



Pneumatic Tubing & Profiles

Flexible. Specific. Innovative.



Flexible. Specific. Innovative.

The right choice

We bestow every hose with its own very special character, because no matter how diverse the demands of modern technology are, we have the perfect solution – in form of a high-performance hose.

We are a leading specialist for extruded tubes and profiles for applications in a wide range of industries. Our material spectrum includes almost all thermoplastic polymers.

Through our involvement with the Masterflex Group we combine the flexibility of a medium-sized operation with the strength of an international group, to the express advantage of our customers.

Customer orientation and customer satisfaction are not slogans for us, but rather the goals of our daily work. Our aims are achieved thanks to an innovative development department and to a technical sales department that accepts its demands and transforms them into products to fit the needs. These demands have led to the development of a series of innovations for the widest variety of applications and branches, e.g. mechanical engineering, the automobile supply industry, electronics and medical technology.

Quality, Precision, Delivery Reliability and competent advice is the cornerstones for the ongoing expansion of our market position.

Starting with the choice of material and cost effectiveness down to matters of design, our experts accompany you in a competent and comprehensive fashion, regardless of whether you require a series product from this documents or an individual custom item.

To protect our own everyday high quality requirements, we use special test and measuring equipment as well as laboratory equipment. As a result, we have the latest technology to safeguard the product quality at our disposal, right from the time of your initial inquiry until your product is shipped. Along with this, our lofty claim to quality is guaranteed through the resolute realization of quality control systems in accordance with ISO 9001 and ISO 13485. Furthermore, our company applies the established Environmental Management System according to DIN EN ISO 14001 as well as Energy Management System according to DIN EN ISO 50001.



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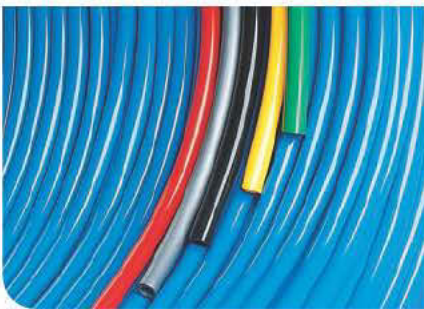
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Pneumatic tubing

... provide flexible solutions even under high pressure

PUR



Pneumatic tubing made from PUR Shore 98 A

- lightweight
- high flexibility at low temperatures
- UV resistant
- high elasticity
- good damping behaviour
- excellent abrasion resistance
- excellent resistance against tear propagation
- kink resistant
- oil and grease resistant
- easily fitted
- minimal pressure loss
- available in a range of colours
- small bending radius
- unplasticized so no embrittlement
- individual printing is possible

Temperature range
-40 °C to +85 °C
-40 °F to +185 °F

Standard colours
 natural
 black
 blue

Standard sizes
Outside-Ø:
0,157 to 0,63 inch
4,0 to 16,0 mm

Special sizes & colours upon request

Nylon



Pneumatic tubing made from Nylon

- lightweight
- excellent temperature resistance
- highly resistant to shock and impact
- excellent compressive strength
- high chemical resistance to oil, grease, fuels, solvent and hydraulic fluids
- excellent resistance to UV-rays
- highly resistant to stress cracking
- excellent abrasion resistance characteristics
- water insensitive
- easily fitted
- minimal pressure loss
- available in a range of colours
- calibrated

Temperature range
-40 °C to +90 °C
-40 °F to +194 °F

Standard colours
 natural
 black
 blue

Standard sizes
Outside-Ø:
0,157 to 0,866 inch
4,0 to 22,0 mm

Special sizes & colours upon request



Pneumatic tubing made from Nylon-E

- high flexible (in comparison with Nylon 11/12 soft)
- lightweight
- excellent temperature resistance
- highly resistant to shock and impact
- excellent resistance to UV-rays
- water insensitive
- unplasticized so no embrittlement
- good chemical resistance characteristics
- lasting flexibility
- calibrated
- lasting flexibility
- calibrated
- easily fitted
- available in a range of colours
- available in a range of hardness grades

Temperature range
 -40 °C to +80 °C
 -40 °F to +176 °F

Dimensions & colours upon request

Nylon-E



Pneumatic tubing made from LD-PE

- lightweight
- physiologically safe and tasteless (complies with FDA regulation 21 CFR 177.120 c 2.1)
- low permeability for water, water vapor and gases
- resistant to various chemicals (see table of chemical resistance)
- sterilizable using ethylene oxide and gamma rays
- good dielectric characteristics
- easily fitted
- available in a range of colours
- low price

Temperature range
 -30 °C to +70 °C
 -22 °F to +158 °F

Standard colours
 natural
 black
 blue

Standard sizes
 Outside-Ø:
 0,157 to 0,709 inch
 4,0 to 18,0 mm

Special sizes & colours upon request

PE



Twin/Triple pneumatic tubing

... stay in line, you will not loose track

PUR



PUR Twin/Triple pneumatic tubing Shore 98 A

- lightweight
- high flexibility at low temperatures
- good elasticity
- high buffering capacity
- excellent abrasion resistance
- kink resistant
- unplasticized so no embrittlement
- easily fitting
- no bundling necessarily
- each tube has a different colour for easy identification
- easy separation
- air/electricity combination possible

