



Dualcore
Magnacor

ISSUED 07/2019



ISO 9001

- **MODERN ADVANCED SYSTEM**
- **DURABILITY IN HARSH CONDITIONS**
- **HIGH STRENGTH AND TOUGHNESS**
- **ABRASIVENESS**
- **STRENGTH CLASS SN 8**
- **WATERTIGHT - 0.5 bar**
- **SUCTION - 0.3 bar**
- **EASY TO USE**
- **INTEGRATION WITH OTHER SYSTEMS**
- **EASY INSPECTION**
- **EXCELLENT SMOOTHNESS**
- **HIGH ELASTICITY**
- **CHEMICAL RESISTANCE pH 2 - pH 12**
- **SHORT TEMPERATURE RESISTANCE OF 95 ° C, LONG 90 ° C**
- **HIGH NOTCH TOUGHNESS**
- **LOW SURFACE ROUGHNESS**
- **100% RECYCLABLE**
- **IN HARMONY WITH NATURE**

Sewer System for Severe Conditions

The Magnacor system is produced in diameters 200-600 mm and its excellent properties are a result of using copolymer made of block polypropylene. At the same time, it complies with all future standards and environmental protection requirements.

Material – Polypropylene

The Magnacor sewer pipes and pipe fittings are made of polypropylene (PP). They have a characteristic surface – smooth and homogeneous on the inside and notched on the outside with high radial stiffness, which predetermines them to be used in places with greater vertical pressure, like highway surfacing, extreme depths or areas with high underground water levels. High mechanical durability at temperatures down to -20 °C.

Sealing properties

Sewer pipes Magnacor are:
waterproof - at a pressure of 0.5 bar
durable suction of 0.3 bar

Simple Connection and Adjustments

It is possible to connect it to sewer systems with smooth walls. It is possible to adjust parts to any length and the connection is easy due to a wide supply range of various pipe fittings of Magnacor and other systems. In comparison with other sewer systems, the light weight of the pipes along with the corrugated outer surface makes it easier to transport and lower it into an excavation. There is a 50% reduction in the force needed for pipe connection. The system enables easy transport and there is less risk in the realm of safety at work and in-situ assembly regulations. The internal grey-white layer is ideal for TV monitoring inspections.

Hydraulic smoothness and elasticity

Hydraulic smoothness of the internal pipe surface enables high flow velocity of the transported media (prevention of pipe deposit accumulation) as well as lower pipe slopes (less earthwork). Very good transfer of static load (high road embankments, etc.) and dynamic load (e.g. intensive road traffic: highways, high-speed roads, etc.)

Chemical resistance

The Magnacor sewer system is resistant according to DIN 8078 to acid wastewater with pH 2 up to alkaline water with pH 12 according to ISO /tr 10358.

Thermal Resistance

Due to the great toughness of the material – polypropylene, the whole system including sealing elements is resistant to long-term temperatures up to 60 °C (permanent flux) and 95 °C in short-term action.

Mechanical resistance

The high notch toughness and low surface roughness have great significance for the hydraulic properties of the Magnacor sewer system. Generally, the lower the surface roughness, the higher the flow volume; the pipe walls suffer no corrosion or erosion attacks and thus the possibility of deposit formation is almost eliminated.



Magnacor

Description

The pipeline system, with double walling made of polypropylene able to withstand hot water up to 60 °C, is characterized by a new bell-mouth design and new gasket shape. The whole system allows reliable and quick assembly. The connection of the bell-mouth with the pipeline provides easier, more reliable and quicker application of the whole system.

The pipes are of strength class SN8 (8 KN/m²) 3 and 6 m long and in dark brown-red color outside (RAL 8004) and light grey inside. It is also possible to color the pipes and pipe fittings with an external black paint.

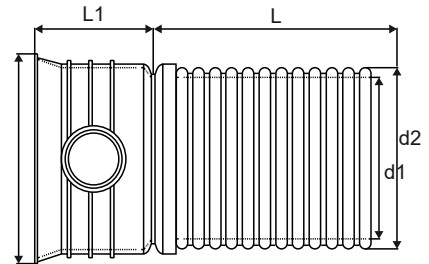
Field of application

The Magnacor sewer system is used for buildings with free-flow combined installations and rain water networks. It is used for common household sewage and for road and highway drainage.



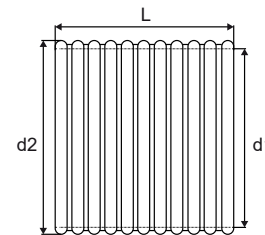
MCEM - Pipe with Socket class C - SN 8 without seal

EAN CODE	EAN	DN	L (mm)	L1	d1	d2	D	PACKING	PALLETE
4020826830281	883023	200	3000	303	197	226	246	1	20
4020826830458	883040	200	6000	303	197	226	246	1	20
4020826840280	884023	250	3000	358	248	284	306	1	12
4020826840457	884040	250	6000	358	248	284	306	1	12
4020826850289	885023	300	3000	434	296	340	365	1	9
4020826850256	885040	300	6000	434	296	340	365	1	9
4020826860288	886023	400	3000	444	395	453	484	1	4
4020826860455	886040	400	6000	444	395	453	484	1	4
4020826870287	887023	500	3000	528	500	572	643	1	4
4020826870454	887040	500	6000	528	500	572	643	1	4
4020826880286	888023	600	3000	592	599	684	740	1	4
4020826880453	888040	600	6000	592	599	684	740	1	4



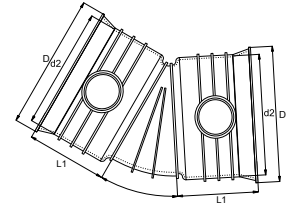
MCEL - Pipe without Socket class C - SN 8

EAN CODE	EAN	DN	L (mm)	d1	d2	PACKING	PALLETE
4020826830908	82090	200	6000	197	226	1	20
4020826840907	83090	250	6000	248	284	1	12
4020826850906	84090	300	6000	296	340	1	9
4020826860905	85090	400	6000	395	453	1	4
4020826870904	86090	500	6000	500	572	1	4
4020826880903	87090	600	6000	599	684	1	4



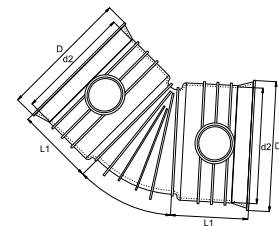
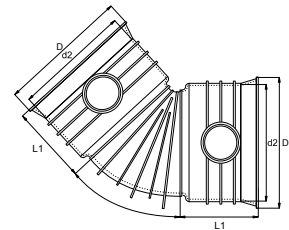
MCB - Bend 15°

EAN CODE	EAN	DN	L1(mm)	D(mm)	d2(mm)	PACKING	PALLETE
4020826831004	883100	200	151	246	226	1	80
4020826841003	884100	250	179	306	284	1	60
4020826851002	885100	300	217	365	340	1	35
4020826861001	886100	400	222	484	453	1	20
4020826871000	887100	500	264	605	572	1	16
4020826881009	888100	600	296	726	684	1	9



MCB - Bend 30°

EAN CODE	EAN	DN	L1(mm)	D(mm)	d2(mm)	PACKING	PALLETE
4020826831103	883110	200	151	246	226	1	80
4020826841102	884110	250	179	306	284	1	54
4020826851101	885110	300	217	365	340	1	35
4020826861100	886110	400	222	484	453	1	25
4020826871109	887110	500	264	605	572	1	16
4020826881108	888110	600	296	726	684	1	9



