

Chassis

The chassis for the EURO-flex stainless steel conveyors are delivered as straight cut profiles, in pairs in lengths of 3m. The EURO-flex chains from wear-free plastic allow the direct low-friction running on the bearing surfaces integrated in the chassis.

The stainless chassis profiles are provided with continuous punch holes, spacing 40mm, which allows for the assembly of attachment parts like side guide holders, supports, etc. without drilling. All attachment parts and connecting elements are compatible with this punch hole spacing.

The effectively required chassis lengths can be cut to length from the standard lengths in 40 mm increments. After sawing, the chassis ends must be bevelled at the upper and lower drum in running direction of the EURO-flex chain. For mounting the chassis, the chassis profile pairs are screwed together at intervals of approx. 500 mm using cross connections or spacer kits.

Tool

For drilling the correct hole spacing at the chassis end (after cutting to length in deduction of the 40mm spacing), a drilling jig is available.

Chassis connections

For linking several chassis elements, screwable strapped joints or connecting straps are available. The connecting elements for the uplink of drive stations, arc bends, continuous bends and deflections are included in the scope of delivery of the related component.

Technical specifications

Material	Chassis profile	Stainless steel 1.4301
Weights	Chassis profile 55N, fully assembled	2,1 kg/m
	Chassis profile 85N, fully assembled	2,6 kg/m
	Chassis profile 115N, fully assembled	4,2 kg/m
	Chassis profile 195N, fully assembled	6,6 kg/m

Deflection

EURO-flex 55	Deflection 2 mm permissible, at point load 10 kg, axis distance 2 m
	Deflection 2 mm permissible, at area load 10 kg/m, axis distance 2 m
EURO-flex 85	Deflection 2 mm permissible, at point load 20 kg, axis distance 2 m
	Deflection 2 mm permissible, at area load 20 kg/m, axis distance 2 m
EURO-flex 115	Deflection 2 mm permissible, at point load 20 kg, axis distance 2 m
	Deflection 2 mm permissible, at area load 20 kg/m, axis distance 2 m
EURO-flex 195	Deflection 2 mm permissible, at point load 50 kg, axis distance 2 m
	Deflection 2 mm permissible, at area load 50 kg/m, axis distance 2 m

Chains

The horizontal and vertical curved chains EURO-flex 55, EURO-flex 85, EURO-flex 115 and EURO-flex 195 consist of a wear- and impact-resistant POM plastic and stainless steel connecting bolts. The EURO-flex 55, EURO-flex85 and EURO-flex 115 systems have toothed chain links.

The toothing offers 2 essential advantages:

- On straight lines, in curves as well as during drive and idler, the gap between the chain links does not bear the risk of accidents.
- Even the smallest parts (up to Ø 16 mm) may be conveyed or pushed on/off without any problem even in accumulating operation.

The chains EURO-flex 195 are designed in a way that no risk of accidents occurs even in the curves through the chain plates opening.

To be able to convey the most different products also on ascending and descending slopes or even vertically, a multitude of belt cleats types are available. For detailed information, please, see the related chapter or call us for information.

Technical specifications

Material Chain POM white, other RAL colours available on request.
Bolt stainless steel 1.4301

Temperatures Operation between -40°C to +90°C

Weights	EURO- flex 55	0,44 kg/m
	EURO- flex 85	1 kg/m
	EURO- flex 115	1 kg/m
	EURO- flex 195	2kg/ m

Tensile force	EURO- flex 55	1000 N
	EURO- flex 85	2200 N
	EURO- flex 115	2200 N
	EURO- flex 195	4000 N

Packaging unit	EURO- flex 55	3 m
	EURO- flex 85	3 m
	EURO- flex 115	3 m
	EURO- flex 195	5 m

Radius minimum	Horizontal	EURO- flex 55	125 mm
		EURO- flex 85	200 mm
		EURO- flex 115	200 mm
		EURO- flex 195	600 mm
	Vertical	EURO- flex 55	300 mm
		EURO- flex 85	400 mm
		EURO- flex 115	400 mm
		EURO- flex 195	600 mm

Drive stations

Head drive stations are to be used preferably. The head drive stations are installed in the conveying direction at the end of the conveyor. The designation “right” and “left” refer to the configuration of the chain drive, viewed in conveying direction, with the motor at the bottom.

