

INDORAMA
VENTURES

> *Mobility Group*



Yarn Types and Properties

Diolen® • Enka® Nylon • Stanylenka® • Enka® Plast

Edition 2021

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Yarn Types and Properties

High-tenacity Polyester (PET) Yarns

Diolen®

Diolen® 54S
Diolen® 57T
Diolen® 61ST
Diolen® 80T
Diolen® 164S
Diolen® 165ST
Diolen® 170ST
Diolen® 170ST-FC
Diolen® 170SST
Diolen® 174S
Diolen® 174ST
Diolen® 175SLC
Diolen® 181T
Diolen® 775
Diolen® 855T

High-tenacity Polyamide 4.6 Yarns

Stanylenka®

Stanylenka® 460HRST

High-tenacity Polyamide 6.6 Yarns

Enka® Nylon

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

Elastic Weft Yarns

Enka® Plast

Enka® Plast 220

General Information

PHP Fibers at a Glance

PHP Fibers is a globally operating company in the area of industrial filament yarns whose origins extend back to 1899. More than 700 employees work in the development, production and sale of high-tenacity polyamide and polyester filament yarns and their polymers at locations in Europe, America and Asia. The company is certified according to DIN EN ISO 9001, 14001 and 50001. Since 2014, PHP Fibers is a subsidiary of Indorama Ventures, Thailand.

Our Segments

PHP high-tenacity polyamide and polyester filament yarns are used in a variety of demanding end-uses

- to protect either people (e.g. airbags, seatbelts, ropes) or goods (e.g. truck tarpaulins, fire hoses),
- to enable or facilitate transportation (e.g. tires, transmission belts, conveyor belts, slings, strappings),
- in architectural and environmental uses (e.g. textile buildings, roofing membranes, geotextiles)
- or lifestyle and leisure related uses (e.g. sail cloth, awnings, billboards, sewing threads).

Our Products

The extensive global portfolio of PHP Fibers includes high-tenacity polyamide and polyester filament yarns for industrial end uses. In fact, PHP Fibers is one of only a few suppliers worldwide who produces both types of high-tenacity yarns.

Brands and main Applications

- | | |
|--|---|
| <ul style="list-style-type: none">• Diolen®
Coated and uncoated broad fabrics
Mechanical rubber goods (MRG)
Seatbelts
Other narrow wovens (Belts, Slings)
Airbags | <ul style="list-style-type: none">• Enka® Nylon
Airbags
Tires
Mechanical rubber goods (MRG)
Coated and uncoated broad fabrics
Sewing threads |
| <ul style="list-style-type: none">• Stanylenka®
Special sewing threads
Transmission belts | <ul style="list-style-type: none">• Enka® Plast
Elastic weft yarn |

Applications of all Yarn Types

Part 1/2

Diolen®

Type No.	LDI	HDI	Tire	MRG	Seatbelts	Airbag	Broad & Narrow Fabrics	Ropes & Nets
54S	X				X			
57T	X						X	
61ST	X						X	
80T	X					X		
164S		X		X			X	
165ST		X		X			X	
170ST		X					X	
170ST-FC		X					X	
170SST		X					X	
174S		X		(X)			X	
174ST		X					X	
175SLC		X					X	
181T		X					X	
775		X		X			(X)	
855T		X		(X)			X	(X)

X

= main application

Applications of all Yarn Types

Part 2/2

Enka® Nylon

Type No.	LDI	HDI	Tire	MRG & Hoses	Seatbelts	Airbag	Broad & Narrow Fabrics	Ropes & Nets
140HRT		X	X	(X)			(X)	(X)
142HRT		X	X	(X)				(X)
154HRST		X	(X)	X			X	(X)
433HRST	X			X				
434HRT	X			X				(X)
442HRT	X					X		
444HRST	X		(X)	X			X	
444HRT	X						X	
446HRT	X					X		
447HRT	X					X		

Stanylenka®

Type No.	LDI	HDI	Tire	MRG & Hoses	Seatbelts	Airbag	Broad & Narrow Fabrics	Ropes & Nets
460HRST	X	X	X	X		X		

Enka® Plast

Type No.	LDI	HDI	Tire	MRG & Hoses	Seatbelts	Airbag	Broad & Narrow Fabrics	Ropes & Nets
220	X		X					

