</b>          | -  |
| <b>Applications</b>             | Tire cord fabrics, power transmission belts, hoses |



## DSP® 1W70

● HMLS ● Adhesive Activated (AA)

| Linear density | Number of filaments | Linear density | Breaking Force | Breaking tenacity | Elongation at Break | EASL (xN) | TS 2 min. at 177°C |
|----------------|---------------------|----------------|----------------|-------------------|---------------------|-----------|--------------------|
| <i>dtex</i>    | <i>(nominal)</i>    | <i>dtex</i>    | <i>N</i>       | <i>cN/tex</i>     | <i>%</i>            | <i>%</i>  | <i>%</i>           |
| 275            | 35                  | 275            | 20.9           | 750               | 15.5                | -         | 5.5                |

Tensile testing is performed at a yarn twist of Z60 t/m

TS – Thermal shrinkage testing is performed with a pretension of 0.05 gpd

## Twisting and Make-up

| Linear density        | Number of filaments | Twist      | Package weight | Tube dimension L/Ø | Spool Ø   | Spools per pallet | Pallet net weight |
|-----------------------|---------------------|------------|----------------|--------------------|-----------|-------------------|-------------------|
| <i>(nominal dtex)</i> | <i>(nominal)</i>    | <i>t/m</i> | <i>kg</i>      | <i>mm</i>          | <i>mm</i> | <i>-</i>          | <i>kg</i>         |
| 1000                  | 35                  | 0          | -              | -                  | -         | -                 | -                 |

Details based on full spools

|                                 |                     |
|---------------------------------|---------------------|
| <b>Package Type</b>             | Cylindrical bobbins |
| <b>Pallet dimension (H×L×W)</b> | 105 × 113 × 111 cm  |
| <b>Special remarks</b>          | -                   |
| <b>Applications</b>             | Seatbelts           |

## DSP® 1W80

- HMLS
- Non-Adhesive Activated (NA)

| Linear density | Number of filaments | Linear density | Breaking Force | Breaking tenacity | Elongation at Break | EASL (xN)   | TS 2 min. at 177°C |
|----------------|---------------------|----------------|----------------|-------------------|---------------------|-------------|--------------------|
| <i>dtex</i>    | <i>(nominal)</i>    | <i>dtex</i>    | <i>N</i>       | <i>cN/tex</i>     | <i>%</i>            | <i>%</i>    | <i>%</i>           |
| <b>1000</b>    | 300                 | 1100           | 89.3           | 800               | 90.0                | 3.8 (44.5N) | 8.5                |
| <b>1500</b>    | 391                 | 1670           | 133.6          | 800               | 90.0                | 4.5 (66.6N) | 8.5                |
| <b>2000</b>    | 600                 | 2200           | 173.8          | 790               | 90.0                | 4.5 (66.6N) | 8.5                |

Tensile testing is performed at a yarn twist of Z60 t/m

TS – Thermal shrinkage testing is performed with a pretension of 0.05 gpd

### Twisting and Make-up

| Linear density        | Number of filaments | Twist      | Package weight | Tube dimension L/Ø | Spool Ø   | Spools per pallet | Pallet net weight |
|-----------------------|---------------------|------------|----------------|--------------------|-----------|-------------------|-------------------|
| <i>(nominal dtex)</i> | <i>(nominal)</i>    | <i>t/m</i> | <i>kg</i>      | <i>mm</i>          | <i>mm</i> | <i>-</i>          | <i>kg</i>         |
| <b>1000</b>           | 300                 | 0          | -              | -                  | -         | -                 | -                 |
| <b>1500</b>           | 391                 | 0          | -              | -                  | -         | -                 | -                 |
| <b>2000</b>           | 600                 | 0          | -              | -                  | -         | -                 | -                 |

Details based on full spools

|                                 |                     |
|---------------------------------|---------------------|
| <b>Package Type</b>             | Cylindrical bobbins |
| <b>Pallet dimension (H×L×W)</b> | 105 × 113 × 111 cm  |
| <b>Special remarks</b>          | -                   |
| <b>Applications</b>             | Geotextiles         |

## DSP® 1X50

- HMLS ● Adhesive Activated (AA)

| Linear density | Number of filaments | Linear density | Breaking Force | Breaking tenacity | Elongation at Break | EASL (xN)   | TS 2 min. at 177°C |
|----------------|---------------------|----------------|----------------|-------------------|---------------------|-------------|--------------------|
| <i>dtex</i>    | <i>(nominal)</i>    | <i>dtex</i>    | <i>N</i>       | <i>cN/tex</i>     | <i>%</i>            | <i>%</i>    | <i>%</i>           |
| <b>1000</b>    | 391                 | 1100           | 77.8           | 690               | 10.6                | 5.0 (44.5N) | 4.5                |
| <b>1300</b>    | 391                 | 1440           | 100.1          | 690               | 10.6                | 4.2 (44.5N) | 4.0                |
| <b>1500</b>    | 546                 | 1670           | 115.8          | 690               | 11.6                | 5.7 (66.6N) | 4.0                |
| <b>2000</b>    | 782                 | 2200           | 152.3          | 680               | 12.0                | 4.5 (66.6N) | 4.0                |