In addition to the head drives, center drives, arc bends and rotary drives may be delivered. Please see the various chapters for further information and specifications.

All drive stations may be delivered with or without motor. In both cases, the related motor plates for SEW S37 are included in the scope of delivery. Adapter plates for other motors available upon request.

For the design of the motor, we need speed, load and track routing of the conveyor. We provide example calculations up.

Technical specifications

Possible conveying speeds $V = \text{up to } 60 \text{ m/min}$

Possible motor output $P = 0,18 \text{ KW}$
 $0,25 \text{ KW}$
 $0,37 \text{ KW}$
 $0,55 \text{ KW}$

Material $\text{Stainless steel } 1.4301 / \text{PE}$

Chain wheels $\text{Head drives are driven using chain wheels and roller chain.}$
 $\text{For the required chain wheels, please, see chapter Drive.}$

Design of the motor speed for head drive stations

Speed of the drive motor

Notation used: $V = \text{conveying speed}$ (m/sec)
 $Z_M = \text{number of teeth of the chain wheel – gear motor}$
 $Z_A = \text{number of teeth of chain wheel – drive station}$
 $N_{ab} = \text{output speed of the gear motor}$ (min./-1)

Calculation EURO- flex 55 $N_{ab} = 215 \times V \times Z_A / Z_M$ (min./-1)

Calculation EURO- flex 85/ 115/ 195 $N_{ab} = 155 \times V \times Z_A / Z_M$ (min./-1)

Deflection pulley

In case of head drive stations, the deflection pulley are installed at the end of the conveyor opposite to the conveying direction. In case of middle drives, 2 deflection pulley are required.

For information about special deflection pulley at 90° for chain guidance, e.g. on serpentines, please, see chapter deflection pulley.

Technical specifications

Material Stainless steel 1.4301 / PE

Wheel bends

Horizontal direction changes with small radii should be made using wheel bends wherever possible.

Through the ball bearing supported deflection pulley plates, the friction forces and thus wear and chain tensile force are extremely low. The space required must be taken into account when planning the system. The connection straps for connecting to a Chassisprofil are included in the scope of delivery. The required guide rails must be ordered separately.