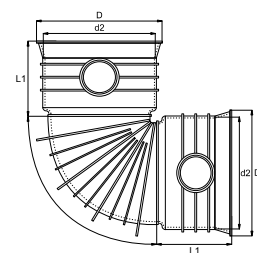
MCB - Bend 45°

EAN CODE	EAN	DN	L1(mm)	D(mm)	d2(mm)	PACKING	PALLETE
4020826831202	883120	200	151	246	226	1	80
4020826841201	884120	250	179	306	284	1	54
4020826851200	885120	300	217	365	340	1	35
4020826861209	886120	400	222	484	453	1	25
4020826871208	887120	500	264	605	572	1	16
4020826881207	888120	600	296	726	684	1	9



MCB - Bend 87°

EAN CODE	EAN	DN	L1(mm)	D(mm)	d2(mm)	PACKING	PALLETE
4020826831301	883130	200	151	246	226	1	80
4020826841300	884130	250	179	306	284	1	54
4020826851309	885130	300	217	365	340	1	35
4020826861308	886130	400	222	484	453	1	25
4020826871307	887130	500	264	605	572	1	16
4020826881306	888130	600	296	726	684	1	9



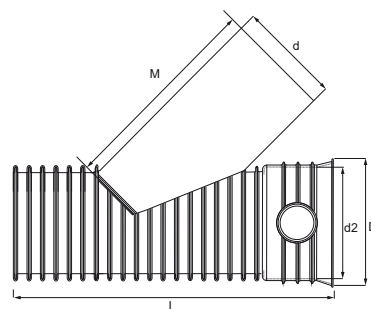
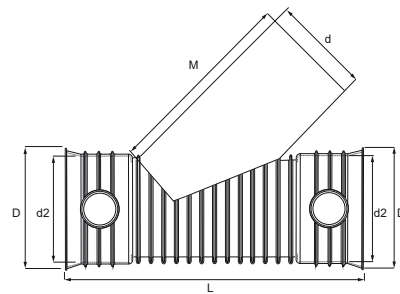
MCEA-KG - Branch Pipe on KG 45°

EAN CODE	EAN	DN	L(mm)	D(mm)	d2(mm)	d(mm)	M(mm)	PACKING (ks)	PALLETE (ks)
4020826813253	881325	200/150	612	217	203	150	305	1	20
4020826813352	881335	200/200	630	259	226	200	345	1	20
4020826823251	882335	250/200	770	320	284	200	410	1	12
4020826813352	882345	250/250	770	320	284	250	425	1	12

EAN CODE	EAN	DN	L(mm)	D(mm)	d2(mm)	d(mm)	M(mm)	PACKING (ks)	PALLETE (ks)
4020826823252	882325	250/160	700	320	284	200	330	1	9
4020826833251	883325	300/160	780	386	284	250	330	1	4
4020826833350	883335	300/200	860	386	340	200	380	1	4
4020826833459	883345	300/250	910	386	340	250	450	1	4
4020826843359	884335	400/200	850	506	453	200	380	1	4
4020826843458	884345	400/250	910	506	453	250	450	1	4
4020826853358	885335	500/200	950	635	572	200	380	1	4
4020826863357	886335	600/200	1100	765	684	200	380	1	4
4020826863555	886355	600/250	1190	765	684	250	450	1	4

MCEA-KG - Branch Pipe on KG 90°

EAN CODE	EAN	DN	L(mm)	D(mm)	d2(mm)	d(mm)	M(mm)	PACKING (ks)	PALLETE (ks)
4025075843365	84336	400/200	506	453	180	200	745	1	20



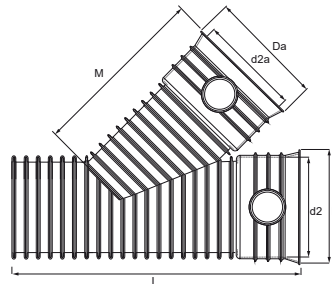
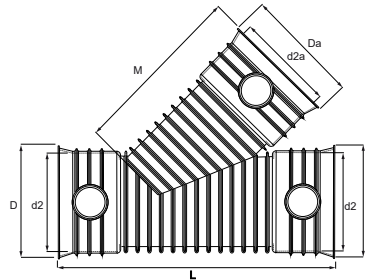
MCEA - Branch Pipe on Magnacor 45°

EAN CODE	EAN	DN	L(mm)	D(mm)	d2(mm)	Da(mm)	d2a (mm)	M (mm)	PACKING (ks)	PALLETE (ks)
4020826813307	881330	200/200	630	259	226	259	226	395	1	20
4020826823306	882330	250/200	770	320	284	259	226	410	1	12
4020826832405	882340	250/250	770	320	284	320	284	480	1	9

EAN CODE	EAN	DN	L(mm)	D(mm)	d2(mm)	Da(mm)	d2a (mm)	M (mm)	PACKING (ks)	PALLETE (ks)
4020826833305	883330	300/200	860	386	340	246	226	502	1	4
4020826833404	883340	300/250	910	386	340	306	284	561	1	4
4020826833503	883350	300/300	1050	506	340	365	340	639	1	4
4020826843304	884330	400/200	850	506	453	246	226	692	1	4
4020826843403	884340	400/250	910	506	453	306	284	720	1	4
4020826843502	884350	400/300	1030	506	453	365	340	772	1	4
4020826843601	884360	400/400	1270	506	453	484	453	1077	1	4
4020826853303	885330	500/200	950	635	572	246	226	730	1	4
4020826853501	885350	500/300	1090	635	572	365	340	942	1	4
4020826863302	886330	600/200	1100	765	684	246	226	718	1	4
4020826863500	886350	600/300	1280	765	684	365	340	1052	1	4

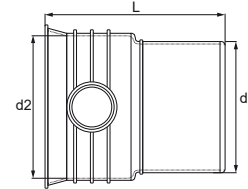
MCEA - Branch Pipe on Magnacor 90°

EAN CODE	EAN	DN	L(mm)	D(mm)	d2(mm)	Da(mm)	d2a (mm)	M (mm)	PACKING (ks)	PALLETE (ks)
4025075833519	83351	300/300	386	339	300	386	339	870	1	20



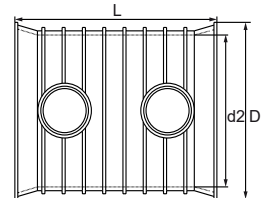
MC-KGI - Reducer on KG (neck)

EAN CODE	EAN	DN	L(mm)	d(mm)	d2(mm)	PACKING	PALLETE
4020826832308	883230	200	253	200	226	1	20
4020826842307	884230	250	306	250	284	1	12
4020826852306	885230	300	346	300	340	1	9
4020826862305	886230	400	376	400	453	1	4
4020826872304	887230	500	440	500	572	1	4
4020826882303	888230	600	460	600	668	1	4



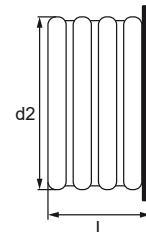
MCU - Sleeve

EAN CODE	EAN	DN	L(mm)	D(mm)	d2(mm)	PACKING	PALLETE
4020826831806	883180	200	303	246	226	1	20
4020826841805	884180	250	358	306	284	1	12
4020826851804	885180	300	434	365	340	1	9
4020826861803	886180	400	444	484	453	1	4
4020826871802	887180	500	528	643	672	1	4
4020826881801	888180	600	592	740	684	1	4