Tensile testing is performed at a yarn twist of Z60 t/m

TS – Thermal shrinkage testing is performed with a pretension of 0.05 gpd

## Twisting and Make-up

| Linear density        | Number of filaments | Twist      | Package weight | Tube dimension L/Ø | Spool Ø   | Spools per pallet | Pallet net weight |
|-----------------------|---------------------|------------|----------------|--------------------|-----------|-------------------|-------------------|
| <i>(nominal dtex)</i> | <i>(nominal)</i>    | <i>t/m</i> | <i>kg</i>      | <i>mm</i>          | <i>mm</i> | <i>-</i>          | <i>kg</i>         |
| <b>1000</b>           | 391                 | 0          | -              | -                  | -         | -                 | -                 |
| <b>1300</b>           | 391                 | 0          | -              | -                  | -         | -                 | -                 |
| <b>1500</b>           | 546                 | 0          | -              | -                  | -         | -                 | -                 |
| <b>2000</b>           | 782                 | 0          | -              | -                  | -         | -                 | -                 |

Details based on full spools

|                                 |  |
|---------------------------------|--|
| <b>Package Type</b>             | Cylindrical bobbins                                |
| <b>Pallet dimension (H×L×W)</b> | 105 × 113 × 111 cm                                 |
| <b>Special remarks</b>          | -  |
| <b>Applications</b>             | Tire cord fabrics, power transmission belts, hoses |

## DSP® 1X55

● HMLS ● Adhesive Activated (AA)

| Linear density | Number of filaments | Linear density | Breaking Force | Breaking tenacity | Elongation at Break | EASL (xN)   | TS 2 min. at 177°C |
|----------------|---------------------|----------------|----------------|-------------------|---------------------|-------------|--------------------|
| <i>dtex</i>    | <i>(nominal)</i>    | <i>dtex</i>    | <i>N</i>       | <i>cN/tex</i>     | <i>%</i>            | <i>%</i>    | <i>%</i>           |
| <b>1000</b>    | 391                 | 1100           | 71.1           | 630               | 10.0                | 4.8 (44.5N) | 3.8                |

Tensile testing is performed at a yarn twist of Z60 t/m

TS – Thermal shrinkage testing is performed with a pretension of 0.05 gpd

## Twisting and Make-up

| Linear density        | Number of filaments | Twist      | Package weight | Tube dimension L/Ø | Spool Ø   | Spools per pallet | Pallet net weight |
|-----------------------|---------------------|------------|----------------|--------------------|-----------|-------------------|-------------------|
| <i>(nominal dtex)</i> | <i>(nominal)</i>    | <i>t/m</i> | <i>kg</i>      | <i>mm</i>          | <i>mm</i> | <i>-</i>          | <i>kg</i>         |
| <b>1000</b>           | 391                 | 0          | -              | -                  | -         | -                 | -                 |

Details based on full spools

|                                 |                                 |
|---------------------------------|---------------------------------|
| <b>Package Type</b>             | Cylindrical bobbins             |
| <b>Pallet dimension (H×L×W)</b> | 105 × 113 × 111 cm              |
| <b>Special remarks</b>          | -                               |
| <b>Applications</b>             | Power transmission belts, hoses |

## Polyester T712

● HMLS ● Adhesive Activated (AA)

| Linear density        | Number of filaments | Linear density | Breaking Force | Breaking tenacity | Elongation at Break | EASL (xN) | TS 1 min. at 177°C |
|-----------------------|---------------------|----------------|----------------|-------------------|---------------------|-----------|--------------------|
| <i>(nominal dtex)</i> | <i>(nominal)</i>    | <i>dtex</i>    | <i>N</i>       | <i>mN/tex</i>     | <i>%</i>            | <i>%</i>  | <i>%</i>           |
| 138                   | 35                  | 138            | 11             | 800               | 15.0                | -         | 1.7                |
| 188                   | 35                  | 188            | 14.3           | 760               | 17.5                | -         | 1.7                |
| 245                   | 67                  | 226            | 17.2           | 760               | 17.0                | -         | 1.8                |
| 278                   | 67                  | 231            | 18.0           | 780               | 15.0                | -         | 1.9                |
| 226                   | 48                  | 245            | 18.6           | 760               | 17.5                | -         | 1.7                |
| 231                   | 48                  | 278            | 21.1           | 760               | 17.5                | -         | 1.7                |