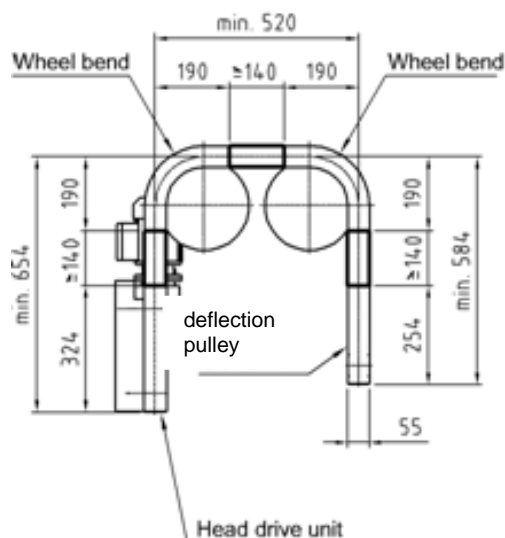
Technical specifications

Material Stainless steel 1.4301 / PE

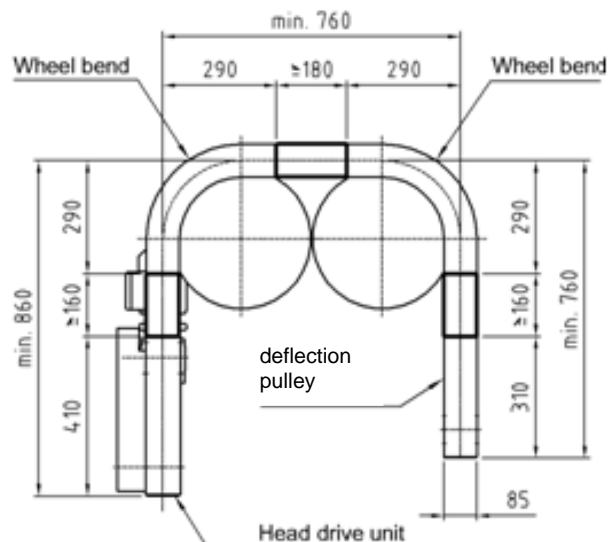
Radius	Horizontal	EURO- flex 55	125 mm
		EURO- flex 85	200 mm
		EURO- flex 115	200 mm

Planning notes

EURO- flex 55



EURO- flex 85/115



Continuous bend

Horizontal bend

The horizontal slide bends consist of stainless steel 1.4301 with a very low coefficient of friction to the chain material.

Additional variant: Material made of PE solid material.

Despite of this, horizontal slide bends should only be used for the systems EURO-flex 55, EURO-flex 85 and EURO-flex 115 if the use of wheel bends is impossible. The connecting strips for the connection to the chassis profile are included in the scope of delivery. For the connection of horizontal continuous bends to other components, please, observe the following planning notes.

Technical specifications

Material stainless steel 1.4301 / PE

Radius	Horizontal	EURO- flex 55	125 mm
		EURO- flex 85	200 mm and 500 mm
EURO- flex 115	200 mm and 500 mm		
EURO- flex 195	600 mm		

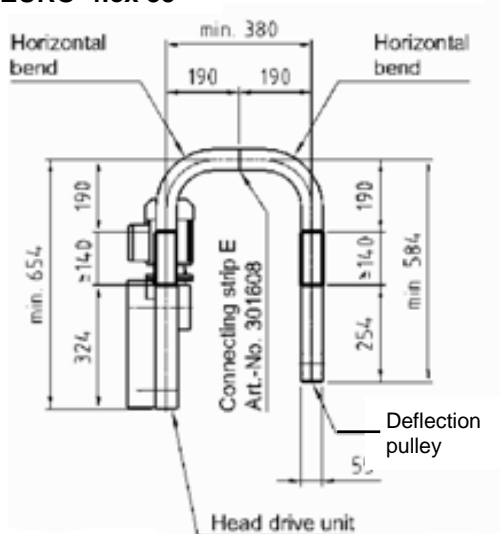
Other radii available on request

Other angles available on request

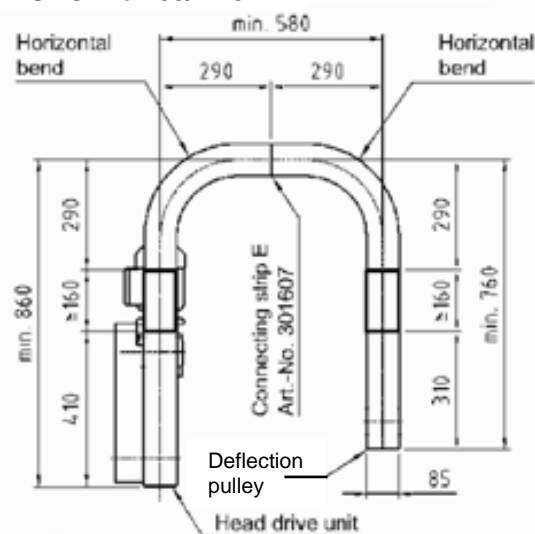
Angle	Horizontal	EURO- flex 55	30°, 45°, 60°, 90°
		EURO- flex 85	15°, 30°, 45°, 60°, 90°, 180°
EURO- flex 115	15°, 30°, 45°, 60°, 90°, 180°		
EURO- flex 195	30°, 45°, 60°, 90°, 180°		

Planning notes

EURO- flex 55



EURO- flex 85/ 115



Vertical bends

The vertical slide bends arch are made of stainless steel 1.4301. Various angles are available for the realization of inclines and declines.