Temperature range
-40 °C to +85 °C
-40 °F to +185 °F

Standard colour combination

■ ■ blue/black
■ □ blue/black/natural

Nylon



Nylon Twin/Triple pneumatic tubing

- lightweight
- excellent temperature resistance
- highly resistant to shock and impact
- excellent compressive strength
- high chemical resistance to oil, grease, fuels, solvent and hydraulic fluids
- highly resistant to stress cracking
- excellent abrasion resistance characteristics
- easily fitting
- no bundling necessarily
- each tube has a different colour for easy identification
- air/electricity combination possible

Temperature range
-40 °C to +85 °C
-40 °F to +185 °F

Standard colour combination

■ ■ blue/black
■ □ blue/black/natural

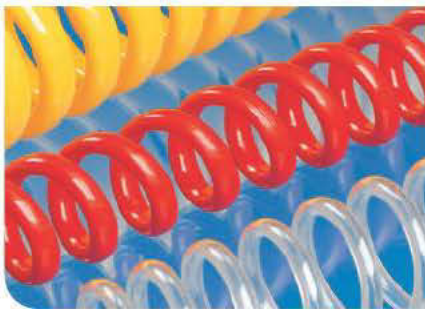
Please note

Since the separation of multiple PA hoses/tubing free of burs is no longer possible, it is advisable not to use "push-in" connectors.



Expandable tubing

... this pull back force protects you from getting twisted



PUR expandable tubing Shore 98 A

- excellent springback characteristics
- high flexibility
- excellent abrasion resistance
- kink resistant
- will not tear off at fittings
- no scratch painted surface by an elastomer character
- high operating length/tube length ratio (in comparison with nylon coil tubing)
- kink resistant
- long service life
- small bending radius for easy handling

PUR

Temperature range
-40 °C to +85 °C
-40 °F to +185 °F

Standard colour
■ blue

Special colours upon request

Duo & trio spirals upon request



Nylon expandable tubing

- excellent springback characteristics
- highly resistant against oil and grease
- lightweight
- excellent compressive strength
- space-saving
- low price as no rollers required
- easy handling
- choice of radial (tangential) or axial (straight) ends

Nylon

Temperature range
-40 °C to +90 °C
-40 °F to +194 °F

Standard colour
■ blue

Special colours upon request

Duo & trio spirals upon request



Fittings for pneumatic expandable tubing

... a light connection with a secure hold

PUR



Fittings for PUR expandable tubing

- clear brass or nickel-plated steel
- quick-coupling DN 7.2
- Polyamide plastic spring prevents kinks and scratches
- rotating fitting with double O-ring seal
- max. pressure resistance 15 bar (test pressure 60 bar)
- all fittings reusable
- maximum passage for optimal flow
- perfectly matched to the PUR-dimensions and degree of hardness

Applications

- for connecting to PUR coil tubes
- for fitting to compressed air lines and tools

Nylon



Fittings for Nylon expandable tubing

- nickel-plated brass
- quick-coupling DN 7.2
- Anti-kink metal spring
- max. working pressure 30 bar
- all fittings reusable
- adapted for optimal flow quantities
- perfectly matched to the PUR-dimensions and degree of hardness

Applications

- for connecting to Nylon coil tubes
- for fitting to compressed air lines and tools



Paint and Lacquer Hoses

... lasting flexibility – even in mix ups



Paint and Lacquer hoses PUR

- for powder conveying
- unplasticized
- no hardening or embrittlement
- kink resistant
- flexible
- high elasticity
- excellent abrasion resistance
- long lifespan
- available in a range of colours
- available in a range of hardness grades
- available in antistatic finish
- individual printing possible

PUR

Temperature range
-40 °C to +85 °C
-40 °F to +185 °F

Dimensions & colours upon request



Paint and Lacquer hoses Nylon

- high chemical resistance to oil, grease, fuels, solvents and hydraulic fluids
- lightweight
- excellent temperature resistance
- highly resistant to shock and impact
- excellent compressive strength
- excellent UV-resistance
- highly resistant to stress cracking
- excellent abrasion resistance characteristics
- water insensitive
- easily fitted

Nylon

Temperature range
-40 °C to +90 °C
-40 °F to +194 °F

Dimensions & colours upon request



Paint and Lacquer hoses Nylon/PUR

- multi-layer hose structure
- suitable for use as a low-pressure paint sprayer hose
- optimum profile of properties due to material combination
- good resistance to solvents due to Nylon core
- good abrasion resistance due to PUR outer coating
- good resistance to pressure due to Nylon core
- optimum flexibility due to PUR outer coating and flexible special Nylon material in the core

Nylon/PUR

Temperature range
-40 °C to +85 °C
-40 °F to +185 °F

Dimensions & colours upon request



Hydrolysis- and microbe resistant tubing

... provides fierce resistance –
even to the smallest micro-organisms

PUR



Tubing made from PUR

- hydrolysis and microbe-resistant PUR special materials
- unplasticized
- no hardening or embrittlement
- kink-resistant
- excellent flexibility at low temperatures
- good elasticity
- highly resistant to abrasion and wear
- UV resistant
- available in a range of colours
- available in different hardness grades
- individual printing possible

Temperature range
-40 °C to +85 °C
-40 °F to +185 °F

Dimensions & colours
upon request

Nylon PVDF PE PP PVC TPE



Tubing made from diverse materials

- all materials hydrolysis and microbe-resistant
- material properties available on inquiry
- available in a range of colours
- available in different hardness grades
- individual printing possible