Indorama Mobility Group – Product Data summary

Tire segment 

Automotive Safety segment 

X

= main application

Abbreviations

Physical Parameters

LD <i>dtex</i>	Linear density – The mass per unit length of an essentially linear structure (1 dtex = 1 g / 10.000 m)
BF <i>N</i>	Breaking force – The maximum force applied to a test specimen carried to rupture during a tensile test under specified conditions
BT <i>mN/tex</i>	Breaking tenacity – The breaking force divided by linear density
EAB %	Elongation at break – The elongation of a test specimen produced by the breaking force
EASF %	Elongation at specified force – The elongation of a test specimen produced by the specified force
HAS %	Hot air shrinkage – 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.

Used in Yarn Types

FC	Food Contact
HR	Heat Resistant
S	Stabilized
SLC	Super Low Capillarity
SST	Super Stabilized (Ultra low shrinkage)
T	Tangled
LDI	Low Denier Industrial yarn
HDI	High Denier Industrial yarn

Conversion Table

(Frequently used SI and American units)

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

High-tenacity Polyester (PET) Yarns **Diolen®**



Diolen®

Type No.	Linear density <i>(nominal dtex)</i>	Number of filaments <i>(nominal)</i>	Main Applications
54S	550	28	Seatbelts
57T	140 225 280 330 420 550	24 48 48 48 96 96	Broad fabrics, Sail cloth, Seatbelts
61ST super low shrinkage	280 550	48 105	Broad fabrics, Seatbelts
80T	470 550	96 96	Airbags
164S adhesive activated	1100 1670 2200 3300 9900 19800	210 210 420 630 1890 3780	Mechanical rubber goods (MRG), Broad fabrics, Lightweight conveyor and processing belts, Heavy-weight conveyor belts, Geotextiles, Transmission belts, Hoses
165ST adhesive activated	1100 1670	210 210	Mechanical rubber goods (MRG), Broad fabrics
170ST low shrinkage	1100 1670	210 210	Broad fabrics, Light-weight conveyor and processing belts
170ST-FC low shrinkage	1100	210	Food packaging applications, Textiles with food contact
170SST super low shrinkage	1100	210	Broad fabrics
174S super low shrinkage	1100 1440 1670 2200 2880 3300	210 210 210 420 420 630	Broad fabrics, Light-weight conveyor and processing belts, Geotextiles, Hoses
174ST super low shrinkage	1100	210	Broad fabrics, Light-weight conveyor and processing belts
175SLC super low capillarity	1100 1670 2200	210 210 420	Broad fabrics, Tents, Textile constructions
181T	880	105	Broad fabrics, Sail cloth
775 adhesive activated	1100 3300	210 630	Mechanical rubber goods (MRG), Geotextiles, Transmission belts, Hoses
855T	1100 1670 2200	210 210 210	Broad fabrics, Heavy-weight conveyor belts, Geotextiles, Hoses, Narrow-woven belts, Nets, Ropes

Diolen® 54S

High-tenacity polyester filament yarn
Micro dull

Linear density (nominal dtex)	Number of filaments (nominal)	Linear density dtex	Breaking force N	Breaking tenacity mN/tex	Elongation at break %	EASF (xN) %	HAS 2 min. at 180°C %
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

Twisting and Make-up

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

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	Seatbelts

Diolen® 57T

High-tenacity polyester filament yarn
Micro dull

Linear density	Number of filaments	Linear density	Breaking force	Breaking tenacity	Elongation at break	EASF (xN)	HAS 2 min. at 180°C
(nominal dtex)	(nominal)	dtex	N	mN/tex	%	%	%
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
(nominal dtex)	(nominal)	t/m	kg	mm	mm	–	kg
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	Z130	7.5	290/94	250	60	450
	96	Z180	7.5	290/94	250	60	450

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. Also available on beams.
Applications	Broad fabrics, sail cloth and seatbelts