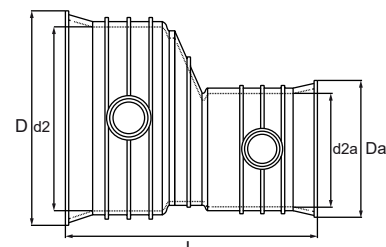
MCM - Plug

EAN CODE	EAN	DN	L(mm)	d2(mm)	PACKING	PALLETE
4020826832209	883220	200	303	226	1	20
4020826842208	884220	250	358	284	1	12
4020826852207	885220	300	434	340	1	9
4020826862206	886220	400	444	453	1	4
4020826872205	887220	500	560	572	1	4
4020826882204	888220	600	670	684	1	4



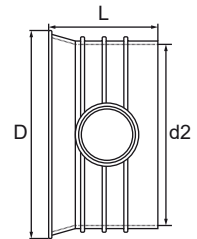
MCR - Reduction

EAN CODE	EAN	DN	L(mm)	D(mm)	d2(mm)	Da(mm)	d2a(mm)	PACKING	PALLETE
4020826842802	884280	250/200	359	306	284	246	226	1	20
4020826852801	885280	300/250	425	365	340	306	284	1	12
4020826862800	886280	400/300	498	484	453	365	340	1	9
4020826872809	887280	500/400	531	643	572	484	453	1	4
4020826882808	888280	600/500	635	740	684	643	572	1	4



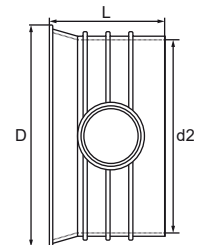
MCF - Shaft liner

EAN CODE	EAN	DN	L(mm)	D(mm)	d2	PACKING	PALLETE
4020826836207	883620	200	151	246	226	1	20
4020826846206	884620	250	179	306	284	1	12
4020826856205	885620	300	217	365	340	1	9
4020826866204	886620	400	222	484	453	1	4
4020826876203	887620	500	264	643	572	1	4
4020826886202	888620	600	296	740	684	1	4



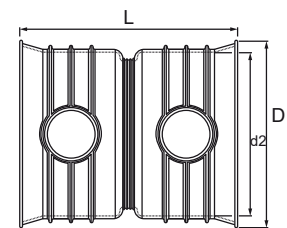
MCK - Cap

EAN CODE	EAN	DN	L (mm)	D (mm)	d2(mm)	PACKING	PALLETE
4020826832407	883240	200	151	246	226	1	20
4020826842406	884240	250	179	306	284	1	12
4020826852405	885240	300	217	365	340	1	9
4020826862404	886240	400	222	484	453	1	4
4020826872403	887240	500	264	605	572	1	4
4020826882402	888240	600	296	726	684	1	4



MCMM - necked Clutch

EAN CODE	EAN	DN	L(mm)	D(mm)	d2(mm)	PACKING	PALLETE
4020826832001	883200	200	305	246	226	1	20
4020826842000	884200	250	358	306	284	1	12
4020826852009	885200	300	434	365	340	1	9
4020826862008	886200	400	444	484	453	1	4
4020826872007	887200	500	528	643	572	1	4
4020826882006	888200	600	592	740	684	1	4



MC - sealing Ring

EAN CODE	EAN	DN	PACKING	PALLETE
4020826834807	883480	200	1	20
4020826844806	884480	250	1	12
4020826854805	885480	300	1	9
4020826864804	886480	400	1	4
4020826874803	887480	500	1	4
4020826884802	888480	600	1	4



MC - Seal „in situ“

EAN CODE	EAN	DN	PACKING	PALLETE
4020826346157	34615	110	1	20
4020826346201	34620	160	1	12
4020826346256	34625	200	1	9



1. SCOPE OF VALIDITY

The instructions describe the transport, storage and assembly process of the Magnacor sewer system.

This involves excavation work, pipeline installation, packing of piping, backfill, repairs and maintenance. Special consideration must be given to work in frozen ground or places with high level of underground water. They also specify the material's transport, handling and storage. The instructions include the average conditions for pipe laying. In special cases it is necessary to contact a specialized design office consultant or one of the OSMA company's technical advisors.



2. TECHNICAL TERMS

These instructions are just a recommended procedure. They are in no way a manual for designing. Before commencing the sewer pipe design work, it is necessary for the designer to ascertain the soil and excavation type, to calculate the height of the covering fill and to consult everything with the contractor. However, leaving out this step, it is still possible to set some guidelines to be able to determine whether Magnacor can be used under specific conditions and to recommend maximum possible deformations. When observing the requirements specified in these instructions, pipeline operation free of defects can be ensured for at least 50 years.

The Magnacor sewer system is used for buildings with free-flow combined installations and rain water networks. It is used for common household sewage and for road and highway drainage. Due to its outstanding characteristics, the Magnacor system can be also used for high temperature industrial waste pipeline.

The Magnacor sewer system can be used for all applications in normal soil conditions, ordinary excavations, and backfill and compaction methods. In case of pipes and pipe fittings with radial stiffness SN 8, the medium pipe deformation, measured during the 1st - 3rd month after installation, must not exceed 5% of the external diameter with the maximum lower than 8 %. Maximum deformation 2 years after installation must not exceed 10 % of the pipeline external diameter.

3. TRANSPORT, HANDLING AND STORAGE

The pipes and pipe fittings must be transported in suitab-

le vehicles with a clean laying area with no protruding bolts or nails. During transport, the pipes must be laid along the whole length and the laying area to avoid unwanted deflections. This does not hold for original factory packing in bundles. In such case, it is only necessary not to exceed the maximum height of the transported bundle, which is 3 meters.

Magnacor pipes and pipe fittings are PALLETEized. They are safeguarded by wooden boards and tied fast, which makes handling significantly easier. To avoid any damage, just observe the following points:

- When transporting using a crane, always use textile straps.
- Handling tools should always be made of a material softer than plastic – the best is wood.
- When unloading, never just drop the load - when transporting „pipe in pipe“ it is always necessary to first take out the internal pipes.

For the transport of pipes and fittings up to DN 300 to the excavation site, no special lifting device is needed due to their low weight.

For greater nominal diameters, it is necessary to use suitable aids along with the lifting device (wide textile straps, etc.). Lifting or suspending devices must pose no danger that could result in pipe damage. No hooks, chains, steel wires or other accessories are allowed which could damage the pipe due to sharp edges or cause an impact or slip.

Magnacor pipes and pipe fittings can be stored in a flat open-air area with no stones or sharp objects, ideally in the producer's original packing. Pipes and pipe fittings must be laid in such a way that no deflection can occur. To avoid deformation of the bell-mouths, they must be laid loose.

For loose pipes storage, it is suitable to first lay wooden beams (maximum 2 meters apart) on the platform and place the pipes on them. The number of pipes laid on each other depends on their size. Maximum pipe storage height is 1.5 meters. It is necessary to make sure that PALLETES are not laid directly on the pipes but on the protective boards of the PALLETE below.

Magnacor pipes and fittings can be stored in the open air for maximum 1 year. Rain and sunshine could cause some color changes, which should be prevented. To prevent that, it is recommended to cover the pipes with a water-proof cloth or black film.



4. CONSTRUCTION - BED AND LAYING

Bed and pack are layers of earth material up to 30 cm above the pipeline top.