Temperature range
depends on the
material

Dimensions & colours
upon request



Antistatic and conductive tubing

... certain tensions are easily overcome



Antistatic tubing made from PUR

- surface resistance <math><10^{10}</math> ff
- highly resistant against abrasion
- high mechanical strength
- flexible
- contains no plasticizers so no embrittlement
- good shock absorbing properties
- kink resistant
- oil and grease resistant

Temperature range

-40 °C to +85 °C
-40 °F to +185 °F

Dimensions & colours upon request

PUR



Electrically conductive PUR tubing

- electrically conductive; surface resistance 10^1 - 10^2 ff
- low weight
- extremely flexible at low temperatures
- UV resistant
- high elasticity
- good damping characteristics
- excellent wear resistance
- resistant to bending
- excellent tear propagation resistance
- oil and grease resistant
- quick installation
- small bending radius
- no embrittlement, because free of plasticisers
- customised overprint is possible

Temperature range

-40 °C to +85 °C
-40 °F to +185 °F

Standard colour

■ black

Dimensions upon request

PUR



Electrical conductive Nylon tubing

- conducts electricity, surface resistant $\leq 10^4$ ff
- lightweight
- excellent compressive strength
- good temperature resistance
- water insensitive
- excellent resistance to UV-rays
- good chemical resistance characteristics to oil, grease, fuels, solvent and hydraulic fluids
- calibrated so suitable for use with pin and socket connectors

Temperature range

-40 °C to +90 °C
-40 °F to +194 °F

Standard colour

■ black

Dimensions upon request

Nylon



Temperature resistant tubing

... can not be bored with wide temperature variances

PVDF



Tubing and hoses made from PVDF

- excellent temperature resistance
- excellent pressure strength
- suitable for use with foodstuffs (FDA CFR 177.2510)
- suitable for medical applications (USP Class VI Standard)
- sterilizable
- non-flammable (UL94 V0)
- excellent resistance to UV-rays
- low gas permeability
- excellent mechanical properties

Temperature range
-40 °C to +150 °C
-40 °F to +302 °F

Standard colour
 natural

Dimensions & special colours upon request

TPEE



Tubing made from TPEE

- high mechanical strength
- excellent abrasion resistance
- very good aging stability
- high flexibility
- kink resistant
- good chemical resistance characteristics (like polyurethane – see table of chemical resistance)
- better temperature resistance than standard pneumatic tubing
- easily fitted
- excellent compressive strength combined with high flexibility

Temperature range
-40 °C to +120 °C
-40 °F to +248 °F

Dimensions & colours upon request

Please note: This hose can be damaged by water and steam (>60 °C/140°F), as well as by microbes.

TPE



Tubing and hoses made from TPE

- highly flexible
- available in a range of hardness grades
- similar to types of rubber
- good chemical resistance characteristics
- available in special grades suitable for use with foodstuff
- excellent dynamic fatigue resistance
- highly flexible at low temperatures
- excellent resistance to aging from hot air exposure
- minimal diffusion of liquid and gaseous media

Temperature range
-40 °C to +125 °C
-40 °F to +257 °F

Dimensions & colours upon request



Chemical resistant tubing

... will not be irritated by aggressive media



Tubing and hoses made from PVDF

- excellent resistant to a variety of chemicals (see list of chemical resistance)
- low gas permeability
- excellent temperature resistance
- excellent pressure strength
- suitable for use with foodstuffs (FDA CFR 177.2510)
- suitable for medical applications (USP Class VI Standard)
- sterilizable
- non-flammable (UL94 V0)
- excellent resistance to UV-rays
- excellent mechanical properties

Temperature range
- 40 °C to +150 °C
- 40 °F to +302 °F

Standard colour
 natural

Dimensions & special colours upon request

PVDF



Tubing and hoses made from PP

- excellent chemical resistance (see list of chemical resistance)
- highly resistant to heat
- good surface hardness
- safe to use with foodstuffs
- good dielectric strength
- low hygroscopicity

Temperature range
- 25 °C to +90 °C
- 13 °F to +194 °F

Dimensions & colours upon request

PP



Food quality tubing

... guarantee that Yummies stay delicious

PUR



Food quality tubing made from PUR

- complies with the consumer article regulation, contained guideline 90/128EWG(D)
- complies with FDA-regulations 21CFR 177.1680, 21CFR 175.105 and 21CFR 177.2600
- hydrolysis and microbe resistant
- unplasticized
- no hardening or embrittlement
- kink resistant
- excellent flexibility at low temperatures
- good elasticity

Temperature range

-40 °C to +85 °C
-40 °F to +185 °F

Dimensions & colours upon request

Nylon



Food quality tubing made from Nylon

- complies with EU-regulations 90/128, 92/93, 93/9, 95/3, 96/11, 01/62 and 02/72
- complies with the FDA-regulations 21CFR 177.1500(9)
- good chemical resistance
- lightweight
- good temperature resistance
- good UV-resistance
- highly resistant to abrasion
- quick fitting
- available in a range of colours

Temperature range

-40 °C to +90 °C
-40 °F to +194 °F

Dimensions & colours upon request

PE



Food quality tubing made from PE

- Physiologically safe and tasteless (complies with recommendation III of the BGA and complies with regulation 21 CFR 177.120 c. 2.1)
- lightweight
- low permeation values for water, water vapor and gases
- resistant to numerous chemicals (refer to chemical resistance table)
- can be sterilized (ethylene oxide and gamma rays)