Additional variant: Material from milled plastic segments.

All components as well as the chassis may directly be connected to the vertical slide bends. The required connecting strips are included in the scope of delivery.

Technical specifications

Material stainless steel 1.4301 / PE

Radius	Vertical	EURO- flex 55	300 mm
		EURO- flex 85	400 mm
		EURO- flex 115	400 mm
		EURO- flex 195	600 mm

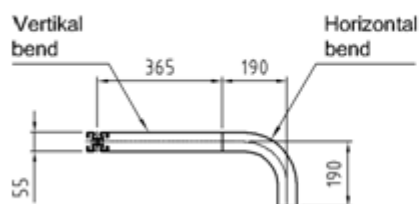
Other radii available on request

Other angles available on request

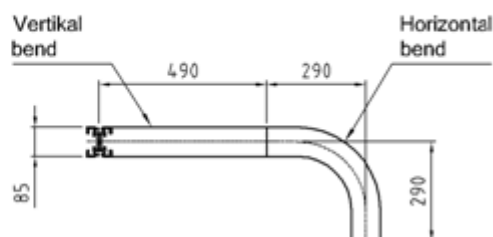
Angle	Vertical	EURO- flex 55	5°, 10°, 15°, 30°, 45°, 60°, 90°
		EURO- flex 85	5°, 10°, 15°, 30°, 45°, 60°, 90°
		EURO- flex 115	5°, 10°, 15°, 30°, 45°, 60°, 90°
		EURO- flex 195	5°, 10°, 15°, 30°, 45°, 60°, 90°

Planning notes

EURO- flex 55



EURO- flex 85/ 115



Supports

To support the conveyors, 2-leg and 3-leg supports are available. The support length may be defined using the pipe length, fine adjustment can be made using the threaded bars at the adjusting feet. The adjustable feet can be doweled.

Supports according to customer requirements possible on request.

Technical specifications

Material	Two-leg and three-leg supports	PA 6/ Stainless steel
	Pipe	Stainless steel
	Fastening elements	PA 6/ Stainless steel

Supporting height	Two-leg and three-leg supports	H = 400 - 2000 mm
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Side guides

The design of the side guides varies and depends on the product to be conveyed and the conveying situation. As standard, 2 side guide profiles are available for this purpose. Using the elements offered, fixed, adjustable and variable side guides for most of the product shapes and sizes may be realized.

Side guides according to customer requirements available on request.

Models	Side guide Ø 12 mm, stainless steel 1.4301
	Side guide Ø 12/8 mm, stainless steel 1.4301/ PA

Order information	The distances, and thus the number of side guide holders depend on the conveying situation. In case of accumulating operation, a distance of 0.3 - 0.5 m may be necessary, in case of normal transport operation, distances of 1 - 1.5 m may be sufficient.
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Quick installation guide

1.1 General information

This Short instructions describes the installation, cleaning, maintenance and servicing of the conveyor system.

1.1.1 Target group

The following persons must read and observe this Quick Start Guide:

- Persons who deploy the machine for its intended use
- Persons who are responsible for the operational safety, operation and operating behaviour of the machine
- Persons who operate or service the machine

1.1.2 Copyright

Without the express written permission of euroflex it is not permissible for any part of this manual to be:

- Copied
- Photographically transmitted
- Reproduced
- Translated
- Saved on any other electronic medium or put into any electronically readable form

1.2 Safety

1.2.1 General

Only the operator of the plant is responsible for the proper assembly and accident-free operation. Obligations of the proprietor

1.2.2 Obligations of the operator

The operator is obliged to implement measures that result from the information provided by the Machinery Directive 2006/42 / EC.