Diolen® 61ST

High-tenacity polyester filament yarn
Micro dull – super low shrinkage

Linear density (nominal dtex)	Number of filaments (nominal)	Linear density dtex	Breaking force N	Breaking tenacity mN/tex	Elongation at break %	EASF (xN) %	HAS 2 min. at 180°C %
280	48	281	18.3	651	17.6	7.2 (7.6N)	1.7
550	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 (nominal dtex)	Number of filaments (nominal)	Twist t/m	Package weight kg	Tube dimension L/Ø mm	Spool Ø mm	Spools per pallet –	Pallet net weight kg
280	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
550	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

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

Diolen® 80T

High-tenacity polyester filament yarn
Micro dull

Linear density (nominal dtex)	Number of filaments (nominal)	Linear density dtex	Breaking force N	Breaking tenacity mN/tex	Elongation at break %	EASF (xN) %	HAS 2 min. at 180°C %
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 (nominal dtex)	Number of filaments (nominal)	Twist t/m	Package weight kg	Tube dimension L/Ø mm	Spool Ø mm	Spools per pallet –	Pallet net weight kg
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

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

Diolen® 164S

High-tenacity polyester filament yarn
Micro dull – adhesive activated

Linear density	Number of filaments	Linear density	Breaking force	Breaking tenacity	Elongation at break	EASF (xN)	HAS 2 min. at 180°C
(nominal dtex)	(nominal)	dtex	N	mN/tex	%	%	%
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
(nominal dtex)	(nominal)	t/m	kg	mm	mm	–	kg
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

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

Diolen® 165ST

High-tenacity polyester filament yarn
Micro dull – adhesive activated

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	1117	88.5	792	13.8	6.6 (45N)	3.6
1670	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	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	14.4	300/94	300	33	475
1670	210	0	14.4	300/94	300	33	475

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) and broad fabrics

Diolen® 170ST

High-tenacity polyester filament yarn
Micro dull – low shrinkage

Linear density (nominal dtex)	Number of filaments (nominal)	Linear density dtex	Breaking force N	Breaking tenacity mN/tex	Elongation at break %	EASF (xN) %	HAS 2 min. at 180°C %
1100	210	1119	80.0	715	21.8	13.6 (45N)	1.6
1670	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 (nominal dtex)	Number of filaments (nominal)	Twist t/m	Package weight kg	Tube dimension L/Ø mm	Spool Ø mm	Spools per pallet –	Pallet net weight kg
1100	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
1670	210	0	14.4	300/94	300	33	475
	210	S/Z60	14.4	290/94	300	33	475

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. Also available on beams.
Applications	Broad fabrics, light-weight conveyor and processing belts

Diolen® 170ST-FC

High-tenacity polyester filament yarn
Micro dull – food contact

Linear density (nominal dtex)	Number of filaments (nominal)	Linear density dtex	Breaking force N	Breaking tenacity mN/tex	Elongation at break %	EASF (xN) %	HAS 2 min. at 180°C %
1100	210	1119	80.0	715	21.8	13.6 (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 (nominal dtex)	Number of filaments (nominal)	Twist t/m	Package weight kg	Tube dimension L/Ø mm	Spool Ø mm	Spools per pallet –	Pallet net weight kg
1100	210	0	14.4	300/94	300	33	475

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. Also available on beams.
Applications	Food packaging applications and textiles with food contact

Diolen® 170SST

High-tenacity polyester filament yarn
Micro dull – super low shrinkage

Linear density (nominal dtex)	Number of filaments (nominal)	Linear density dtex	Breaking force N	Breaking tenacity mN/tex	Elongation at break %	EASF (xN) %	HAS 2 min. at 180°C %
1100	210	1118	81.5	728	23.9	16.0 (45N)	1.0

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 (nominal dtex)	Number of filaments (nominal)	Twist t/m	Package weight kg	Tube dimension L/Ø mm	Spool Ø mm	Spools per pallet –	Pallet net weight kg
1100	210	0	14.4	300/94	300	33	475
	210	Z60	14.4	290/94	300	33	475

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. Also available on beams.
Applications	Broad fabrics