Temperature range

-30 °C to +70 °C
-22 °F to +158 °F

Dimensions & colours upon request



Food quality tubing made from PVC

- complies with European Pharmacopoeia 3.1.1.1, 3.1.1.2 and 3.1.1.4
- complies with USP XXIV, class 6 and ISO 10993
- good resistance against oils and greases
- good dielectric characteristics
- low inflammability
- contains plasticizer
- flexible
- good chemical resistance
- UV and ozone proof
- available in a range of colours
- available in a range of hardness's
- individual printing possible

Temperature range

-10 °C to +60 °C
-14 °F to +140 °F

Dimensions & colours upon request

PVC



Food quality tubing made from TPE

- complies with FDA 21 CFR 177.2600 and 21 CFR 177.1210
- highly flexible
- good chemical resistance
- high flexibility at low temperatures
- minimal diffusion of liquid and gaseous mediums
- excellent resistance to aging from hot air exposure
- comparable with rubber types
- highly dynamic fatigue strength
- available in a range of colours
- available in a range of hardness's
- individual printing possible

Temperature range

-40 °C to +125 °C
-40 °F to +257 °F

Dimensions & colours upon request

TPE



Insulating tubing

... bundle the flow of energy to make light shine

PUR



Insulating tubing made from PUR

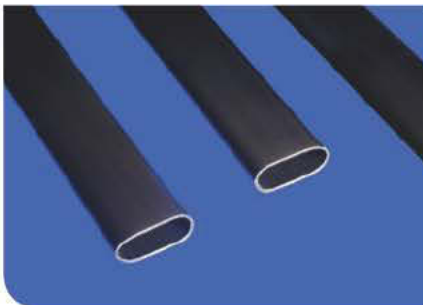
- highly flexible
- resistant to oil, water, ozone and UV rays
- unplasticized so no embrittlement
- good dielectric characteristics
- insulation class B (VDE standard 0530)
- manufactured in accordance with DIN 40 621
- excellent mechanical characteristics
- Shore A hardness 85°

Temperature range
-40 °C to +125 °C
-40 °F to +257 °F

Standard colour
■ black

Dimensions upon request

PUR



Oval PUR insulation tubing

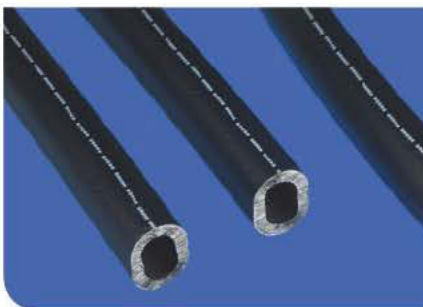
- inside groove pattern
- very flexible
- resistant against oil, water, ozone and UV radiation
- no embrittlement, because free of plasticisers
- good dielectric properties
- insulation class B acc. to VDE 0530
- manufactured according to the terms of DIN 40 621
- very good manufacturing properties
- Shore A hardness 85°

Temperature range
-40 °C to +125 °C
-40 °F to +257 °F

Standard colour
■ black

Dimensions upon request

TPEE



TPEE insulation tubing

- manufactured according to the terms of DIN 40 621 B
- inside groove pattern
- high mechanical strength
- excellent wear resistance
- very good ageing resistance
- high flexibility (elastomer)
- resistant to bending
- good chemical resistance

Temperature range
-40 °C to +120 °C
-40 °F to +257 °F

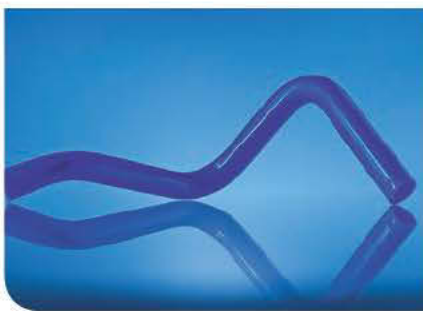
Standard colour
■ black

Dimensions upon request



Preformed tubes

... adjusts to all possible required shapes



Preformed tubes made from PUR

- individual mouldability as 2D and 3D parts
- flexible
- without plasticizer
- unplasticized
- no hardening or embrittlement
- kink resistant
- high elasticity
- highly resistant to abrasion
- UV resistant
- available in a range of colours
- available in a range of hardness's

Temperature range

-40 °C to +85 °C
-40 °F to +185 °F

Dimensions & colours upon request

PUR



Preformed tubes made from Nylon

- individual mouldability as 2D and 3D parts
- lightweight
- high chemical resistance to oil, grease, fuels, thinners and hydraulic fluids
- good temperature resistance
- good UV resistance
- highly resistant to abrasion
- quick fitting
- available in a range of colours
- calibrated

Temperature range

-40 °C to +90 °C
-40 °F to +194 °F

Dimensions & colours upon request

Nylon



Energy chaining tubing

... glide freely & smoothly

PUR



Energy chaining tubing made from PUR

- good sliding qualities against tear propagation
- lightweight
- high flexibility at low temperatures
- UV resistant
- highly elasticity
- high buffering capacity
- excellent abrasion resistance
- kink resistant
- excellent resistance
- oil and grease resistant
- easily fitted
- available in a range of colours
- small bending radius
- unplasticized so no embrittlement
- individual printing is possible

Temperature range

-40 °C to +85 °C
-40 °F to +185 °F

Standard colours

- natural
- black
- blue

Special sizes & colours upon request

Nylon



Energy chaining tubing made from Nylon

- good sliding qualities
- lightweight
- excellent temperature resistance
- highly resistant to shock and impact
- excellent compressive strength
- high chemical resistance to oil, grease, fuels, solvent and hydraulic fluids
- excellent resistance to UV-rays
- highly resistant to stress cracking
- excellent abrasion resistance characteristics
- water insensitive
- easily fitted
- minimal pressure loss
- available in a range of colours
- calibrated