These include in particular:

- Adhering to the laws and regulations valid at the installation site.
- Marking hazard zones.
- Training and instructing personnel.
- Providing personal protective equipment.
- Stipulating instructions and prohibitions.



1.2.3 Hazard zones and signs identifying these

The operator of the system is responsible for the identification of the hazardous areas (prohibition, warning and mandatory signs).

The danger zones refer to the immediate environment in which they are installed and serve to protect persons.

1.2.4 Protective guards

Protective guards in machine areas in which a risk to persons exists protect personnel against injuries.

The protective covers must be placed by the operator.

1.2.5 Protective equipment

When dwelling or working in the hazard zones and operating areas it is necessary to wear general or special personal protective equipment.



1.3 Assembly

During installation, the safety regulations, which result from the specifications of the Machinery Directive 2006/42 / EC are to be implemented.

This chapter contains the instructions information for assembly.

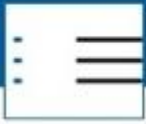
Observe the information and instructions provided on the coming pages.

1.3.1 Overall view of the flat-top chain conveyor



Figure 1: Overall view of the flat-top chain conveyor

- 1 Lateral guide
- 2 Flat-top chain
- 3 Base plate
4. Support
5. Drive

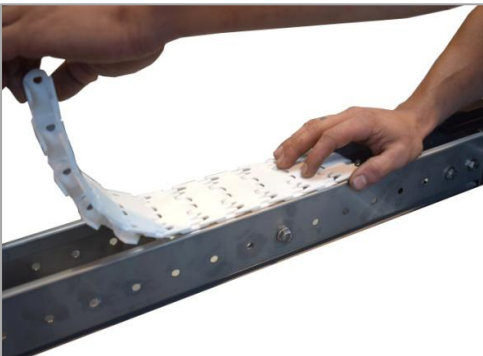


1.4 Mounting the flat-top chain

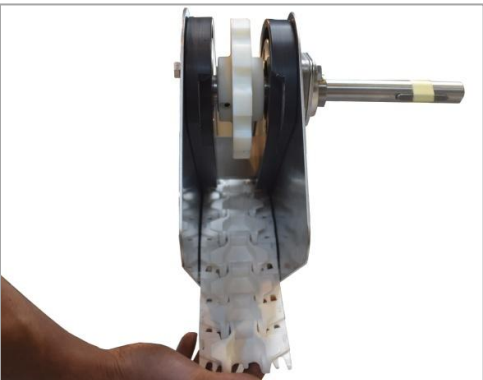
Required tools: steel pin (\varnothing 4mm x approx. 200mm long), hammer



- Check the run using a short piece of the chain.
- Remove any clamping points and rework seams if necessary.
- Observe the run direction of the chain.



- Variant:
- Place the conveyor chain on the chassis.
- Place the conveyor chain on the chassis in running direction and push/pull it until the chain is completely pulled through the conveyor.



- Variant:
- Feed the conveyor chain into the drive station.
- Feed the conveyor chain in the running direction into the drive station from below and slide in/pull through until the chain has been drawn fully through the conveyor.



- At the assembly opening fit the chain bolt and close the chain with this.
- Select the chain length so that the contraction of the chain ends is done with little effort.
- With a tight chain, rattling will be heard at the drive station.



1.5 Cleaning

When cleaning the safety instructions which follow from the details of the Machinery Directive 2006/42 / EC are to be implemented.

1.5.1 Prerequisites

NOTE! Improper cleaning

The consequences may be damage to the machine or objects within its environment.

- Do not use steam jet or high pressure cleaning devices for cleaning surfaces.
- Do not use compressed air for cleaning and drying surfaces.