BED AND PACK MATERIAL

The excavated material can be used for bed and pack if it consists of particles corresponding to the beige area in the graphic chart below. The size of the greatest particle must not exceed $1/10$ DN or 30 mm for $DN > 250$. If the excavated material cannot be used, it is advisable to use graded sand or sand-gravel (earth containing no sharp particles) with the greatest particle size not exceeding $1/10$ DN or 30 mm. The bearing stratum should protect the pipes from unevenness and provide for even support of the pipeline along its entire length. The pipeline installation angle is influenced by static earth-pipe composite action (the greater the installation angle, the deeper the pipeline cover may be).

PIPE INSTALLATION

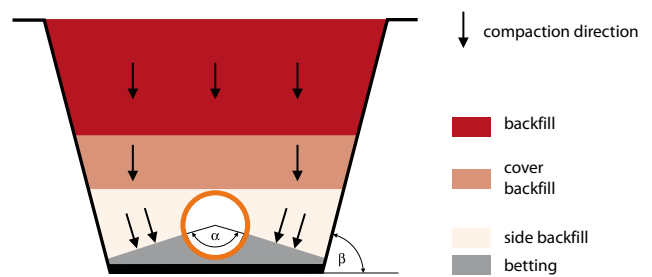
Before the actual pipe installation, it is necessary to check each pipe for the correctness of the faucets and sealing, and any potential damage. Then install the pipes so that no uneven conditions are created around faucet joints. Pipe faucets with greater diameters can be slightly recessed. Each pipe and shaped piece must be installed under consideration of slope according to the design. A direct and continuous course in the prescribed slope must be preserved.

5. CONSTRUCTION - PACK, BACKFILL, COMPACTION

Once the pipeline has been installed and tested in the prescribed manner, you can start filling in the pack. Both pack and compaction must be done on both sides simultaneously (see Figure 1) preventing any cavities to be created under the drains. The area between the pipeline and the trench wall must be compacted evenly. Side pack (see Figure 1) should be as high as the pipeline top edge. Create the pack by means of gradual filling and compacting thin layers of the prescribed material until the required height has been reached. It is advisable to leave the pipeline top edge uncovered. Covering pack (see Figure 1) should exceed the pipeline top edge by 0.3 m and should be compacted with a rammer on both sides of the pipe. Never use the rammer directly above the pipeline!!! Never fill the trench with other materials than those prescribed, as long as the above-mentioned layer is not created.

The excavated material can be used for backfill. The backfill must be compacted along the entire trench width. We do not recommend using frozen earth or earth containing particles greater than 150 mm for the backfill. At locations with higher levels of groundwater, it is necessary to pack, backfill and compact faster to prevent the pipeline from floating. The trench reinforcement is to be removed simultaneously as the backfill and compaction advance.

Figure 1 Pack and backfill structure



6. CONSTRUCTION - CONCRETE ENCASEMENT

Although the Magnacor is designed predominantly for buried installation without any concrete encasement being necessary, a concrete encasement can still be (in certain situations) used. However, make always sure the following measures and requirements are met:

- The gap between the faucet and the pipe must be protected against cement laitance penetration: a piece of adhesive tape is the best choice.
- The pipeline must be secured against uplift (floating) - the anchoring should prevent any unwanted bends.
- Thermal linear expansion of the pipes must be taken into account: wrap the faucet joints and leave them free.

7. CONNECTING THE PIPES A FITTINGS

Magnacor pipes and fittings can be easily connected to the smooth KG pipe system for external sewerage as well as to the OSMA sewage shaft system via the corresponding fittings.

Magnacor brings a new special shape of the bell-mouth, which makes pipeline assembly significantly easier. The internal part of the bell-mouth is tapered (inlet and guide haunch), which ensures distribution of the force needed for insertion of the stem into the bell-mouth.

During the connection process of Magnacor pipelines, individual connection phases can be distinguished, which enables constant checking of the correctness of the connection.

The connection itself can be divided into the following steps:

1. Clean the place for installation of the gasket ring (with a cloth or other suitable tool). Install the ring evenly and without straining into the first recess between the 1st and 2nd wave of the pipe stem.

Check the proper contact of the gasket ring on the perimeter of the pipe. No twisting of the gasket ring is allowed. Mark the insertion area.



2. Spread an appropriate lubricant evenly on the gasket ring and the internal surface of the bell-mouth. Do not use oil or grease!

Just before the assembly, check the bell-mouth and the pipe stem once more for cleanliness (sand, gravel and debris, which could get into the bell-mouth or stick to the lubricated area, must be removed).



3. Insert the pipes to the stop at the marking. The pipeline stem must be protected during assembly by means of a wooden beam to spread the assembly forces evenly.

If needed, the length of the pipes can be mechanically adjusted or cut using a special saw for plastic pipes. The cutting must be perpendicular to the pipe centerline. Before further usage, the walls must be thoroughly cleaned of dust.

The gasket is pressed into its final shape and guarantees a 100% tight connection. Using light force we obtain a very tight and durable connection.



To form any bell-gasket joint, a certain force must be used. The necessary force to insert the pipe stem into the bell-mouth in this connection has been significantly minimized by circa 50 %. When using pipes up to diameter DN 400, the assembly can be carried out by one person, for pipes of diameters DN 500 and 600 two people will be sufficient.

All Magnacor system fittings have the same unique bell-gasket joint construction, which enables fast and easy connection as well as reliable sealing.

8. TIGHTNESS TEST

The tightness test takes place always after completing a part or the whole pipeline - before the backfill and compaction. Two methods can be used:

- a) Wet - using a water column,
- b) Dry – using compressed air, must be removed!

9. PIPELINE REPAIRS

With the Magnacor sewer system, post-repairs are relatively easy. For pipe repairs, sleeves (MCU) are most often used. First, the defective place must be identified. Then, the damaged part is cut out and a replacement pipeline part is put in its place by means of two sleeves.





Polypropylene chemical stability

COMPOUND	Concentration [%]	Temperature [°C]		
		20	40	60
acetone	100	+	SDgr	
gaseous ammonia	100	+	+	
ammonium, hydrous sol.	concd. soln.	+	+	
ammonium, hydrous sol.	10	+	+	
amyl alcohol, pure		+	+	
acetanhydride	100	+		
benzenamine	100	+		+
benzaldehyde	100	+		
benzaldehyde, sol. aq.	sat.	+		
benzine	(see "Technical liquids")			
benzole	100	-*	-	
liquid bromide	100	-		
bromide fumes	high	-	-	
bromide fumes	dil.	SDgr	-	
bromide water	sat.	-	-	
liquid butane	100	+		
butane gas	100	+	+	
butyl acetate	100	+	SDgr	
cyclohexane	100	+		
cyclohexanol	100	+	+	
cyclohexanone	100	+	-	
dibutylphthalate	(see "Technical liquids")			
diethyl ether	100	SDgr		
potassium dichromate, sol. aq.	sat.	+	+	+
dimethylformamide	100	+		
1,4-dioxan	100	+	SDgr	-
ammonium nitrate, hydrous	all	+	+	+
potassium nitrate, sol. aq.	sat.	+	+	
sodium nitrate, sol. aq.	sat.	+	+	
calcium nitrate, sol. aq.	sat.	+	+	+
ethyl acetate	100	SDgr	SDgr	
ethyl alcohol	100	+		
ethyl alcohol, sol. aq.	96	+	+	
ethyl alcohol, sol. aq.	50	+	+	
ethyl alcohol, sol. aq.	10	+	+	
ethyl-benzene	100	SDgr	-	
ethylene chloride	100	SDgr	-*	
2-ethoxyethanol	100	+		
ethyl chloride	100	-		
ethyl ether see "diethyl ether"				
phenol	sat.	+	+	
formaldehyde, sol. aq.	40	+	+	
formaldehyde, sol. aq.	30	+	+	
formaldehyde, sol. aq.	10	+	+	
triammonium phosphate, hydrous	all	+	+	+
sodium phosphate, sol. aq.	sat.	+	+	+
glycerine	100	+	+	
glycerine, sol. aq.	high	+	-	-
glycerine, sol. aq.	dil.	+	-	-
glycol	100	+	+	
glycol, sol. aq.	high	+	+	
glycol, sol. aq.	dil.	+	+	+
heptane	100	+	SDgr	
hexane	100	+	SDgr	
aluminium salts	all	+	+	+
hydrogen sulphite sodium, sol. aq.	sat.	+	+	
sodium bicarbonate, sol. aq.	sat.	+	+	+
potassium hydroxide	50	+	+	
potassium hydroxide	25	+	+	
potassium hydroxide	10	+	+	

