

Technical Data Sheet Multifilament Yarn

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General Description

Cordenka[®] rayon is a man-made cellulose yarn for technical applications. It consists of multiple continuous filaments. The number of filaments determines the linear density of the yarn, i.e. its thickness ($1 \text{ dtex} = 10^{-4} \text{ g m}^{-1}$). Usually the yarn has almost no twist (approx. 2-3 t/m) so that the single filaments are aligned in parallel. We can also provide twisted yarns (100 t/m). Furthermore we offer Cordenka[®] rayon in form of woven fabrics and chopped fibers.

Features

- Biobased and biodegradable
- Specified constant properties
- Low abrasiveness
- Improvement of composite material's
 - ◆ Impact resistance, also at low temperatures
 - ◆ Fatigue behaviour
 - ◆ Dampening

Applications

- Reinforcement and light weight construction for:
 - ◆ Thermoplastics and thermosets
 - ◆ Completely biobased and biodegradable composites
 - ◆ Passenger car tyres, mechanical rubber goods
- Vehicle parts, shields, housing for machinery
- Acoustic devices, sports equipment
- Agricultural- and geotextiles

Sustainability

- Cordenka[®] rayon is composed of cellulose. It is both bio-based and biodegradable.
- Cordenka[®] yarn is certified as follows:



8C032

ASTM
D6866:2016-01



9S0014

DIN EN 13432:200-12
DIN EN 14955:2007-03
NF T 51-800:2015-11



7H0111

- Superior recycling suitability: During processing, Cordenka[®] rayon maintains an excellent level of fiber lengths, resulting in a consistently high level of mechanical properties in recycled thermoplastics.

Storage, Handling and Processing

- **Storage:** Protect CORDENKA[®] products against heat, cold, moisture, direct solar radiation and extreme climatic fluctuations.
- **Cutting and dosing:** For Cutting and dosing of Cordenka[®] Rayon we recommend the use of special equipment. If you need assistance for selecting appropriate machinery, please contact us.
- **Processing:** If your process is sensitive to moisture, we recommend drying of Cordenka[®] rayon for two hours at 105 °C. Alternatively, inline drying at higher temperatures (less than a minute) can be applied. During processing, the temperature should be kept below 200 °C and the exposure time at this temperature should not exceed 20 minutes.
- For the **compounding** of thermoplastic composites it might be useful to add coupling agents. Excellent results in polypropylene can be achieved with MAHPP.

Functional Properties

| | |
|-------------------------------------|---|
| Density | 1.5 g cm ⁻³ |
| Moisture content (20 °C, 65 % r.h.) | approx. 13 % |
| Flammability | approx. 290 °C |
| Self-ignition | approx. 400 °C |
| Decomposition | from 175 °C (time dependent) |
| Chemical reactivity | resistant to most organic solvents, not resistant in alkaline or acidic environment |
| Smell | odourless |
| Colour | raw white |
| Cold water shrinkage | 4 – 8 % |
| Hot air shrinkage | 1 – 2 % |

Products (main grades)

| | | Cordenka® 610F (Super 2) | | | Cordenka® 700 (Super 3) | |
|--------------------------|------|--------------------------|------|-------|-------------------------|-------|
| Linear density (nominal) | dtex | 1220 | 1840 | 2440 | 1840 | 2440 |
| Number of filaments | | 720 | 1000 | 1350 | 1000 | 1350 |
| Breaking force | N | 56.8 | 89.6 | 116.4 | 96.1 | 127.9 |
| Tensile strength | MPa | 703 | 735 | 720 | 788 | 791 |
| Elongation at break | % | 10.7 | 12.1 | 12.5 | 12.2 | 12.0 |
| Tensile modulus | GPa | 18.0 | 15.9 | 14.5 | 16.5 | 15.1 |

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

Packaging

Package Type: cylindrical bobbins

Pallet Dimension: 126/105/110 cm

| Twist | Package Weight | Tube Dimension L/Inner- Ø | Spool Ø | Spools per Pallet | Pallet Weight |
|-------|----------------|---------------------------|---------|-------------------|---------------|
| t/m | kg | mm | mm | | kg |
| Z 100 | 4.3 | 170/37.5 | 205 | 150 | 645 |
| 0 | 4.3 | 170/56 | 205 | 125 | 538 |
| 0 | 10 | 290/94 | 240 | 54 | 540 |

Further Information

phone: +49 60 22 81 3264
 mail: sales@cordenka.com
 web: www.cordenka.com

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