Remove contaminants that arise during ongoing operation with plenty of water under low pressure and cleaning products. Remove process product residues.

Contact euroflex for instructions on cleaning any further contaminants.

The cleaning products used shall be specified by the local hygiene officers. For the selection of the cleaning agent observe the following requirements.

Use the following:

- Solutions with a pH value between 4.5 and 9
- Water under low pressure
- Water temperatures below 40°C

Do not use the following:

- Cleaning products containing chlorine, ammoniac, phosphoric acid or their compounds
- Abrasive cleaning products
- Solutions with a pH value below 4.5 or above 9
- Water under high pressure
- Water temperatures above 40°C

1.5.2 Preparation

1. Switch off machine.
 - ⇒ No voltage is present at the machine.
2. Close the pneumatic supply at the main valve.
3. Secure the main switch on the switch cabinet and main valve for the pneumatics with a separate safety lock to prevent a restart.

1.5.3 Execution

Protective equipment: Protective equipment against cleaning products used

Prerequisite:

The machine has been prepared for cleaning and the cleaning prerequisites have been fulfilled.

1. Remove surface contamination without damaging the surface.
2. Remove residue of conveyance goods.
3. Rinse off solution with water under low pressure.
4. Rub surface to dry it.



1.6 Spare parts

NOTE! Use of non-original spare parts

Replacement of parts with non-original spare parts during maintenance.

This can lead to defects in the conveyance goods, malfunctions, a loss of the safety functions and the damage or destruction of parts.

During maintenance only replace parts with original spare parts from euroflex.

1.7 Maintenance

When servicing the safety instructions which follow from the details of the Machinery Directive 2006/42 / EC are to be implemented.

Quantity of lubricant

- Spray on evenly and sparingly.

1.8 Maintenance schedule

Interval: Every 8 operating hours

Place	Maintenance work	Personnel
Safety equipment	Check function	
Machine/system	<ul style="list-style-type: none"> ▪ Inspect for visible damage ▪ Clean surface ▪ Remove foreign bodies 	Maintenance personnel
Gears	Check leak-tightness	Maintenance personnel
Roller chain (drive unit)	Check for damage and Roller chain elongation	Maintenance personnel

Interval: Every 40 operating hours

Place	Maintenance work	Personnel
Conveyor chain	Check conveyor chain belt for damage and linear expansion	Maintenance personnel
Electrical wiring	Check wiring for visible damage.	Maintenance personnel



Interval: Every 170 operating hours

Place	Maintenance work	Personnel
Screw connections	Check screw connections on all load-bearing and moving parts for correct tightness.	Maintenance personnel
Surfaces	Check surfaces for damage.	Maintenance personnel
Flange bearing (if present)	Check eccentric ring for secure seating	Maintenance personnel
Conveyor chain	Check conveyor chain belt for damage and linear expansion	Maintenance personnel
Roller chain (drive unit)	Check for damage and Roller chain elongation	Maintenance personnel

Interval: Every 500 operating hours

Place	Maintenance work	Personnel
Gear wheel	Check gear wheel for visible damage.	Maintenance personnel
Conveyor chain	Check conveyor chain belt for damage and linear expansion.	Maintenance personnel
Slide rail	Check slide rail for visible damage.	Maintenance personnel
Sprocket wheels of gear motor and drive unit	Sprocket check for visible damage and wear.	Maintenance personnel
Roller chain (drive unit)	Check for damage and Roller chain elongation	Maintenance personnel
Motor plate	Check motor plate for tight fit	Maintenance personnel

Interval: Every 1000 operating hours

Ort	Wartungsarbeit	Personal
Bearings and links	Check correct function of bearings and links.	Maintenance personnel
Conveyor chain	Check conveyor chain belt for damage and linear expansion	Maintenance personnel
Guides	Check conveyor chain guides in the drive unit and deflection units	Maintenance personnel