Tensile testing is performed at a yarn twist of Z0 t/m

TS – Terminal shrinkage testing is performed with a pretension of 0.05 gpd

## Twisting and Make-up

| Linear density        | Number of filaments | Twist      | Package weight | Tube dimension L/Ø | Spool Ø   | Spools per pallet | Pallet net weight |
|-----------------------|---------------------|------------|----------------|--------------------|-----------|-------------------|-------------------|
| <i>(nominal dtex)</i> | <i>(nominal)</i>    | <i>t/m</i> | <i>kg</i>      | <i>mm</i>          | <i>mm</i> | <i>-</i>          | <i>kg</i>         |
| 138                   | 35                  | 0          | -              | -                  | -         | -                 | -                 |
| 188                   | 35                  | 0          | -              | -                  | -         | -                 | -                 |
| 245                   | 67                  | 0          | -              | -                  | -         | -                 | -                 |
| 278                   | 67                  | 0          | -              | -                  | -         | -                 | -                 |
| 226                   | 48                  | 0          | -              | -                  | -         | -                 | -                 |
| 231                   | 48                  | 0          | -              | -                  | -         | -                 | -                 |

Details based on full spools

|                                 |                     |
|---------------------------------|---------------------|
| <b>Package Type</b>             | Cylindrical bobbins |
| <b>Pallet dimension (H×L×W)</b> | 105 × 113 × 111 cm  |
| <b>Special remarks</b>          | -                   |
| <b>Applications</b>             | Sewing threads      |

## DSP® 1W72

- Non-HMLS
- Non-Adhesive Activated (NA)

| Linear density | Number of filaments | Linear density | Breaking Force | Breaking tenacity | Elongation at Break | EASL (xN) | TS 2 min. at 177°C |
|----------------|---------------------|----------------|----------------|-------------------|---------------------|-----------|--------------------|
| <i>dtex</i>    | <i>(nominal)</i>    | <i>dtex</i>    | <i>N</i>       | <i>cN/tex</i>     | <i>%</i>            | <i>%</i>  | <i>%</i>           |
| 465            | 70                  | 465            | 34.9           | 750               | 19.0                | -         | 1.7                |
| 550            | 70                  | 550            | 41.6           | 750               | 19.0                | -         | 1.7                |

Tensile testing is performed at a yarn twist of Z60 t/m

TS – Thermal shrinkage testing is performed with a pretension of 0.05 gpd

### Twisting and Make-up

| Linear density        | Number of filaments | Twist      | Package weight | Tube dimension L/Ø | Spool Ø   | Spools per pallet | Pallet net weight |
|-----------------------|---------------------|------------|----------------|--------------------|-----------|-------------------|-------------------|
| <i>(nominal dtex)</i> | <i>(nominal)</i>    | <i>t/m</i> | <i>kg</i>      | <i>mm</i>          | <i>mm</i> | <i>-</i>          | <i>kg</i>         |
| 465                   | 70                  | 0          | -              | -                  | -         | -                 | -                 |
| 550                   | 70                  | 0          | -              | -                  | -         | -                 | -                 |

Details based on full spools

|                                 |                     |
|---------------------------------|---------------------|
| <b>Package Type</b>             | Cylindrical bobbins |
| <b>Pallet dimension (H×L×W)</b> | 105 × 113 × 111 cm  |
| <b>Special remarks</b>          | -                   |
| <b>Applications</b>             | Seatbelts           |

## DSP® 1Y86

- Non-HMLS
- Non-Adhesive Activated (NA)

| Linear density | Number of filaments | Linear density | Breaking Force | Breaking tenacity | Elongation at Break | EASL (xN) | TS 1 min. at 177°C |
|----------------|---------------------|----------------|----------------|-------------------|---------------------|-----------|--------------------|
| <i>dtex</i>    | <i>(nominal)</i>    | <i>dtex</i>    | <i>N</i>       | <i>cN/tex</i>     | <i>%</i>            | <i>%</i>  | <i>%</i>           |
| 240            | 35                  | 240            | 16.8           | 700               | 23.0                | -         | 2.5*               |
| 280            | 35                  | 280            | 19.6           | 700               | 23.0                | -         | 2.5*               |
| 2240           | 400                 | 2240           | 163.5          | 730               | 20.0                | -         | 1.5*               |

Tensile testing is performed at a yarn twist of Z60 t/m

TS – Thermal shrinkage testing is performed with a pretension of 0.05 gpd

### Twisting and Make-up

| Linear density        | Number of filaments | Twist      | Package weight | Tube dimension L/Ø | Spool Ø   | Spools per pallet | Pallet net weight |
|-----------------------|---------------------|------------|----------------|--------------------|-----------|-------------------|-------------------|
| <i>(nominal dtex)</i> | <i>(nominal)</i>    | <i>t/m</i> | <i>kg</i>      | <i>mm</i>          | <i>mm</i> | <i>-</i>          | <i>kg</i>         |
| 240                   | 35                  | 0          | -              | -                  | -         | -                 | -                 |
| 280                   | 35                  | 0          | -              | -                  | -         | -                 | -                 |
| 2240                  | 400                 | 0          | -              | -                  | -         | -                 | -                 |