Temperature range

-40 °C to +90 °C
-40 °F to +194 °F

Standard colours

- natural
- black
- blue

Special sizes & colours upon request



Brake tubing & truck brake rolls of straight tubing

... secure the confidence when using brakes



Brake tubing made from Nylon

- lightweight
- highly resistant to oil, grease, solvent and hydraulic fluids
- excellent compressive strength
- highly resistant to shock and impact
- stable against light and heat
- easily fitted: calibrated and suitable for use with push-in fittings
- minimal pressure loss
- fully compliant with DIN 73 378 and DIN 74 324

Temperature range

-40 °C to +90 °C
-40 °F to +194 °F

Standard colour

■ black

Dimensions & special colours upon request

Nylon



PUR expandable tubing for truck brakes made from PUR

- will not break at fittings
- excellent antikink characteristics – kinking leaves no defects
- longer operation length
- highly resistant to tearing off at fittings
- excellent springback characteristics
- unplasticized so no embrittlement
- resistant to oil and grease
- resistant to UV and ozon
- service life many times longer than conventional coil tubing

Certification

German Technical Surveyance Association (TÜV)-type approved (Certificate R 9910199)

Certified according to: DIN 74323, DIN 74324, ISO 7268-2, ISO 7375-2, DIN 73378, DIN 74310-2

Standard colours

■ red
■ yellow
■ black

PUR



Flame resistant tubing

... hold firm - even when the sparks fly

PUR



XFlame®

- Flame retardant according to UL94 V2/V0
- Welding-spark resistant
- Halogen-free according to EN 50267-2-1 (complies with IEC 60754-1)
- LABS free (free from paint-adhesion inhibiting substances)
- UV resistant
- can be used with drag chains
- flexible
- resistant to bending
- very good wear resistance
- plasticiser free

Temperature range
-40 °C to +90 °C
-40 °F to +194 °F

Standard colour
■ black

Dimensions and special colours upon request

Models: XFlame®
XFlame hydro®
XFlame soft®

PVDF



Flame resistant tubing made from PVDF

- hardly flammable in accordance UL94 V0
- excellent temperature resistance
- excellent pressure strength
- excellent UV-resistance
- low gas permeability
- excellent mechanical properties
- resistant to numerous chemicals

Temperature range
-40 °C to +150 °C
-40 °F to +302 °F

Standard colour
□ natural

Dimensions & special colours upon request

TPE



Flame resistant tubing made from TPE

- hardly flammable in accordance with UL94 V0
- highly flexible
- good chemical resistance
- highly flexible at low temperatures
- minimal diffusion of liquid and gaseous mediums
- excellent resistance to aging from hot air exposure
- similar to types of rubber
- excellent dynamic fatigue resistance

Temperature range
-40 °C to +125 °C
-40 °F to +257 °F

Dimensions & colours upon request



Tubing for special cable

... with this arrangement, everyone pulls on the same strand



Tubing for special cable made from PUR

- lightweight
- high flexibility at low temperatures
- UV resistant
- high elasticity
- high buffering capacity
- excellent abrasion resistance
- kink resistant
- excellent resistance against tear propagation
- oil and grease resistant
- easily fitted
- available in a range of colours
- small bending radius
- unplasticized so no embrittlement

Temperature range
-40 °C to +85 °C
-40 °F to +185 °F

Dimensions & colours upon request

PUR



Tubing for special cable made from Nylon

- lightweight
- excellent temperature resistance
- highly resistant to shock and impact
- excellent compressive strength
- high chemical resistance to oil, grease, fuels, solvent and hydraulic fluids
- excellent resistance to UV-rays
- highly resistant to stress cracking
- excellent abrasion resistance characteristics

Temperature range
-40 °C to +90 °C
-40 °F to +194 °F

Dimensions & colours upon request

Nylon



Tubing for special cable made from PE

- lightweight
- physiologically safe and tasteless (complies to the recommendation III of BGA and complies with FDA regulation 21 CFR 177.120 c.2.1)
- low permeability for water, water vapor and gases
- resistant to various chemicals (see table of chemical resistance)
- sterilizable using ethylene oxide and gamma rays
- good dielectric characteristics
- easily fitted

Temperature range
-30 °C to +70 °C
-22 °F to +158 °F

Dimensions & colours upon request

PE



Profiles and profile tubing

... offer numerous possibilities no matter what shape

PUR



PUR scraper profile

- to your individual specifications
- excellent grip
- flexible
- unplasticized
- no hardening or embrittlement
- high elasticity
- highly resistant to abrasion
- UV-resistant
- available in a range of colours
- available in a range of hardness grades

Temperature range
-40 °C to +85 °C
-40 °F to +185 °F

Colours upon request

PUR



Channeled profiles made from PUR

- extremely flexible
- permanently elastic
- high flexibility at low temperatures
- highly resistant to abrasion
- excellent grip
- available in a range of hardness grades
- hydrolysis-resistant and microbe-resistant versions available
- made according to your technical specifications
- available in your choice of colour (corporate identity)