1.9 Lubrication schedule for flat-top chain conveyor

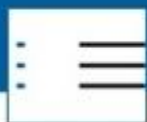
Item	Part				
	Name	Quantity	Information	Interval	Lubricant
1	Roller chain	1	Spray Every time after cleaning!	170 operating hours	Chain lubricant spray NSF H1
2	Drive station, Deflection pulley, Continuous bend, Wheel bend	-	Spray Every time after cleaning!	40 Operating hours	Silicone spray NSF H1
3	Gear motor, Drive engine	1	Lubrication and maintenance information: "see manufacturer's instructions".	-	-

Materials in the EURO-flex conveyor systems

The following table contains the most important **mechanical and physical properties**

Material:	Density kg / m3	E-modulus N / mm2	Tensile strength N / mm2	Water absorption%	Temperature range ° C
Anodized aluminum AlMgSi 0,5 / F25	2.700	65.000	280	-	-
Galvanized steel P235TR1 (ST 37)	7.850	210.000	390	-	-
Stainless steel steel 1.4301	7.900	200.000	500	-	-
Polyamide, PA	1.360	8.000	180	6,6	-40 to +120
Polyethylene, PE-UHMW	950	1.000	25	0,02	-50 to +80
Polypropylene, PP	1.160	1.500	40	0,03	+1 to +104
Polyoxymethylene, POM	1.410	3.000	70	0,8	-40 to +90
Polyvinyl chloride, PVC	1.440	3.100	54	2,5	-10 to +90
Superfric	1.780	1.800	50	0,1	-40 to +140
Styrene polymer, ABS	1.120	2.400	75	0,5	-50 to +110

The indicated values are approximate values at a temperature of 20 ° C. Please note that the mechanical and physical properties of the materials described change due to temperature influences. Technical changes and modifications are reserve.



Chemical resistance

Chemical	Material									
	Anodized aluminum	Galvanized steel C 45	Stainless steel 1.4301	PA Polyamide	PE-UHMW Polyethylene	PP Polypropylene	POM Polyoxymethylene	PVC Polyvinyl chloride	Superfric	ABS Styrene polymer
Acetone	x	-	+	+	+	+	x	-	+	x
Ammonia	x	-	+	+	+	+	+	-	+	x
Benzene	x	+	+	+	+	+		x	+	x
Hydrochloric acid (2%)	-	-	-	-	+	+	-	-	-	-
Acetic acid	x	-	x	-	+	+	-	-	-	-
Formaldehyde	x	+	+	+	+	+	+	x	+	x
Honing oil	x	+	+	-	+	+	x	-	x	-
Mineral oil	x	+	+	x	x	+	x	x	x	x
Sodium chloride	-	-	x	+	+	+	+	x	+	x
Oxalic acid	x	x	x	-	x	x	x	-	x	-
Petroleum	-	-	+	+	-	+	x	x	+	x
Phenol	-	-	x	-	-	-	-	-	-	-
Phosphoric acid	-	-	x	-	+	+	-	-	-	-
Nitric acid	-	-	+	-	x	+	-	-	-	-
Sulfuric acid	-	-	x	-	x	+	-	-	-	-
Soapy water	x	x	+	+	+	+	+	x	+	x
Carbon tetrachloride	x	x	x	+	x	-	-	-	+	x
Hydrogen peroxide	x	x	+	-	x	x	-	-	-	-
Tartaric acid	-	x	+	+	x	+	x	-	+	-
Citric acid	+	+	+	x	+	+	x	x	x	-

Explanation

+ Good resistance

x resistance depending on the application / practical test recommended

- Insufficient resistance / not recommended

The shown suitabilities have been determined under laboratory conditions at 20°C. The actual resistance in practice is influenced by various factors such as temperature, load, concentration of the chemical and the actual exposure time. Plastic hinge chains and plastic modular belts are generally not resistant to liquids with a pH lower than 4.5 or higher than 9.