Details based on full spools

|                                 |  |
|---------------------------------|--|
| <b>Package Type</b>             | Cylindrical bobbins                      |
| <b>Pallet dimension (H×L×W)</b> | 105 × 113 × 111 cm                       |
| <b>Special remarks</b>          | -  |
| <b>Applications</b>             | Sewing threads (2240dtex)   Yarn coating |

# PINGDINGSHAN



## Contact

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## Certifications

- ISO 9001: 2015
- ISO 14001: 2015
- ISO 45001: 2018

Click [here](#) for all certificates



## Enka® Nylon 446HRT-10

- Medium shrinkage

| Linear density<br><i>(nominal dtex)</i> | Number of filaments<br><i>(nominal)</i> | Linear density<br><i>dtex</i> | Breaking force<br><i>N</i> | Breaking tenacity<br><i>mN/tex</i> | Elongation at break<br><i>%</i> | EASF (xN)<br><i>%</i> | HAS 2 min. at 180°C<br><i>%</i> |
|---|---|-------------------------------|----------------------------|------------------------------------|---------------------------------|-----------------------|---------------------------------|
| 350                                     | 140                                     | 350                           | 30.2                       | -                                  | 21.8                            | -                     | 5.3                             |
| 470                                     | 140                                     | 470                           | 39.6                       | -                                  | 22.0                            | -                     | 5.8                             |
| 580                                     | 140                                     | 580                           | 47.4                       | -                                  | 21.5                            | -                     | 5.5                             |
| 700                                     | 108                                     | 700                           | 59.8                       | -                                  | 21.0                            | -                     | 5.7                             |

Tensile testing is performed at a yarn twist of Z60 t/m

HAS – Hot-air shrinkage testing is performed with a pretension of 5 mN/tex

### Twisting and Make-up

| Linear density<br><i>(nominal dtex)</i> | Number of filaments<br><i>(nominal)</i> | Twist<br><i>t/m</i> | Package weight<br><i>kg</i> | Tube dimension L/Ø<br><i>mm</i> | Spool Ø<br><i>mm</i> | Spools per pallet<br><i>-</i> | Pallet net weight<br><i>kg</i> |
|---|---|---------------------|-----------------------------|---------------------------------|----------------------|-------------------------------|--------------------------------|
| 350                                     | 140                                     | 0                   | -                           | -                               | -                    | -                             | -                              |
| 470                                     | 140                                     | 0                   | -                           | -                               | -                    | -                             | -                              |
| 580                                     | 140                                     | 0                   | -                           | -                               | -                    | -                             | -                              |
| 700                                     | 108                                     | 0                   | -                           | -                               | -                    | -                             | -                              |

Details based on full spools

|                          |                          |
|--------------------------|--------------------------|
| Package Type             | Cheeses                  |
| Pallet dimension (H×L×W) | 112 × 126 × 101 cm       |
| Special remarks          | Also available on beams. |
| Applications             | Airbags                  |

## Enka® Nylon 447HRT-10

- Medium shrinkage

| Linear density        | Number of filaments | Linear density | Breaking force | Breaking tenacity | Elongation at break | EASF (xN) | HAS 2 min. at 180°C |
|-----------------------|---------------------|----------------|----------------|-------------------|---------------------|-----------|---------------------|
| <i>(nominal dtex)</i> | <i>(nominal)</i>    | <i>dtex</i>    | <i>N</i>       | <i>mN/tex</i>     | <i>%</i>            | <i>%</i>  | <i>%</i>            |
| 470                   | 144                 | 470            | 36.5           | -                 | 23.5                | -         | 7.7                 |

Tensile testing is performed at a yarn twist of Z60 t/m

HAS – Hot-air shrinkage testing is performed with a pretension of 5 mN/tex

### Twisting and Make-up

| Linear density        | Number of filaments | Twist      | Package weight | Tube dimension L/Ø | Spool Ø   | Spools per pallet | Pallet net weight |
|-----------------------|---------------------|------------|----------------|--------------------|-----------|-------------------|-------------------|
| <i>(nominal dtex)</i> | <i>(nominal)</i>    | <i>t/m</i> | <i>kg</i>      | <i>mm</i>          | <i>mm</i> | <i>-</i>          | <i>kg</i>         |
| 470                   | 140                 | 0          | -              | -                  | -         | -                 | -                 |