Temperature range
-40 °C to +85 °C
-40 °F to +185 °F

Colours upon request

PUR



PUR flat tubing

- flexible
- resistant to oil, water, ozone and UV rays
- unplasticized so no embrittlement
- good dielectric characteristics
- insulation class B (German Electrical Association, VDE, standard 0530)
- manufactured in accordance with DIN 40 621
- excellent mechanical characteristics
- Shore A hardness 85°

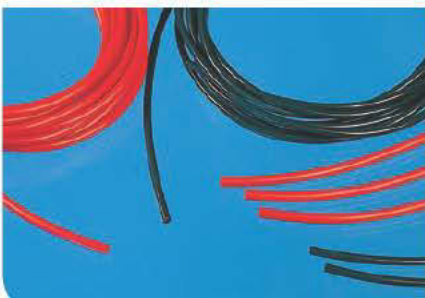
Temperature range
-40 °C to +85 °C
-40 °F to +185 °F

Colours upon request



Round- and hollow belts

... to ensure things get moving – permanently



PUR round belts

- tensile and flexible
- high abrasion resistance
- oil and grease resistant
- long service life
- high working stress
- available in food safe quality grades
- easily welded to continuous belts

Temperature range

-40 °C to +85 °C
-40 °F to +185 °F

Dimensions & colours upon request

PUR



PUR hollow belts

- better flexibility than round belts with identical diameters
- high tensile strength
- excellent abrasion resistance
- oil and grease resistant
- long service life
- high working stress
- available in food safe quality grades
- easily welded to form continuous belts

Temperature range

-40 °C to +85 °C
-40 °F to +185 °F

Dimensions & colours upon request

PUR



Water-cooling tubing

... for cool looking cooling elements

PUR



PUR water-cooling tubing

- high flexibility at low temperatures
- hydrolysis- and microbe resistant
- special PUR materials
- unplasticized
- no hardening or embrittlement
- kink resistant
- highly elasticity
- excellent abrasion resistance
- UV resistant
- available in a range of colours
- available in a range of hardness grades

Temperature range
-40 °C to +85 °C
-40 °F to +185 °F

Dimensions & colours upon request

PVC



PVC water-cooling tubing

- hydrolysis resistant
- low flammability
- good resistance to oils and greases
- good dielectric characteristics
- contains plasticizers
- good chemical resistance
- flexible
- UV and ozone resistant
- available in a range of colours
- available in a range of hardness grades
- individual printing possible

Temperature range
-10 °C to +60 °C
-14 °F to +140 °F

Dimensions & colours upon request

TPE



TPE water-cooling tubing

- highly flexible at low temperatures
- highly flexible
- hardly flammable in accordance with UL94 V0
- good chemical resistance characteristics
- minimal diffusion of liquid and gaseous mediums
- similar to types of rubber
- excellent dynamic fatigue resistance
- available in a range of colours
- available in a range of hardness grades

Temperature range
-40 °C to +125 °C
-40 °F to +257 °F

Dimensions & colours upon request



Tubing manufacture in clean room

... the cleanest solution for special requirements

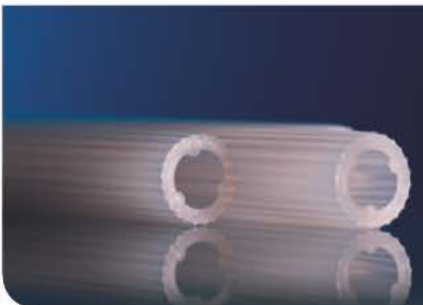


Clean room manufactured hoses

Class 8 and 6 clean rooms are available for the manufacture of tubing for medical engineering or other applications that require exceptionally pure products.

We process numerous thermoplastic synthetic materials to tubing here with OD's from 0,02 inch to 0,472 inch (from 0,5 mm to 12,0 mm).

Here, in addition to standard tubing we also offer multilumen tubings and multilayer tubings.



We can naturally develop »made to measure tubing«. Here we would adapt our tubing to meet your specific material requirements, quality, dimensions etc.



Competence

- PUR
- Nylon
- PEBAX
- PVDF
- PE, HDPE, LDPE, MDPE
- PP
- PVC
- TEEE
- TPE-S
- specialcompounds
- corporate colours
- X-Ray contrast or colour stripes
- Ink-Jet print