COMPOUND	Concentration [%]	Temperature [°C]		
		20	40	60
sodium hydroxide	100	+	+	
liquid chlorine	100	-		
chlorine gas, anhydrous	100	-	-	-
chlorine gas, humid	10	SDgr	-	-
chlorobenzene	100			
sodium chlorate, sol. aq.	5	+		
ammonium chloride, sol. aq.	all	+	+	+
tin dichloride	sat.	+	+	
potassium chloride, aq.	sat.	+	+	+
sodium chloride, sol. aq.	sat.	+	+	+
calcium chloride, hydrous	sat.	+	+	+
sodium perchlorate, sol. aq.	5	+	+	
potassium hypochlorite, sol. aq.	sat.	+	+	
sodium hypochlorite, sol. aq.	25	+	+	
chloroform	100	-*	-	
chlorine water	sat.	SDgr	-	
muiriac acid gas	high	+	+	
iso-octane	100	+	SDgr	
isopropyl alcohol	100	+	+	
potassium iodide, hydrous	sat.	+	+	
hydroxytoluene	100	+	SDgr	
hydroxytoluene, sol. aq.	sat.	+	SDgr	
benzenecarboxylic acid	100	+	+	
benzenecarboxylic acid, sol. aq.	sat.	+	+	+
boracic acid	100	+	+	
boracic acid, hydrous	sat.	+	+	
citric acid, sol. aq.	sat.	+	+	+
nitric acid	50	SDgr	-	
nitric acid	25	+	+	
nitric acid	10	+	+	
fluorohydric acid	40	+	+	
orthophosphoric acid	sat.	+	SDgr	
orthophosphoric acid	50	+	+	
orthophosphoric acid	10	+	+	+
hydrochloric acid	sat.	+	+	
chlorosulphonic acid	100	-	-	
chromic acid	sat.	+	-	
chromic acid	20	+	SDgr	
butanedioic acid, sol. aq.	sat.	+	+	
lactacid, sol. aq.	90	+	+	
lactacid, sol. aq.	50	+	+	
lactacid, sol. aq.	10	+	+	+
methanoic acid	98	+	SDgr	
methanoic acid	90	+		
methanoic acid	50	+	+	
methanoic acid	10	+	+	+
glacial acetic acid	100	+	SDgr	-
acetic acid, sol. aq.	50	+	+	
acetic acid, sol. aq.	10	+	+	+
oleic acid	100	+		
sulphuric acid	96	+	SDgr	
sulphuric acid	50	+	+	
sulphuric acid	25	+	+	
sulphuric acid	10	+	+	+
stearic acid	100	+		
ethanedioic acid, sol. aq.	sat.	+	+	+
2,3-dihydroxybutanedioic acid, sol. aq.	sat.	+	+	
permanganate of potassium, sol. aq.	sat.	+	+	*
methanol	100	+	+	
methanol, sol. aq.	50	+	+	

COMPOUND	Concentration [%]	Temperature [°C]		
		20	40	60
methane ethyl ketone	100	+	SDgr	
methyl chloride	100	SDgr		
mineral oils	(see "Technical liquids")			
urea, sol. aq.	sat.	+	+	
naphthalene	100	+		
naphthalene	100	-*	-	-
soda lime	50	+	+	
soda lime	25	+	+	
soda lime	10	+	+	+
n-butanol	100	+	+	
nitrobenzene	100	+	SDgr	
ammonium acetate, sol. aq.	all	+	+	+
octane see "iso-octane"				
diphosphorus pentoxide	100	+		
sulphur dioxide	dil.	+	+	
ozone < 0,5 ppm		+	-*	
hydrogen dioxide, sol. aq.	90			
hydrogen dioxide, sol. aq.	30	+	SDgr	
hydrogen dioxide, sol. aq.	10	+	+	
hydrogen dioxide, sol. aq.	3	+	+	+
potassium persulphate, sol. aq.	sat.	+		
propane, liquid	100	+		
propane gas	100	+	+	
pyridine	100	+	SDgr	
mercury	100	+	+	
sulphur	100	+	+	+
ammonium sulphate, sol. aq.	all	+	+	+
potassium sulphate, sol. aq.	sat.	+	+	+
sulphate of strontium, sol. aq.	sat.	+	+	+
carbon sulphide	100	SDgr		
hydrogen sulphide	dil.	+	+	
sodium sulphite, sol. aq.	sat.	+	+	
barium salts	all	+	+	+
magnesium salts, sol. aq.	sat.	+	+	+
chromium salts 2+, 3+	sat.	+	+	
copper salts	sat.	+	+	+
nickel salts	sat.	+	+	
mercury salts, sol. aq.	sat.	+	+	
argent salts	sat.	+	+	
zinc salts, sol. aq.	sat.	+	+	
ferrous salts, sol. aq.	sat.	+	+	+
sodium sulphide, sol. aq.	sat.	+	+	
trisodium tetraborate, sol. aq.	sat.	+	+	+
tetrahydrofuran	100	SDgr	-	
tetrahydro-naphthalene	100	SDgr	-	
tetrachloroethane	100	SDgr	-	
tetrachloromethane	100	SDgr	-	
thiophene	100	SDgr	-	
sodium thiosulphate, sol. aq.	sat.	+	+	
toluene	100	SDgr	-	
chloral	100	SDgr	-*	
ammonium carbonate, sol. aq.	all	+	+	+
potassium carbonate (potash)	sat.	+	+	
carbonate of soda (soda)	sat.	+	+	
carbonate of soda (soda)	10	+	+	+
water	100	+	+	+
xylene	100	SDgr	-	
Technical liquids				
accumulator acid		+	+	
asphalt		+	SDgr	
petrol, pure		+	SDgr	
unleaded petrol		+	SDgr	