Diolen® 174S

High-tenacity polyester filament yarn
Micro dull – super low shrinkage

Linear density	Number of filaments	Linear density	Breaking force	Breaking tenacity	Elongation at break	EASF (xN)	HAS 2 min. at 180°C
(nominal dtex)	(nominal)	dtex	N	mN/tex	%	%	%
1100	210	1122	84.8	756	19.3	12.1 (45N)	1.2
1440	210	1451	106.0	730	19.0	12.1 (59N)	1.3
1670	210	1705	130.0	762	20.5	12.9 (68N)	1.0
2200	420	2245	167.0	744	20.2	12.6 (90N)	1.1
2880	420	2890	214.0	740	20.0	12.4 (118N)	1.2
3300	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
(nominal dtex)	(nominal)	t/m	kg	mm	mm	–	kg
1100	210	0	11.3	290/94	260	48	542
	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
1440	210	0	11.3	290/94	270	48	542
1670	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
2200	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
2880	420	0	11.3	290/94	290	48	542
3300	630	0	11.3	290/94	290	48	542
	630	Z60	11.3	290/94	300	48	542
	630	Z100	11.3	290/94	305	39	441

Details based on full spools

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

Diolen® 174ST

High-tenacity polyester filament yarn
Micro dull – super low shrinkage

Linear density (nominal dtex)	Number of filaments (nominal)	Linear density dtex	Breaking force N	Breaking tenacity mN/tex	Elongation at break %	EASF (xN) %	HAS 2 min. at 180°C %
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 (nominal dtex)	Number of filaments (nominal)	Twist t/m	Package weight kg	Tube dimension L/Ø mm	Spool Ø mm	Spools per pallet –	Pallet net weight kg
1100	210	0	11.3	290/94	260	48	542

Details based on full spools

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

Diolen® 175SLC

High-tenacity polyester filament yarn
Micro dull – super low capillarity

Linear density (nominal dtex)	Number of filaments (nominal)	Linear density dtex	Breaking force N	Breaking tenacity mN/tex	Elongation at break %	EASF (xN) %	HAS 2 min. at 180°C %
1100	210	1144	84.0	734	19.6	12.1 (45N)	1.3
1670	210	1722	127.5	740	19.9	12.1 (68N)	1.3
2200	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 (nominal dtex)	Number of filaments (nominal)	Twist t/m	Package weight kg	Tube dimension L/Ø mm	Spool Ø mm	Spools per pallet –	Pallet net weight kg
1100	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
1670	210	0	11.3	290/94	260	48	542
	210	Z60	11.3	290/94	270	48	542
2200	420	0	11.3	290/94	260	48	542
	420	Z60	11.3	290/94	270	48	542

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. Also available on beams. Processing recommendations available.
Applications	Broad fabrics, tents and textile constructions

Diolen® 181T

High-tenacity polyester filament yarn
Micro dull

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

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

Diolen® 775

High-tenacity polyester filament yarn
Micro dull – adhesive activated

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	1121	89.0	794	11.5	4.4 (45N)	6.0
3300	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>
1100	210	0	11.0	290/94	265	48	528
3300	630	0	11.0	290/94	262	48	528

Details based on full spools

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

Diolen® 855T

High-tenacity polyester filament yarn
Micro dull

Linear density (nominal dtex)	Number of filaments (nominal)	Linear density dtex	Breaking force N	Breaking tenacity mN/tex	Elongation at break %	EASF (xN) %	HAS 2 min. at 180°C %
1100	210	1108	92.0	830	12.0	5.5 (45N)	6.5
1670	210	1670	135.5	811	13.5	6.5 (68N)	5.9
2200	210	2240	185.0	826	13.9	7.2 (90N)	6.8

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 (nominal dtex)	Number of filaments (nominal)	Twist t/m	Package weight kg	Tube dimension L/Ø mm	Spool Ø mm	Spools per pallet –	Pallet net weight kg
1100	210	0	10.0	290/94	260	48	480
	210	Z100	10.0	290/94	275	48	480
1670	210	0	10.0	290/94	260	48	480
2200	210	0	10.0	290/94	260	48	480
	210	Z60	10.0	290/94	275	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. Also available on beams.
Applications	Broad fabrics, heavy-weight conveyor belts, geotextiles, hoses, narrow-woven belts, nets and ropes

High-tenacity Polyamide 6.6 Yarns
Enka® Nylon



Enka® Nylon

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

¹ LDPF yarn types (Low denier per filament)