Chemical resistance

Medium (aq = in an aqueous solution)	PUR	Nylon	PE	PVDF	PVC	PP	TPE
Acetic acid	3	4	2	3	3	2	3
Actic acid anhydride	4	1	3	4	4	1	2
Acetone	4	1	1	3	5	1	2
Aluminium salts, aq	2	1	4	1	1	1	1
Alums, aq	1	1	1	1	1	1	1
Aminobenzoic acid	4	2	1	2	3	1	3
Ammonia, aq	4	1	1	4	1	1	1
Ammonia g	1	1	1	2	1	1	1
Ammonium acetate, aq	4	1	1	3	1	1	2
Ammonium carbonate, aq	4	1	1	1	1	1	1
Ammonium chloride, aq	1	1	1	1	1	1	1
Ammonium nitrate, aq	1	1	1	1	1	2	2
Ammonium phosphate, aq	1	1	1	1	1	1	1
Ammonium sulfate, aq	1	1	1	1	1	1	1
Amyl alcohol	2	1	1	1	1	1	1
Antifreeze	2	1	1	1	1	1	1
Barium salts	1	1	1	1	1	1	1
Battery acid	1	3	1	1	3	1	1
Beef tallow	1	1	1	1	2	1	1
Beer	1	1	1	1	1	1	1
Benzaldehyde	3	1	1	1	3	2	3
Benzoic acid	4	1	1	1	3	1	3
Benzoic acid, aq	4	1	1	1	1	2	2
Bone fat	1	1	2	1	3	1	1
Boric acid	1	1	1	1	1	2	3
Brake fluid	4	1	3	1	3	1	1
Bromine, aq	4	4	4	1	4	4	4
Bromine, l	4	4	4	1	4	4	4
Butane, g	1	1	4	1	1	1	1
Butane, l	1	1	1	1	2	1	1
n-Butanol	4	1	4	1	3	2	3
n-Butyl alcohol	4	4	4	1	4	1	4
Butylacetate (acetic acid butyl ester)	4	1	4	2	5	4	5
Butylacetate	4	1	2	3	4	2	4
Calcium chloride, aq	1	1	1	1	1	1	1
Calcium nitrate, aq	1	1	1	1	1	1	1
Carbon disulfide	3	1	4	1	4	4	4
Carbon tetrachloride	3	1	4	1	4	4	4
Carnation oil	1	1	4	1	2	2	3
Chlorine, g	4	4	4	1	4	4	4
Chlorine, l	4	4	4	1	4	4	4
Chlorobenzoic acid	3	3	4	1	4	4	4
Chloroform	4	3	4	1	4	4	4
Chlorosulfonic acid	4	4	4	1	4	3	4
Chrome bath	3	4	1	1	1	2	3
Chromic acid	4	4	2	1	3	2	4
Chromsulfuric acid	3	4	1	1	2	4	4
Chromium salts	3	1	1	1	1	1	1
Citric acid	2	1	1	1	1	1	2
Cleaner	1	1	1	1	1	1	1
Coca-Cola*	1	1	1	1	1	1	1

Medium (aq = in an aqueous solution)	PUR	Nylon	PE	PVDF	PVC	PP	TPE
Cocoa	1	1	1	1	1	1	1
Coconut oil	1	1	2	1	1	2	3
Cod-liver oil	1	1	1	1	4	2	3
Coffee	1	1	1	1	1	1	1
Cooking oil, animal	2	1	3	1	2	1	1
Cooking oil, vegetable	2	1	4	1	2	1	1
Corn oil	2	1	4	1	1	2	3
Cresol	4	4	4	1	4	2	3
Cresol, aq	4	3	4	1	4	3	4
Cyclohexane	2	1	1	1	1	3	4
Cyclohexanol	4	1	1	1	5	4	4
Cyclohexanone	1	1	4	3	5	4	5
Decalin*	2	1	1	1	1	3	4
Detergent	1	1	1	1	2	1	1
Dibutyl phthalate	3	1	3	1	3	2	3
Diesel fuel	1	1	2	1	2	2	3
Dimethylether	2	1	2	2	2	4	4
Dimethylformamide	4	1	1	5	4	1	2
1,4-Dioxane	4	1	1	3	4	3	4
Engine oil	2	1	3	1	3	2	3
Ethanol	1	1	1	1	3	1	1
Ether	3	1	4	1	3	4	4
Ethyl acetate	4	1	2	3	5	4	5
Ethylene chloride	2	3	4	1	4	3	4
Ethylhexanol	4	1	4	1	4	1	2
Ferric salts	2	1	1	1	1	1	1
Fizzy drink	1	1	1	1	1	1	1
Formaldehyde, aq	2	3	1	1	3	1	2
Formaline	2	3	1	1	2	2	3
Formic acid	4	4	2	1	4	3	3
Fruit juice	1	1	1	1	1	1	1
Fuel	2	1	4	1	4	3	3
Fuel oil	1	1	3	1	4	2	3
Gin	1	1	1	1	2	1	1
Glycerine	1	1	1	1	1	1	1
Glycol	2	1	1	1	1	1	1
Heptane	2	1	1	1	1	2	3
Hexane	2	1	1	1	1	3	4
Honey	1	1	1	1	1	1	1
Hydrochlorid acid (up to 20%)	2	4	1	1	2	2	3
Hydrochloride, g	2	4	1	1	2	2	3
Hydrogen peroxide, aq	2	2	1	1	3	4	4
Ink	1	1	1	1	1	1	1
Isooctane	1	1	4	1	1	2	3
Isopropanol	3	1	1	1	3	1	1
Jelly	1	1	1	1	1	1	1
Lactic acid	3	2	2	1	3	1	2
Lanolin	1	1	3	1	2	3	4
Lemon juice	1	1	1	1	1	1	2
Linseed oil	1	1	1	1	3	1	1
Liquors	1	1	1	1	2	1	1

Chemical resistance (at room temperature)