Polypropylene chemical stability

COMPOUND	Concentration [%]	Temperature [°C]		
		20	40	60
leaded petrol		+	SDgr	
super petrol		+*	SDgr	
bleaching liquor (12,5 % Cl)		SDgr	SDgr	
sodium tetraborate, sol. aq.	sat.	+	+	
pine oil		+	+*	
brake fluid		+	+	
tar		+	SDgr	
Formalin*		+	+	
photographic developer	usual	+	+	
Fridex*		+	+	
calcium hypochlorite		+	+	
chromium tanning bath		+	+	
chromium-sulphur mixture		-	-	
alumen, sat.		+	+	
shoe polish		+	SDgr	
Kresolum saponatum*		+		
anti-moth marbles		+		
Lanolin*		+	SDgr	
LITEX*		+	+	
flax-seed oil		+	+	
Lysof*		+	SDgr	
mineral oils (w/o aromates)		+	SDgr	-
engine oils		+	SDgr	-
diesel fuel		+	SDgr	
synthetic degreasers	c. u.	+	+	+
two-cycle engine oil		SDgr	SDgr	
typewriter oil		+	+*	
transformer oil		+	SDgr	
fuming sulphuric acid	all	-	-	
paraffin	100	+	+	-
paraffin oil	100	+	SDgr	-
pectose, sat.		+	+	
pectrol-ether	100	+	SDgr	
furniture polish		+	SDgr	-
laundry agents high		+	+	
Sagrotan*		+	SDgr	
kitchenware detergent		+	+	+
silicone oil		+	+*	
spruce oil		+	+*	
soda	(see "carbonate of soda")			
Solvina		+	+	
turpentine		SDgr	-	
fuel oil		+	SDgr	
graphite		+	+	
fixative bath	10	+	+	
salt water		+	+	+
aqueous glass		+	+	
floor polish		+	SDgr	
softening agent – dibutylphthalate		+	SDgr	
softening agent – dibutyl sebacate		+		
softening agent – dihexylphthalate		+		
softening agent – dinonyl-adipate		+		
softening agent – dioctyl-adipate		+		
softening agent – dioctyl-phthalate		+		
softening agent – tricresyl phosphate		+		
softening agent – trioctyl phosphate		+		
Pharmaceuticals and cosmetics				
Aspirin*		+		
Quinine		+		

COMPOUND	Concentration [%]	Temperature [°C]		
		20	40	60
iodine tincture		+		
bornyl chloride		+		
ingernail polish		+		
menthol		+		
soap and soapflakes		+		
soap solution	sat.	+	+	+
soap solution	10	+	+	+
ingernail polish remover		+	SDgr	
perfumes		+		
hair shampoo		+	+	
paraffin jelly		+	SDgr	
toothpaste		+	+	
Food and eatables				
potato salad		+		
Coca-Cola*		+		
dry sugar		+	+	+
sugar solution		+	+	+*
tea tree leaves		+	+	
tea – drink		+	+	+*
lemon pulp and peel		+		
apple pulp		+	+	+*
orange pulp and peel		+		
essential oils		+	SDgr	
gin	40	+		
mustard		+		
cocoa – drink		+	+	+
cocoa – powder		+		
coffee (beans and ground coffee)		+		
coffee – drink		+	+	+
ketchup		+	+	
cognac		+		
spices		+		
fish in vinegar		+	+	+*
pickled cabbage		+	+	+*
liqueur	all	+		
lemonade		+		
beef tallow		+	+	
mayonnaise		+		
margarine		+	+	
jam		+	+	+*
butter		+	+	
honey		+	+	
milk products		+	+	+*
milk		+	+	+*
flour		+		
vinegar	c. u.	+	+	
lemon oil		+		
coconut oil		+	+*	
peppermint oil		+		
olive oil		+	+	
palm oil		+	SDgr	
orange oil		+		
vegetable oil		+	SDgr	
soya bean oil		+	SDgr	
corn-germ oil		+	SDgr	
peanut oil		+	+*	-*
animal oil		+	SDgr	
fruit salad		+		
baked goods		+	+	+*
beer		+		
butter milk		+		
pudding		+	+	+*

COMPOUND	Concentration [%]	Temperature [°C]		
		20	40	60
rum	40	+	+	
fish oil		+		
lard		+	SDgr	
salami		+	+	
beet syrup	all	+	+	+*
herrings		+		
carbonated water		+		
salt brine		+	+	+
common salt	(see "sodium chloride")			
cheese		+		
fecula – sol. aq.	all	+	+	
whipped cream		+		
pineapple juice		+	+	
lemon juice		+	+	
grapefruit juice		+	+	
apple juice		+	+	
fruit juice		+	+	
orange juice		+	+	
tomato sauce		+	+	
roast-food sauce		+	+	+*
lemon essence		+		
bitter almond essence		+		
vinegar essence	c. u.	+	+	
rum essence		+		
vanilla essence		+	+	
cottage cheese		+		
eggs (raw and cooked)		+	+	+*
wine		+	+	
whisky	40	+		
vegetables		+	+	+*
gelatine		+	+	+*

Legend :	
+	resistance
+*	partial resistance
SDgr	conditional resistance
-*	low resistance
-	instability
no classification	not tested
all	all concentrations
concd. soln.	concentrated solution
low conc.	low concentration
c. u.	commonly used concentration
usual	usual, commercial concentration
dil.	diluted solution
sol. aq.	aqueous solution
sat.	cold-saturated solution
hot sat.	hot-saturated solution
m. a.	minute amounts

Chemical stability of unplasticized polyvinyl chloride

Chemical stability of unplasticized polyvinyl chloride

COMPOUND	Concentration [%]	Temp. [°C]		
		20	40	60
acetaldehyde	100			
acetaldehyde	40	°	°	
acetaldehyde+acetic acid	90/40	°		
acetanhydride	100	-		
acetone	m. a.	-		
acetone	100	-		
allyl alcohol	96	°		
liquid ammonia	100	°	°	
gaseous ammonia	100	+	+	+
pure phenylamine	100	-		
phenylamine hydrochloride, hydrous	sat.	°		
anon	100	-		
inorganic fertilizers	up to 10	+	+	°
inorganic fertilizers	sat.	+	+	+
antiformin hydrous	2	+		
Asfluid I, liquid		-		
benzaldehyde, sol. aq.	0.1	-	-	-
benzine	100	+	+	+
benzine-benzole mixture	80/20	-	-	-
sodium benzoate, sol. aq.	up to 10	+	+	
sodium benzoate, sol. aq.	up to 36			°
benzole	100	-	-	-
bleach liquid (12.5% active chlorine)	c. u.	+	+	°
sodium tetraborate, sol. aq.	dil.	+	+	°
sodium tetraborate, sol. aq.	sat.			°
potassium borate, sol. aq.	1	+	+	°
liquid bromide	100	-		
gaseous bromide	low conc.	°		
potassium bromate, sol. aq.	dil.	+	+	°
potassium bromate, sol. aq.	dil.	+	+	°
potassium bromate, sol. aq.	sat.	+	+	+
bromide water	sat.	°	°	
butadiene	100	+	+	+
butane gas	50	+		
succinaldehyde	up to 10	+	°	-
butanol	up to 100	+	+	°
butine-diol	100		°	
butyl acetate	100	-		
butylphenol	100	°		
cellulose, sol. aq.	sat.	+	°	
cycannone	c. u.	+	+	+
cyclohexanol	100	-	-	-
cyclohexanone	100	-	-	-
tanning cellulose extracts	usual			
tanning herbal extracts	usual	+		
ammonia liquor	sat.	+	+	°
densodrine	c. u.	+	+	+
dextrine, sol. aq.	sat.	+		
dextrine, sol. aq.	18			°
potassium dichromate, sol. aq.	40	+		
ammonium nitrate, hydrous	dil.	+	+	°
ammonium nitrate, hydrous	sat.	+	+	+
potassium nitrate, sol. aq.	sat.	+	+	+
potassium nitrate, sol. aq.	dil.	+	+	°
silver nitrate, sol. aq.	up to 8	+	+	°
calcium nitrate, sol. aq.	50	+	+	+
paraffine emulsions	c. u.	+	+	
acetic ester	100	-		
ethyl-acrylate	100	-		
ethyl alcohol (inoculum)	c. u.	+	+	°
ethyl alcohol and acetic acid (fermentation mixture)	c. u.	+	°	
denaturated ethyl alcohol (2% of toluene)	96	+	°	°
ethyl alcohol, sol. aq.	96	+	+	°
ethylene chloride	100	-		
ethylene oxide, liquid	100	-		
ethyl ether	100	-		
phenol water	up to 90	°	°	-
phenol water	1	+		