Details based on full spools

|                                 |                          |
|---------------------------------|--------------------------|
| <b>Package Type</b>             | Cheeses                  |
| <b>Pallet dimension (H×L×W)</b> | 112 × 126 × 101 cm       |
| <b>Special remarks</b>          | Also available on beams. |
| <b>Applications</b>             | Airbags                  |

# Appendix

## Appendix

### Physical Data of all Yarn Types

| Yarn Type | Density<br><i>g/cm<sup>3</sup></i> | Melting point<br>°C | Heat capacity <sup>1</sup><br><i>J/g</i> | Acid resistance | Basic resistance | Hydrolysis resistance |
|-----------|------------------------------------|---------------------|--|-----------------|------------------|-----------------------|
| Polyester | 1.38                               | 256                 | 303                                      | +               | -                | -                     |
| PA 6.6    | 1.14                               | 258                 | 620                                      | -               | +                | +                     |
| PA 4.6    | 1.18                               | 285                 | 771                                      | -               | +                | ++                    |

<sup>1</sup> 0°C to TM

## Chemical Resistance of PA 6.6 (e.g. Enka® Nylon)

## Part 1/3

The specimens were exposed to the various chemicals for the time mentioned. After this exposure, changes in weight and mechanical strength were determined. The following information is to the best of our knowledge true and accurate, but is furnished subject to later revision if and when new data become available. No liability is accepted in regard of the information presented.

### Acids

| Chemicals         | Conditions      |                |               | Stability <sup>1</sup> |
|-------------------|-----------------|----------------|---------------|------------------------|
|                   | Concentration % | Temperature °C | Exposure Time |                        |
| Acetic acid       | 5               | 100            | 10 hrs        | 0                      |
| Benzoic acid      | 3               | 100            | 10 hrs        | 0                      |
| Formic acid       | 5               | 100            | 10 hrs        | 0                      |
|                   | 40              | 21             | 10 hrs        | +                      |
|                   | 90              | 21             | 10 hrs        | -                      |
| Hydrochloric acid | 1               | 21             | 10 hrs        | +                      |
|                   | 1               | 21             | 1000 hrs      | 0                      |
|                   | 10              | 21             | 10 hrs        | 0                      |
|                   | 10              | 21             | 1000 hrs      | -                      |
|                   | 37              | 21             | 1 hr          | -                      |
|                   | 1               | 70             | 1 hr          | +                      |
|                   | 1               | 70             | 10 hrs        | 0                      |
| Oxalic acid       | 5               | 100            | 10 hrs        | 0                      |
|                   | 10              | 21             | 10 hrs        | +                      |
| Sulfuric acid     | 1               | 21             | 10 hrs        | +                      |
|                   | 1               | 21             | 1000 hrs      | 0                      |
|                   | 10              | 21             | 10 hrs        | 0                      |
|                   | 70              | 21             | 1 hr          | -                      |

<sup>1</sup> **Stability:** + = Resistant | 0 = Limited resistance | - = Non resistant

## Bases

| Chemicals           | Conditions      |                |               | Stability <sup>1</sup> |
|---------------------|-----------------|----------------|---------------|------------------------|
|                     | Concentration % | Temperature °C | Exposure Time |                        |
| Ammonia             | 28              | 21             | 1000 hrs      | 0                      |
| Potassium hydroxide | 10              | 21             | 100 hrs       | 0                      |
| Sodium hydroxide    | 1               | 100            | 100 hrs       | +                      |
|                     | 1               | 120            | 10 hrs        | +                      |
|                     | 10              | 100            | 10 hrs        | +                      |
|                     | 10              | 100            | 1000 hrs      | -                      |
|                     | 40              | 100            | 10 hrs        | 0                      |
| Soap                | 1               | 120            | 10 hrs        | +                      |

## Organic Compounds

| Chemicals            | Conditions      |                |               | Stability <sup>1</sup> |
|----------------------|-----------------|----------------|---------------|------------------------|
|                      | Concentration % | Temperature °C | Exposure Time |                        |
| Acetone              | 100             | 21             | 1000 hrs      | +                      |
| Benzene              | 100             | 21             | 1000 hrs      | +                      |
| Carbon disulfide     | 100             | 21             | 1000 hrs      | +                      |
| Carbon tetrachloride | 100             | 21             | 1000 hrs      | +                      |
| Chloroform           | 100             | 21             | 1000 hrs      | +                      |
| Diethyl ether        | 100             | 21             | 1000 hrs      | +                      |
| Ethyl acetate        | 100             | 21             | 1000 hrs      | +                      |
| Ethanol              | 100             | 21             | 1000 hrs      | +                      |
| Ethylene dichloride  | 100             | 21             | 2 mths        | +                      |
| Formaldehyde         | 10              | 21             | 1000 hrs      | +                      |
| Gasoline             | 100             | 21             | 2 mths        | +                      |
| Methanol             | 100             | 21             | 1000 hrs      | +                      |
| Mineral oils         | 100             | 21             | 1000 hrs      | +                      |
|                      |                 | 100            | 10 hrs        | +                      |
| Perchloroethylene    | 100             | 21             | 1000 hrs      | +                      |
|                      | 120             | 120            | 10 hrs        | +                      |
| Phenol               | 100             | 93             | 10 hrs        | -                      |
| Pyridine             | 100             | 21             | 1000 hrs      | +                      |
|                      |                 | 93             | 10 hrs        | +                      |