1 Excellent resistance | 2 Good resistance | 3 Medocre resistance | 4 Non-resistant | 5 Liable to dissolve

Medium (aq = in an aqueous solution)	PUR	Nylon	PE	PVDF	PVC	PP	TPE
Magnesium salts, aq	1	1	1	1	1	1	1
Margarine	1	1	3	1	1	1	1
Mercury	1	1	1	1	3	1	1
Mercury salts, aq	1	1	1	1	3	1	1
Methanol	2	1	1	1	3	1	1
Methyl ethyl ketone	4	1	4	3	3	1	2
Mathylene chloride	4	3	4	2	4	3	4
Milk	1	1	1	1	1	1	1
Mustard	1	1	1	1	1	1	1
Nail varnish	4	1	1	1	4	1	2
Nail varnish remover	4	1	1	1	4	2	3
Naphthalin	1	1	4	1	2	2	3
Nickel salts, aq	1	1	1	1	1	1	1
Nitric acid (up to 25%)	5	4	2	1	3	3	4
Nitrobenzoic acid	4	2	4	1	4	3	4
Octane	1	1	1	1	4	1	2
Oil no. 3 (ASTM D390-59)	1	1	3	1	2	1	3
Oleic acid	1	2	2	1	2	2	3
Olive oil	1	1	1	1	2	1	1
Oxalic acid, aq	4	2	1	1	3	1	1
Ozone (<0,5 ppm)	1	1	4	1	3	3	4
Palm oil	2	1	4	1	3	3	3
Paraffin	2	1	3	1	1	1	1
Paraffin ether	1	1	4	1	3	4	4
Paraffin oil	2	1	3	1	1	2	3
Paraffin oil (petroleum jelly)	2	1	3	1	2	2	2
Pectin	1	1	1	1	1	1	1
Pepper	1	1	1	1	1	2	2
Peppermint oil	1	1	3	1	2	1	2
Perfume	1	1	1	1	4	2	2
Phenol	4	4	4	1	4	1	2
Phosphoric acid	3	4	4	1	1	2	3
Phosphorus pentoxide	2	3	1	1	1	1	1
Pine needle oil	2	1	2	1	2	1	2
Potassium carbonate	3	1	1	4	1	1	1
Potassium chlorate, aq	2	2	1	1	1	1	1
Potassium chloride, aq	1	1	1	1	1	1	1
Potassium chromate, aq	1	3	1	1	1	1	1
Potassium hydroxide, aq	1	1	1	1	2	1	3
Potassium iodine, aq	2	1	1	1	1	1	1
Potassium nitrate, aq	2	1	1	1	1	1	1
Potassium permanganese, aq	3	3	1	1	1	1	1
Potassium sulfate	1	1	1	1	1	1	1
Propane, g	2	1	3	1	1	2	3
Propane, l	2	1	4	1	1	2	3
Pyridine	5	1	1	3	4	3	4
Rum	1	1	1	1	2	1	1
Sea water	1	1	1	1	1	1	1
Shampoo	1	1	1	1	1	1	1
Silicon oil	1	1	1	1	4	1	1
Silver salts, aq	1	1	1	1	1	1	1

Medium (aq = in an aqueous solution)	PUR	Nylon	PE	PVDF	PVC	PP	TPE
Soapy water	2	1	1	1	1	1	1
Soda	1	2	1	1	1	1	1
Sodium bicarbonate, aq	1	1	1	1	1	1	1
Sodium bisulfite, aq	2	1	1	1	1	1	1
Sodium carbonate (borax), aq	1	1	1	1	1	1	1
Sodium carbonate, aq	1	1	1	1	1	1	1
Sodium chlorate	2	2	1	1	1	1	1
Sodium chloride, aq	1	1	1	1	1	1	1
Sodium hydroxide (caustic soda)	4	1	4	4	4	1	1
Sodium hydroxide, aq	2	1	1	4	1	1	1
Sodium hypochlorite	4	3	1	1	3	3	3
Sodium nitrate, aq	1	1	1	1	1	1	1
Sodium nitrite, aq	1	2	1	1	1	1	1
Sodium perborate, aq	2	1	1	1	3	1	1
Sodium phosphate, aq	2	1	1	1	1	1	1
Sodium silicate	3	1	1	1	1	1	1
Sodium sulfate, aq	1	1	1	1	1	1	1
Sodium sulfide, aq	1	1	1	4	1	1	1
Sodium sulfite, aq	1	1	1	1	1	1	1
Sodium thiosulfate	2	1	1	1	1	1	2
Sodium thiosulfate (antichlor), aq	2	1	1	1	1	1	1
Soybean oil	2	1	4	1	2	1	1
Spruce needle oil	2	1	2	1	3	1	2
Starch	1	1	1	1	1	1	1
Stearic acid	1	2	4	1	1	2	3
Sugar, aq	1	1	1	1	1	1	1
Sulfur	1	1	4	1	4	1	1
Sulfuric acid (concentrated)	4	4	4	4	4	4	4
Sulfuric acid (up to 50%)	2	4	1	1	3	2	3
Sulfur dioxide, g	3	1	1	1	2	4	4
Tar (hot tar)	4	1	3	1	3	2	3
Tartaric acid, aq	1	1	1	1	1	1	1
Tea	1	1	1	1	1	1	1
Tetrahydrofuran	4	1	3	2	4	3	4
Tetralin* (tetrahydronaphthalene)	2	1	4	2	1	4	4
Tin dichloride	1	1	1	1	1	1	1
Toluene	4	1	4	1	4	3	4
Trichloroethylene	4	2	4	1	4	4	4
Turpentine (oil of)	4	1	3	1	3	4	4
Urea, aq	1	1	1	1	1	1	1
Vanilla	1	1	1	1	1	1	1
Vaseline	1	1	3	1	2	2	3
White spirit	1	1	4	1	3	3	4
Wine	1	1	1	1	1	1	1
Xylene	4	1	4	1	4	4	4

This table has been compiled on the basis of in-house tests, the recommendations of our raw material suppliers and customer experience. Differences in user environments will affect the performance characteristics of the product in different ways. The ratings given above are therefore approximative only. If the product is being used in a particular setting for the first time, it is advisable to test the product in the proposed user environment, especially if it will be coming into contact with combinations of substances.



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