COMPOUND	Concentration [%]	Temp. [°C]		
		20	40	60
phenylhydrazine	100	-		
phenylhydrazine-hydrochloride, sol. aq.	sat.	°		
ferri-cyanide and ferro-cyanide				
potassium sol. aq.	dil.	+	+	°
potassium sol. aq.	sat.	+	+	+
ammonium fluoride, hydrous	up to 20	+		°
copper difluoride, hydrous	2	+	+	+
nitrogen fluoride, sol. aq.	up to 20	+		°
formaldehyde, sol. aq.	dil.	+	+	°
formaldehyde, sol. aq.	40	+	+	+
phosphane	100	+		
gaseous carbonyl dichloride	100	+		°
liquid carbonyl dichloride	100	-		
photoemulsion	all	+	+	
fixative	c. u.	+	+	
developing agent	c. u.	+	+	
FRIGEN*	100	+		
fructose (grape sugar), sol. aq.	sat.	+	+	°
glycerine, sol. aq.	all	+	+	+
glycocol, sol. aq.	10	+	+	+
glycol, sol. aq.	c. u.	+	+	+
hexane-triol	c. u.	+	+	+
beef tallow, sulphate emulsion	c. u.	+		
hydrogen sulphite sodium, sol. aq.	dil.	+	+	°
hydrogen sulphite sodium, sol. aq.	sat.	+	+	+
hydroxylamine sulphate, sol. aq.	up to 12	+	+	
chlophene	c. u.	°		-
chlorine gas, anhydrous	100	°	°	-
chlorine gas, hydrous	0.5	+		
chlorine gas, hydrous	1	°		
chlorine gas, hydrous	5	°		
chlorine gas, hydrous	97	°		
liquified chlorine		-		
chloramine, sol. aq.	dil.	+	-	-
sodium chlorate, sol. aq.	up to 10	+	+	°
sodium chlorate, sol. aq.	sat.	+	+	+
ammonium chloride, hydrous	dil.	+		°
ammonium chloride, hydrous	sat.	+	+	+
antimonous chloride, hydrous	90	+	+	+
tin bichloride, hydrous	sat.	+	+	°
tin bichloride, hydrous	dil.	+	+	°
potassium chloride, sol. aq.	sat.	+	+	+
potassium chloride, sol. aq.	dil.	+	+	°
trichloride phosphorus	100	-		
aluminium trichloride, hydrous	dil.	+	+	°
aluminium trichloride, hydrous	sat.	+	+	+
magnesium chloride, hydrous	dil.	+	+	°
magnesium chloride, hydrous	sat.	+	+	+
copper chloride, hydrous	sat.	+	+	°
sodium chloride	(see Common salt)			
calcium chloride, hydrous	dil.	+	+	°
calcium chloride, hydrous	sat.	+	+	+
chloride zinc, hydrous	sat.	+	+	+
chloride zinc, hydrous	dil.	+	+	°
ferric chloride	up to 10	+	+	°
ferric chloride	sat.	+	+	+
potassium perchlorate, sol. aq.	1	+	+	°
sodium hypochlorite, sol. aq.	dil.	+		
chlorine water	sat.	°	°	
chlorine hydride, hydrous		+	+	
hydrogen chloride, anhydrous		+	+	+
potassium chromate, sol. aq.	40	+	+	+
chrome alum, sol. aq.	dil.	+	+	°
chrome alum, sol. aq.	sat.	+	+	+
chromium-sulphur cleaning mixture	50/15/35	+	+	°
metallic iodine and in alkaline solution		-		
hydrous alumen	dil.	+	+	°

COMPOUND	Concentration [%]	Temp. [°C]		
		20	40	60
hydrous alumen	sat.	+	+	+
carbolineum, fruit origin	c. u.	+		
acacia	c. u.	+		
hydroxytoluene, sol. aq.	up to 90	°	°	
crotonaldehyde	100	-		
colour agents	c. u.	+	+	+
potassium cyanide, sol. aq.	up to 10	+	+	°
adipinic acid	sat.	+	+	°
antraquinone-sulphone acid aqueous suspension		+		
arsenic acid, sol. aq.	dil.	+	+	°
arsenic acid, sol. aq.	80	+	+	°
benzenecarboxylic acid	all	+	+	°
boracic acid, sol. aq.	sat.	+	+	°
bromhydric acid, sol. aq.	48	+	+	+
bromhydric acid, sol. aq.	up to 10	+	+	°
oxychlorine acid, sol. aq.	up to 10	+	+	°
oxychlorine acid, sol. aq.	sat.	+	+	+
hypochlorous acid, sol. aq.	10	+	+	°
hypochlorous acid, sol. aq.	20	+	+	°
hypochlorous acid, sol. aq.	1	+	+	°
chlorosulphonic acid	100	°		
chromic acid, sol. aq.	up to 50	+	+	°
citric acid, sol. aq.	sat.	+	+	+
citric acid, sol. aq.	up to 10	+	+	°
diethylene-glycol acid	30	+	+	°
diethylene-glycol acid	sat.	+		
nitric acid, sol. aq.	up to 50	+	+	°
nitric acid, sol. aq.	98	-		
fluorosilicic acid, sol. aq.	up to 32	+	+	+
orthophosphoric acid, sol. aq.	up to 30	+	+	°
orthophosphoric acid, sol. aq.	above 30	+	+	+
glycolic acid, sol. aq.	37	+		
2-hydroxybutanedioic acid, sol. aq.	1	+	+	
silicic acid, sol. aq.	all	+	+	+
(Z)-butenedioic acid, sol. aq.	sat.	+	+	°
(Z)-butenedioic acid, sol. aq.	35	+	+	
butanoic acid, concd. sol.		-		
butanoic acid, sol. aq.	20	+	-	-
methanesulfone acid	100	+	+	°
methanesulfone acid, sol. aq.	up to 50	+	°	
lactacid acid, sol. aq.	90	+	°	-
lactacid acid, sol. aq.	up to 10	+	+	°
monochloroacetic acid, sol. aq.	85	+		
monochloroacetic acid, sol. aq.	100	+	+	°
methanoic acid, hydrous	100	+	°	-
methanoic acid, hydrous	up to 50	+	+	°
methanoic acid, hydrous	50	+	+	°
acetic acid, sol. aq.	do 25	+	+	°
glacial acetic acid	100	°	-	
acetic acid, sol. aq.	25-60	+	+	+
acetic acid, sol. aq.	80	+	°	
crude acetic acid	95		°	
(Z)-9-octadecenoic acid	c. u.	+	+	+
picric acid	1	+		
sulphurous acid (at 8 bar)	sat.	+		
sulphuric acid, sol. aq.	do 40	+	+	°
sulphuric acid, sol. aq.	40-80	+	+	+
sulphuric acid, sol. aq.	96	+	°	
sulphuric acid, sol. aq.	80-90			
chlorhydric acid, sol. aq.	do 30	+	+	°
chlorhydric acid, sol. aq.	concd.	+	+	+
stearic acid	100	+	+	+
ethanedioic acid, sol. aq.	sat.	+	+	+
ethanedioic acid, sol. aq.	dil.	+	+	+
carbonic acid, sol. aq. (up to 8 bar)	sat.	+		
2,3-dihydroxybutanedioic acid, sol. aq.	up to 10	+	+	°
2,3-dihydroxybutanedioic acid, sol. aq.	sat.	+	+	+
oxygen	all.	+	+	+
spirits		+		
liqueurs		+		