Enka® Nylon 140HRT

High-tenacity polyamide 6.6 filament yarn
Medium shrinkage

Linear density (nominal dtex)	Number of filaments (nominal)	Linear density dtex	Breaking force N	Breaking tenacity mN/tex	Elongation at break %	EASF (xN) %	HAS 2 min. at 180°C %
700	108	716	61.5	859	21.0	9.8 (34N)	5.5
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 (nominal dtex)	Number of filaments (nominal)	Twist t/m	Package weight kg	Tube dimension L/Ø mm	Spool Ø mm	Spools per pallet –	Pallet net weight kg
700	108	0	10.0	300/94	270	48	480
	140	0	10.0	300/94	270	48	480
940	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

Super high-tenacity polyamide 6.6 filament yarn
Medium shrinkage

Linear density (nominal dtex)	Number of filaments (nominal)	Linear density dtex	Breaking force N	Breaking tenacity mN/tex	Elongation at break %	EASF (xN) %	HAS 2 min. at 180°C %
940	140	942	86.7	920	18.0	9.7 (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 (nominal dtex)	Number of filaments (nominal)	Twist t/m	Package weight kg	Tube dimension L/Ø mm	Spool Ø mm	Spools per pallet –	Pallet net weight 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

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

Enka® Nylon 154HRST

High-tenacity polyamide 6.6 filament yarn
Low shrinkage

Linear density (nominal dtex)	Number of filaments (nominal)	Linear density dtex	Breaking force N	Breaking tenacity mN/tex	Elongation at break %	EASF (xN) %	HAS 2 min. at 180°C %
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 (nominal dtex)	Number of filaments (nominal)	Twist t/m	Package weight kg	Tube dimension L/Ø mm	Spool Ø mm	Spools per pallet –	Pallet net weight 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

High-tenacity polyamide 6.6 filament yarn
Low elongation at break, high breaking tenacity

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>
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	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>
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

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

Enka® Nylon 434HRT

High-tenacity polyamide 6.6 filament yarn

Linear density (nominal dtex)	Number of filaments (nominal)	Linear density dtex	Breaking force N	Breaking tenacity mN/tex	Elongation at break %	EASF (xN) %	HAS 2 min. at 180°C %
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 (nominal dtex)	Number of filaments (nominal)	Twist t/m	Package weight kg	Tube dimension L/Ø mm	Spool Ø mm	Spools per pallet –	Pallet net weight kg
78	36	0	4.4	290/94	200	75	330

Details based on full spools

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

Enka® Nylon 442HRT

Super high-tenacity polyamide 6.6 filament yarn
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	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	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	72	0	9.0	150/94	360	48	450

Details based on full spools

Package Type	Cheeses
Pallet dimension (H×L×W)	112 × 126 × 101 cm
Special remarks	
Applications	Airbags

Enka® Nylon 444HRST

High-tenacity polyamide 6.6 filament yarn
Low shrinkage

Linear density (nominal dtex)	Number of filaments (nominal)	Linear density dtex	Breaking force N	Breaking tenacity mN/tex	Elongation at break %	EASF (xN) %	HAS 2 min. at 180°C %
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 (nominal dtex)	Number of filaments (nominal)	Twist t/m	Package weight kg	Tube dimension L/Ø mm	Spool Ø mm	Spools per pallet –	Pallet net weight 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

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

Enka® Nylon 444HRT

High-tenacity polyamide 6.6 filament yarn
Medium shrinkage

Linear density (nominal dtex)	Number of filaments (nominal)	Linear density dtex	Breaking force N	Breaking tenacity mN/tex	Elongation at break %	EASF (xN) %	HAS 2 min. at 180°C %
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 (nominal dtex)	Number of filaments (nominal)	Twist t/m	Package weight kg	Tube dimension L/Ø mm	Spool Ø mm	Spools per pallet –	Pallet net weight kg
235	36	0	9.5	290/94	260	42	400

Details based on full spools

Package Type	Cylindrical bobbins
Pallet dimension (H×L×W)	111 × 126 × 101 cm
Special remarks	
Applications	Broad and narrow fabrics