<sup>1</sup> **Stability:** + = Resistant | 0 = Limited resistance | - = Non resistant

## Inorganic Compounds

| Chemicals           | Conditions      |                |               | Stability <sup>1</sup> |
|---------------------|-----------------|----------------|---------------|------------------------|
|                     | Concentration % | Temperature °C | Exposure Time |                        |
| Ferric chloride     | 3               | 100            | 10 hrs        | 0                      |
| Hydrogen peroxide   | 0.2             | 70             | 10 hrs        | 0                      |
|                     | 0.4             | 70             | 10 hrs        | -                      |
|                     | 3               | 21             | 10 hrs        | +                      |
| Sodium bisulfite    | 1               | 100            | 10 hrs        | +                      |
| Sodium carbonate    | 1               | 120            | 10 hrs        | +                      |
| Sodium chloride     | 0.7             | 100            | 10 hrs        | 0                      |
| Sodium hypochlorite | 0.01            | 21             | 10 hrs        | +                      |
|                     | 0.01            | 70             | 10 hrs        | 0                      |
|                     | 0.4             | 21             | 10 hrs        | 0                      |
|                     | 0.4             | 70             | 10 hrs        | -                      |
| Sodium perborate    | 1               | 100            | 10 hrs        | +                      |
| Sodium sulphate     | 10              | 21             | 24 mths       | +                      |
| Zinc chloride       | 3               | 100            | 10 hrs        | +                      |

<sup>1</sup> **Stability:** + = Resistant | 0 = Limited resistance | - = Non resistant

## Chemical Resistance of PET (e.g. Diolen®)

## Part 1/6

The specimens were exposed to the various chemicals for the time mentioned. After this exposure, changes in weight and mechanical strength were determined. The following information is to the best of our knowledge true and accurate, but is furnished subject to later revision if and when new data become available. No liability is accepted in regard of the information presented.

### Acids I

| Chemicals         | Conditions      |                |               | Stability <sup>1</sup> |
|-------------------|-----------------|----------------|---------------|------------------------|
|                   | Concentration % | Temperature °C | Exposure Time |                        |
| Acetic acid       | 5               | 21             | 2 mths        | +                      |
|                   | 5               | 60             | 2 mths        | 0                      |
|                   | 5               | 80             | 2 mths        | -                      |
|                   | 5               | 100            | 10 hrs        | +                      |
|                   | 10              | 21             | 2 mths        | +                      |
|                   | 10              | 60             | 2 mths        | 0                      |
|                   | 10              | 80             | 2 mths        | -                      |
|                   | 100             | 60             | 2 mths        | 0                      |
| Benzoid acid      | 3               | 100            | 10 hrs        | +                      |
| Chromic acid      | 40              | 80             | 2 mths        | +                      |
| Citric acid       | 10              | 80             | 2 mths        | +                      |
| Formic acid       | 5               | 21             | 2 mths        | +                      |
|                   | 5               | 80             | 2 mths        | 0                      |
|                   | 5               | 100            | 10 hrs        | +                      |
|                   | 90              | 21             | 10 hrs        | +                      |
|                   | 90              | 21             | 2 mths        | 0                      |
|                   | 90              | 60             | 2 mths        | -                      |
| Hydrochloric acid | 10              | 21             | 24 mths       | +                      |
|                   | 10              | 60             | 2 mths        | 0                      |
|                   | 10              | 80             | 2 mths        | -                      |
|                   | 20              | 21             | 12 mths       | 0                      |
|                   | 30              | 21             | 12 mths       | -                      |
|                   | 37              | 21             | 100 hrs       | +                      |
|                   | 37              | 21             | 1 mth         | 0                      |
|                   | 37              | 21             | 2 mths        | -                      |

<sup>1</sup> **Stability:** + = Resistant | 0 = Limited resistance | - = Non resistant