COMPOUND	Concentration [%]	Temp. [°C]		
		20	40	60
caustic potash lye, sol. aq.	up to 40	+	+	°
caustic potash lye, sol. aq.	50-60	+	+	+
sodium lye, sol. aq.	up to 40	+	+	°
sodium lye, sol. aq.	50-60	+	+	+
aqua regia		°		
tallow	100	+	+	+
permanganate of potassium, sol. aq.	6	+	+	+
permanganate of potassium, sol. aq.	up to 18	+	+	
fatty acids	100	+	+	+
palm oil fatty acids	100	+	+	+
molasses	c. u.	+	+	°
molasses mixture	c. u.	+	+	+
Mersol D	c. u.	+	+	°
methanol, sol. aq.	32	°		
methanol	100	+	+	°
chloromethane	100	-		
methylene-chloride	100	+	+	°
mineral oils		+	+	+
beer wort	c. u.	+	+	
milk		+	+	+
urine		+	+	°
urea, sol. aq.	up to 10	+	+	°
urea, sol. aq.	33	+	+	+
Mowilith D	c. u.	+		
NEKAL BX [®] aq.	dil.	+	+	°
nicotine, sol. aq.	c. u.	+		
nicotinic preparates, sol. aq.	c. u.	+		
nitroglycerine	dil.	°		
nitroglycol	dil.	-		
oxides of nitrogen	concd. soln.	°		
wine vinegar	c. u.	+	+	+
acetate lead, sol. aq.	sat.	+	+	+
acetate lead, sol. aq.	dil.	+	+	°
acetate lead, sol. aq.	hot sat.	+	+	
mists containing sulphuric acid (hydrous)	all	+	+	+
mists containing sulphur trioxide	all	°		
mists containing carbon dioxide	all	+	+	+
mists containing hydrogen fluoride	all	+	+	+
mists containing sulphur dioxide	low concd.	+	+	+
mists containing carbon monoxide	all	+	+	+
mists containing nitrogen oxides	all	+	+	
mists containing fuming sulphuric acid	low conc.	+	+	+
mists containing chlorine hydride	all	+	+	+
mists containing oxides of nitrogen	all	+	+	+
flax-seed oil	100	+	+	
oils and fats		+	+	+
fuming sulphuric acid	10	-		
fruit juice	c. u.	+	+	+
fruit drinks	c. u.	+	+	+
diphosphorous pentaoxide	100	+		
sulphur dioxide, anhydrous	all	+	+	+
sulphur dioxide, hydrous	50	+	+	
sulphur dioxide, liquid	100	°		
sulphur dioxide, hydrous	all	+	+	°
carbon monoxide	100	+	+	+
carbon dioxide, anhydrous	100	+	+	+
carbon dioxide, hydrous	all	+	+	°
nitrogen oxides, hydrous and anhydrous	dil.			°
nitrogen oxides, hydrous	concd soln.	-		
ozone	100	+	+	+
ozone	10	+		
paraffin alcohols	100	+	+	+
sulphuric acid fumes	higher	°		
sulphuric acid fumes	niz.	+		
hydrogen dioxide, sol. aq.	up to 30	+		
hydrogen dioxide, sol. aq.	up to 20	+	+	
potassium peroxydisulphate	sat.	+	+	°
potassium peroxydisulphate	dil.	+	+	°
beer		+	+	+

COMPOUND	Concentration [%]	Temp. [°C]		
		20	40	60
potash, sol. aq.	sat.	+	+	
propane gas		+		
propane, liquid	100	+		
propargyl alcohol, sol. aq.	7	+	+	+
plant protective agents	(see carbolineum and nicotinic preparates)			
pyridine	all	-		
mercury		+	+	+
carbon sulphide	100	°		
hydrogen sulphide, anhydrous	100	+	+	+
ethyl alcohol, sol. aq.	sat.	+	+	°
ammonium sulphate, hydrous	sat.	+	+	+
ammonium sulphate, hydrous	dil.	+	+	°
magnesium sulphate, sol. aq.	sat.	+	+	+
magnesium sulphate, sol. aq.	dil.	+	+	°
cupric sulphate, sol. aq.	sat.	+	+	+
cupric sulphate, sol. aq.	dil.	+	+	°
nickel sulphate, sol. aq.	dil.	+	+	°
nickel sulphate, sol. aq.	sat.	+	+	+
sodium sulphate, sol. aq.	dil.	+	+	°
sodium sulphate, sol. aq.	sat.	+	+	+
zinc sulphate, sol. aq.	sat.	+	+	+
zinc sulphate, sol. aq.	dil.	+	+	°
mixed acids (nitric/sulphuric/water)	50/50/0	°	-	
mixed acids (nitric/sulphuric/water)	10/20/70	+	+	
mixed acids (nitric/sulphuric/water)	10/87/3	°		
mixed acids (nitric/sulphuric/water)	50/31/19	+		
mixed acids (nitric/sulphuric/water)	48/49/3	+	°	
soda solution	sat.	+	+	+
soda solution	dil.	+	+	°
sodium bisulphide, sol. aq. with carbon dioxide	sat.	+	+	+
spinner acids with CS ₂	200 mg/l		°	
spinner acids with CS ₂	100 mg/l	+	+	
spinner acids with CS ₂	700 mg/l		-	
spinning viscose bath liquors		+	+	+
common salt, sol. aq.	dil.	+	+	°
common salt, sol. aq.	sat.	+	+	+
lighting gas w/o benzene		+		
fecula, sol. aq.	c. u.	+	+	+
tetraclormethane	100	°	-	
tetraethyl lead	100	+		
thionyl chloride	concd.	-		
toluene	100	-		
trichlorethylene	100	-		
trietanolamine	100	-		
trimethylpropane, sol. aq.	c. u.		°	
trimethylpropane, sol. aq.	up to 10	+	+	°
potassium carbonate (sol. aq.)	(see potash)			
sodium carbonate	(see soda)			
wine spirits of all kinds		+		
wine spirit		+	+	
vinyl acetate	100	-		
white and red wine		+	+	+
salt water		+	+	°
water in general		+	+	°
carbonated water		+	°	°
distilled water		+	+	
soap water	concd.	+		°
drinking water		+	+	
spring water		+	+	
condensed water		+	+	
waste water (also acetic w/o organic solvents)		+	+	
waste water with minute amounts of phenols and butanol				
hydrogen	100	+	+	+
higher fatty alcohols	100	+	+	+
xylol	100	-		
gelatine, sol. aq.	all	+	+	

Legend :	
+	resistant
+*	partially resistant
°	conditionally resistant
-*	low resistance
-	instability
no classification	not tested
all	all concentrations
concd.	concentrated solution
low	low concentration
c. u.	commonly used concentration
usual	usual, commercial concentration
dil.	diluted solution
sol. aq.	aqueous solution
sat.	cold-saturated solution
hot sat.	hot-saturated solution
m. a.	minute amounts