Enka® Nylon 446HRT

Super high-tenacity polyamide 6.6 filament yarn
Medium shrinkage

Linear density (nominal dtex)	Number of filaments (nominal)	Linear density dtex	Breaking force N	Breaking tenacity mN/tex	Elongation at break %	EASF (xN) %	HAS 2 min. at 180°C %
350	140	352	30.5	866	22.5	7.1 (8.4N)	5.4
470	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 (nominal dtex)	Number of filaments (nominal)	Twist t/m	Package weight kg	Tube dimension L/Ø mm	Spool Ø mm	Spools per pallet –	Pallet net weight 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

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

Enka® Nylon 447HRT

High-tenacity polyamide 6.6 filament yarn
High shrinkage LDPF yarn

Linear density (nominal dtex)	Number of filaments (nominal)	Linear density dtex	Breaking force N	Breaking tenacity mN/tex	Elongation at break %	EASF (xN) %	HAS 2 min. at 180°C %
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

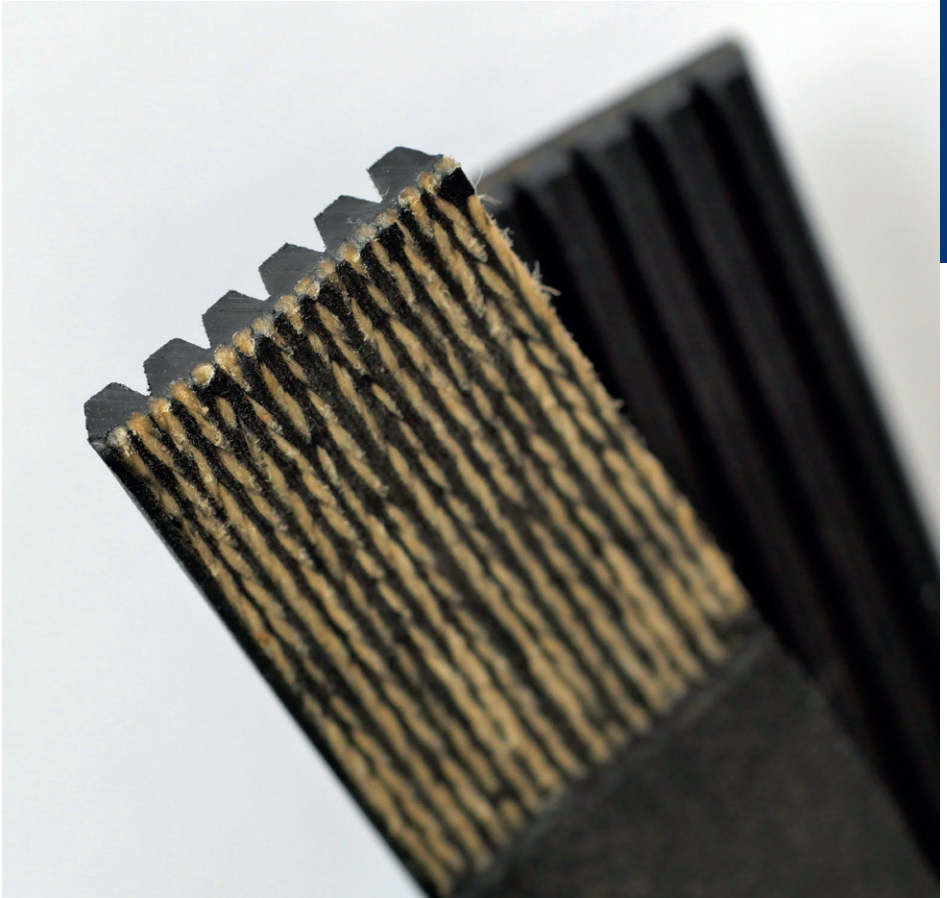
Twisting and Make-up

Linear density (nominal dtex)	Number of filaments (nominal)	Twist t/m	Package weight kg	Tube dimension L/Ø mm	Spool Ø mm	Spools per pallet –	Pallet net weight 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

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

High-tenacity Polyamide 4.6 Yarns
Stanylenka®



Stanylenka®

Stanylenka®

Stanylenka® 460HRST

High-tenacity polyamide 4.6 filament yarn
Low shrinkage

Linear density <i>(nominal dtex)</i>	Number of filaments <i>(nominal)</i>	Linear density <i>dtex</i>	Breaking force <i>N</i>	Breaking tenacity <i>mN/tex</i>	Elongation at break <i>%</i>	EASF (xN) <i>%</i>	HAS 2 min. at 180°C <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 <i>(nominal dtex)</i>	Number of filaments <i>(nominal)</i>	Twist <i>t/m</i>	Package weight <i>kg</i>	Tube dimension L/Ø <i>mm</i>	Spool Ø <i>mm</i>	Spools per pallet <i>–</i>	Pallet net weight <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 and transmission belts