## Acids II

| Chemicals       | Conditions      |                |               | Stability <sup>1</sup> |
|-----------------|-----------------|----------------|---------------|------------------------|
|                 | Concentration % | Temperature °C | Exposure Time |                        |
| Nitric acid     | 10              | 21             | 24 mths       | +                      |
|                 | 15              | 21             | 12 hrs        | +                      |
|                 | 20              | 21             | 1 mth         | +                      |
|                 | 30              | 21             | 12 mths       | 0                      |
|                 | 50              | 21             | 1 mth         | 0                      |
|                 | 50              | 21             | 12 mths       | -                      |
|                 | 70              | 21             | 0.1 hr        | 0                      |
|                 | 95              | 21             | 0.1 hr        | -                      |
| Oleic acid      | 100             | 80             | 2 mths        | +                      |
| Oxalic acid     | 5               | 100            | 10 hrs        | +                      |
| Lactic acid     | conc.           | 21             | 12 mths       | +                      |
| Maleic acid     | 25              | 21             | 12 mths       | +                      |
| Phosphoric acid | 85              | 21             | 12 mths       | +                      |
| Sulfuric acid   | 30              | 80             | 2 mths        | +                      |
|                 | 50              | 21             | 12 mths       | +                      |
|                 | 70              | 21             | 12 mths       | 0                      |
|                 | 90              | 21             | 1 mth         | -                      |

<sup>1</sup> **Stability:** + = Resistant | 0 = Limited resistance | - = Non resistant

## Bases

| Chemicals           | Conditions      |                |               | Stability <sup>1</sup> |
|---------------------|-----------------|----------------|---------------|------------------------|
|                     | Concentration % | Temperature °C | Exposure Time |                        |
| Ammonium hydroxide  | 2               | 21             | 12 mths       | -                      |
|                     | 5               | 21             | 1 mth         | 0                      |
|                     | 10              | 21             | 1 mth         | -                      |
| Potassium hydroxide | 0.1             | 21             | 1 mth         | +                      |
|                     | 0.1             | 21             | 12 mths       | 0                      |
|                     | 1               | 21             | 2 mths        | +                      |
|                     | 1               | 60             | 2 mths        | 0                      |
|                     | 1               | 80             | 2 mths        | -                      |
|                     | 5               | 21             | 1 mth         | 0                      |
|                     | 5               | 21             | 12 mths       | -                      |
|                     | 10              | 21             | 1 mth         | 0                      |
|                     | 20              | 21             | 1 mth         | -                      |
|                     | 40              | 21             | 100 hrs       | -                      |
| Sodium hydroxide    | 0.1             | 21             | 12 mths       | +                      |
|                     | 1               | 100            | 10 hrs        | +                      |
|                     | 1               | 100            | 100 hrs       | 0                      |
|                     | 1               | 120            | 10 hrs        | -                      |
|                     | 2               | 21             | 12 hrs        | 0                      |
|                     | 5               | 21             | 1 mth         | -                      |
|                     | 10              | 21             | 10 hrs        | +                      |
|                     | 10              | 21             | 1 mth         | -                      |
| Soap                | 1               | 120            | 10 hrs        | +                      |

<sup>1</sup> **Stability:** + = Resistant | 0 = Limited resistance | - = Non resistant

## Organic Compounds I

| Chemicals            | Conditions      |                |               | Stability <sup>1</sup> |
|----------------------|-----------------|----------------|---------------|------------------------|
|                      | Concentration % | Temperature °C | Exposure Time |                        |
| Acetone              | 100             | 21             | 12 mths       | +                      |
| Aniline              | 100             | 21             | 12 mths       | +                      |
| Benzene              | 100             | 21             | 2 mths        | +                      |
|                      |                 | 60             | 2 mths        | -                      |
| Butane               | 100             | 21             | 2 mths        | +                      |
| Butanol              | 100             | 21             | 12 mths       | +                      |
|                      |                 | 60             | 2 mths        | 0                      |
| Butyl acetate        | 100             | 21             | 12 mths       | +                      |
|                      |                 | 60             | 2 mths        | +                      |
| Carbon disulfide     | 100             | 21             | 2 mths        | +                      |
| Carbon tetrachloride | 100             | 21             | 1000 hrs      | +                      |
| Chloroform           | 100             | 21             | 1000 hrs      | 0                      |
| Cotton seed oil      | 100             | 21             | 1000 hrs      | +                      |
|                      |                 | 80             | 2 mths        | +                      |
| Cresol               | 100             | 21             | 12 mths       | +                      |
|                      |                 | 60             | 2 mths        | -                      |
| Dibutyl phtalate     | 100             | 60             | 2 mths        | +                      |
| Diethyl ether        | 100             | 21             | 12 mths       | +                      |
| Dioxane              | 100             | 21             | 2 mths        | +                      |
|                      |                 | 60             | 2 mths        | -                      |
| Ethanol              | 100             | 21             | 12 mths       | +                      |
| Ethyl acetate        | 100             | 21             | 1000 hrs      | +                      |
| Ethylene dichloride  | 100             | 21             | 2 mths        | -                      |
| Ethylene glycol      | 100             | 21             | 12 mths       | +                      |
|                      |                 | 60             | 2 mths        | 0                      |
| Formaldehyde         | 30              | 21             | 12 mths       | +                      |
| Freon II             | 100             | 21             | 2 mths        | +                      |
| Glycerol             | 100             | 60             | 2 mths        | +                      |
| Heptane              | 100             | 21             | 2 mths        | +                      |
| Hexane               | 100             | 60             | 2 mths        | +                      |