Elastic Weft Yarns

Enka® Plast



Enka® Plast

Enka® Plast

Enka® Plast 220

Elastic weft yarn for tire cord fabrics

Linear density <i>(nominal dtex)</i>	Number of filaments <i>(nominal)</i>	Linear density <i>dtex</i>	Breaking force <i>N</i>	Breaking force cotton <i>N</i>	Breaking tenacity <i>mN/tex</i>	Elongation at break <i>%</i>	HAS 2 min. at 180°C <i>%</i>
220	–	225	2.5	1.5	109	300.0	max. 3

Tensile testing is performed at a yarn twist of Z60 t/m
HAS – Hot-air shrinkage testing is performed with a pretension of 0.5 mN/tex

Twisting and Make-up

Linear density <i>(nominal dtex)</i>	Number of filaments <i>(nominal)</i>	Twist <i>t/m</i>	Package weight <i>kg</i>	Tube dimension L/Ø <i>mm</i>	Spool Ø <i>mm</i>	Spools per pallet <i>–</i>	Pallet net weight <i>kg</i>
220	–	775	1	171/38 & 64	138 & 159	342	370

Details based on full spools

Package Type	Cones
Pallet dimension (H×L×W)	176 × 120 × 80 cm
Special remarks	Elastic weft yarns for tire cord fabrics.
Applications	Tires

Appendix

Appendix

Physical Data of all Yarn Types

Yarn Type	Density	Melting point	Heat capacity ¹	Acid resistance	Basic resistance	Hydrolysis resistance
	g/cm ³	°C	J/g			
Diolen® PET	1.38	256	303	+	-	-
Enka® Nylon PA 6.6	1.14	258	620	-	+	+
Stanylenka® PA 4.6	1.18	285	771	-	+	++

¹ 0°C to TM

Chemical Resistance of Enka® Nylon (PA 6.6)

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 ¹
	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	-

¹ **Stability:** + = Resistant | 0 = Limited resistance | - = Non resistant

Chemical Resistance of Enka® Nylon (PA 6.6)

Part 2/3

Bases

Chemicals	Conditions			Stability ¹
	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 ¹
	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	+

¹ **Stability:** + = Resistant | 0 = Limited resistance | - = Non resistant

Chemical Resistance of Enka® Nylon (PA 6.6)

Part 3/3

Inorganic Compounds

Chemicals	Conditions			Stability ¹
	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	+

¹ **Stability:** + = Resistant | 0 = Limited resistance | – = Non resistant

Chemical Resistance of Diolen® (PET)

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 ¹
	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	-

¹ **Stability:** + = Resistant | 0 = Limited resistance | - = Non resistant

Chemical Resistance of Diolen® (PET)

Part 2/6

Acids II

Chemicals	Conditions			Stability ¹
	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	-

¹ **Stability:** + = Resistant | 0 = Limited resistance | - = Non resistant

Chemical Resistance of Diolen® (PET)

Part 3/6

Bases

Chemicals	Conditions			Stability ¹
	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	+

¹ **Stability:** + = Resistant | 0 = Limited resistance | - = Non resistant

Chemical Resistance of Diolen® (PET)

Part 4/6

Organic Compounds I

Chemicals	Conditions			Stability ¹
	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 phthalate	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	+

¹ **Stability:** + = Resistant | 0 = Limited resistance | - = Non resistant

Chemical Resistance of Diolen® (PET)

Part 5/6

Organic Compounds II

Chemicals	Conditions			Stability ¹
	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	+

¹ **Stability:** + = Resistant | 0 = Limited resistance | - = Non resistant

Chemical Resistance of Diolen® (PET)

Part 6/6

Inorganic Compounds

Chemicals	Conditions			Stability ¹
	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	+

¹ **Stability:** + = Resistant | 0 = Limited resistance | - = Non resistant

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