<sup>1</sup> **Stability:** + = Resistant | 0 = Limited resistance | - = Non resistant

## Organic Compounds II

| Chemicals          | Conditions      |                |               | Stability <sup>1</sup> |
|--------------------|-----------------|----------------|---------------|------------------------|
|                    | Concentration % | Temperature °C | Exposure Time |                        |
| Isopropanol        | 100             | 60             | 2 mths        | 0                      |
| Kerosene           | 100             | 21             | 2 mths        | +                      |
| Methanol           | 100             | 21             | 2 mths        | +                      |
| Methylene chloride | 100             | 21             | 2 mths        | -                      |
| Methylethyl ketone | 100             | 21             | 12 mths       | +                      |
|                    |                 | 60             | 2 mths        | -                      |
| Mineral oils       | 100             | 80             | 2 mths        | +                      |
|                    |                 | 100            | 10 hrs        | +                      |
| Olive oils         | 100             | 80             | 2 mths        | +                      |
| Perchloroethylene  | 100             | 60             | 2 mths        | +                      |
|                    |                 | 100            | 10 hrs        | +                      |
| Petrol             | 100             | 21             | 2 mths        | +                      |
| Phenol             | 100             | 21             | 12 mths       | +                      |
|                    |                 | 60             | 2 mths        | -                      |
|                    |                 | 100            | 0.1 hr        | -                      |
| Pyridine           | 100             | 21             | 12 mths       | +                      |
| Resorcinol         | 10              | 21             | 1000 hrs      | +                      |
| Silicone fluids    | 100             | 80             | 2 mths        | +                      |
| Tetrahydrofuran    | 100             | 21             | 1 mth         | 0                      |
| Toluene            | 100             | 21             | 2 mths        | +                      |
| Trichloroethylene  | 100             | 21             | 12 mths       | +                      |
| Terpentine         | 100             | 21             | 12 mths       | +                      |
| Vaseline           | 100             | 80             | 2 mths        | +                      |
| Vegetable oils     | 100             | 80             | 2 mths        | +                      |
| White spirit       | 100             | 21             | 2 mths        | +                      |
| Xylene             | 100             | 60             | 2 mths        | +                      |

<sup>1</sup> **Stability:** + = Resistant | 0 = Limited resistance | - = Non resistant

## Inorganic Compounds

| Chemicals              | Conditions      |                |               | Stability <sup>1</sup> |
|------------------------|-----------------|----------------|---------------|------------------------|
|                        | Concentration % | Temperature °C | Exposure Time |                        |
| Aluminium chloride     | 5               | 60             | 168 hrs       | +                      |
| Calcium chloride       | 50              | 21             | 12 mths       | +                      |
|                        | 10              | 10             | 2 mths        | +                      |
| Calcium hypochlorite   | 0.01            | 60             | 12 mths       | +                      |
| Cupric sulfate         | 3               | 21             | 12 mths       | +                      |
|                        | 3               | 100            | 10 hrs        | +                      |
| Ferric chloride        | 3               | 21             | 12 mths       | +                      |
|                        | 3               | 100            | 10 hrs        | +                      |
| Hydrogen peroxyde      | 3               | 70             | 10 hrs        | +                      |
| Potassium chloride     | 10              | 21             | 12 mths       | +                      |
|                        | 10              | 80             | 2 mths        | +                      |
| Potassium permanganate | 10              | 21             | 12 mths       | +                      |
|                        | 50              | 21             | 2 mths        | +                      |
| Sodium bicarbonate     | 10              | 60             | 2 mths        | +                      |
|                        | 10              | 80             | 2 mths        | +                      |
| Sodium bisulfite       | 1               | 100            | 10 hrs        | -                      |
|                        | 10              | 60             | 2 mths        | -                      |
|                        | 10              | 80             | 2 mths        | 0                      |
| Sodium carbonate       | 1               | 120            | 10 hrs        | +                      |
| Sodium chloride        | 0.7             | 80             | 2 mths        | +                      |
|                        |                 | 100            | 10 hrs        | +                      |
| Sodium hypochloride    | 0.4             | 70             | 10 hrs        | +                      |
|                        | 10              | 80             | 2 mths        | +                      |
| Sodium sulfate         | 1               | 21             | 12 mths       | +                      |
| Sodium perborate       | 1               | 100            | 10 hrs        | +                      |
| Zinc chloride          | 3               | 100            | 10 hrs        | +                      |

<sup>1</sup> **Stability:** + = Resistant | 0 = Limited resistance | - = Non resistant

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